

# PRODUCT CATALOGUE



**WABCO**



# Right at your fingertips

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Visit the New Online WABCO Customer Centre

We have prepared our new WABCO Customer Centre to support you on finding and ordering what you need easier, faster, and with lots of new features you'll come to love.

[www.wabco-customercentre.com](http://www.wabco-customercentre.com)

**WABCO**

# Dear WABCO customer,

Welcome to the new WABCO Customer Catalogue. This extensive reference work has been designed to support and simplify your daily operational performance by providing you with an exhaustive overview of our product availability. The catalogue enables you to quickly find and order replacement parts and services essential to supporting your customer's ability to achieve reduced downtime.

A lot has changed since the last imprint, and the new publication contains up-to-date details of our latest products and services, designed and developed for today's commercial vehicle industry, one which is quickly transitioning to an Autonomous, Connected and Electric future.

Backed by over 150 years of expertise in the supply of commercial vehicle parts and built on a long collaboration with the world's leading Original Equipment Manufacturers, every WABCO component is designed and manufactured to the highest quality standards and supported by a powerful, global customer service network. Our high quality standards have been put in place to delivery you, that essential peace of mind - knowing that when you order from the WABCO catalogue, every item is a like for like replacement part to the original OE part.

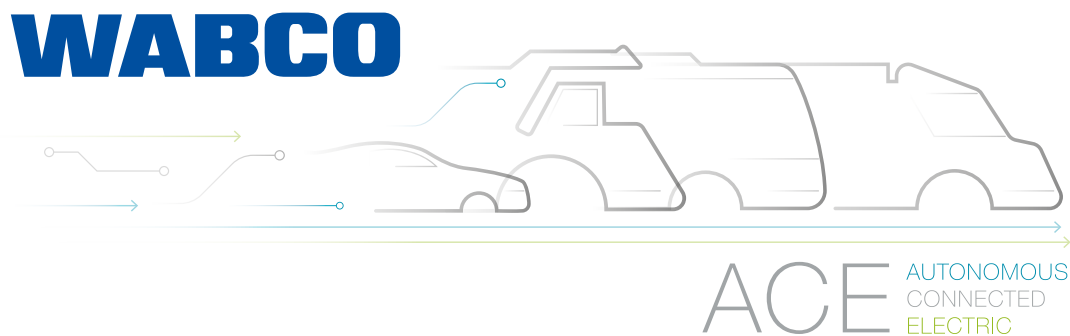
Within these pages you will find detailed specifications of our growing range of systems and components for trucks, trailers and buses. The catalogue has been designed to deliver a one-stop shop for every workshop and distributor.

Serving you with a complete overview of our offer, this catalogue also provides details on our REMAN SOLUTIONS offering, leading repair solutions, as well as WABCO ACADEMY trainings and diagnostics. We hope you find this catalogue useful.

Orders may be placed through our online portal [wabco-customercentre.com](http://wabco-customercentre.com) catalogue, or you are welcome to reach out to our expert staff that is readily available to provide full technical and business support, ensuring you find the right product, training course or service.

We are confident that this catalogue, with its comprehensive offering of parts and services will play a key part in achieving our joint ambition: to enable the commercial vehicle transport industry achieves safer, greener and leaner operations.

Your WABCO team



## ZF Friedrichshafen AG

ZF is a global technology company and supplies systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. ZF allows vehicles to see, think and act. In the four technology domains Vehicle Motion Control, Integrated Safety, Automated Driving, and Electric Mobility, ZF offers comprehensive solutions for established vehicle manufacturers and newly emerging transport and mobility service providers. ZF electrifies different kinds of vehicles. With its products, the company contributes to reducing emissions and protecting the climate.

ZF, which acquired WABCO Holdings Inc. on May 29, 2020, now has 162,000 employees worldwide with approximately

260 locations in 41 countries. In 2019, the two then-independent companies achieved sales of €36.5 billion (ZF) and \$3.4 billion (WABCO).

With the integration of WABCO, the leading global supplier of braking control systems and other advanced technologies that improve the safety, efficiency and connectivity of commercial vehicles ZF will create a new level of capability to pioneer the next generation of solutions and services for original equipment manufacturers and fleets globally. WABCO, with almost 12,000 people in 40 locations worldwide, will now operate under the ZF brand as its new Commercial Vehicle Control Systems division.



# Welcome to the WABCO family!

Are you searching for the ways to bring down the cost of your business, enable simplicity in your operations, train your staff, improve productivity across the board, increase uptime, and simply reduce the carbon footprint? We are here for you!

This catalogue proudly offers you an overview of our aftermarket OE proven parts, repair solutions, diagnostic tools, training and re-manufacturing services.



## WABCO Original Equipment and Repair Kits

Our OE parts deliver peace of mind, built on decades of experience and on our extensive industry partnerships with the commercial vehicle sector as a whole. To ensure we deliver the highest quality, we use high-grade materials, as well as subject these parts to comprehensive tests and inspections designed to meet the most rigorous production and safety standards. Today our parts and services proudly serve over 100 OE companies worldwide.

Not looking to replace the whole part? If you need a cost-effective refresh without requiring the entire component to be replaced you can choose from our extensive range of repair solutions. On top, many of these components require no additional specialist tooling, making the repair quick and easy.



**ECO** LOGICAL  
NOMICAL

## WABCO REMAN SOLUTIONS

Our extensive REMAN SOLUTIONS offer customers a remanufactured product that matches the level of quality of a new part and is the perfect cost-efficient choice when core return is ensured. This solution, which builds on the need for the industry to return used cores back to WABCO, supports a significant cut down on waste, supporting our contribution to a greener planet and allows us to return used cores back to the market as new.



## ProVia

Looking to strike a balance between safety, reliability and cost as an alternative to the low-end budget parts which can often fall short of quality and reliability expectations? Don't want to invest in premium aftermarket parts for trucks, buses, and trailer? Then ProVia is the perfect solution for you. Want to know more? Visit the dedicated ProVia catalogue, for a detailed portfolio overview on [www.provia-auto.com](http://www.provia-auto.com).



# Your journey with WABCO

## Order & delivery

The greater your fleet operations uptime, the higher the satisfaction levels of your customers, stakeholders and drivers. Finding the right replacement part for your vehicles therefore plays a key role in enabling improved uptime! To help you find and order the part quickly, we have recently introduced the new WABCO Customer Centre – the online tool for all your WABCO parts and service needs. If you prefer personal contact, we look forward to answering your call or welcoming you to one of our almost 5000 distribution points worldwide. To find the nearest one use “Find us” on:  
[www.wabco-customercentre.com](http://www.wabco-customercentre.com)

## Repair & maintenance

When the vehicle is constantly on the road, it has to be continuously maintained. WABCO offers a comprehensive range of customized aftermarket solutions and dedicated support services tailored to your repair and maintenance needs, enabling you to operate safely and efficiently. In our extensive offering you will find spare parts and a repair kits for almost all commercial vehicles worldwide, tailored to your budget and vehicle age.

## Customer support

Have a question? Missing some information? We are here for you! Our trained specialists at the WABCO Customer Care Centre are always on hand to answer your technical and commercial questions, providing the help you need in your local language where available:  
[www.wabco-auto.com/Get-in-touch](http://www.wabco-auto.com/Get-in-touch)

## Digital & diagnostic tools

To prevent is better than to cure. Vehicle downtime can be a real thorn in a fleet and workshop manager’s side. One effective way to increase uptime across your fleet operations is by being on top of the health of your vehicles at all times.

To enable you to detect onboard system failures early on and optimize vehicle maintenance scheduling, WABCO offers a powerful combination of diagnostics solutions that will monitor the technical performance of your vehicle on the road and support diagnostic work in the workshop, enabling mechanics can react quickly to improve the uptime.



## Training

Enabling your specialists to quickly assess the condition of a vehicle, decide on the right replacement part and effectively repair it to reduce the truck’s downtime requires continued training. WABCO ACADEMY provides advanced technical training and consulting services to fleet managers, professional drivers, garage managers, distributors and mechanics. As the industry and the technology around it evolve, WABCO ACADEMY is there to enable you and your teams to stay on top of the latest trends and technological changes.

To meet varying customer demands and in a drive to offer the most convenient forms of training, WABCO ACADEMY offers a number of different training options:

- e-learning,
- classroom training,
- in-house training,

Visit [www.wabco-academy.com](http://www.wabco-academy.com) and choose an option that meets your needs today!

## Upgrade & update

Keeping your vehicles up to speed with the changing market is a challenging task for any fleet manager and when replacement is not an option, you can turn to WABCO’s extensive offering of Retrofit solutions. It’s a portfolio specifically designed to keep you vehicles up to date, thanks to an ability to upgrade your existing vehicles with the latest state-of-the-art technology and ensure they are up to standard (e.g. Advanced Driver Assistance Systems or our newest Trailer EBS).

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### Cross reference list

To quickly identify the right spare part for your vehicle open the „Cross Reference List“, document 815 010 054 3 and follow 3 quick and easy steps, described within the document.

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# Important instructions

## Safety & testing instructions

### Repair

Repairs must be made by qualified expert technicians with specific knowledge of the system only.

It is imperative that the applicable accident prevention regulations of the company as well as national regulations are observed.

It is imperative that the vehicle manufacturer's specifications and instructions are complied with.

### Adjustment

Even where devices have the same product number, they may have different operating principles. Electronic control units especially are often produced universally and then adjusted for a particular application by the vehicle manufacturer setting corresponding parameters. If a replacement is required the device must be calibrated or parameterized with diagnosis equipment. Therefore you need to attend an adequate system training course and have the knowledge of special settings.

Apart from electronic control units, automatic load-dependent brake-power distribution is also likely to require special adjustments and settings.

### Test

After replacing or repairing a device, a functional test of the entire system must be performed.

It is imperative that universal devices are tested on the basis of the vehicle manufacturer's data (such as load sensing valve label, brake calculation etc.).

Perform a test drive after finishing work on the vehicle.

## Description of pneumatical ports

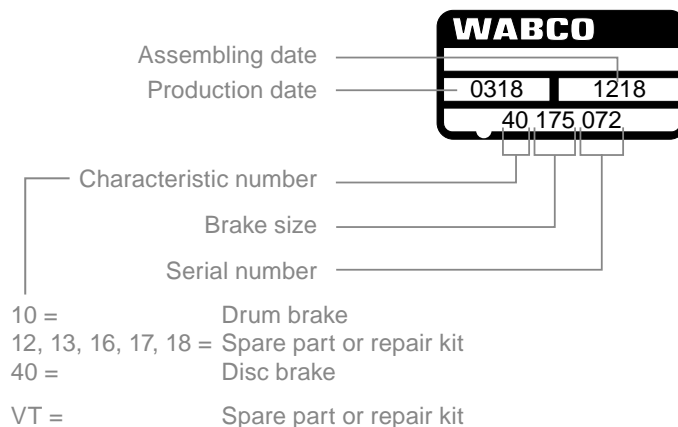
The markings consist of a number comprising a maximum of 2 digits. The first digit stands for:

- 0 - intake connection
- 1 - supply of energy
- 2 - energy delivery (not for delivery to atmosphere, see no. 3)
- 3 - exhaust port
- 4 - control port (device inlet)
- 5 - additional pneumatic port
- 6 - free
- 7 - anti-freeze connection
- 8 - oil connection
- 9 - cooling water connection (compressor)

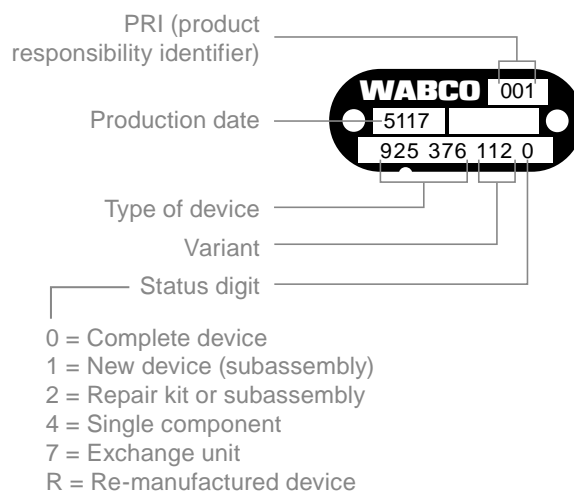
## Structure of the WABCO number

WABCO part numbers consist of 8 or 10 digits.

### 8 digit product number (wheel brakes)



### 10 digit product number



A second digit is there required when several similar connections, e.g. multi-circuit systems, are available. The relevance of the second digits is up to the manufacturers. They should begin at 1 and be used consecutively, e.g. 21, 22, 23, etc. If a modular system is used, deviations from this are permitted.

The following numbers are not available for free selection:

- 7.1 - anti-freeze supply
- 7.2 - anti-freeze discharge
- 8.1 - oil supply
- 8.2 - oil discharge
- 9.1 - cooling water supply
- 9.2 - cooling water discharge



**WABCO**

# ADVANCED DIGITAL SOLUTIONS





# Content

## Advanced digital solutions

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# Telematics



Modern-day transport companies face a multitude of challenges in a world that is fast changing, driven by higher customer expectations, more regulation and fast-paced technological change. The advent of cloud technology, Big Data and the Internet of Things (IoT) is having a significant impact on industries worldwide and is already delivering new levels of safety and efficiency to transport operators globally.

WABCO offers a unique combination of advanced digital solutions, an extensive support network and services designed to connect the many ecosystem players in transport today. The company's ever expanding and evolving telematics and cloud-based Fleet Management Solutions (FMS) allows transport operators to continuously improve their connectivity across the ecosystem enabling these to operate in an increasingly safer, greener and leaner manner. This includes advanced and connected solutions to enable fuel savings, driver satisfaction, event recording, regulatory compliance, intelligent cargo management, optimized planning, administrative automation, and supply chain connectivity.

On the next pages you will find an extract of our FMS systems, platforms and functionalities. Want to learn more? We invite you to visit [www.wabco-solutioncentre.com](http://www.wabco-solutioncentre.com) or see [www.transics.com](http://www.transics.com) to review the full portfolio.

## Entry-level telematics

### TRAXEE™

■ <b>Description</b>	Fleet management assistant
■ <b>Product number</b>	446 297 002 2 TRAXEE Standard Pack
■ <b>Training</b>	E-learning: TRAXEE 200 300 117 0



Content	TRAXEE Standard Pack 446 297 002 2
FMS connector kit	1x
Remote data download connector kit	1x
Tacho connector kit	1x
Hardware unit	1x
1 <sup>st</sup> year subscription	1x
Quick start guide	1x
Safety instructions	1x
FMS CAN cable	1x
Power input/output cable	1x

Features
Driver identification
Fleet position and status
Tacho times
Remaining driving and resting times
Activity management
Automatic and remote tacho data download and archiving

Features
Historical routes
Text messaging
ECO driving style analysis
GeoZones
Advanced reports and alarms
Truck-friendly route calculation, including toll costs

## Accessory

Product number	Accessory	Application
446 297 100 2	Optional hardware type 1	DAF XF95 / XF105 / XF106 MAN TGX / TGA / TGS / TGM / TGL IVECO Stralis Euro 4 ... 5 Scania P / R / T Renault T / K / C (Euro 6) Volvo FH / FM (Euro 6)
446 297 101 2	Optional hardware type 2	Mercedes Actros / Antos / Arocs / Atego / Axor Iveco Hi-Way (>2016) Scania R / S / G / P (Euro 6 >2018) Volvo / Renault (Euro 5 and older)

## Advanced telematics

### TX-SKY

TX-SKY is a powerful on-board computer, touchscreen-operated and dashboard mounted. It is fully integrated into Transics' multifunctional TX-CONNECT back office software and connects as standard to the vehicle's CAN bus and tachograph. It registers all driver and truck information as well as data from other sources, such as temperature sensors and document scanners. As a secured gateway, TX-SKY enables drivers and dispatchers to exchange information in real time. TX-GO 2



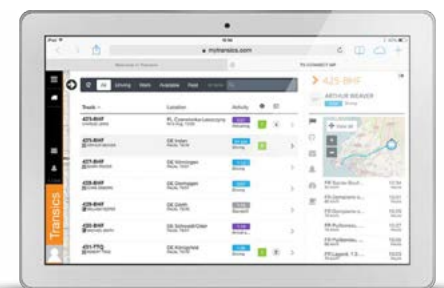
### TX-GO 2

TX-GO 2 is an on-board computer without a display, designed for installation behind the dashboard. It is connected to the truck's digital tachograph, allowing real-time tacho activity follow-up, automated activity management and remote download of mass memory and driver cards. TX-GO 2 can also be connected to the CAN bus, allowing fuel management, trend reporting and driver scoring. Integrated within the powerful TX-CONNECT back office platform, TX-GO 2 is a secured gateway for fleet data, and enables real-time fleet follow-up.



### TX-CONNECT (MP)

This interactive platform for transport, logistics and distribution companies better integrates fleet information, allowing improved functionality of daily communication between planners, manager, subcontractors and customers. TX-CONNECT is the beating heart of our solutions and can be strengthened via the integration of vehicle peripherals and office software.



## TX-SOCIAL

TX-SOCIAL is an intuitive software package for managing tacho read-outs and social data. It helps drivers understand when to drive and rest, while also managing and archiving their tacho data. The software provides activity and expense reports, with an exporting function to share the information as required. It can also be used to simplify payroll administration.



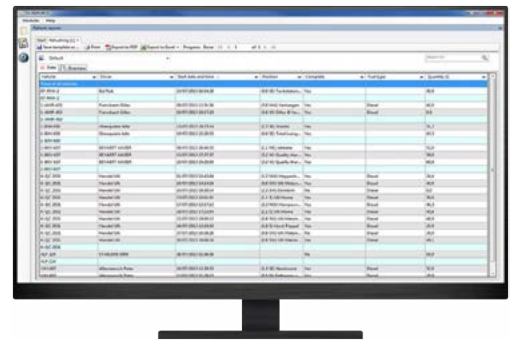
## TX-ECO

TX-ECO is a brand-independent program that objectively evaluates and stimulates driver performance for economical and environmentally-friendly driving. The program combines in-cabin driver tools, key performance indicators, driver scores and trend reporting, using telemetry captured from a truck's CAN-bus. TX-ECO is fully integrated into the back-office software TX-CONNECT.



## TX-REPORTS

Charts fleet performance. TX-REPORTS is part of TX-CONNECT and is a perfect basis for detailed reporting. As it records and charts the performance of the fleet, it can help find ways to optimise productivity and profitability.



## TX-DASHBOARDS

TX-DASHBOARDS is an assessment platform that helps fleet managers identify and monitor strategic objectives. It translates fleet data into trend reporting and measures that against company targets for vehicle efficiency, driver performance, fuel consumption and customer service.



## TX-TANGO

TX-TANGO is a web service platform offering quick integration capabilities between Transics' solution and a wide range of other popular back office applications used by fleet managers.





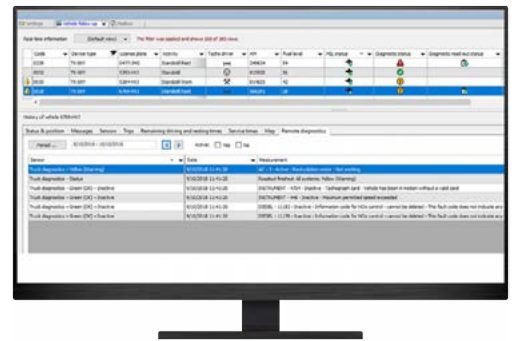
## TX-FLEX SOLO

Designed to simplify collaboration with freelance or subcontracted drivers. TX-FLEX SOLO is a driver app that is compatible with Android smartphones and tablets. The app allows back offices to track and trace trucks, while allowing drivers to perform tasks such as messaging, planning, pallet handling, barcode & document scanning, picture transfer, problem tracking and so forth...



## TX-DIAGNOSTIX (remote diagnostics)

TX-DIAGNOSTIX enables a detailed and remote assessment of the technical health of any European truck brand. Co-developed with WABCOWÜRTH, a reliable diagnostics specialist for commercial vehicles, TX-DIAGNOSTIX reads out all fault codes, translates them into understandable language, then goes on to describe the root cause of the failure and even explains how the problem should be solved. The solution is fully integrated in TX-CONNECT, your powerful FMS back office platform.



## Trailer telematics

### TX-TRAILERGUARD

TX-TRAILERGUARD is a robust trailer telematics solution that optimizes trailer management. It includes track & trace and also features EBS data, remote reefer management, connection to data loggers and peripherals such as door-lock or tire-pressure monitoring systems. Designed to maximize connectivity, it can be used with any type of trailer and mixed fleets containing many different types of trailer, including refrigerated, specialty, or high-security units. It features a rechargeable & long-lasting battery for uninterrupted data availability.

### TX-TRAILERPULSE

TX-TRAILERPULSE is a robust trailer telematics unit without battery. The device has been specifically designed to capture a maximum of data on trailers with limited electronics, such as curtain siders, box trailers or flatbed chassis trailers. On top of its Track & Trace capabilities, TX-TRAILERPULSE captures and forwards EBS-data sourced from multibrand EBS systems. The unit is also capable of relaying data from available WABCO braking, stability, efficiency and safety systems to TX-CONNECT.

■ <b>Product number</b>	346 291 000 0	TX-TRAILERPULSE
	346 292 000 0	TX-TRAILERPULSE with battery
■ <b>Accessory</b>	346 297 000 4	TX-TRAILERPULSE bracket
■ <b>Training</b>	200 300 127 0	E-learning: TX-TRAILERPULSE



346 291 000 0

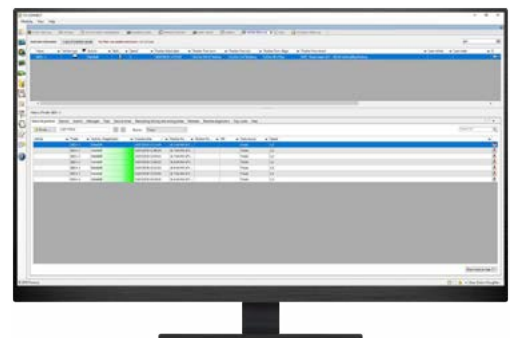
### TX-GEO 2

TX-GEO 2 is a robust tracking solution that pinpoints the location of powered or unpowered objects, such as trailers, containers or portable cabins. Fitted with an embedded motion sensor and advanced GPS technology, TX-GEO 2 responds to the slightest movement and immediately sends precise position data to a TX-CONNECT back office software platform. A durable battery ensures TX-GEO 2 remains operational for up to seven years.



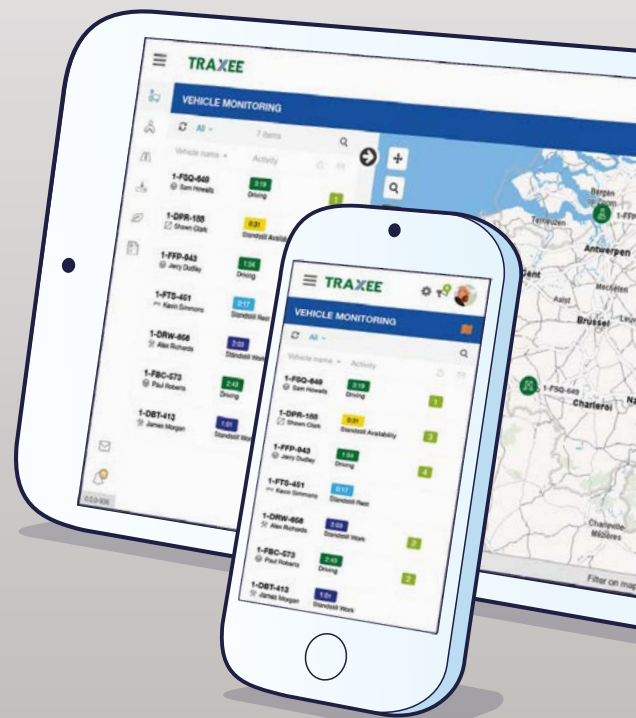
### TX-CONNECT (MP)

This interactive platform for transport, logistics and distribution companies better integrates fleet information, allowing improved functionality of daily communication between planners, manager, subcontractors and customers. TX-CONNECT is the beating heart of our solutions and can be strengthened via the integration of vehicle peripherals and office software.



# TRAXEE

your fleet management assistant



## Hello!

I'm TRAXEE, your fleet management assistant, designed to make your life easier.

I can tell you where your trucks and drivers are and how they are doing at any moment at any device. This gives you, your drivers and your customers peace of mind and provides better insight into your overall productivity.

[www.wabco-traxee.com](http://www.wabco-traxee.com)

**WABCO**



**WABCO**

# TRUCK & BUS





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# Air supply and processing

## Air compressor

- **Port description**
  - 0 - intake connection
  - 2 - energy delivery
  - 8 - oil connection
  - 9 - cooling water connection
  - 8.1 - oil supply
  - 8.2 - oil discharge
  - 9.1 - cooling water supply
  - 9.2 - cooling water discharge

## Compressor - foot mounted (single cylinder)

- **Lubrication** UD - Lubrication supplied from engine
- **Crankshaft thread** M18x1.5



411 003 011 0



411 034 501 0



411 052 300 0



411 140 000 0



411 141 000 0

Product number	Cooling	Max. pressure	Operating speed	Swept volume	Port
411 141 000 0 411 141 000 R	Air	10.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5
411 141 001 0	Air	10.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5
411 141 002 0 411 141 002 R	Air	10.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5 (closed)
411 141 008 0 411 141 008 R	Air	10.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5
411 141 103 0 411 141 103 R	Air	8.5 bar	3000 1/min	159 ccm	0, 2: M26x1.5; 8.1, 8.3: M10x1, 8.2: closed
411 141 503 0	Air	10.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: 2x M10x1, 1x closed; 8.2: 2x M22x1.5, 1x closed
411 141 507 0	Air	10.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5
411 141 551 0	Water / Oil	16.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2, 9.1, 9.2: M22x1.5
411 141 640 0	Air	18.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5
411 141 703 0	Air	10.0 bar	3000 1/min	159 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5
411 142 681 0	Water / Oil	18.0 bar	3000 1/min	229 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2, 9.1, 9.2: M22x1.5
411 143 805 0	Air	10.0 bar	3000 1/min	293 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1
911 004 511 0	Air	17.0 bar	4000 1/min	76 cm <sup>3</sup>	0, 2: M22x1.5; 8.1: M10x1
912 970 064 0	Air	10.0 bar	3000 1/min	120 cm <sup>3</sup>	0, 2: M26x1.5; 8.1: M10x1; 8.2: M22x1.5

# AIR SUPPLY AND PROCESSING

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 411 141 000 0 411 141 000 R	411 140 002 2	Bearing + cylinder head gasket	■ 411 141 507 0	411 140 002 2	Bearing + cylinder head gasket
	411 141 923 2	Bearing		411 141 923 2	Bearing
	411 141 926 2	Cylinder head		411 141 927 2	Piston + rod
	411 141 927 2	Piston + rod			
■ 411 141 001 0	411 140 002 2	Bearing + cylinder head gasket	■ 411 141 551 0	411 140 003 2	Gasket
	411 141 923 2	Bearing		411 141 923 2	Bearing
	411 141 927 2	Piston + rod		411 141 927 2	Piston + rod
				411 145 921 2	Cylinder head
■ 411 141 002 0 411 141 002 R	411 140 002 2	Bearing + cylinder head gasket	■ 411 141 640 0	411 140 002 2	Bearing + cylinder head gasket
	411 141 923 2	Bearing		411 141 923 2	Bearing
	411 141 926 2	Cylinder head		411 141 927 2	Piston + rod
	411 141 927 2	Piston + rod		411 141 928 2	Cylinder head
■ 411 141 008 0 411 141 008 R	411 141 927 2	Piston + rod	■ 411 141 703 0	411 140 002 2	Bearing + cylinder head gasket
	411 141 928 2	Cylinder head		411 141 923 2	Bearing
■ 411 141 103 0 411 141 103 R	411 141 925 2	Magnet		411 141 927 2	Piston + rod
	411 141 025 2	Clutch		411 141 928 2	Cylinder head
	411 141 928 2	Cylinder head			
■ 411 141 503 0	411 140 002 2	Bearing + cylinder head gasket	■ 411 142 681 0	411 033 923 2	Gasket
	411 141 923 2	Bearing		411 141 923 2	Bearing
	411 141 927 2	Piston + rod		411 142 003 2	Gasket
			■ 411 143 805 0	411 141 923 2	Bearing
				411 142 002 2	Gasket
			■ 911 004 511 0	911 004 004 2	Valve plate

## Compressor - flange mounted (single cylinder)

- **Operating speed** 3000 1/min  
911 146 003 0: 2890 1/min  
912 210 000 0: 3500 1/min
- **Lubrication** UD - Lubrication supplied from engine



Product number	Cooling	Max. pressure	Swept volume	Crankshaft thread	Port
411 144 003 0	Air	14.0 bar	106 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1
411 145 057 0	Water	12.5 bar	159 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1; 9.1, 9.2: M22x1.5
411 145 507 0	Water	12.5 bar	203 cm <sup>3</sup>	M20x1.5 LH	0, 2: M26x1.5; 8.1: M10x1; 9.1, 9.2: M22x1.5
411 146 003 0	Air	10.0 bar	229 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1
411 147 062 0	Water	12.5 bar	293 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1; 9.1, 9.2: M22x1.5
411 147 066 0	Water	10.0 bar	293 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1; 9.1, 9.2: M22x1.5
411 151 000 0	Water	12.5 bar	238 cm <sup>3</sup>	M20x1.5 LH	0, 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
411 151 000 1	Water	12.5 bar	238 cm <sup>3</sup>	M20x1.5 LH	0, 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
411 151 004 0 411 151 004 R	Water	12.5 bar	238 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: Ø 10.2 mm; 9.1, 9.2: M14x1.5

Product number	Cooling	Max. pressure	Swept volume	Crankshaft thread	Port
411 151 009 0 411 151 009 R	Water	12.5 bar	238 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
411 151 012 1	Water	12.5 bar	238 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
411 153 502 0	Water	12.5 bar	318 cm <sup>3</sup>	M20x1.5	0: Ø 30 mm; 2: M26x1.5; 4: M12x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
411 154 004 0 411 154 004 R	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
411 154 005 0 411 154 005 R	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
411 154 005 1	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
412 352 003 0 412 352 003 R	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: Ø 10.2 mm; 9.1, 9.2: M14x1.5
412 352 020 0 412 352 020 R	Water	14.0 bar	352 cm <sup>3</sup>	M18x1.5	0, 2: M26x1.5; 4: M12x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M18x1.5
412 352 025 0 412 352 025 R	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 4: M12x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
412 352 026 0 412 352 026 R	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: M30x1.5; 21: M26x1.5 (closed); 22: M26x1.5; 4: M12x1.5; 8.1: Ø 4 mm; 9.1, 9.2: M16x1.5
412 352 026 1	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: M30x1.5; 21: M26x1.5 (closed); 22: M26x1.5; 4: M12x1.5; 8.1: Ø 4 mm; 9.1, 9.2: M16x1.5
412 352 027 0 412 352 027 R	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: M30x1.5; 21: M26x1.5; 22: M26x1.5 (closed); 4: M12x1.5; 8.1: Ø 4 mm; 9.1, 9.2: M16x1.5
412 352 027 1	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5 LH	0: M30x1.5; 21: M26x1.5; 22: M26x1.5 (closed); 4: M12x1.5; 8.1: Ø 4 mm; 9.1, 9.2: M16x1.5
412 352 029 0	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4: M16x1.5; 8.1: M12x1.5; 9.1, 9.2: M16x1.5
412 352 030 0 412 352 030 R	Water	12.5 bar	352 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4: M12x1.5; 8.1: M12x1.5; 9.1, 9.2: M16x1.5
884 503 586 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5	0: 1.5/16"-12 UN; 2: Ø 16 mm; 8.1: 7/16"-20 UNF-2A; 9: 2x Ø 12.7 mm
911 145 060 0	Water	12.5 bar	159 cm <sup>3</sup>	M18x1.5	0: Ø 18 mm; 2: M26x1.5; 8.1: Ø 6.8 mm; 9.1, 9.2: M16x1.5
911 145 560 0 911 145 560 R	Water	12.5 bar	221 cm <sup>3</sup>	M18x1.5	0: Ø 18 mm; 2: M26x1.5; 8.1: Ø 6.8 mm; 9: 2x M16x1.5
911 146 003 0	Water	11.0 bar	229 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1.5; 8.2: Ø 10 mm; 9.1: 3/8"-18 NPT; 9.2: 3/4"-14 NPTF
911 153 001 0	Water	12.0 bar	318 cm <sup>3</sup>	M18x1.5	0, 2: M26x1.5; 8.1: Ø 4 mm; 8.2: Ø 15 mm; 9: 2x M14x1.5
911 153 548 0	Water	12.0 bar	318 cm <sup>3</sup>	M20x1.5 LH	0, 2: 3/4"-14 NPTF; 4: M10x1; 8.1: 1/8"-27 NPTF; 9: 2x 1/2"-14 NPTF
911 153 552 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5 LH	0, 2: 3/4"-14 NPTF; 4: M10x1; 8.1: 1/8"-27 NPTF; 9: 2x 1/2"-14 NPTF
911 153 553 0	Water	12.0 bar	318 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: Ø 13 mm; 9: 2x M16x1.5
911 155 001 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5	0: Ø 25.4 mm; 2: 3/4"-14 NPTF; 4: M10x1; 8.1: 7/16"-20 UNF-2A; 9.1, 9.2: Ø 12.7 mm
911 155 062 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5	0: 1.5/16"-12 UN; 2: Ø 16 mm; 8.1: 7/16"-20 UNF-2A; 9.1, 9.2: 1/2"-SAE J2044
911 155 511 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5	0: Ø 19.05 mm; 2: Ø 16 mm; 4: M10x1; 8.1: 7/16"-20 UNF-2A; 9.1, 9.2: Ø 12.7 mm
911 155 518 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5	0, 2: M22x1.5; 8.1: 1/8"-27 NPTF; 9: 2x M20x1.5
911 155 519 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5	0, 2: 3/4"-14 NPTF; 4: M10x1; 8.1: 1/8"-27 NPTF; 9: 2x 1/2"-14 NPTF
911 155 521 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5	0: M30x1.5; 2: M26x1.5; 8.1: 1/8"-27 NPTF; 9.1, 9.2: M16x1.5
912 112 002 0	Water	14.0 bar	318 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4: M16x1.5; 8.1: M12x1.5; 9.1, 9.2: M16x1.5



# AIR SUPPLY AND PROCESSING

Product number	Cooling	Max. pressure	Swept volume	Crankshaft thread	Port
912 116 000 0 912 116 000 R	Water	12.5 bar	238 cm <sup>3</sup>	M18x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> Ø 10.2 mm; <b>9.1, 9.2:</b> M14x1.5
912 116 001 0 912 116 001 R	Water	12.5 bar	238 cm <sup>3</sup>	M18x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> Ø 10.2 mm; <b>9:</b> M14x1.5
912 117 000 0	Water	12.5 bar	352 cm <sup>3</sup>	M18x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> Ø 10.2 mm; <b>9.1, 9.2:</b> M14x1.5
912 124 000 0 912 124 000 R	Air	10.0 bar	238 cm <sup>3</sup>	M20x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> M10x1
912 125 000 0	Water	12.0 bar	238 cm <sup>3</sup>	M18x1.5	<b>0, 2:</b> ¾"-14 NPTF; <b>8.1:</b> M10x1; <b>9:</b> 2x ½"-14 NPTF
912 126 002 0	Air	10.0 bar	238 cm <sup>3</sup>	M20x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> M10x1
912 126 004 0 912 126 004 R	Water	8.5 bar	318 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> Ø 30 mm; <b>2:</b> M26x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M14x1.5
912 140 006 0	Water	10.0 bar	238 cm <sup>3</sup>	M20x1.5 LH	<b>0, 2:</b> ¾"-14 NPTF; <b>4:</b> M10x1; <b>8.1:</b> Ø 14.1 mm; <b>9.1, 9.2:</b> ½"-14 NPTF
912 140 011 0	Water	10.0 bar	318 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> M30x1.5; <b>2:</b> M26x1.5; <b>4:</b> M12x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M16x1.5
912 140 015 0	Water	14.0 bar	318 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> ¾"-14 NPTF; <b>2:</b> M26x1.5; <b>4:</b> 10x1; <b>8.1:</b> Ø 4 mm; <b>9:</b> 2x ½"-14 NPTF
912 150 001 0	Water	10.0 bar	238 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 25 mm; <b>2:</b> M24x1.5; <b>8.1:</b> M10x1.5; <b>9:</b> 2x M18x1.5
912 151 001 0	Water	14.0 bar	318 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>8.1:</b> M12x1.5; <b>9.1, 9.2:</b> M16x1.5
912 160 002 0	Water	12.5 bar	318 cm <sup>3</sup>	M20x1.5	<b>0:</b> M28x1.5; <b>2:</b> M26x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M16x1.5
912 210 000 0	Water	12.5 bar	393 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4:</b> M12x1.5 (closed); <b>8.1:</b> Ø 5 mm; <b>9.1, 9.2:</b> M18x1.5
912 210 002 0	Water	12.5 bar	393 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> Ø 30 mm; <b>2:</b> M26x1.5; <b>8.1:</b> Ø 6 mm; <b>9.1, 9.2:</b> M14x1.5
912 970 001 0	Air	8.0 bar	160 cm <sup>3</sup>	M18x1.5 LH	<b>0, 2:</b> M22x1.5; <b>8.1:</b> Ø 4 mm

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 411 144 003 0	411 141 926 2 411 144 002 2	Cylinder head Gasket	■ 411 154 004 0 411 154 004 R	411 151 923 2 411 151 925 2 411 154 002 2 411 154 003 2 412 352 928 2 412 352 929 2	Gasket Valve plate Cylinder head Valve plate Piston + rod Piston + rod
■ 411 145 057 0	411 145 000 2 411 145 921 2	Valve plate Cylinder head	■ 411 154 005 0 411 154 005 R	411 151 926 2 411 154 002 2 411 154 003 2 412 352 928 2 412 352 929 2	Piston + rod Cylinder head Valve plate Piston + rod Piston + rod
■ 411 145 507 0	411 145 000 2 411 145 921 2	Valve plate Cylinder head	■ 412 352 003 0 412 352 003 R	412 352 001 2 412 352 924 2 412 352 928 2	Gasket Cylinder head Piston + rod
■ 411 146 003 0 411 146 003 R	411 146 000 2 411 146 921 2	Gasket Cylinder head	■ 412 352 020 0 412 352 020 R	412 352 005 2 412 352 928 2	Cylinder head Piston + rod
■ 411 147 066 0	411 142 003 2	Gasket	■ 412 352 025 0 412 352 025 R	412 352 006 2 412 352 929 2 912 510 927 2	Valve plate Piston + rod Piston + rod
■ 411 151 000 0 411 151 000 R	411 151 921 2 411 151 927 2 411 153 000 2 412 352 928 2	Valve plate Crankshaft Gasket Piston + rod	■ 412 352 026 0 412 352 026 R	412 352 002 2 412 352 922 2 412 352 923 2 412 352 925 2 412 352 927 2 412 352 929 2	Valve plate Cylinder head Gasket Piston + rod Crankshaft Piston + rod
■ 411 151 004 0 411 151 004 R	411 151 000 2 411 151 920 2 412 352 928 2	Valve plate Cylinder head Piston + rod			
■ 411 151 009 0 411 151 009 R	411 151 923 2 411 151 925 2 411 151 927 2 411 151 929 2 411 154 002 2 411 154 003 2	Gasket Valve plate Crankshaft Piston + rod Cylinder head Valve plate			
■ 411 153 502 0	911 153 925 2	Flange			

Product number	Repair kit	Content
■ <b>412 352 027 0</b> <b>412 352 027 R</b>	412 352 002 2 412 352 922 2 412 352 923 2 412 352 925 2 412 352 927 2 412 352 929 2	Valve plate Cylinder head Gasket Piston + rod Crankshaft Piston + rod
■ <b>412 352 029 0</b> <b>412 352 029 R</b>	412 704 943 2	Piston + rod
■ <b>412 352 030 0</b> <b>412 352 030 R</b>	412 704 943 2	Piston + rod
■ <b>884 503 586 0</b>	911 155 920 2 911 155 923 2 911 155 924 2	Valve plate Piston + rod Crankshaft
■ <b>911 153 001 0</b>	411 151 921 2 911 153 941 2 912 512 929 2	Valve plate Cylinder head Piston + rod
■ <b>911 153 548 0</b>	911 155 920 2 911 155 926 2	Valve plate Piston + rod
■ <b>911 153 552 0</b>	911 155 920 2 911 155 926 2	Valve plate Piston + rod
■ <b>911 153 553 0</b>	911 155 926 2	Piston + rod
■ <b>911 155 001 0</b>	911 155 926 2	Piston + rod
■ <b>911 155 062 0</b>	911 155 920 2 911 155 923 2 911 155 924 2	Valve plate Piston + rod Crankshaft
■ <b>911 155 511 0</b>	911 155 926 2	Piston + rod
■ <b>911 155 518 0</b>	911 155 926 2	Piston + rod
■ <b>911 155 519 0</b>	911 155 921 2 911 155 925 2 911 155 926 2	Valve plate Crankshaft Piston + rod
■ <b>911 155 521 0</b>	911 155 923 2 911 155 924 2	Piston + rod Crankshaft

Product number	Repair kit	Content
■ <b>912 112 002 0</b> <b>912 112 002 R</b>	412 352 920 2 912 112 921 2 912 518 924 2	Cylinder head Crankshaft Piston + rod
■ <b>912 116 000 0</b> <b>912 116 000 R</b>	411 151 928 2 412 352 001 2 412 352 924 2	Piston + rod Gasket Cylinder head
■ <b>912 116 001 0</b> <b>912 116 001 R</b>	411 151 928 2	Piston + rod
■ <b>912 117 000 0</b> <b>912 117 000 R</b>	412 352 001 2 412 352 924 2 412 352 928 2	Gasket Cylinder head Piston + rod
■ <b>912 125 000 0</b>	411 151 926 2 912 125 920 2	Piston + rod Gasket
■ <b>912 126 002 0</b> <b>912 126 002 R</b>	912 126 920 2 912 126 921 2	Gasket Cylinder head
■ <b>912 126 004 0</b> <b>912 126 004 R</b>	911 153 925 2 912 512 929 2	Flange Piston + rod
■ <b>912 140 011 0</b>	412 352 002 2 412 352 923 2	Valve plate Gasket
■ <b>912 140 015 0</b>	912 140 051 2	Cylinder head
■ <b>912 150 001 0</b>	412 352 928 2 912 112 921 2 912 518 924 2	Piston + rod Crankshaft Piston + rod
■ <b>912 160 002 0</b>	912 512 939 2	Piston + rod
■ <b>912 210 000 0</b> <b>912 210 000 R</b>	912 210 922 2 912 210 923 2 912 210 924 2	Piston + rod Cylinder head Valve plate
■ <b>912 210 002 0</b>	912 210 920 2 912 210 921 2 912 210 922 2	Cylinder head Valve plate Piston + rod
■ <b>912 970 001 0</b>	912 970 920 2 912 970 921 2 912 970 922 2	Crankshaft Connecting rod Gasket

# AIR SUPPLY AND PROCESSING

## Compressor - flange mounted (twin cylinder)

- **Cooling** Water
- **Lubrication** UD - Lubrication supplied from engine



412 442 000 0



412 704 027 0



911 504 506 0



912 510 104 0



912 514 009 0

Product number	Max. pressure	Operating speed	Swept volume	Crankshaft thread	Port
412 442 000 0	12.5 bar	3000 1/min	442 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 4: M12x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
412 442 001 0	12.5 bar	3000 1/min	442 cm <sup>3</sup>	M24x1.5	0, 2: M26x1.5; 4: M12x1.5; 8.1: Ø 11.16 mm; 9.1, 9.2: M14x1.5
412 704 008 0 412 704 008 R	14.0 bar	3000 1/min	704 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4, 8.1: M12x1.5; 9.1, 9.2: M16x1.5
412 704 009 0	14.0 bar	3000 1/min	704 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4, 8.1: M12x1.5; 9.1, 9.2: M16x1.5
412 704 013 0 412 704 013 R	14.0 bar	3000 1/min	704 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4, 8.1: M12x1.5; 9.1, 9.2: M16x1.5
412 704 014 0	14.0 bar	3000 1/min	704 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4, 9.1, 9.2: M16x1.5; 8.1: M12x1.5
412 704 019 0	14.0 bar	3000 1/min	704 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4, 8.1: M12x1.5; 9.1, 9.2: M16x1.5
412 704 024 0 412 704 024 R	14.0 bar	3000 1/min	704 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4, 9.1, 9.2: M16x1.5; 8.1: M12x1.5
412 704 027 0 412 704 027 R	14.0 bar	3000 1/min	704 cm <sup>3</sup>	M20x1.5	0: Ø 34.9 mm; 2: M26x1.5; 4: M16x1.5 (closed); 8.1: M12x1.5; 9.1, 9.2: M16x1.5
886 902 519 0	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	0: M30x1.5; 21: M26x1.5; 22: M26x1.5 (closed); 4: M12x1.5; 8.1: Ø 4 mm; 9: M12x1.5 (closed); 9.1, 9.2: M16x1.5
911 504 506 0 911 504 506 R	12.5 bar	3000 1/min	442 cm <sup>3</sup>	M12	0, 2: M26x1.5; 8.1: M10x1; 9.1, 9.2: M14x1.5
911 505 150 0 911 505 150 R	12.5 bar	2400 1/min	704 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1; 9.1, 9.2: M16x1.5
911 506 054 0	12.5 bar	3000 1/min	442 cm <sup>3</sup>	M18x1.5	0: Ø 24 mm; 2: Ø 16 mm; 8.1: Ø 6.8 mm; 9: 2x Ø 16 mm
911 506 505 0	12.5 bar	3000 1/min	442 cm <sup>3</sup>	M18x1.5	0: Ø 24 mm; 2: Ø 16 mm; 8.1: Ø 6.8 mm; 9: 2x Ø 16 mm
911 553 007 0	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	0: M30x1.5; 2: M26x1.5; 4: M12x1.5; 8.1: Ø 4 mm; 9: M12x1.5 (closed); 9.1, 9.2: M16x1.5
912 510 001 0 912 510 001 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 4: M12x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
912 510 003 0 912 510 003 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
912 510 005 0 912 510 005 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	0: Ø 30 mm; 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5
912 510 005 1	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	0, 2: M26x1.5; 8.1: Ø 6 mm; 9.1, 9.2: M14x1.5

Product number	Max. pressure	Operating speed	Swept volume	Crankshaft thread	Port
912 510 103 0 912 510 103 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> M30x1.5; <b>21:</b> M26x1.5 (closed); <b>22:</b> M26x1.5; <b>4:</b> M12x1.5; <b>8.1:</b> Ø 4 mm; <b>8.2:</b> Ø 15.5 mm; <b>9.1, 9.2:</b> M16x1.5
912 510 104 0 912 510 104 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> M30x1.5; <b>21:</b> M26x1.5; <b>22:</b> M26x1.5 (closed); <b>4:</b> M12x1.5; <b>8.1:</b> Ø 4 mm; <b>8.2:</b> Ø 15.5 mm; <b>9.1, 9.2:</b> M16x1.5
912 510 200 0 912 510 200 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> M30x1.5; <b>21:</b> M26x1.5 (closed); <b>22:</b> M26x1.5; <b>4:</b> M12x1.5; <b>8.1:</b> Ø 4 mm; <b>8.2:</b> Ø 15.5 mm; <b>9.1, 9.2:</b> M16x1.5
912 510 201 0 912 510 201 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> M30x1.5; <b>21:</b> M26x1.5; <b>22:</b> M26x1.5 (closed); <b>4:</b> M12x1.5; <b>8.1:</b> Ø 4 mm; <b>8.2:</b> Ø 15.5 mm; <b>9.1, 9.2:</b> M16x1.5
912 510 201 1	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> M30x1.5; <b>21:</b> M26x1.5; <b>22:</b> M26x1.5 (closed); <b>8.1:</b> Ø 4 mm; <b>8.2:</b> Ø 15.5 mm; <b>9.1, 9.2:</b> M16x1.5
912 512 006 0 912 512 006 R	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4:</b> M16x1.5; <b>8.1:</b> M12x1.5; <b>9:</b> 2x M16x1.5
912 512 007 0	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4:</b> M16x1.5; <b>8.1:</b> M12x1.5; <b>9:</b> 2x M16x1.5
912 512 015 0 912 512 015 R	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4, 8.1:</b> M12x1.5; <b>9.1, 9.2, 9.3, 9.4:</b> M16x1.5
912 512 029 0 912 512 029 R	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4, 9.1, 9.2:</b> M16x1.5; <b>8.1:</b> M12x1.5
912 512 033 0 912 512 033 R	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M16x1	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4, 9.1, 9.2:</b> M16x1.5; <b>8.1:</b> M12x1.5
912 514 009 0	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4, 9.1, 9.2:</b> M16x1.5; <b>8.1:</b> M12x1.5
912 514 013 0	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M16x1	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4, 9.1, 9.2:</b> M16x1.5; <b>8.1:</b> M12x1.5
912 518 206 0	12.5 bar	3000 1/min	476 cm <sup>3</sup>	M16	<b>0:</b> M30x1.5; <b>2:</b> M27x2 / M26x1.5; <b>4, 8.1:</b> M12x1.5; <b>9.1, 9.2:</b> M16x1.5
912 518 207 0	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M16	<b>0:</b> M30x1.5; <b>2:</b> M26x1.5; <b>4, 8.1:</b> M12x1.5; <b>9.1, 9.2:</b> M16x1.5
912 522 002 0	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M16x1	<b>0:</b> Ø 30 mm; <b>2:</b> Ø 21.75 mm; <b>4:</b> M10x1; <b>8.1:</b> Ø 6 mm; <b>9:</b> 2x Ø 19.8 mm
912 526 000 R	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	<b>0:</b> Ø 30 mm; <b>2:</b> M26x1.5; <b>4:</b> M12x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M14x1.5
912 540 003 0	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5 LH	<b>0, 2:</b> M26x1.5; <b>4:</b> M12x1.5; <b>8.1:</b> Ø 13.86 mm; <b>9.1, 9.2:</b> M18x1.5
912 542 007 0	14.0 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5	<b>0:</b> Ø 34.9 mm; <b>2:</b> M26x1.5; <b>4, 9.1, 9.2:</b> M16x1.5; <b>8.1:</b> M12x1.5
912 550 003 0	10.0 bar	3000 1/min	636 cm <sup>3</sup>	M24x1.5	<b>0:</b> Ø 25 mm; <b>2:</b> M27x2m; <b>8.1:</b> M10x1.5; <b>9:</b> 2x M18x1.5
912 551 003 0	12.5 bar	3000 1/min	476 cm <sup>3</sup>	M20x1.5	<b>0, 2:</b> M26x1.5; <b>4:</b> M12x1.5; <b>8.1:</b> Ø 5 mm; <b>8.2:</b> Ø 10 mm; <b>9.1, 9.2:</b> M16x1.5
912 560 003 0	10.0 bar	3000 1/min	476 cm <sup>3</sup>	M20x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M14x1.5
912 560 007 0 912 560 007 R	10.0 bar	1250 1/min	636 cm <sup>3</sup>	M24x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M14x1.5
912 560 008 0	10.0 bar	1250 1/min	636 cm <sup>3</sup>	M24x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M14x1.5
912 561 000 0	10.0 bar	3000 1/min	476 cm <sup>3</sup>	M20x2.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> M10x1; <b>9.1, 9.2:</b> M14x1.5
912 562 000 0	12.5 bar	3000 1/min	636 cm <sup>3</sup>	M20x1.5	<b>0, 2:</b> M26x1.5; <b>8.1:</b> Ø 5 mm; <b>9:</b> 2x M14x1.5



# AIR SUPPLY AND PROCESSING

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 412 442 000 0	412 442 000 2 911 503 921 2 911 504 925 2 911 504 932 2	Cylinder head Piston Gasket Piston + rod	■ 912 510 200 0	412 352 929 2	Piston + rod
■ 412 442 001 0	412 442 000 2 911 503 921 2 911 504 925 2 911 504 932 2	Cylinder head Piston Gasket Piston + rod	■ 912 510 200 R	912 510 930 2 912 510 931 2	Cylinder head Valve plate
■ 412 704 008 0	412 704 932 2	Cylinder head	■ 912 510 201 0	412 352 929 2	Piston + rod
■ 412 704 008 R	412 704 942 2	Piston + rod	■ 912 510 201 R	912 510 928 2 912 510 930 2 912 510 931 2	Crankshaft Cylinder head Valve plate
■ 412 704 013 0	412 704 934 2	Cylinder head	■ 912 510 201 1	412 352 929 2 912 510 930 2 912 510 931 2	Piston + rod Cylinder head Valve plate
■ 412 704 013 R	412 704 936 2 412 704 939 2 412 704 942 2	Gasket Valve plate Piston + rod	■ 912 512 006 0	912 512 925 2	Cylinder head
■ 412 704 014 0	412 704 933 2 412 704 939 2 412 704 942 2	Cylinder head Valve plate Piston + rod	■ 912 512 006 R	912 512 927 2	Gasket
■ 412 704 019 0	412 704 937 2 412 704 938 2 412 704 943 2	Cylinder head Valve plate Piston + rod	■ 912 512 007 0	912 512 925 2 912 512 927 2	Cylinder head Gasket
■ 412 704 027 0	412 352 925 2	Piston + rod	■ 912 512 015 0	412 704 938 2	Valve plate
■ 412 704 027 R	912 512 935 2 912 512 936 2	Cylinder head Valve plate	■ 912 512 015 R	912 512 928 2 912 512 930 2 912 518 924 2	Valve plate Crankshaft Piston + rod
■ 911 504 506 0	911 503 921 2	Piston	■ 912 512 029 0	912 512 935 2	Cylinder head
■ 911 504 506 R	911 504 922 2 911 504 925 2 911 504 932 2	Cylinder head Gasket Piston + rod	■ 912 512 029 R	912 512 936 2 912 518 924 2	Valve plate Piston + rod
■ 911 505 150 0	412 704 942 2	Piston + rod	■ 912 512 033 0	912 512 043 2	Valve plate
■ 911 505 150 R	911 505 001 2 911 505 920 2	Gasket Cylinder head	■ 912 512 033 R	912 512 900 2 912 512 937 2 912 512 940 2 912 512 941 2	Piston + rod Cylinder head Clutch Actuation unit
■ 911 506 054 0	911 506 927 2	Cylinder head	■ 912 514 009 0	912 512 935 2	Cylinder head
■ 911 506 505 0	911 506 926 2 911 506 928 2	Cylinder head Valve plate	■ 912 514 009 R	912 512 936 2 912 518 924 2	Valve plate Piston + rod
■ 911 553 007 0	911 553 921 2	Cylinder head	■ 912 514 013 0	412 704 938 2	Valve plate
■ 912 510 001 0	411 553 924 2	Crankshaft	■ 912 514 013 R	912 512 043 2 912 512 937 2 912 512 938 2 912 512 940 2 912 527 921 2	Valve plate Valve plate Cylinder head Valve plate Clutch Valve plate
■ 912 510 001 R	912 510 922 2	Cylinder head	■ 912 518 206 0	912 510 929 2 912 518 922 2	Valve plate Cylinder head
■ 912 510 003 0	411 553 924 2	Crankshaft	■ 912 518 207 0	912 510 929 2 912 518 922 2	Valve plate Cylinder head
■ 912 510 003 R	912 510 934 2 912 510 935 2	Cylinder head Valve plate	■ 912 522 002 0	912 522 921 2	Valve plate
■ 912 510 005 0	411 553 924 2	Crankshaft	■ 912 522 002 R	912 522 922 2 912 522 925 2 912 522 926 2	Clutch Valve plate Clutch
■ 912 510 005 R	912 510 923 2 912 510 934 2 912 510 935 2	Leaf Cylinder head Valve plate	■ 912 542 007 0	912 512 935 2	Cylinder head
■ 912 510 103 0	412 352 929 2	Piston + rod	■ 912 542 007 R	912 512 936 2 912 518 924 2	Valve plate Piston + rod
■ 912 510 103 R	912 510 920 2 912 510 927 2 912 510 928 2 912 510 929 2	Cylinder head Piston + rod Crankshaft Valve plate	■ 912 550 003 0	412 352 928 2 912 510 927 2 912 512 929 2 912 550 924 2 912 560 922 2	Piston + rod Piston + rod Piston + rod Cylinder head Cylinder head
■ 912 510 104 0	412 352 929 2	Piston + rod	■ 912 560 007 0	912 560 921 2	Gasket
■ 912 510 104 R	912 510 920 2 912 510 927 2 912 510 928 2 912 510 929 2 912 510 933 2	Cylinder head Piston + rod Crankshaft Valve plate Screws	■ 912 560 007 R		
			■ 912 560 008 0	912 560 921 2	Gasket
			■ 912 560 008 R		

Product number	Repair kit	Content
■ 912 561 000 0	912 560 922 2	Cylinder head
■ 912 562 000 0	912 512 939 2 912 518 924 2	Piston + rod Piston + rod

Product number	Repair kit	Content
■ 412 704 024 0	412 704 933 2	Cylinder head
412 704 024 R	412 704 939 2 412 704 943 2	Valve plate Piston + rod

## Compressor - flange mounted (special cylinder)

■ Cooling	Water
■ Lubrication	UD - Lubrication supplied from engine
■ Operating speed	3000 1/min



912 518 004 0

Product number	Type	Max. pressure	Swept volume	Crankshaft thread	Port
911 514 002 0	V-Compressor	12.0 bar	568 cm <sup>3</sup>	M20x1.5	0, 2: M26x1.5; 8.1: M10x1; 8.2: M26x1.5; 9.1, 9.2: M14x1.5
912 510 303 0 912 510 303 R	Triple cylinder	12.5 bar	636/210 cm <sup>3</sup>	M20x1.5 LH	0: Ø 25; 2: M26x1.5; 4: M10x1.5; 8.1: Ø 4 mm; 8.2: Ø 15.5 mm; 9.1, 9.2: M16x1.5
912 518 004 0 912 518 004 R	Twin cylinder	12.5 bar	352/119 cm <sup>3</sup>	M20x1.5	0: M33x2; 2, 8.1: M22x1.5; 4: M14x1.5; 9.1, 9.2: M16x1.5
912 518 006 0 912 518 006 R	Twin cylinder	12.5 bar	352/119 cm <sup>3</sup>	M20x1.5	0: M33x2; 2, 8.1: M22x1.5; 4: M14x1.5; 9.1, 9.2: M16x1.5
912 718 000 0	Twin cylinder	14.0 bar	440/124 cm <sup>3</sup>	M20x1.5	0: Ø 25 mm; 2: Ø 20 mm; 4: M14x1.5; 8.1: M22x1.5; 9.1, 9.2: M16x1.5

## Repair solutions

Product number	Repair kit	Content
■ 911 514 002 0	911 514 000 2 912 510 925 2	Gasket Cylinder head
■ 912 510 303 0 912 510 303 R	912 510 924 2 912 510 926 2	Cylinder head Gasket

Product number	Repair kit	Content
■ 912 518 006 0 912 518 006 R	912 518 923 2 912 518 925 2	Valve Plate Cylinder head

## Compressor - stand alone

■ Mounting	Stand alone
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415 404 001 0



913 500 002 0



913 500 003 0

Product number	Type	Cooling	Max. pressure	Operating speed	Swept volume	Port
415 404 001 0	Air supply unit		6.1 bar			
913 500 002 0	Twin cylinder with E-Motor	Water	12.5 bar	2000 1/min	476 cm <sup>3</sup>	0: Ø 39 mm; 2: M26x1.5; 4, 9.1, 9.2: M16x1.5
913 500 003 0	Twin cylinder with E-Motor	Water	12.5 bar	2000 1/min	476 cm <sup>3</sup>	0: Ø 39 mm; 2: M26x1.5; 4, 9.1, 9.2: M16x1.5

# AIR SUPPLY AND PROCESSING

## Repair solutions

Product number	Repair kit	Content
■ 913 500 003 0	913 500 921 2	Cylinder head
■ 913 500 002 0	913 500 920 2	Damper

## Air processing

### Air Processing Unit (APU)

■ <b>Description</b>	Air dryer with multi circuit protection valve	
■ <b>Notes</b>	<sup>1)</sup> MCPV: Multi circuit protection valve <sup>2)</sup> Silencer 432 407 012 0 retrofittable <sup>3)</sup> Silencer 432 407 015 0 retrofittable <sup>4)</sup> Elbow for PA tube connection	
■ <b>Electrical connection</b>	MCPV <sup>1)</sup> Heater <sup>5)</sup>	Pressure sensor: DIN bayonet 72585, 7-pin Heating connection: Kostal: M27x1 Bayonet: DIN 72585-A1-2.1-1-Sn/K2
■ <b>Accessories</b>	432 407 012 0 432 407 015 0 432 410 932 2 432 420 920 2 894 590 151 2 894 600 451 2	Silencer Silencer Heater kit (Bayonet) Heater kit (Kostal) Cable for heater (Bayonet) Cable for heater (Kostal)



Product number	Air Dryer MCPV <sup>1)</sup> Solenoid valve	Pressure		Voltage	Temperature	MCPV <sup>1)</sup> pressure sensor	Heater <sup>5)</sup>	Silencer
		Working	Cut-out					
932 500 003 0	932 400 003 0 934 705 002 0 –	13 bar	10.0 bar	–	–40 ... +65 °C	–	–	432 407 012 0
932 500 008 0	932 400 003 0 934 705 002 0 884 501 634 0	13 bar	10.0 bar	12 V	–40 ... +65 °C	–	–	432 407 012 0
932 500 009 0	932 400 003 0 934 705 002 0 884 501 634 0	13 bar	10.0 bar	12 V	–40 ... +65 °C	–	–	– <sup>2)</sup>
932 500 012 0	932 400 003 0 934 705 002 0 884 501 940 0	13 bar	10.0 bar	24 V	–40 ... +65 °C	–	–	432 407 012 0
932 500 015 0	932 400 024 0 934 705 003 0 –	13 bar	12.0 bar	24 V	–40 ... +65 °C	✓	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 016 0	932 400 013 0 934 705 005 0 –	13 bar	12.0 bar	24 V	–40 ... +65 °C	✓	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 021 0	932 400 014 0 934 705 008 0 –	13 bar	11.5 bar	24 V	–40 ... +65 °C	✓	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 027 0	932 400 003 0 934 705 002 0 884 501 837 0	13 bar	10.0 bar	24 V	–40 ... +65 °C	–	–	432 407 012 0
932 500 028 0	932 400 007 0 934 705 002 0 884 501 837 0	13 bar	10.0 bar	24 V	–40 ... +80 °C	–	–	432 407 012 0
932 500 030 0	932 400 003 0 934 705 002 0 –	13 bar	10.0 bar	–	–40 ... +80 °C	–	–	432 407 012 0

Product number	Air Dryer MCPV <sup>1)</sup> Solenoid valve	Pressure		Voltage	Temperature	MCPV <sup>1)</sup> pressure sensor	Heater <sup>5)</sup>	Silencer
		Working	Cut-out					
932 500 035 0	432 415 904 0 934 714 151 0 –	10 bar	8.5 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 015 0
932 500 039 0	932 400 017 0 934 705 005 0 –	13 bar	12.0 bar	–	–40 ... +65 °C	✓	–	– <sup>3)</sup>
932 500 040 0	932 400 018 0 934 705 005 0 –	13 bar	12.0 bar	24 V	–40 ... +65 °C	✓	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 044 0	432 415 050 0 934 714 110 0 –	13 bar	11.0 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 012 0
932 500 047 0	432 415 051 0 934 714 152 0 –	10 bar	9.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 052 0	432 415 051 0 934 714 152 0 –	10 bar	9.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 054 0	432 415 052 0 934 714 151 0 –	13 bar	9.3 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 055 0	932 400 021 0 934 705 009 0 –	13 bar	12.5 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	432 407 015 0
932 500 056 0	432 415 054 0 934 705 010 0 –	13 bar	10.0 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 015 0
932 500 057 0	432 415 055 0 934 705 010 0 –	13 bar	10.0 bar	–	–40 ... +65 °C	–	–	432 407 015 0
932 500 060 0	432 415 060 0 934 714 161 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 061 0	432 415 056 0 934 714 031 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 015 0
932 500 062 0	432 415 057 0 934 714 161 0 –	13 bar	10.0 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 015 0
932 500 063 0	432 415 058 0 934 705 013 0 –	13 bar	9.3 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	432 407 015 0
932 500 064 0	432 415 061 0 934 714 153 0 –	10 bar	9.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 012 0
932 500 068 0	932 400 016 0 934 705 008 0 –	13 bar	11.5 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 080 0	432 413 070 0 934 714 161 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 081 0	432 413 071 0 934 714 161 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 015 0
932 500 082 0	432 413 072 0 934 714 161 0 –	13 bar	10.0 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 015 0
932 500 087 0	432 415 062 0 934 714 110 0 –	13 bar	11.0 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 015 0

# AIR SUPPLY AND PROCESSING

Product number	Air Dryer MCPV <sup>1)</sup> Solenoid valve	Pressure		Voltage	Temperature	MCPV <sup>1)</sup> pressure sensor	Heater <sup>5)</sup>	Silencer
		Working	Cut-out					
932 500 089 0	432 415 906 0 934 714 161 0 –	13 bar	10.0 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 015 0
932 500 098 0	432 415 065 0 934 714 154 0 –	13 bar	10.6 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 015 0
932 500 099 0	432 415 066 0 934 714 151 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 015 0
932 500 101 0	432 416 001 0 934 705 021 0 –	13 bar	11.0 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	– <sup>4)</sup>
932 500 102 0	432 416 002 0 934 705 022 0 –	13 bar	10.5 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	– <sup>4)</sup>
932 500 103 0	432 416 003 0 934 705 023 0 –	13 bar	12.5 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	– <sup>4)</sup>
932 500 104 0	432 416 004 0 934 705 021 0 –	13 bar	11.0 bar	–	–40 ... +80 °C	✓	–	– <sup>4)</sup>
932 500 105 0	432 415 063 0 934 714 170 0 –	13 bar	9.5 bar	–	–40 ... +65 °C	–	–	– <sup>4)</sup>
932 500 107 0	932 400 055 0 934 705 014 0 –	13 bar	10.0 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	432 407 015 0
932 500 109 0	432 415 068 0 934 705 010 0 –	13 bar	10.0 bar	–	–40 ... +65 °C	–	–	– <sup>3)</sup>
932 500 110 0	932 400 024 0 934 705 005 0 –	13 bar	12.0 bar	24 V	–40 ... +80 °C	✓	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 111 0	932 400 033 0 934 705 004 0 –	13 bar	10.0 bar	24 V	–40 ... +65 °C	✓	Bayonet <sup>5)</sup>	432 407 015 0
932 500 112 0	432 421 058 0 934 714 161 0 –	13 bar	9.3 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 113 0	432 421 059 0 934 714 161 0 –	13 bar	9.3 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 114 0	432 421 060 0 934 714 161 0 –	13 bar	10.0 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 015 0
932 500 115 0	432 415 067 0 934 714 151 0 –	10 bar	8.8 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 015 0
932 500 118 0	432 415 070 0 934 714 161 0 –	10 bar	10.0 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	432 407 015 0
932 500 119 0	432 415 071 0 934 714 161 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Kostal <sup>5)</sup>	432 407 015 0
932 500 123 0	432 415 075 0 934 714 160 0 –	13 bar	9.1 bar	–	–40 ... +65 °C	–	–	432 407 015 0
932 500 160 0	432 415 160 0 934 714 161 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>



Product number	Air Dryer MCPV <sup>1)</sup> Solenoid valve	Pressure		Voltage	Temperature	MCPV <sup>1)</sup> pressure sensor	Heater <sup>5)</sup>	Silencer
		Working	Cut-out					
932 500 180 0	432 413 170 0 934 714 161 0 –	13 bar	9.3 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 269 0	432 413 069 0 934 714 161 0 –	13 bar	10.8 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 380 0	432 413 370 0 934 714 161 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 500 480 0	432 413 470 0 934 714 161 0 –	13 bar	8.5 bar	24 V	–40 ... +65 °C	–	Bayonet <sup>5)</sup>	– <sup>3)</sup>
932 507 001 0	432 417 101 2 934 707 001 0 –	13 bar	10.5 bar	–	–40 ... +65 °C	–	–	432 407 070 0
932 507 002 0	432 417 102 2 934 707 001 0 –	13 bar	11.1 bar	–	–40 ... +65 °C	–	–	432 407 070 0
932 507 003 0	432 417 103 2 934 707 001 0 –	13 bar	10.7 bar	–	–40 ... +65 °C	–	–	432 407 070 0

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 932 500 008 0	932 400 920 2	Test port	■ 932 500 081 0	932 400 920 2 932 500 154 2	Test port Protection valve
■ 932 500 009 0	932 400 920 2	Test port	■ 932 500 082 0	932 400 920 2 932 500 154 2	Test port Protection valve
■ 932 500 012 0	932 400 920 2	Test port	■ 932 500 098 0	432 410 002 2	Valve
■ 932 500 015 0	932 400 920 2	Test port	■ 932 500 101 0	932 505 000 2 432 410 935 2	Pressure sensor module Valve body
■ 932 500 016 0	932 505 000 2 932 400 920 2	Pressure sensor module Test port	■ 932 500 102 0	432 410 935 2 932 505 000 2	Valve body Pressure sensor module
■ 932 500 021 0	932 400 920 2	Test port	■ 932 500 103 0	432 410 935 2 932 505 000 2	Valve body Pressure sensor module
■ 932 500 027 0	932 400 920 2	Test port	■ 932 500 104 0	932 505 000 2 432 410 935 2	Pressure sensor module Valve body
■ 932 500 030 0	932 400 920 2	Test port	■ 932 500 110 0	932 505 000 2 932 400 920 2	Pressure sensor module Test port
■ 932 500 039 0	932 400 920 2 932 505 000 2	Test port Pressure sensor module	■ 932 500 111 0	932 400 920 2	Test port
■ 932 500 040 0	932 505 000 2 932 400 920 2	Pressure sensor module Test port	■ 932 500 112 0	932 400 920 2	Test port
■ 932 500 054 0	932 400 920 2	Test port	■ 932 500 114 0	932 400 920 2	Test port
■ 932 500 055 0	932 400 920 2	Test port	■ 932 500 119 0	932 400 920 2	Test port
■ 932 500 060 0	932 500 154 2 932 400 920 2	Protection valve Test port	■ 932 500 160 0	932 500 154 2	Protection valve
■ 932 500 061 0	932 400 920 2	Test port	■ 932 500 269 0	932 500 154 2	Protection valve
■ 932 500 062 0	932 400 920 2 932 500 154 2	Test port Protection valve	■ 932 507 001 0	432 410 924 2 934 705 921 2 932 400 920 2	Valve piston Valve body + spring Test port
■ 932 500 063 0	932 505 000 2	Pressure sensor module	■ 932 507 002 0	934 705 921 2 932 501 922 2 432 410 924 2 932 400 920 2	Valve body + spring Valve Valve piston Test port
■ 932 500 064 0	432 415 923 2 432 410 002 2	Exhaust valve Valve			
■ 932 500 068 0	932 400 920 2	Test port			
■ 932 500 080 0	932 500 154 2	Protection valve			

# AIR SUPPLY AND PROCESSING

Product number	Repair kit	Content
■ 932 507 003 0	432 410 924 2	Valve piston
	934 705 921 2	Valve body + spring
	932 400 920 2	Test port
	932 501 922 2	Valve

## Electronic Air Processing Unit (EAPU) - FuelGuard™

■ Training	E-learning: APS-EAPU 200 300 301 0
■ Diagnostics	Diagnostic software "APS-EAPU"



Product number	Working pressure	Silencer	Temperature
932 510 009 0 932 510 009 R	12.5 bar	432 407 070 0	-40 ... +65 °C

## Repair solutions

Product number	Repair kit	Content
■ 932 510 009 0	432 901 228 2	Cartridge
	932 510 952 2	Solenoid valve
	932 510 953 2	Exhaust
	932 510 954 2	Non-return valve
	932 510 955 2	Safety valve
	932 510 956 2	Air dryer repair unit
	932 510 957 2	Gasket kit
	932 510 958 2	Protection valve repair unit
	932 510 959 2	Manifold block repair unit
	932 510 960 2	Gasket kit
	932 510 964 2	Air dryer repair kit
	932 510 965 2	Protection valve repair kit

## Unloader

■ Temperature	-40 ... +100 °C (975 300 111 / 113 / 114 0: -40 ... +150 °C)
■ Working pressure	25 bar (975 300 111 / 113 / 114 0: 15 bar)
■ Notes	Port 1-2: Tire inflation port * Tire inflation port 1-2 closed: 975 303 920 2 retrofit kit



Product number	Pressure		One-way valve	Port
	Cut-out	Opening		
975 300 111 0	7.3 bar	-	✓	1, 21: M22x1.5; 1-2: ✓; 3: Union Ø 15 mm
975 300 113 0	8.1 bar	-	✓	1, 21: M22x1.5; 1-2: ✓; 3: Union Ø 15 mm
975 300 114 0	8.1 bar	-	✓	1, 21: M22x1.5; 1-2: closed (M22x1.5); 3: Union Ø 15 mm
975 303 000 0	5.3 bar	10.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 22: M12x1.5; 3: Union Ø 20 mm
975 303 001 0	8.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 22: M12x1.5; 3: Union Ø 20 mm
975 303 003 0	7.0 bar	15.0 bar	✓	1, 21: M22x1.5; 1-2: -; 3: Union Ø 20 mm; 4: M12x1.5
975 303 040 0	7.3 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 3: Union Ø 20 mm
975 303 060 0	8.1 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 22: M12x1.5; 3: Union Ø 20 mm
975 303 061 0	8.1 bar	12.0 bar	-	1, 21: M22x1.5; 1-2: -; 22, 23, 4: M12x1.5; 3: Union Ø 20 mm

Product number	Pressure		One-way valve	Port
	Cut-out	Opening		
975 303 063 0	8.1 bar	12.0 bar	✓	1, 21: ¼"-14 NPTF; 1-2: closed*; 3: Union Ø 20 mm
975 303 068 0	8.0 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 3: Union Ø 20 mm
975 303 071 0	8.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: –; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 072 0	8.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: –; 22, 23, 4: M12x1.5; 3: Union Ø 20 mm
975 303 075 0	8.7 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: –; 3: Union Ø 20 mm; 4: M12x1,5
975 303 080 0	9.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 3: Union Ø 20 mm
975 303 081 0	9.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 23: M12x1.5; 3: Union Ø 20 mm
975 303 082 0	9.8 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 23: M12x1.5; 3: Union Ø 20 mm
975 303 084 0	9.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 23: M12x1.5; 3: Union Ø 20 mm
975 303 088 0	9.5 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: –; 22, 23, 4: M12x1.5; 3: Union Ø 20 mm
975 303 089 0	9.5 bar	14.0 bar	✓	1, 21: M22x1.5; 1-2: –; 22, 23, 4: M12x1.5; 3: Union Ø 20 mm
975 303 091 0	9.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: –; 22, 23, 4: M12x1.5; 3: Union Ø 20 mm
975 303 120 0	11.0 bar	15.5 bar	✓	1, 21: M22x1.5; 1-2: –; 23: M12x1.5; 3: Union Ø 20 mm
975 303 121 0	11.0 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: –; 22, 23, 4: M12x1.5; 3: Union Ø 20 mm
975 303 140 0	12.5 bar	15.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 22: M12x1.5; 3: Union Ø 20 mm
975 303 141 0	12.5 bar	17.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 23: M12x1.5; 3: Union Ø 20 mm
975 303 220 0	16.0 bar	20.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 3: Union Ø 20 mm
975 303 222 0	16.5 bar	20.0 bar	✓	1, 21: M22x1.5; 1-2: closed*; 3: Union Ø 20 mm
975 303 441 0	7.8 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 442 0	7.3 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 23, 4: M12x1.5; 3: Union Ø 20 mm
975 303 443 0	7.8 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 446 0	7.8 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 447 0	7.3 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 449 0	7.3 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 463 0	8.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 464 0	8.1 bar	10.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 3: Union Ø 20 mm
975 303 465 0	8.1 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 469 0	8.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 472 0	8.5 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 473 0	8.1 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 474 0	8.1 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 475 0	8.1 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 478 0	8.1 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 480 0	9.5 bar	12.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 491 0	8.5 bar	12.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 503 0	10.0 bar	14.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 303 504 0	10.0 bar	14.0 bar	–	1, 21: M22x1.5; 1-2: ✓; 22, 4: M12x1.5; 3: Union Ø 20 mm
975 303 580 0	14.0 bar	20.0 bar	✓	1, 21: M22x1.5; 1-2: ✓; 22: M12x1.5; 3: Union Ø 20 mm
975 400 083 0	8.5 bar	–	–	1, 21: ½"-27 NPTF; 3: exhaust

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 975 300 111 0	975 300 000 2	Valve	■ 975 303 068 0	975 303 000 2	Valve
■ 975 303 000 0	975 303 000 2	Valve	■ 975 303 071 0	975 303 000 2	Valve
■ 975 303 040 0	975 303 000 2	Valve	■ 975 303 072 0	975 303 000 2	Valve
■ 975 303 060 0	975 303 000 2	Valve	■ 975 303 075 0	975 303 000 2	Valve
■ 975 303 061 0	975 303 000 2	Valve	■ 975 303 080 0	975 303 000 2	Valve
■ 975 303 063 0	975 303 000 2	Valve	■ 975 303 081 0	975 303 000 2	Valve

# AIR SUPPLY AND PROCESSING

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 975 303 082 0	975 303 000 2	Valve	■ 975 303 449 0	975 303 001 2	Valve
■ 975 303 084 0	975 303 000 2	Valve	■ 975 303 463 0	975 303 001 2	Valve
■ 975 303 088 0	975 303 000 2	Valve	■ 975 303 464 0	975 303 001 2	Valve
■ 975 303 089 0	975 303 000 2	Valve	■ 975 303 465 0	975 303 001 2	Valve
■ 975 303 120 0	975 303 000 2	Valve	■ 975 303 469 0	975 303 001 2	Valve
■ 975 303 121 0	975 303 000 2	Valve	■ 975 303 472 0	975 303 001 2	Valve
■ 975 303 140 0	975 303 000 2	Valve	■ 975 303 473 0	975 303 001 2	Valve
■ 975 303 141 0	975 303 000 2	Valve	■ 975 303 474 0	975 303 001 2	Valve
■ 975 303 220 0	975 303 000 2	Valve	■ 975 303 475 0	975 303 001 2	Valve
■ 975 303 222 0	975 303 000 2	Valve	■ 975 303 478 0	975 303 001 2	Valve
■ 975 303 441 0	975 303 001 2	Valve	■ 975 303 480 0	975 303 001 2	Valve
■ 975 303 442 0	975 303 001 2	Valve	■ 975 303 491 0	975 303 001 2	Valve
■ 975 303 443 0	975 303 001 2	Valve	■ 975 303 503 0	975 303 001 2	Valve
■ 975 303 446 0	975 303 001 2	Valve	■ 975 303 504 0	975 303 001 2	Valve
■ 975 303 447 0	975 303 001 2	Valve	■ 975 303 580 0	975 303 001 2	Valve

## Charging valve

- Temperature -40 ... +80 °C



Product number	Return flow	Pressure		Nominal Ø	Port	
		Charging	Working		1	2
434 100 020 0	✓	3.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 021 0	✓	3.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 022 0	✓	4.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 023 0	✓	5.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 024 0	✓	6.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 025 0	✓	6.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 026 0	✓	1.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 027 0	✓	0.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 028 0	✓	5.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 032 0	✓	10.5 bar	13.0 bar	1-2: 3 mm, 2-1: 8 mm	M22x1.5	M22x1.5
434 100 033 0	✓	7.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 034 0	✓	6.8 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 037 0	✓	1.6 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 038 0	✓	7.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 039 0	✓	8.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 043 0	✓	5.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 047 0	✓	10.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 048 0	✓	8.8 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 049 0	✓	9.2 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 051 0	✓	10.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 080 0	✓	4.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5



Product number	Return flow	Pressure		Nominal Ø	Port	
		Charging	Working		1	2
434 100 082 0	✓	4.8 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 083 0	✓	4.8 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 122 0	–	4.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 123 0	–	5.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 124 0	–	5.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 125 0	–	6.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 126 0	–	6.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 127 0	–	6.7 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 128 0	–	5.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 130 0	–	7.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 131 0	–	7.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 133 0	–	7.6 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 136 0	–	10.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 139 0	–	8.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 143 0	–	9.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 144 0	–	10.8 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 150 0	–	6.1 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 153 0	–	7.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 202 0	limited	6.2 bar	10.0 bar	5 mm	M22x1.5	M22x1.5
434 100 203 0	limited	4.0 bar	10.0 bar	5 mm	M22x1.5	M22x1.5
434 100 220 0	limited	4.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 221 0	limited	5.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 222 0	limited	6.2 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 223 0	limited	4.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 224 0	limited	1.7 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 225 0	limited	6.8 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 226 0	limited	5.3 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 227 0	limited	5.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 228 0	limited	6.4 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 229 0	limited	–	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 230 0	limited	–	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 231 0	limited	–	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 232 0	limited	8.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 233 0	limited	7.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 234 0	limited	8.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 235 0	limited	4.2 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 236 0	limited	1.1 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 244 0	limited	7.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 249 0	limited	10.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 251 0	limited	0.8 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 253 0	limited	6.1 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 257 0	limited	5.6 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 260 0	limited	–	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 262 0	limited	–	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 310 0	✓	8.2 bar	8.3 bar	8 mm	female ½"-14 NPTF	male ½"-14 NPTF
434 100 504 0	limited	–	10.0 bar	7 mm	M16x1.5	M16x1.5
434 100 505 0	limited	–	13.0 bar	7 mm	M16x1.5	M16x1.5
434 100 600 0	–	8.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 602 0	–	10.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 603 0	–	2.0 bar	13.0 bar	8 mm	M22x1.5	M22x1.5
434 100 604 0	–	7.5 bar	13.0 bar	8 mm	M22x1.5	M22x1.5

## Protection valve

- **Opening pressure**      Circuit 1: 5.2 bar  
                                  Circuit 2: 6.0 bar



Product number	Working pressure	Temperature	Port
434 700 003 0	10.0 bar	-40 ... +80 °C	1, 21, 22: M22x1.5
934 700 040 0	20.0 bar	-40 ... +90 °C	1: M22x1.5; 21, 22: M16x1.5

## Repair solutions

Product number	Repair kit	Content
■ 934 700 040 0	934 700 000 2	Diaphragm + valve



## Triple protection valve

- **Temperature**            -40 ... +90 °C
- **Working pressure**      20 bar

Product number	Opening pressure			Port
	Circuit 1	Circuit 2	Circuit 3	
934 701 000 0	5.7 bar	5.7 bar	5.2 bar	1: M22x1.5; 21, 22, 23: M16x1.5
934 701 001 0	6.0 bar	6.0 bar	5.5 bar	1: M22x1.5; 21, 22, 23: M16x1.5
934 701 005 0	5.4 bar	5.4 bar	4.9 bar	1: M22x1.5; 21, 22, 23: M16x1.5
934 701 040 0	6.0 bar	6.0 bar	5.5 bar	1: M22x1.5; 21, 22, 23: M16x1.5
934 701 041 0	7.0 bar	7.0 bar	6.5 bar	1: M22x1.5; 21, 22, 23: M16x1.5
934 701 110 0	7.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23: M16x1.5

## Quadruple circuit protection valve - flange mounted

- **Temperature**            -40 ... +90 °C  
                                  <sup>1)</sup> -40 ... +65 °C  
                                  <sup>2)</sup> -40 ... +90 °C
- **Pressure sensor**        \* electrical connection  
                                  DIN bayonet 72585, 7-pin
- **Mounting**                Port 1 flange mounted at air dryer



884 503 144 0



934 705 008 0



934 714 152 0

Product number	Working pressure	Pressure limiting		Opening pressure		Pressure sensor*	Port
		Circuit 1 / 2	Circuit 3 / 4	Circuit 1 / 2	Circuit 3 / 4		
884 503 144 0	13.0 bar	-	8.5 bar	9.0 bar	7.5 bar	✓	1: thread M8; 21, 22, 23, 24, 25, 26: M22x1.5
934 702 073 0	13.0 bar	-	-	8.0 bar	8.4 bar	-	1: 2 bolts M8; 21, 22, 23, 24: M22x1.5 JED-388

Product number	Working pressure	Pressure limiting		Opening pressure		Pressure sensor*	Port
		Circuit 1 / 2	Circuit 3 / 4	Circuit 1 / 2	Circuit 3 / 4		
934 705 002 0	13.0 bar	–	8.5 bar	9.0 bar	7.5 bar	–	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5
934 705 003 0	13.0 bar	10.0 bar	8.5 bar	9.0 bar	7.5 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 004 0	10.2 bar	–	8.5 bar	8.6 bar	7.5 bar	–	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5
934 705 005 0	13.0 bar	10.0 bar	8.5 bar	9.0 bar	7.5 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 008 0	13.0 bar	10.6 bar	8.6 bar	9.0 bar	7.5 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 009 0	13.0 bar	10.0 bar	–	9.0 bar	7.5 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 010 0	13.0 bar	–	8.5 bar	6.5 bar	6.0 / 7.5 bar	–	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5
934 705 011 0	13.0 bar	–	10.0 bar	9.0 bar	7.5 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 013 0	13.0 bar	–	–	6.9 bar	7.3 / 6.9 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 014 0	10.2 bar	–	9.0 bar	8.6 bar	7.5 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 015 0	13.0 bar	–	8.5 bar	6.5 bar	6.0 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 705 021 0	13.0 bar	8.5 bar	8.5 bar	7.5 bar	5.35 ÷ 7.5 / 7.5 bar	✓	1: 2 bolts M8; 21, 22, 23, 24, 26: M22x1.5
934 707 010 0 <sup>1)</sup>	13.0 bar	–	8.5 bar	9.0 bar	7.5 bar	–	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 707 011 0 <sup>1)</sup>	13.0 bar	–	8.5 bar	9.0 bar	7.5 bar	–	1: 2 bolts M8; 21, 22, 23, 24, 25, 26: M22x1.5; 27, 28: M12x1.5
934 714 151 0 <sup>2)</sup>	13.0 bar	–	–	6.5 bar	7.5 / 6.5 bar	–	1: 2 bolts M8; 21, 22, 23, 24: M16x1.5
934 714 152 0 <sup>2)</sup>	13.0 bar	–	–	6.0 bar	7.0 / 6.0 bar	–	1: 2 bolts M8; 21, 22, 23, 24: 3/8"-18 PTF
934 714 160 0 <sup>2)</sup>	13.0 bar	–	–	6.5 bar	7.2 bar	–	1: 2 bolts M8; 21, 22, 23, 24: M16x1.5

Temperature: <sup>1)</sup> –40 ... +65 °C; <sup>2)</sup> –40 ... +90 °C

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 934 705 002 0	934 705 001 2	Valve	■ 934 705 011 0	934 705 920 2	Valve body
	934 705 920 2	Valve body		934 705 921 2	Valve body + spring
	934 705 921 2	Valve body + spring	■ 934 705 021 0	934 705 921 2	Valve body + spring
■ 934 705 003 0	934 705 920 2	Valve body		934 705 923 2	Valve
	934 705 921 2	Valve body + spring	■ 934 714 152 0	934 714 920 2	Diaphragm
■ 934 705 005 0	934 705 920 2	Valve body		■ 934 714 160 0	934 714 920 2
	934 705 921 2	Valve body + spring	934 714 922 2		Diaphragm + valve
			934 714 925 2		Diaphragm + valve

# AIR SUPPLY AND PROCESSING

## Quadruple circuit protection valve



934 702 040 0



934 702 210 0



934 702 260 0



934 714 400 0



934 714 740 0

Product number	Temperature	Working pressure	Opening pressure		Port
			Circuit 1 / 2	Circuit 3 / 4	
934 702 000 0	-40 ... +90°C	10.0 bar	6.0 bar	5.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 002 0	-40 ... +90°C	10.0 bar	6.3 bar	6.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 005 0	-40 ... +90°C	10.0 bar	6.3 bar	6.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 040 0	-40 ... +90°C	10.0 bar	6.0 bar	5.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 041 0	-40 ... +90°C	10.0 bar	7.0 bar	6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 042 0	-40 ... +90°C	10.0 bar	5.4 bar	4.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 045 0	-40 ... +90°C	10.0 bar	6.5 bar	6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 047 0	-40 ... +90°C	10.0 bar	6.3 bar	5.8 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 082 0	-40 ... +90°C	20.0 bar	7.9 bar	7.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 100 0	-40 ... +90°C	10.0 bar	7.0 bar	6.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 101 0	-40 ... +90°C	10.0 bar	6.1 bar	4.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 110 0	-40 ... +90°C	10.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 120 0	-40 ... +90°C	10.0 bar	6.0 bar	5.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 122 0	-40 ... +90°C	13.0 bar	9.3 bar	7.3 / 6.3 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 191 0	-40 ... +90°C	10.0 bar	7.9 bar	7.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 192 0	-40 ... +90°C	10.0 bar	7.5 bar	7.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 210 0	-40 ... +90°C	10.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 11, 12, 21, 22, 23, 24: M16x1.5
934 702 220 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 11, 12, 21, 22, 23, 24: M16x1.5
934 702 221 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 11, 12, 21, 22, 23, 24: M16x1.5
934 702 223 0	-40 ... +90°C	20.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 11, 12, 21, 22, 23, 24: M16x1.5
934 702 240 0	-40 ... +90°C	10.0 bar	7.0 bar	6.5 bar	1: M22x1.5; 11, 12, 21, 22, 23, 24: M16x1.5
934 702 250 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 251 0	-40 ... +90°C	20.0 bar	6.5 bar	6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 252 0	-40 ... +90°C	20.0 bar	7.0 bar	7.7 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 260 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1, 21, 22, 23, 24: M22x1.5
934 702 261 0	-40 ... +90°C	20.0 bar	7.0 bar	7.7 bar	1, 21, 22, 23, 24: M22x1.5
934 702 270 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1, 11, 12, 21, 22, 23, 24: M22x1.5
934 702 271 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1, 11, 12, 21, 22, 23, 24: M22x1.5
934 702 300 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 302 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 304 0	-40 ... +90°C	10.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 320 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 322 0	-40 ... +90°C	20.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 323 0	-40 ... +90°C	20.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 324 0	-40 ... +90°C	20.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 330 0	-40 ... +90°C	10.0 bar	6.3 bar	5.5 / 5.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 340 0	-40 ... +90°C	10.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 342 0	-40 ... +90°C	10.0 bar	6.5 bar	6.7 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 380 0	-40 ... +90°C	20.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 381 0	-40 ... +90°C	20.0 bar	6.5 bar	6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 387 0	-40 ... +90°C	10.0 bar	6.5 bar	7.5 / 6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5



Product number	Temperature	Working pressure	Opening pressure		Port
			Circuit 1 / 2	Circuit 3 / 4	
934 702 388 0	-40 ... +90°C	20.0 bar	7.0 bar	7.4 / 7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 390 0	-40 ... +90°C	10.0 bar	7.0 bar	6.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 702 391 0	-40 ... +90°C	10.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 001 0	-40 ... +90°C	13.0 bar	6.4 bar	5.9 bar	1: ½"-14 PTF; 21, 22, 23, 24: ⅜"-18 PTF
934 714 003 0	-40 ... +90°C	13.0 bar	6.9 bar	6.9 bar	1: ½"-14 PTF; 21, 22, 23, 24: ⅜"-18 PTF
934 714 004 0	-40 ... +90°C	13.0 bar	7.5 bar	7.5 bar	1: ½"-14 PTF; 21, 22, 23, 24: ⅜"-18 PTF
934 714 006 0	-40 ... +90°C	13.0 bar	7.2 bar	5.7 bar	1: ½"-14 PTF; 21, 22, 23, 24: ⅜"-18 PTF
934 714 010 0	-40 ... +90°C	13.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 011 0	-40 ... +90°C	13.0 bar	7.2 bar	7.7 / 7.3 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 014 0	-40 ... +90°C	13.0 bar	6.7 bar	6.7 bar	1: ½"-14 PTF; 21, 22, 23, 24: ⅜"-18 PTF
934 714 016 0	-40 ... +90°C	13.0 bar	7.5 bar	7.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 019 0	-40 ... +90°C	13.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 030 0	-40 ... +90°C	13.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 109 0	-40 ... +90°C	13.0 bar	6.9 bar	7.0 / 6.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 110 0	-40 ... +90°C	13.0 bar	7.5 bar	7.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 111 0	-40 ... +90°C	13.0 bar	6.9 bar	7.2 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 119 0	-45 ... +90°C	13.0 bar	6.5 bar	6.7 / 6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 123 0	-40 ... +90°C	13.0 bar	8.0 bar	8.5 / 8.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 124 0	-40 ... +90°C	13.0 bar	6.5 bar	7.4 / 6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 125 0	-40 ... +90°C	13.0 bar	6.2 bar	6.2 bar	1: ½"-14 PTF; 21, 22, 23, 24: ⅜"-18 PTF
934 714 126 0	-45 ... +90°C	13.0 bar	6.5 bar	7.2 / 6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 137 0	-40 ... +90°C	13.0 bar	6.2 bar	6.2 bar	1: ½"-14 PTF; 21, 22, 23, 24: ⅜"-18 PTF
934 714 145 0	-45 ... +90°C	13.0 bar	6.5 bar	7.2 / 6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 211 0	-40 ... +90°C	13.0 bar	6.5 bar	7.4 / 6.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 302 0	-40 ... +90°C	13.0 bar	7.0 bar	7.0 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 320 0	-40 ... +90°C	13.0 bar	7.9 bar	8.3 / 7.9 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 400 0	-40 ... +90°C	13.0 bar	6.9 bar	7.0 / 6.9 bar	1, 21, 22, 23, 24: M22x1.5 JED-388
934 714 401 0	-40 ... +90°C	13.0 bar	6.9 bar	7.0 / 6.9 bar	1, 21, 22, 23, 24: M22x1.5 JED-388
934 714 403 0	-40 ... +90°C	13.0 bar	6.9 bar	7.0 / 6.9 bar	1, 21, 22, 23, 24: M22x1.5 JED-388
934 714 404 0	-40 ... +90°C	13.0 bar	6.7 / 6.6 bar	5.8 bar	1, 21, 22, 23, 24: M22x1.5 JED-388
934 714 730 0	-40 ... +90°C	13.0 bar	7.0 bar	7.5 / 7.0 bar	1, 21, 22, 23: M22x1.5; 24: M16x1.5
934 714 732 0	-40 ... +90°C	13.0 bar	7.5 bar	8.5 / 7.5 bar	1: M22x1.5; 21, 22, 23, 24: M16x1.5
934 714 740 0	-45 ... +90°C	13.0 bar	6.3 bar	5.8 bar	1: M22x1.5; 11, 12, 21, 22, 23, 24: M16x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 934 702 000 0	934 702 000 2	Diaphragm + valve	■ 934 702 120 0	934 901 002 2	Diaphragm + valve
■ 934 702 002 0	934 702 000 2	Diaphragm + valve	■ 934 702 191 0	934 901 005 2	Diaphragm + valve
■ 934 702 005 0	934 702 000 2	Diaphragm + valve	■ 934 702 192 0	934 901 005 2	Diaphragm + valve
■ 934 702 040 0	934 702 000 2	Diaphragm + valve	■ 934 702 210 0	934 702 005 2	Diaphragm + valve
■ 934 702 041 0	934 702 000 2	Diaphragm + valve	■ 934 702 220 0	934 702 005 2	Diaphragm + valve
■ 934 702 042 0	934 702 000 2	Diaphragm + valve	■ 934 702 221 0	934 702 009 2	Diaphragm + valve
■ 934 702 045 0	934 702 000 2	Diaphragm + valve	■ 934 702 223 0	934 702 900 2	Diaphragm + valve
■ 934 702 047 0	934 702 000 2	Diaphragm + valve	■ 934 702 250 0	934 901 005 2	Diaphragm + valve
■ 934 702 082 0	934 702 008 2	Diaphragm + valve	■ 934 702 252 0	934 702 901 2	Diaphragm + valve
■ 934 702 100 0	934 702 001 2	Diaphragm + valve	■ 934 702 260 0	934 901 005 2	Diaphragm + valve
■ 934 702 101 0	934 702 001 2	Diaphragm + valve	■ 934 702 261 0	934 702 901 2	Diaphragm + valve
■ 934 702 110 0	934 702 001 2	Diaphragm + valve	■ 934 702 270 0	934 702 009 2	Diaphragm + valve

# AIR SUPPLY AND PROCESSING

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 934 702 300 0	934 702 004 2	Diaphragm + valve	■ 934 714 006 0	934 714 921 2	Diaphragm + valve
■ 934 702 302 0	934 702 004 2	Diaphragm + valve	■ 934 714 011 0	934 714 922 2	Diaphragm + non return valve
■ 934 702 304 0	934 702 004 2	Diaphragm + valve		934 714 925 2	Diaphragm + valve
■ 934 702 320 0	934 702 001 2	Diaphragm + valve	■ 934 714 016 0	934 714 921 2	Diaphragm + valve
■ 934 702 322 0	934 702 900 2	Diaphragm + valve	■ 934 714 030 0	934 714 921 2	Diaphragm + valve
■ 934 702 323 0	934 702 900 2	Diaphragm + valve	■ 934 714 109 0	934 714 924 2	Diaphragm + valve
■ 934 702 330 0	934 702 000 2	Diaphragm + valve	■ 934 714 119 0	934 714 923 2	Diaphragm + valve
■ 934 702 340 0	934 901 002 2	Diaphragm + valve	■ 934 714 123 0	934 714 923 2	Diaphragm + valve
■ 934 702 342 0	934 901 002 2	Diaphragm + valve	■ 934 714 124 0	934 714 920 2	Diaphragm
■ 934 702 380 0	934 702 006 2	Diaphragm + valve	■ 934 714 137 0	934 714 921 2	Diaphragm + valve
■ 934 702 381 0	934 702 006 2	Diaphragm + valve	■ 934 714 302 0	934 714 921 2	Diaphragm + valve
■ 934 702 387 0	934 702 902 2	Diaphragm + valve	■ 934 714 403 0	934 714 920 2	Diaphragm
■ 934 702 390 0	934 901 005 2	Diaphragm + valve		934 714 922 2	Diaphragm + non return valve
■ 934 702 391 0	934 901 005 2	Diaphragm + valve		934 714 925 2	Diaphragm + valve
■ 934 714 001 0	934 714 921 2	Diaphragm + valve	■ 934 714 732 0	934 714 925 2	Diaphragm + valve
■ 934 714 004 0	934 714 921 2	Diaphragm + valve			



434 608 204 0



434 608 220 0



434 612 004 0

## Safety valve

Product number	Temperature	Opening pressure	Port 1	Wrench size	Length
434 608 202 0	-40 ... +80 °C	10.7 bar	M16x1.5	19 mm	97.0 mm
434 608 204 0	-40 ... +80 °C	15.5 bar	M14x1.5	19 mm	97.0 mm
434 608 207 0	-40 ... +80 °C	10.8 bar	¼"-18 NPTF	¾"	72.0 mm
434 608 208 0	-40 ... +100 °C	9.7 bar	M16x1.5	22 mm	74.0 mm
434 608 209 0	-40 ... +80 °C	10.4 bar	M16x1.5	19 mm	97.0 mm
434 608 220 0	-40 ... +80 °C	10.0 bar	M16x1.5	22 mm	59.0 mm
434 608 221 0	-40 ... +80 °C	9.0 bar	M16x1.5	22 mm	59.0 mm
434 608 226 0	-40 ... +80 °C	15.0 bar	M16x1.5	22 mm	59.0 mm
434 612 001 0	-40 ... +80 °C	9.0 bar	M22x1.5	24 mm	72.0 mm
434 612 002 0	-40 ... +80 °C	10.0 bar	M22x1.5	24 mm	72.0 mm
434 612 003 0	-40 ... +80 °C	11.0 bar	M22x1.5	24 mm	72.0 mm
434 612 004 0	-40 ... +80 °C	13.0 bar	M22x1.5	24 mm	72.0 mm
434 612 005 0	-40 ... +80 °C	13.8 bar	M22x1.5	24 mm	72.0 mm
434 612 014 0	-40 ... +80 °C	7.5 bar	M22x1.5	24 mm	72.0 mm
434 612 015 0	-40 ... +80 °C	8.0 bar	M22x1.5	24 mm	72.0 mm
434 612 016 0	-40 ... +80 °C	8.5 bar	M22x1.5	24 mm	72.0 mm
434 612 017 0	-40 ... +80 °C	10.5 bar	M22x1.5	24 mm	72.0 mm
434 612 018 0	-40 ... +80 °C	12.0 bar	M22x1.5	24 mm	72.0 mm
434 612 054 0	-40 ... +80 °C	13.0 bar	M16x1.5	24 mm	72.0 mm
434 612 055 0	-40 ... +80 °C	14.5 bar	M16x1.5	24 mm	72.0 mm

Product number	Temperature	Opening pressure	Port 1	Wrench size	Length
434 612 064 0	-40 ... +80 °C	12.0 bar	M16x1.5	24 mm	72.0 mm
434 612 065 0	-40 ... +80 °C	14.0 bar	M16x1.5	24 mm	72.0 mm
434 612 066 0	-40 ... +80 °C	15.0 bar	M16x1.5	24 mm	72.0 mm
434 612 100 0	-40 ... +80 °C	13.0 bar	M22x1.5	24 mm	72.0 mm
884 502 074 0	-40 ... +80 °C	19.0 bar	M22x1.5	27 mm	53.0 mm
934 602 001 0	-40 ... +100 °C	10.5 bar	G $\frac{1}{4}$ " (NFE 003 005)	24 mm	41.5 mm
934 602 150 0	-40 ... +100 °C	10.0 bar	M14x1.5	24 mm	43.5 mm

## Air dryer - single chamber (Standard cartridge)

■ Temperature	-40 ... +65 °C
■ Heating connection	Bayonet DIN = DIN 72585-A1-2.1-1-Sn/K2
■ Air reg.	Air regeneration reservoir port (if no regeneration valve)
■ Port	<sup>1)</sup> JED-388; <sup>2)</sup> JED-152; <sup>3)</sup> JED-464



432 410 023 0

432 410 083 0

Product number	Cartridge port	Voltage	Max. pressure	Heating	Cut-out pressure	Air reg.	Port
432 410 000 0	M39	24 V	13 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 003 0	M39	12 V	13 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 005 0	M39	-	13 bar	retrofitable	10.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 007 0	M39	24 V	13 bar	Kostal M27x1	8.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 020 0	M39	-	13 bar	Kostal M27x1	9.5 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 021 0	M39	-	13 bar	retrofitable	9.5 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 022 0	M39	24 V	13 bar	Kostal M27x1	9.5 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 023 0	M39	-	13 bar	retrofitable	11.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 026 0	M39	24 V	13 bar	Kostal M27x1	9.8 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 027 0	M39	24 V	13 bar	Kostal M27x1	10.0 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 028 0	M39	24 V	13 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 031 0	M39	-	13 bar	retrofitable	7.8 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 033 0	M39	-	13 bar	retrofitable	12.5 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 034 0	M39	24 V	13 bar	Bayonet DIN	12.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 035 0	M39	24 V	13 bar	Bayonet DIN	11.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 036 0	M39	24 V	13 bar	Kostal M27x1	7.3 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 041 0	M39	24 V	13 bar	Kostal M27x1	8.5 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 042 0	M39	24 V	13 bar	Kostal M27x1	8.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 066 0	M39	-	13 bar	retrofitable	8.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 067 0	M39	24 V	13 bar	Kostal M27x1	8.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 069 0	M39	24 V	13 bar	Kostal M27x1	10.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 073 0	M39	-	13 bar	retrofitable	11.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 074 0	M39	-	13 bar	retrofitable	12.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5

# AIR SUPPLY AND PROCESSING

Product number	Cartridge port	Voltage	Max. pressure	Heating	Cut-out pressure	Air reg.	Port
432 410 075 0	M39	–	13 bar	Bayonet DIN	11.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 076 0	M39	–	13 bar	Bayonet DIN	12.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 079 0	M39	24 V	13 bar	Kostal M27x1	8.5 bar	✓	1, 21: M22x1.5; 22, control port: M16x1.5
432 410 080 0	M39	24 V	13 bar	Kostal M27x1	9.8 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 083 0	G1¼" / SW30	–	13 bar	D.T.06-2S-CE01	9.3 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 087 0	M39	–	13 bar	HDSCS 2-Pole	12.0 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 088 0	M39	–	13 bar	Kostal M27x1	12.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 094 0	M39	24 V	10 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 096 0	M39	–	13 bar	retrofitable	9.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup> ; control port: M12x1.5 <sup>2)</sup> (closed)
432 410 097 0	M39	–	13 bar	retrofitable	10.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup> ; control port: M12x1.5 <sup>2)</sup> (closed)
432 410 098 0	M39	–	13 bar	retrofitable	8.4 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup> ; control port: M12x1.5 <sup>2)</sup> (closed)
432 410 099 0	M39	–	13 bar	retrofitable	9.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup> ; control port: M12x1.5 <sup>2)</sup> (closed)
432 410 102 0	M39	24 V	13 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 104 0	M39	24 V	13 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 111 0	M39	–	13 bar	retrofitable	12.5 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 112 0	M39	24 V	13 bar	Bayonet DIN	12.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 113 0	M39	–	13 bar	retrofitable	12.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 114 0	M39	24 V	13 bar	Bayonet DIN	8.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 115 0	M39	–	13 bar	retrofitable	8.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 116 0	M39	24 V	13 bar	Bayonet DIN	10.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 117 0	M39	–	13 bar	retrofitable	10.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup>
432 410 118 0	M39	24 V	13 bar	Kostal M27x1	8.8 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 122 0	M39	24 V	13 bar	Kostal M27x1	12.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 127 0	M39	12 V	13 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 129 0	M39	24 V	10 bar	Kostal M27x1	8.1 bar	✓	1, 21, 22: M22x1.5
432 410 134 0	M39	24 V	13 bar	Bayonet DIN	12.5 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22, control port: M16x1.5 <sup>1)</sup>
432 410 138 0	M39	–	13 bar	retrofitable	10.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22: M16x1.5 <sup>1)</sup> ; control port: M12x1.5 <sup>2)</sup> (closed)
432 410 140 0	M39	24 V	10 bar	Bayonet DIN	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 152 0	M39	24 V	10 bar	Kostal M27x1	8.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 162 0	M39	12 V	13 bar	Bayonet DIN	8.5 bar	✓	1, 21: M22x1.5 <sup>2)</sup> ; 22: M12x1.5 <sup>2)</sup> ; control port: M12x1.5
432 410 200 0	M39	24 V	13 bar	Bayonet (Schlemmer) 3-pin	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 201 0	M39	–	13 bar	retrofitable	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 202 0	M39	–	13 bar	retrofitable	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 410 204 0	M39	–	13 bar	retrofitable	10.0 bar	✓	1: M22x1.5; 21: M22x1.5 <sup>1)</sup> ; 22, control port: M16x1.5 <sup>1)</sup>

Product number	Cartridge port	Voltage	Max. pressure	Heating	Cut-out pressure	Air reg.	Port
432 410 221 0	M39	12 V	13 bar	Bayonet DIN	8.1 bar	✓	1, 21: M22x1.5 <sup>2)</sup> ; 22: M12x1.5 <sup>2)</sup>
432 410 250 0	M39	24 V	13 bar	Kostal M27x1	10.0 bar	✓	1, 21, 22: M22x1.5
432 410 262 0	M39	12 V	13 bar	Bayonet DIN	12.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 411 167 0	M39	24 V	13 bar	Bayonet (Schlemmer) 3-pin	12.5 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 411 168 0	M39	24 V	13 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22: M12x1.5
432 412 002 0	M39	12 V	13 bar	Kostal M27x1	7.5 bar	–	1, 21: M22x1.5; control port: M12x1.5
432 413 002 0	M39	24 V	10 bar	Delphi metri pack 280	7.9...9.0 bar	–	1, 21: ½"-14 NPTF; control port: ¼"-18 NPTF
432 413 003 0	M39	12 V	10 bar	Delphi metri pack 280	7.9...9.0 bar	–	1, 21: ½"-14 NPTF; control port: ¼"-18 NPTF
432 413 007 0	M39	12 V	10 bar	Delphi metri pack 280	7.9...9.0 bar	–	1, 21: ½"-14 NPTF; control port: ¼"-18 NPTF
432 415 000 0	M39	24 V	13 bar	Kostal M27x1	8.0 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup>
432 415 003 0	M39	24 V	13 bar	Kostal M27x1	8.0 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup>
432 415 005 0	M39	24 V	13 bar	Kostal M27x1	9.0 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup>
432 415 006 0	M39	24 V	13 bar	Kostal M27x1	8.5 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup>
432 415 013 0	M39	24 V	13 bar	Kostal M27x1	8.3 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup> ; control port: M12x1.5
432 415 015 0	M39	24 V	13 bar	retrofitable	11.0 bar	–	1, 21: M22x1.5; control port: M12x1.5
432 415 016 0	M39	24 V	13 bar	Kostal M27x1	11.0 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup> ; control port: M12x1.5
432 415 019 0	M39	24 V	13 bar	Kostal M27x1	12.5 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup> ; control port: M12x1.5
432 415 022 0	M39	24 V	13 bar	Kostal M27x1	9.8 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup> ; control port: M12x1.5
432 415 027 0	M39	24 V	13 bar	Kostal M27x1	10.0 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup>
432 415 028 0	M39	24 V	13 bar	Kostal M27x1	8.0 bar	–	1: M22x1.5; 21: M22x1.5 <sup>1)</sup>
432 415 030 0	M39	24 V	13 bar	Kostal M27x1	8.3 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup> ; control port: M12x1.5
432 415 032 0	M39	12 V	13 bar	Kostal M27x1	8.3 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup> ; control port: M12x1.5
432 415 033 0	M39	24 V	13 bar	Kostal M27x1	10.5 bar	–	1: M22x1.5 <sup>1)</sup> ; 21: M22x1.5 <sup>3)</sup>
432 415 037 0	M39	24 V	13 bar	Bayonet DIN	8.3 bar	–	1: M22x1.5; 21: M22x1.5 <sup>3)</sup> ; control port: M12x1.5
432 415 059 0	M39	12 V	13 bar	Kostal M27x1	11.0 bar	–	1, 21: M22x1.5 <sup>2)</sup> ; control port: M12x1.5
432 415 124 0	M39	–	13 bar	–	12.5 bar	–	1, 21: M22x1.5 <sup>1)</sup>
432 415 138 0	G1¼"	–	13 bar	retrofitable	10.0 bar	–	1: M22x1.5 <sup>1)</sup> ; 21: M22x1.5 <sup>3)</sup>
432 415 921 0	M39	12 V	13 bar	Kostal M27x1	8.3 bar	–	1, 21: M22x1.5 <sup>3)</sup>
432 420 000 0	M39	24 V	13 bar	Kostal M27x1	13.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 420 002 0	M39	–	13 bar	retrofitable	13.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 420 003 0	M39	12 V	13 bar	Kostal M27x1	13.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 420 008 0	M39	24 V	13 bar	Kostal M27x1	13.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 421 000 0	M39	24 V	13 bar	Kostal M27x1	13.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22, control port: M16x1.5 <sup>1)</sup>
432 421 002 0	M39	–	13 bar	retrofitable	13.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22, control port: M16x1.5 <sup>1)</sup>



# AIR SUPPLY AND PROCESSING

Product number	Cartridge port	Voltage	Max. pressure	Heating	Cut-out pressure	Air reg.	Port
432 421 003 0	M39	24 V	13 bar	Kostal M27x1	7.5...13 bar	✓	1, 21: M22x1.5 <sup>2)</sup> ; 22, control port: M12x1.5 <sup>2)</sup>
432 421 007 0	M39	24 V	13 bar	Kostal M27x1	13.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22, control port: M16x1.5 <sup>1)</sup>
432 421 008 0	M39	–	13 bar	retrofittable	13.0 bar	✓	1, 21: M22x1.5 <sup>1)</sup> ; 22, control port: M16x1.5 <sup>1)</sup>
432 421 009 0	M39	12 V	13 bar	Delphi metri pack 280	7.9...9.0 bar	✓	1, 21: ½"-14 NPTF; 22, control port: ¼"-18 NPTF
432 421 012 0	M39	24 V	10 bar	Kostal M27x1	10.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 421 014 0	M39	–	10 bar	retrofittable	10.0 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 421 028 0	M39	24 V	10 bar	Kostal M27x1	8.1 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 410 000 0	432 410 000 2	Exhaust + charging valve	■ 432 410 026 0	432 410 000 2	Exhaust + charging valve
	432 410 001 2	Unloader valve		432 410 001 2	Unloader valve
	432 410 002 2	Exhaust valve		432 410 002 2	Exhaust valve
	432 410 005 2	Valve set		432 410 005 2	Valve set
■ 432 410 003 0	432 410 000 2	Exhaust + charging valve	■ 432 410 027 0	432 410 000 2	Exhaust + charging valve
	432 410 001 2	Unloader valve		432 410 001 2	Unloader valve
	432 410 002 2	Exhaust valve		432 410 002 2	Exhaust valve
	432 410 005 2	Valve set		432 410 005 2	Valve set
	432 420 921 2	Heater	■ 432 410 028 0	432 410 000 2	Exhaust + charging valve
■ 432 410 005 0	432 410 000 2	Exhaust + charging valve		432 410 001 2	Unloader valve
	432 410 001 2	Unloader valve		432 410 002 2	Exhaust valve
	432 410 002 2	Exhaust valve		432 410 005 2	Valve set
	432 410 005 2	Valve set		■ 432 410 031 0	432 410 000 2
■ 432 410 007 0	432 410 001 2	Unloader valve	432 410 001 2		Unloader valve
	432 410 002 2	Exhaust valve	432 410 002 2		Exhaust valve
	432 410 005 2	Valve set	432 410 005 2		Valve set
	432 420 920 2	Heater	■ 432 410 033 0	432 410 001 2	Unloader valve
■ 432 410 020 0	432 410 000 2	Exhaust + charging valve		432 410 002 2	Exhaust valve
	432 410 001 2	Unloader valve		■ 432 410 034 0	432 410 001 2
	432 410 002 2	Exhaust valve	432 410 002 2		Exhaust valve
432 410 005 2	Valve set	■ 432 410 035 0	432 410 001 2	Unloader valve	
■ 432 410 021 0	432 410 000 2		Exhaust + charging valve	432 410 002 2	Exhaust valve
	432 410 001 2		Unloader valve	■ 432 410 036 0	432 410 000 2
	432 410 002 2	Exhaust valve	432 410 001 2		Unloader valve
432 410 005 2	Valve set	432 410 002 2	Exhaust valve		
■ 432 410 022 0	432 410 000 2	Exhaust + charging valve	432 410 005 2	Valve set	
	432 410 001 2	Unloader valve	■ 432 410 041 0	432 410 000 2	Exhaust + charging valve
	432 410 002 2	Exhaust valve		432 410 001 2	Unloader valve
■ 432 410 023 0	432 410 001 2	Unloader valve		432 410 002 2	Exhaust valve
	432 410 002 2	Exhaust valve	432 410 005 2	Valve set	
	■ 432 410 023 0	432 410 001 2	Unloader valve	■ 432 410 042 0	432 410 001 2
432 410 002 2		Exhaust valve	432 410 002 2		Exhaust valve
432 410 005 2		Valve set	432 410 005 2		Valve set

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 410 066 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve	■ 432 410 112 0	432 410 001 2 432 410 002 2 432 410 932 2	Unloader valve Exhaust valve Heater
■ 432 410 067 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve	■ 432 410 113 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve
■ 432 410 069 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve	■ 432 410 114 0	432 410 001 2 432 410 002 2 432 410 005 2 432 410 932 2	Unloader valve Exhaust valve Valve set Heater
■ 432 410 073 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve	■ 432 410 115 0	432 410 001 2 432 410 002 2 432 410 005 2	Unloader valve Exhaust valve Valve set
■ 432 410 074 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve	■ 432 410 116 0	432 410 001 2 432 410 002 2 432 410 932 2	Unloader valve Exhaust valve Heater
■ 432 410 075 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 932 2	Exhaust + charging valve Unloader valve Exhaust valve Heater	■ 432 410 117 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve
■ 432 410 076 0	432 410 001 2 432 410 002 2 432 410 932 2	Unloader valve Exhaust valve Heater	■ 432 410 118 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 005 2	Exhaust + charging valve Unloader valve Exhaust valve Valve set
■ 432 410 079 0	432 410 001 2 432 410 002 2 432 410 005 2	Unloader valve Exhaust valve Valve set	■ 432 410 122 0	432 410 005 2	Valve set
■ 432 410 080 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 005 2	Exhaust + charging valve Unloader valve Exhaust valve Valve set	■ 432 410 127 0	432 410 005 2	Valve set
■ 432 410 083 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve	■ 432 410 129 0	432 410 005 2	Valve set
■ 432 410 087 0	432 410 001 2 432 410 002 2 432 410 935 2	Unloader valve Exhaust valve Valve body	■ 432 410 134 0	432 410 001 2 432 410 002 2 432 410 932 2	Unloader valve Exhaust valve Heater
■ 432 410 088 0	432 410 005 2	Valve set	■ 432 410 138 0	432 410 002 2	Exhaust valve
■ 432 410 094 0	432 410 002 2 432 410 005 2	Exhaust valve Valve set	■ 432 410 140 0	432 410 002 2 432 410 005 2 432 410 932 2	Exhaust valve Valve set Heater
■ 432 410 096 0	432 410 924 2 932 400 002 2	Valve piston Valve set	■ 432 410 152 0	432 410 001 2 432 410 002 2 432 410 005 2	Unloader valve Exhaust valve Valve set
■ 432 410 097 0	932 400 002 2	Valve set	■ 432 410 162 0	432 410 924 2 432 415 923 2	Valve piston Exhaust valve
■ 432 410 098 0	432 410 924 2 932 400 002 2	Valve piston Valve set	■ 432 410 200 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 005 2	Exhaust + charging valve Unloader valve Exhaust valve Valve set
■ 432 410 102 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 005 2 432 420 920 2	Exhaust + charging valve Unloader valve Exhaust valve Valve set Heater	■ 432 410 201 0	432 410 000 2  432 410 005 2	Exhaust + charging valve Valve set
■ 432 410 104 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 005 2	Exhaust + charging valve Unloader valve Exhaust valve Valve set	■ 432 410 202 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 005 2	Exhaust + charging valve Unloader valve Exhaust valve Valve set
■ 432 410 111 0	432 410 000 2  432 410 001 2 432 410 002 2 432 410 005 2	Exhaust + charging valve Unloader valve Exhaust valve Valve set	■ 432 410 204 0	432 410 001 2 432 410 002 2	Unloader valve Exhaust valve

# AIR SUPPLY AND PROCESSING

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 410 221 0	432 410 001 2	Unloader valve	■ 432 415 013 0	432 410 000 2	Exhaust + charging valve
	432 410 002 2	Exhaust valve		432 410 001 2	Unloader valve
	432 410 005 2	Valve set		432 410 002 2	Exhaust valve
	432 410 940 2	Exhaust + charging valve		432 410 005 2	Valve set
■ 432 410 250 0	432 410 000 2	Exhaust + charging valve	■ 432 415 015 0	432 410 000 2	Exhaust + charging valve
	432 410 001 2	Unloader valve		432 410 001 2	Unloader valve
	432 410 002 2	Exhaust valve		432 410 002 2	Exhaust valve
	432 410 005 2	Valve set		432 415 000 2	Diaphragm
■ 432 410 262 0	432 415 923 2	Exhaust valve	■ 432 415 016 0	432 410 000 2	Exhaust + charging valve
	432 425 927 2	Exhaust valve		432 410 001 2	Unloader valve
■ 432 411 168 0	432 410 000 2	Exhaust + charging valve		432 410 002 2	Exhaust valve
	432 410 001 2	Unloader valve		432 415 000 2	Diaphragm
	432 410 002 2	Exhaust valve	■ 432 415 019 0	432 410 000 2	Exhaust + charging valve
■ 432 413 002 0	432 413 075 2	Valve piston		432 410 001 2	Unloader valve
	432 413 924 2	Heater		432 410 002 2	Exhaust valve
	432 413 929 2	Valve + exhaust		432 410 005 2	Valve set
	432 413 930 2	Diaphragm + filter	432 415 000 2	Diaphragm	
	432 413 933 2	Valve set	■ 432 415 022 0	432 410 000 2	Exhaust + charging valve
432 413 934 2	Valve body	432 410 001 2		Unloader valve	
■ 432 413 003 0	432 413 075 2	Valve piston		432 410 002 2	Exhaust valve
	432 413 925 2	Valve body		432 410 005 2	Valve set
	432 413 930 2	Diaphragm + filter		432 415 000 2	Diaphragm
	432 413 934 2	Valve body	932 500 235 2	Regeneration valve	
■ 432 413 007 0	432 413 075 2	Valve piston	■ 432 415 027 0	432 410 000 2	Exhaust + charging valve
	432 413 923 2	Heater		432 410 001 2	Unloader valve
	432 413 925 2	Valve body		432 410 002 2	Exhaust valve
	432 413 929 2	Valve + exhaust		432 410 005 2	Valve set
	432 413 930 2	Diaphragm + filter		432 415 000 2	Diaphragm
	432 413 934 2	Valve body		932 500 235 2	Regeneration valve
■ 432 415 000 0	432 410 000 2	Exhaust + charging valve	■ 432 415 028 0	432 410 000 2	Exhaust + charging valve
	432 410 001 2	Unloader valve		432 410 001 2	Unloader valve
	432 410 002 2	Exhaust valve		432 410 002 2	Exhaust valve
	432 410 005 2	Valve set		432 410 005 2	Valve set
	432 413 075 2	Valve piston		432 415 000 2	Diaphragm
	432 415 000 2	Diaphragm		932 500 235 2	Regeneration valve
■ 432 415 003 0	432 410 000 2	Exhaust + charging valve	■ 432 415 030 0	432 410 000 2	Exhaust + charging valve
	432 410 001 2	Unloader valve		432 410 001 2	Unloader valve
	432 410 002 2	Exhaust valve		432 410 002 2	Exhaust valve
	432 410 005 2	Valve set		432 410 005 2	Valve set
	432 415 000 2	Diaphragm		432 415 000 2	Diaphragm
■ 432 415 005 0	432 410 000 2	Exhaust + charging valve	432 420 921 2	Heater	
	432 410 001 2	Unloader valve	■ 432 415 032 0	432 410 000 2	Exhaust + charging valve
	432 410 002 2	Exhaust valve		432 410 001 2	Unloader valve
	432 410 005 2	Valve set		432 410 002 2	Exhaust valve
	432 415 000 2	Diaphragm		432 410 005 2	Valve set
432 415 000 2	Diaphragm	432 415 000 2		Diaphragm	
■ 432 415 006 0	432 410 000 2	Exhaust + charging valve	432 420 921 2	Heater	
	432 410 001 2	Unloader valve	■ 432 415 033 0	432 410 005 2	Valve set
	432 410 002 2	Exhaust valve		932 500 235 2	Regeneration valve
	432 410 005 2	Valve set			
	432 415 000 2	Diaphragm			
432 415 000 2	Diaphragm				

Product number	Repair kit	Content	Product number	Repair kit	Content			
■ 432 415 037 0	432 410 000 2	Exhaust + charging valve	■ 432 421 000 0	432 410 000 2	Exhaust + charging valve			
	432 410 001 2	Unloader valve		432 410 002 2	Exhaust valve			
	432 410 002 2	Exhaust valve		432 413 075 2	Valve piston			
	432 410 005 2	Valve set	■ 432 421 002 0	432 410 000 2	Exhaust + charging valve			
	432 410 932 2	Heater		432 410 002 2	Exhaust valve			
432 415 000 2	Diaphragm	432 413 075 2	Valve piston	■ 432 421 003 0	432 421 000 2	Exhaust valve		
■ 432 415 138 0	432 410 001 2	Unloader valve	432 413 075 2		Valve piston			
	432 410 002 2	Exhaust valve	■ 432 421 007 0		432 410 000 2	Exhaust + charging valve		
	932 500 235 2	Regeneration valve		432 410 002 2	Exhaust valve			
■ 432 415 921 0	432 410 005 2	Valve set	432 413 075 2	Valve piston	■ 432 421 008 0	432 410 000 2	Exhaust + charging valve	
	■ 432 420 000 0	432 410 000 2	Exhaust + charging valve	432 410 002 2		Exhaust valve		
432 410 002 2		Exhaust valve	432 413 075 2	Valve piston	■ 432 421 009 0	432 410 002 2	Exhaust valve	
432 413 075 2		Valve piston	432 413 075 2	Valve piston		432 413 075 2	Valve piston	
■ 432 420 002 0	432 410 000 2	Exhaust + charging valve	432 413 923 2	Heater		■ 432 421 012 0	432 410 005 2	Valve set
	432 410 002 2	Exhaust valve	432 413 929 2	Valve + exhaust	432 413 075 2		Valve piston	
	432 413 075 2	Valve piston	432 413 934 2	Valve body	432 413 934 2		Valve body	
■ 432 420 003 0	432 410 000 2	Exhaust + charging valve	432 420 920 2	Heater	■ 432 421 028 0	432 410 001 2	Unloader valve	
	432 410 002 2	Exhaust valve	■ 432 421 028 0	432 410 002 2		Exhaust valve	432 410 002 2	Exhaust valve
	432 413 075 2	Valve piston		432 413 934 2		Valve body	432 413 934 2	Valve body
432 420 921 2	Heater							
■ 432 420 008 0	432 410 000 2	Exhaust + charging valve						
	432 410 002 2	Exhaust valve						
	432 413 075 2	Valve piston						

## Air dryer - single chamber (Air System Protector)

- **Temperature** –40 ... +65 °C
- **Heating connection** Bayonet DIN = DIN 72585-A1-2.1-1-Sn/K2
- **Air reg.** Air regeneration reservoir port (if no regeneration valve)



432 410 023 0

Product number	Cartridge port	Voltage	Max. pressure	Heating	Cut-out pressure	Air reg.	Port
432 410 144 0	G 1¼" / SW30	24 V	13 bar	D.T.06-2S-CE01	9.3 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 014 0	M39	–	13 bar	retrofitable	9.0 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 016 0	M39	–	13 bar	retrofitable	10.0 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 017 0	M39	–	13 bar	retrofitable	9.2 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 064 0	M39	–	13 bar	retrofitable	8.2 bar	✓	1, 21: M22x1.5; 22: M12x1.5; control port: M12x1.5 (closed)
432 410 130 0	M39	24 V	13 bar	Kostal M27x1	8.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5
432 410 169 0	M39	24 V	13 bar	Kostal M27x1	9.5 bar	✓	1, 21: M22x1.5; 22, control port: M12x1.5

# AIR SUPPLY AND PROCESSING

Product number	Cartridge port	Voltage	Max. pressure	Heating	Cut-out pressure	Air reg.	Port
432 410 191 0	M39	24 V	13 bar	Bayonet DIN	12.0 bar	✓	1, 21: M22×1.5 JED-152; 22, control port: M12×1.5 JED-152
432 410 192 0	M39	24 V	13 bar	Bayonet DIN	8.5 bar	✓	1, 21: M22×1.5 JED-152; 22, control port: M12×1.5 JED-152
432 410 720 0	M39	–	13 bar	retrofitable	12.5 bar	✓	1: M22×1.5; 21: M22×1.5 JED-388; 22: M16×1.5 JED-388
432 410 735 0	M39	24 V	13 bar	Bayonet DIN	12.5 bar	✓	1, 21: M22×1.5; 22: M16×1.5; control port: M12×1.5 (closed)
432 410 907 0	M39	24 V	13 bar	Kostal M27×1	9.8 bar	✓	1, 21: M22×1.5; 22, control port: M12×1.5
432 415 051 0	M39	24 V	10 bar	Bayonet DIN	9.5 bar	–	1: M22×1.5 JED-152; 21: M22×1.5; control port: M12×1.5 JED-152 (closed)
432 415 061 0	M39	24 V	10 bar	Bayonet DIN	9.5 bar	–	1, 21: M22×1.5; control port: M12×1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 410 014 0	932 400 002 2 432 410 005 2	Valve set Valve set	■ 432 410 192 0	432 410 002 2 432 410 932 2 432 410 935 2 432 420 920 2	Exhaust valve Heater Valve body Heater
■ 432 410 016 0	932 400 002 2	Valve set	■ 432 410 735 0	432 410 932 2	Heater
■ 432 410 017 0	932 400 002 2 432 410 005 2	Valve set Valve set	■ 432 410 907 0	432 410 005 2	Valve set
■ 432 410 064 0	432 410 001 2 432 410 002 2 432 410 005 2 932 400 002 2	Unloader valve Exhaust valve Valve set Valve set	■ 432 415 051 0	432 410 005 2 432 410 932 2 932 500 235 2	Valve set Heater Regeneration valve
■ 432 410 130 0	432 410 005 2	Valve set	■ 432 415 061 0	432 410 932 2 432 415 922 2 432 415 923 2 932 500 235 2	Heater Valve set Exhaust valve Regeneration valve
■ 432 410 191 0	432 410 002 2 432 410 932 2 432 410 935 2 432 420 920 2	Exhaust valve Heater Valve body Heater			

## Air dryer - single chamber (Air System Protector Plus)

■ Temperature	–40 ... +65 °C
■ Cartridge port	M39
■ Heating connection	Bayonet DIN = DIN 72585-A1-2.1-1-Sn/K2
■ Air reg.	Air regeneration reservoir port



432 410 166 0

Product number	Voltage	Max. pressure	Heating	Cut-out pressure	Air reg.	Port
432 410 166 0	24 V	13 bar	Bayonet DIN	12.5 bar	✓	1, 21: M22×1.5 JED-388; 22: M16×1.5 JED-388
432 410 167 0	24 V	13 bar	Kostal M27×1	9.5 bar	✓	1, 21: M22×1.5; 22: M12×1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 410 166 0	432 410 932 2	Heater	■ 432 410 167 0	432 410 005 2	Valve set



## Air dryer - single chamber with external filling port (Standard cartridge)

■ Temperature	-40 ... +65 °C
■ Cartridge port	M39
■ Max. pressure	13 bar
■ Heating connection	Bayonet DIN = DIN 72585-A1-2.1-1-Sn/K2
■ Air reg.	Air regeneration reservoir port (if no regeneration valve)



932 400 014 0

Product number	Voltage	Heating	Cut-out pressure	Air reg.	Port
432 413 071 0	24 V	Bayonet DIN	8.5 bar	–	11, 21: M22x1.5; 12: M16x1.5 (closed); 22: Tire inflation device M16x1.5; control port: M12x1.5
932 400 003 0	–	retrofitable	10.0 bar	✓	11, 21: M22x1.5; 12: M12x1.5 (closed); 22: M16x1.5 JED-388; 23: Tire inflation device M16x1.5
932 400 014 0	24 V	Bayonet DIN	11.5 bar	✓	11, 21: M22x1.5; 12: M12x1.5; 22: M16x1.5 JED-388; 23: Tire inflation device M16x1.5; 24: M22x1.5 JED-388; control port: M10x1.5 JED-388

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 413 071 0	432 410 005 2	Valve set	■ 932 400 003 0	432 410 001 2	Unloader valve
	432 410 932 2	Heater		932 400 000 2	Valve set
	432 413 934 2	Valve body		932 400 001 2	Valve set
	932 400 920 2	Test port		932 400 920 2	Test port
	932 500 235 2	Regeneration valve		■ 932 400 014 0	432 410 001 2
		932 400 000 2	Valve set		
		932 400 920 2	Test port		

## Air dryer - single chamber with external filling port (Air System Protector)

■ Temperature	-40 ... +65 °C
■ Cartridge port	M39
■ Max. pressure	13 bar
■ Heating connection	Bayonet DIN = DIN 72585-A1-2.1-1-Sn/K2
■ Air reg.	Air regeneration reservoir port (if no regeneration valve)
■ Port	<sup>1)</sup> JED-388; <sup>2)</sup> JED-152



932 400 024 0

Product number	Voltage	Heating	Cut-out pressure	Air reg.	Port
432 416 004 0	–	retrofitable	11.0 bar	–	1, 12, 21: M22x1.5; 25, control port: M16x1.5; 26: Tire inflation port M22x1.5
932 400 016 0	24 V	Bayonet DIN	11.5 bar	✓	11, 21: M22x1.5; 12: M12x1.5; 22: M16x1.5 <sup>1)</sup> ; 23: Tire inflation device M16x1.5; 24: M22x1.5 <sup>1)</sup> ; control port: M10x1.5 <sup>1)</sup>
932 400 017 0	–	retrofitable	12.0 bar	✓	11, 21: M22x1.5 <sup>2)</sup> ; 12: M12x1.5 <sup>2)</sup> ; 22: M16x1.5 <sup>1)</sup> ; 23: Tire inflation device M16x1.5; 24: M22x1.5 <sup>1)</sup> ; control port: M10x1.5 <sup>1)</sup>
932 400 018 0	24 V	Bayonet DIN	12.0 bar	✓	11, 21: M22x1.5 <sup>2)</sup> ; 12: M12x1.5 <sup>2)</sup> ; 22: M16x1.5 <sup>1)</sup> ; 23: Tire inflation device M16x1.5; 24: M22x1.5 <sup>1)</sup> ; control port: M10x1.5 <sup>1)</sup>

# AIR SUPPLY AND PROCESSING

Product number	Voltage	Heating	Cut-out pressure	Air reg.	Port
932 400 021 0	24 V	Bayonet DIN	12.5 bar	✓	11, 21: M22x1.5 <sup>2)</sup> ; 12: M12x1.5 <sup>2)</sup> ; 22: M16x1.5 <sup>1)</sup> ; 23: Tire inflation device M16x1.5; 24: M22x1.5 <sup>1)</sup> ; control port: M10x1.5 <sup>1)</sup>
932 400 024 0	24 V	Bayonet DIN	12.0 bar	✓	11, 21: M22x1.5; 12: M12x1.5; 22: M16x1.5 <sup>1)</sup> ; 23: Tire inflation device M16x1.5; 24: M22x1.5 <sup>1)</sup> ; control port: M10x1.5 <sup>1)</sup> (closed)

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 416 004 0	432 415 922 2	Valve set	■ 932 400 018 0	432 410 001 2	Unloader valve
■ 932 400 016 0	432 410 001 2	Unloader valve		932 400 000 2	Valve set
	432 410 932 2	Heater		932 400 920 2	Test port
	432 413 925 2	Valve body	■ 932 400 021 0	932 400 920 2	Test port
	932 400 000 2	Valve set	■ 932 400 024 0	432 410 932 2	Heater
	932 400 920 2	Test port		932 400 000 2	Valve set
				932 400 920 2	Test port

## Air dryer - twin chamber with unloader (Standard cartridge)

■ Temperature	-40 ... +65 °C
■ Cartridge port	M39
■ Max. pressure	13 bar
■ Voltage	24 V
■ Heating connection	<sup>1)</sup> Bayonet (Schlemmer) 3-pin <sup>2)</sup> Bayonet DIN 72585-A1-2.1-1-Sn/K2
■ Solenoid connection	<sup>3)</sup> Bayonet DIN 72585-A1-2.1-1-Sn/K1
■ Port	<sup>4)</sup> JED-388; <sup>5)</sup> JED-388-1; <sup>6)</sup> JED-388-3; <sup>7)</sup> JED-388-4
■ Silencer	Not equipped, retrofittable: 432 407 012 0 432 407 060 0: 432 432 008 0



432 433 206 0

Product number	Heating	Solenoid	Cut-out pressure	Port
432 432 000 0	Bayonet <sup>1)</sup>	Kostal M24x1	12.5 bar	1, 21: M22x1.5
432 432 001 0	Kostal M27x1	Kostal M24x1	8.1 bar	1, 21: M22x1.5
432 432 002 0	Bayonet <sup>1)</sup>	Kostal M24x1	10.0 bar	1, 21: M22x1.5
432 432 005 0	Bayonet <sup>1)</sup>	Kostal M24x1	8.1 bar	1, 21: M22x1.5
432 432 007 0	Bayonet DIN <sup>2)</sup>	Kostal M24x1	11.0 bar	1, 21: M22x1.5
432 432 008 0	Kostal M27x1	Kostal M24x1	10.0 bar	1, 21: M22x1.5
432 432 017 0	Kostal M27x1	Kostal M24x1	10.0 bar	1, 21: M22x1.5; control port: M16x1.5
432 432 018 0	retrofittable	Kostal M24x1	12.5 bar	1, 21: M22x1.5
432 432 019 0	Bayonet DIN <sup>2)</sup>	Kostal M24x1	12.5 bar	1, 21: M22x1.5
432 432 021 0	Kostal M27x1	Bayonet DIN <sup>3)</sup>	10.0 bar	1, 21: M22x1.5
432 432 024 0	Bayonet DIN <sup>2)</sup>	Bayonet DIN <sup>3)</sup>	8.1 bar	1, 21: M22x1.5
432 432 199 0	Kostal M27x1	Kostal M24x1	10.0 bar	1, 21: M22x1.5
432 433 005 0	Bayonet DIN <sup>2)</sup>	Bayonet DIN <sup>3)</sup>	12.0 bar	11, 21: M22x1.5 <sup>4)</sup> ; 12: M22x1.5; 22: Tire inflation device M16x1.5; control port: M10x1.5 <sup>5)</sup>
432 433 200 0	Bayonet <sup>1)</sup>	Kostal M24x1	12.5 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5 <sup>7)</sup> (closed)
432 433 202 0	Bayonet <sup>1)</sup>	Kostal M24x1	10.0 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5 <sup>7)</sup> (closed)

Product number	Heating	Solenoid	Cut-out pressure	Port
432 433 205 0	Bayonet <sup>1)</sup>	Kostal M24x1	8.1 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5 <sup>7)</sup> (closed)
432 433 206 0	Bayonet DIN <sup>2)</sup>	Bayonet DIN <sup>3)</sup>	12.0 bar	<b>11:</b> M22x1.5; <b>21:</b> M22x1.5 <sup>6)</sup> ; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5 <sup>7)</sup> (closed)
432 433 217 0	Kostal M27x1	Kostal M24x1	10.0 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5
432 433 218 0	retrofitable	Kostal M24x1	12.5 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5 <sup>7)</sup> (closed)
432 433 278 0	Bayonet <sup>1)</sup>	Kostal M24x1	8.1 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5 <sup>7)</sup> (closed)
432 433 279 0	Bayonet <sup>1)</sup>	Kostal M24x1	10.0 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5 <sup>7)</sup> (closed)
432 433 299 0	Kostal M27x1	Kostal M24x1	10.0 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5 <sup>7)</sup> (closed)

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ <b>432 432 000 0</b>	432 410 001 2 432 432 000 2	Unloader valve Valve + solenoid	■ <b>432 433 202 0</b>	432 433 921 2 432 433 925 2 932 400 920 2	Outlet valve Solenoid Test port
■ <b>432 432 001 0</b>	432 410 001 2 432 432 000 2	Unloader valve Valve + solenoid	■ <b>432 433 205 0</b>	432 433 921 2 932 400 920 2	Outlet valve Test port
■ <b>432 432 002 0</b>	432 410 001 2 432 432 000 2	Unloader valve Valve + solenoid	■ <b>432 433 206 0</b>	432 410 932 2 432 433 920 2 432 433 921 2 932 400 920 2	Heater Valve body Outlet valve Test port
■ <b>432 432 005 0</b>	432 410 001 2	Unloader valve	■ <b>432 433 217 0</b>	432 433 921 2 432 433 924 2 432 433 925 2 932 400 920 2	Outlet valve Valve body Solenoid Test port
■ <b>432 432 007 0</b>	432 410 001 2 432 410 932 2 432 432 000 2	Unloader valve Heater Valve + solenoid	■ <b>432 433 218 0</b>	432 433 921 2 432 433 925 2 932 400 920 2	Outlet valve Solenoid Test port
■ <b>432 432 017 0</b>	432 410 001 2 432 432 000 2	Unloader valve Valve + solenoid	■ <b>432 433 219 0</b>	432 410 924 2 432 433 921 2 432 433 925 2 432 433 926 2 932 400 920 2	Valve piston Outlet valve Solenoid Valve + exhaust Test port
■ <b>432 432 018 0</b>	432 410 001 2 432 432 000 2	Unloader valve Valve + solenoid	■ <b>432 433 278 0</b>	432 433 921 2 432 433 925 2 932 400 920 2	Outlet valve Solenoid Test port
■ <b>432 432 019 0</b>	432 410 001 2 432 410 932 2 432 432 000 2	Unloader valve Heater Valve + solenoid	■ <b>432 433 279 0</b>	432 433 921 2 432 433 925 2 932 400 920 2	Outlet valve Solenoid Test port
■ <b>432 432 024 0</b>	432 410 932 2	Heater	■ <b>432 433 299 0</b>	432 433 921 2 432 433 924 2 432 433 925 2 932 400 920 2	Outlet valve Valve body Solenoid Test port
■ <b>432 432 199 0</b>	432 410 001 2 432 432 000 2	Unloader valve Valve + solenoid			
■ <b>432 433 005 0</b>	432 410 932 2 432 433 921 2 932 400 920 2	Heater Outlet valve Test port			
■ <b>432 433 200 0</b>	432 433 921 2 432 433 925 2 932 400 920 2	Outlet valve Solenoid Test port			

## Air dryer - twin chamber with unloader (Air System Protector)

■ Temperature	-40 ... +65 °C
■ Cartridge port	M39
■ Max. pressure	13 bar
■ Voltage	24 V
■ Heating connection	<sup>1)</sup> Bayonet (Schlemmer) 3-pin <sup>2)</sup> Bayonet DIN 72585-A1-2.1-1-Sn/K2
■ Solenoid connection	<sup>3)</sup> Bayonet DIN 72585-A1-2.1-1-Sn/K1
■ Port	<sup>4)</sup> JED-388-1; <sup>5)</sup> JED-388-3; <sup>6)</sup> JED-388-4
■ Silencer	Not equipped, retrofittable: 432 407 012 0



432 433 062 0

Product number	Heating	Solenoid	Cut-out pressure	Port
432 432 023 0	Kostal M27x1	Kostal M24x1	10.0 bar	<b>1, 21:</b> M22x1.5; <b>control port:</b> M16x1.5
432 433 062 0	Bayonet DIN <sup>2)</sup>	Bayonet DIN <sup>3)</sup>	12.0 bar	<b>11, 21:</b> M22x1.5 <sup>5)</sup> ; <b>12:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M10x1.5 <sup>4)</sup>
432 433 201 0	Kostal M27x1	Kostal M24x1	10.0 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5 <sup>6)</sup> (closed)
432 433 219 0	Bayonet DIN <sup>2)</sup>	Kostal M24x1	12.5 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5
432 433 223 0	Kostal M27x1	Kostal M24x1	10.0 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5
432 433 296 0	Bayonet DIN <sup>2)</sup>	Bayonet DIN <sup>3)</sup>	12.5 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5
432 433 298 0	Bayonet <sup>1)</sup>	Kostal M24x1	8.5 bar	<b>11, 21:</b> M22x1.5; <b>22:</b> Tire inflation device M16x1.5; <b>control port:</b> M16x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 433 062 0	432 410 001 2	Unloader valve	■ 432 433 223 0	432 433 921 2	Outlet valve
	432 410 932 2	Heater		432 433 925 2	Solenoid
	432 433 921 2	Outlet valve		932 400 920 2	Test port
	932 400 920 2	Test port	■ 432 433 296 0	432 433 204 2	Solenoid
■ 432 433 201 0	432 410 924 2	Valve piston		432 433 921 2	Outlet valve
	432 420 920 2	Heater		432 433 922 2	Valve body
	432 433 921 2	Outlet valve		932 400 920 2	Test port
	432 433 925 2	Solenoid	■ 432 433 298 0	432 433 921 2	Outlet valve
432 433 926 2	Valve + exhaust	432 433 924 2		Valve body	
932 400 920 2	Test port	432 433 925 2		Solenoid	
■ 432 433 219 0	432 410 932 2	Heater		432 433 926 2	Valve + exhaust
	432 433 921 2	Outlet valve	932 400 920 2	Test port	
	432 433 925 2	Solenoid			
	932 400 920 2	Test port			

## Air dryer - twin chamber without unloader

- **Cartridge type** Standard Cartridge (M39)  
Air System Protector (M39): 432 433 191 0  
Air System Protector Plus (M39): 432 433 282 0
- **Temperature** -40 ... +65 °C
- **Voltage** 24 V
- **Silencer** Not equipped, retrofittable: 432 407 012 0



432 433 209 0

Product number	Heating	Solenoid	Max. pressure	Port
432 431 010 0	HDSCS 2-Pole	HDSCS 2-Pole	13 bar	1, 21: M22x1.5; control port: M16x1.5
432 431 199 0	Kostal M27x1	Kostal M24x1	13 bar	1, 21: M22x1.5; control port: M16x1.5
432 433 108 0	HDSCS 2-Pole	HDSCS 2-Pole	13 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5
432 433 191 0	HDSCS 2-Pole	HDSCS 2-Pole	13 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5
432 433 209 0	Kostal M27x1	Kostal M24x1	10 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5 JED-388-4
432 433 273 0	Kostal M27x1	Kostal M24x1	13 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5
432 433 274 0	Kostal M27x1	Kostal M24x1	13 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5
432 433 280 0	Kostal M27x1	Kostal M24x1	10 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5 JED-388-4
432 433 281 0	Kostal M27x1	Kostal M24x1	13 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5
432 433 282 0	Kostal M27x1	Kostal M24x1	13 bar	11, 21: M22x1.5; 22: Tire inflation device M16x1.5; control port: M16x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 432 431 010 0	432 431 002 2	Valve + exhaust	■ 432 433 273 0	432 433 921 2 432 433 925 2 932 400 920 2	Outlet valve Solenoid Test port
■ 432 431 199 0	432 420 920 2 432 431 000 2	Heater Valve + solenoid	■ 432 433 274 0	432 433 921 2 432 433 924 2 432 433 925 2 932 400 920 2	Outlet valve Valve body Solenoid Test port
■ 432 433 108 0	432 433 921 2 432 433 924 2 932 400 920 2	Outlet valve Valve body Test port	■ 432 433 280 0	432 430 926 2 432 431 933 2 432 433 921 2	Heater Solenoid Outlet valve
■ 432 433 191 0	432 433 921 2 432 433 924 2 932 400 920 2	Outlet valve Valve body Test port	■ 432 433 281 0	432 433 921 2 432 433 923 2 432 433 925 2 932 400 920 2	Outlet valve Valve body Solenoid Test port
■ 432 433 209 0	432 433 921 2 432 433 925 2 932 400 920 2	Outlet valve Solenoid Test port			



## Air dryer - electrically controlled (ECAD)

- **Cartridge type** Air System Protector (M39)  
Standard Cartridge (M39): 432 425 010 0
- **Temperature** -40 ... +65 °C
- **Max. pressure** 13 bar
- **Heating connection** Bayonet DIN = Bayonet DIN 72585-A1-2.1-1-Sn/K2
- **Solenoid connection** Bayonet DIN 72585-A1-2.1-1-Sn/K1



432 425 101 0

Product number	Voltage	Heating	Silencer	Port
432 425 010 0	12 V	Bayonet DIN	— (432 407 060 0 retrofittable)	<b>11, 21:</b> M22×1.5 JED-388-4; <b>12:</b> M16×1.5; <b>control port:</b> M12×1.5
432 425 101 0	24 V	Bayonet DIN	432 407 060 0	<b>11, 21:</b> M22×1.5 JED-388-4; <b>12:</b> M16×1.5; <b>control port:</b> M12×1.5
432 425 105 0	24 V	retrofittable	432 407 060 0	<b>11, 21:</b> M22×1.5; <b>12:</b> M16×1.5; <b>control port:</b> M12×1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ <b>432 425 101 0</b>	432 410 002 2	Exhaust valve	■ <b>432 425 105 0</b>	432 410 935 2	Valve body
	432 410 932 2	Heater		432 425 920 2	Solenoid
	432 410 935 2	Valve body		432 425 922 2	Exhaust valve
	432 425 920 2	Solenoid		432 425 927 2	Exhaust valve
	432 425 922 2	Exhaust valve		432 425 928 2	Exhaust valve

## Heater



Product number	Voltage	Connector	Temperature	
			Cut in	Cut out
894 260 040 2	24 V	M27×1, 2-pin	7.0 °C	29.5 °C
894 260 043 2	24 V	HDSCS 2-pole	7.0 °C	29.5 °C
894 260 045 2	24 V	Bayonet plug (Schlemmer) 3-pin	7.0 °C	29.5 °C
894 260 046 2	12 V	Delphi metri pack 280	7.0 °C	29.5 °C

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ <b>894 260 040 2</b>	432 420 920 2	Heater, accessories	■ <b>894 260 045 2</b>	432 410 932 2	Heater, accessories
	894 260 067 2	Cartridge heater		894 260 067 2	Cartridge heater
■ <b>894 260 043 2</b>	432 430 926 2	Heater, accessories	■ <b>894 260 046 2</b>	432 413 923 2	Heater, accessories
	894 260 067 2	Cartridge heater			

## Pressure limiting valve (475 009 ... 0)

■ Supply Nominal Ø: 4 mm



475 009 008 0

Product number	Pressure		Temperature	Port
	Max. working	Delivered		
475 009 000 0	10 bar	5.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 004 0	10 bar	0.4 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 005 0	10 bar	0.3 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 007 0	10 bar	0.5 bar at p1 = 9.5 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 008 0	10 bar	0.7 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 009 0	10 bar	2.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 010 0	10 bar	3.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 012 0	12 bar	0.3 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 013 0	10 bar	0.45 bar at p1 = 9.5 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 014 0	12 bar	0.5 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 015 0	10 bar	4.8 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 021 0	10 bar	1.2 bar at p1 = 2.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 022 0	10 bar	2.0 bar at p1 = 3.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 026 0	10 bar	3.0 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 027 0	12 bar	2.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 031 0	10 bar	2.2 bar at p1 = 4.5 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 032 0	10 bar	1.7 bar at p1 = 2.0 bar	-40 ... +80 °C	1, 2: M12x1.5
475 009 152 0	12 bar	0.5 bar at p1 = 8.5 bar	-30 ... +70 °C	1, 2: M16x1.5 JED-388-3

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 475 009 000 0	475 009 000 2	Valve + diaphragm	■ 475 009 013 0	475 009 000 2	Valve + diaphragm
■ 475 009 004 0	475 009 000 2	Valve + diaphragm	■ 475 009 014 0	475 009 000 2	Valve + diaphragm
■ 475 009 005 0	475 009 000 2	Valve + diaphragm	■ 475 009 021 0	475 009 000 2	Valve + diaphragm
■ 475 009 007 0	475 009 000 2	Valve + diaphragm	■ 475 009 022 0	475 009 000 2	Valve + diaphragm
■ 475 009 008 0	475 009 000 2	Valve + diaphragm	■ 475 009 026 0	475 009 000 2	Valve + diaphragm
■ 475 009 009 0	475 009 000 2	Valve + diaphragm	■ 475 009 027 0	475 009 000 2	Valve + diaphragm
■ 475 009 010 0	475 009 000 2	Valve + diaphragm	■ 475 009 031 0	475 009 000 2	Valve + diaphragm
■ 475 009 012 0	475 009 000 2	Valve + diaphragm			

## Air dryer cartridge

### Essential cartridge

- **Recommended service interval** Up to one year system protection
- **Vehicle air consumption** Low
- **Accessory** 897 788 720 4 O-ring ISO 3601-33x5



Product number	Working pressure	Port	Colour
432 410 222 7	14 bar	M39x1.5	white
432 415 220 7	14 bar	G1¼	white

### Standard cartridge

- **Recommended service interval** Up to two years system protection
- **Vehicle air consumption** Low
- **Accessory** 897 788 720 4 O-ring ISO 3601-33x5

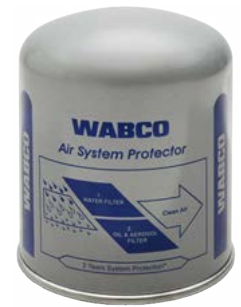


Product number	Working pressure	Port	Colour	Comment
432 410 020 2	14 bar	M39x1.5	black	
432 410 080 2	10 bar	M39x1.5	black	
432 410 120 2	14 bar	M39x1.5	black	
432 410 220 2	20 bar	M42x1.5	black	
432 410 226 1	14 bar	G1¼	black	Wrench size: Hexagon SW 30
432 410 229 2	14 bar	M39x1.5	black	
432 410 241 2	10 bar	M39x1.5	black	
432 410 868 2*	13 bar	M39x1.5	blue	
432 410 927 2	14 bar	G1¼	black	Wrench size: Hexagon SW 30

\* Recommended service interval: up to 6 months system protection, vehicle air consumption: extra low

## Air System Protector

■ Recommended service interval	Up to two years system protection
■ Vehicle air consumption	Medium
■ Filter type	Coalencence filter
■ Accessory	897 788 720 4 O-ring ISO 3601-33x5



Product number	Working pressure	Port	Colour	Comments
432 901 223 2	14 bar	M39x1.5	silver	
432 901 228 2	14 bar	G1¼	silver	Wrench size: hexagon SW 30
432 901 245 2	14 bar	M39x1.5 LH	silver	
432 901 246 2	14 bar	M41x1.5	silver	
432 901 247 2	14 bar	M39x1.5	silver	
432 901 251 2	14 bar	M41x2.0	silver	
432 901 252 2	14 bar	M39x1.5 LH	silver	
432 901 253 2	14 bar	M39x1.5	silver	Wrench size: hexagon SW 30, special sealing ring DAF
432 901 500 2	15 bar	–	–	Air System Protector <sup>INSERT</sup>

## Air System Protector Plus

■ Recommended service interval	Up to three years system protection
■ Vehicle air consumption	High
■ Filter type	Coalencence filter
■ Accessory	897 788 720 4 O-ring ISO 3601-33x5



Product number	Working pressure	Port	Colour	Comments
432 410 244 2	14 bar	M39x1.5	gold	
432 911 228 2	14 bar	G1¼	gold	Wrench size: hexagon SW 30
432 911 245 2	14 bar	M39x1.5 LH	gold	
432 911 246 2	14 bar	M41x1.5	gold	

## Pressure limiting unit

- **Temperature**                    -40 ... +80 °C
- **Voltage**                            24 V
- **Nominal flow rate**            0.025 (m<sup>3</sup>/min)
- **Electrical connection**    Bayonet DIN 72585 A1-2.1-Sn/K2



975 009 001 0

Product number	Type	Pressure		Nominal diameter	Port
		Max. working	Delivered		
975 009 001 0	Air control unit	13 bar	5.5 bar at p1 = 8.5 bar	1.8 mm	1, 2: M16×1.5 JED-388-3; 3: exhaust
975 009 003 0	Pressure limiting unit	13 bar	5.5 bar at p1 = 8.5 bar	1.8 mm	1, 2: M16×1.5 JED-388-3; 3: exhaust
975 009 211 0	Pressure limiting unit	10 bar	5.5 bar at p1 = 9 bar	1.0 mm	1,2, 2: M16×1.5 JED-388-3; 3: exhaust



# Air storage

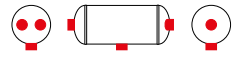


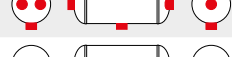
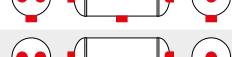
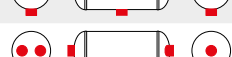


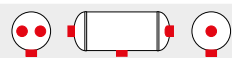


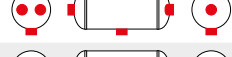
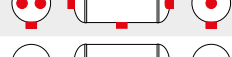

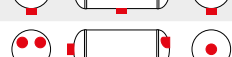



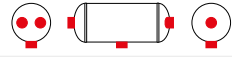
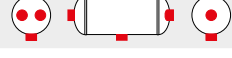

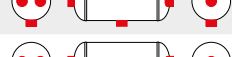
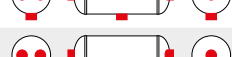
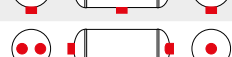






## Air reservoir

■ <b>Material</b>	Steel *) Aluminum
■ <b>Colour</b>	Black Grey: 950 020 011 0, 950 020 013 0 Non-painted: 950 530 903 0, 950 740 904 0, 950 960 002 0
■ <b>Temperature</b>	-50 ... +100 °C **) -50 ... +200 °C



Product number	Capacity	Ø	Length	Working pressure	Port	
					Thread	Number
950 001 003 0**	0.6 l	102 mm	129.0 mm	15.5 bar	½"-14 NPSI	
950 020 000 0	10.0 l	206 mm	371.0 mm	15.5 bar	M22x1.5	
950 020 001 0	4.0 l	144 mm	321.0 mm	15.5 bar	M22x1.5	
950 020 002 0	25.0 l	246 mm	606.5 mm	15.5 bar	M22x1.5	
950 020 004 0	25.0 l	276 mm	494.5 mm	15.5 bar	M22x1.5	
950 020 005 0	35.0 l	276 mm	662.5 mm	15.5 bar	M22x1.5	
950 020 006 0	20.0 l	246 mm	496.5 mm	15.5 bar	M22x1.5	
950 020 007 0	25.0 l	246 mm	604.5 mm	15.5 bar	M22x1.5	
950 020 008 0	4.0 l	154 mm	273.0 mm	12.5 bar	M22x1.5	
950 020 010 0	40.0 l	310 mm	604.0 mm	12.5 bar	M22x1.5	
950 020 011 0	30.0 l	276 mm	568.0 mm	14.5 bar	M22x1.5	
950 020 012 0	36.0 l	300 mm	609.0 mm	12.5 bar	M22x1.5	
950 020 013 0	30.0 l	250 mm	705.0 mm	13.0 bar	M22x1.5	
950 060 003 0	60.0 l	310 mm	893.0 mm	12.5 bar	M22x1.5	
950 060 004 0	60.0 l	396 mm	580.0 mm	10.0 bar	M22x1.5	
950 080 002 0	80.0 l	396 mm	750.0 mm	10.0 bar	M22x1.5	
950 100 002 0	100.0 l	396 mm	915.0 mm	10.0 bar	M22x1.5	
950 105 001 0	5.0 l	154 mm	341.0 mm	20.0 bar	M22x1.5	
950 108 002 0	7.7 l	154 mm	486.0 mm	15.5 bar	M22x1.5	
950 110 002 0	10.0 l	154 mm	615.0 mm	20.0 bar	M22x1.5	
950 310 001 0	10.0 l	206 mm	386.0 mm	15.5 bar	½"-14 NPSI	
950 405 001 0	4.5 l	206 mm	185.0 mm	15.5 bar	M22x1.5	

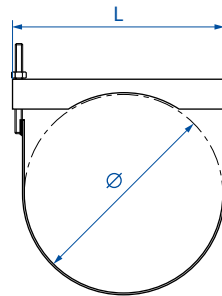
# AIR STORAGE

Product number	Capacity	Ø	Length	Working pressure	Port	
					Thread	Number
950 406 001 0	6.0 l	206 mm	241.0 mm	15.5 bar	M22x1.5	
950 410 004 0	10.0 l	206 mm	368.0 mm	15.5 bar	M22x1.5	
950 410 902 0	10.0 l	206 mm	355.0 mm	15.5 bar	M22x1.5	
950 415 005 0	15.0 l	206 mm	527.0 mm	15.5 bar	M22x1.5	
950 420 003 0	20.0 l	206 mm	691.0 mm	15.5 bar	M22x1.5	
950 430 001 0	30.0 l	206 mm	992.0 mm	15.5 bar	M22x1.5	
950 515 003 0	15.0 l	246 mm	380.0 mm	15.5 bar	M22x1.5	
950 516 004 0	16.0 l	246 mm	411.0 mm	15.5 bar	M22x1.5	
950 520 003 0	20.0 l	246 mm	495.0 mm	15.5 bar	M22x1.5	
950 525 001 0	25.0 l	246 mm	601.0 mm	15.5 bar	M22x1.5	
950 527 005 0	27.0 l	246 mm	645.0 mm	15.5 bar	M22x1.5	
950 530 002 0	30.0 l	246 mm	709.0 mm	15.5 bar	M22x1.5	
950 530 903 0*	30.0 l	246 mm	729.5 mm	12.5 bar	M22x1.5	
950 540 001 0	40.0 l	246 mm	927.0 mm	15.5 bar	M22x1.5	
950 560 002 0	60.0 l	246 mm	1365.0 mm	15.5 bar	M22x1.5	
950 620 005 0	20.0 l	246 mm	503.0 mm	15.5 bar	M22x1.5	
950 620 006 0	20.0 l	246 mm	487.0 mm	15.5 bar	M22x1.5	
950 630 002 0	30.0 l	246 mm	708.0 mm	12.5 bar	½"-14 NPSI	
950 630 005 0	30.0 l	246 mm	718.0 mm	15.5 bar	M22x1.5	
950 630 006 0	30.0 l	246 mm	718.0 mm	15.5 bar	M22x1.5	
950 720 005 0	20.0 l	276 mm	414.0 mm	14.5 bar	M22x1.5	
950 722 002 0	22.0 l	276 mm	452.0 mm	14.5 bar	M22x1.5	
950 730 006 0	30.0 l	276 mm	590.5 mm	14.5 bar	M22x1.5	
950 730 007 0	30.0 l	276 mm	583.0 mm	14.5 bar	M22x1.5	
950 740 002 0	40.0 l	276 mm	758.0 mm	14.5 bar	M22x1.5	
950 740 904 0*	40.0 l	276 mm	766.0 mm	15.5 bar	M22x1.5	
950 740 906 0	40.0 l	310 mm	618.0 mm	12.5 bar	M22x1.5	
950 760 002 0	60.0 l	276 mm	1108.0 mm	14.5 bar	M22x1.5	
950 820 001 0	20.0 l	300 mm	381.0 mm	12.5 bar	M22x1.5	
950 830 004 0	30.0 l	300 mm	528.0 mm	12.5 bar	M22x1.5	
950 836 001 0	36.0 l	300 mm	603.0 mm	12.5 bar	M22x1.5	

Product number	Capacity	Ø	Length	Working pressure	Port	
					Thread	Number
950 845 001 0	45.0 l	300 mm	743.0 mm	12.5 bar	M22x1.5	
950 845 002 0	45.0 l	300 mm	743.0 mm	12.5 bar	M22x1.5	
950 860 004 0	60.0 l	300 mm	942.0 mm	12.5 bar	M22x1.5	
950 960 002 0*	60.0 l	310 mm	902.0 mm	11.0 bar	M22x1.5	
951 002 133 0	4.0 l	206 mm	192.0 mm	12.5 bar	M22x1.5	
951 002 157 0	4.25 l	206 mm	192.0 mm	15.5 bar	M22x1.5	
951 002 158 0	4.0 l	154 mm	278.0 mm	15.5 bar	M22x1.5	
951 005 010 0**	1.0 l	102 mm	170.0 mm	15.5 bar	M22x1.5	

## Clamp band

- Colour black
- Wrench size 19 mm
- Mounting 2x Ø 11.0 mm



Version 1-part



Version 2-parts

Product number	Version	Distance between holes	Length	Nominal Ø
451 999 206 2	1-part	124 mm	225 mm	206 mm
451 999 246 2	1-part	164 mm	265 mm	246 mm
451 999 276 2	1-part	194 mm	295 mm	276 mm
451 999 310 2	1-part	229 mm	330 mm	310 mm
451 999 396 2	1-part	309 mm	410 mm	396 mm
950 001 351 2	2-parts	262 mm	410 mm	396 mm
950 405 351 2	2-parts	77 mm	225 mm	206 mm
950 515 351 2	2-parts	117 mm	265 mm	246 mm
950 720 351 2	2-parts	147 mm	295 mm	276 mm
950 949 351 2	2-parts	182 mm	330 mm	310 mm

## Drain valve

### Drain valve - manually operated

- Working pressure 20.0 bar (434 300 009 0: 12.5 bar)
- Temperature -40 ... +80 °C (934 300 041 / 042 0: -40 ... +100 °C)



Product number	Ring	Port	Sealing	Wrench size
434 300 009 0	✓	Male M22x1.5	✓	27 mm
934 300 001 0	-	Male M22x1.5	-	27 mm
934 300 002 0	-	Male G½"	✓	28 mm

# AIR STORAGE

Product number	Ring	Port	Sealing	Wrench size
934 300 003 0	✓	Male M22x1.5	–	27 mm
934 300 005 0	✓	Male M22x1.5	–	27 mm
934 300 006 0	✓	Male ½"-14 PTF-SAE short	–	22 mm
934 300 007 0	✓	Male ½"-14 PTF-SAE short	–	22 mm
934 300 009 0	✓	Male M22x1.5	–	27 mm
934 300 016 0	–	Male M22x1.5	–	27 mm
934 300 023 0	✓	Male 2x ½"-14 PTF-SAE short	–	27 mm
934 300 024 0	✓	Male ½"-14 PTF-SAE short	–	27 mm
934 300 025 0	✓	Male M22x1.5	–	27 mm
934 300 038 0	✓	Male M22x1.5	✓	28 mm
934 300 041 0	✓	Male 2x M22x1.5	–	27 mm
934 300 042 0	✓	Male 2x M22x1.5	–	27 mm

## Drain valve - automatic with control port

- Working pressure 10.0 bar
- Temperature –40 ... +80 °C

Product number	Port	Sealing
434 300 000 0	Female 2x M12x1.5	–
434 300 003 0	Female 2x M12x1.5	–



## Repair solutions

Product number	Repair kit	Content
■ 434 300 000 0	434 300 000 2	Piston
■ 434 300 003 0	434 300 000 2	Piston

## Drain valve - automatic

- Temperature –30 ... +80 °C
- Port Male M22x1.5
- Wrench size 27 mm

Product number	Working pressure	Drain function
934 301 000 0	20.0 bar	$\Delta p < 0.4$ bar
934 301 003 0	20.0 bar	$0.3 < \Delta p < 0.7$ bar
934 301 005 0	10.0 bar	$\Delta p > 0.6$ bar



## Repair solutions

Product number	Repair kit	Content
■ 934 301 000 0	934 301 000 2	Diaphragm + filter
■ 934 301 003 0	934 301 000 2	Diaphragm + filter

# Conventional braking components

## Foot brake valve

### Foot brake valve (without actuation)

■ Accessory

433 801 020 0 Treadle



461 315 008 0



461 315 077 0



461 315 180 0



461 315 263 0



461 315 264 0

Product number	Max. pressure	Predominance	Temperature	Port
461 111 002 0	8.5 bar	–	–40 ... +80 °C	11, 21: M16x1.5; 3: union
461 307 439 0	8.0 bar	0.25 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: flap
461 307 458 0	8.0 bar	0.25 bar	–40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: flap
461 307 479 0	8.0 bar	0.25 bar	–40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: flap
461 315 004 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 315 008 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: union
461 315 012 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: flap
461 315 019 0	10.0 bar	0.0 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: snap-on contour
461 315 036 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: flap
461 315 038 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: flap
461 315 040 0	8.5 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: flap
461 315 042 0	10.0 bar	0.0 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 315 057 0	10.0 bar	0.3 bar	–35 ... +80 °C	11, 12: M16x1.5 + ¼"-18 NPT; 21, 22: M16x1.5; 3: union
461 315 061 0	8.5 bar	0.3 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 315 064 0	8.5 bar	0.3 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 315 065 0	8.5 bar	0.3 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 315 069 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: snap-on contour
461 315 077 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 315 082 0	10.0 bar	0.0 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: M22x1.5
461 315 086 0	10.0 bar	0.0 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: M22x1.5
461 315 100 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 315 150 0	10.0 bar	0.0 bar	–40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: union
461 315 156 0	10.0 bar	0.3 bar	–35 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 315 157 0	10.0 bar	0.3 bar	–35 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 315 162 0	10.0 bar	0.3 bar	–35 ... +80 °C	11, 12, 21, 22: ¾"-18 NPTF; 3: union
461 315 170 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12: M22x1.5 + M16x1.5; 21, 22: M22x1.5; 3: union
461 315 180 0	9.0 bar	0.0 bar	–40 ... +80 °C	11, 12, 21, 22: flange 12 mm; 3: silencer
461 315 240 0	10.0 bar	0.0 bar	–40 ... +80 °C	11, 12, 21, 22, 3: M22x1.5
461 315 245 0	10.2 bar	0.0 bar	–40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 246 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 247 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 248 0	10.0 bar	0.3 bar	–40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union



# CONVENTIONAL BRAKING COMPONENTS

Product number	Max. pressure	Predominance	Temperature	Port
461 315 250 0	10.0 bar	0.3 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 254 0	9.5 bar	0.5 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 255 0	9.5 bar	0.3 bar	-35 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 258 0	10.2 bar	0.4 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 259 0	10.0 bar	0.2 bar	-40 ... +80 °C	11, 12, 21, 22, 3: M22x1.5
461 315 261 0	10.2 bar	0.4 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 263 0	10.2 bar	0.5 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: silencer
461 315 264 0	10.2 bar	0.5 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: silencer
461 315 265 0	10.2 bar	0.5 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: silencer
461 315 267 0	10.2 bar	0.5 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: union
461 315 269 0	10.2 bar	0.5 bar	-40 ... +80 °C	1, 12, 21, 22: M22x1.5/Voss 230 NG 12; 3: silencer
461 315 459 0	10.0 bar	0.0 bar	-40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 315 479 0	10.0 bar	0.0 bar	-40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: snap-on contour
461 315 482 0	8.5 bar	0.0 bar	-40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 315 489 0	8.5 bar	0.3 bar	-40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 315 490 0	8.5 bar	0.3 bar	-40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 315 491 0	9.5 bar	0.5 bar	-40 ... +80 °C	11, 12, 21, 22: M16x1.5; 3: union
461 315 495 0	10.0 bar	0.3 bar	-40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: M22x1.5
461 315 497 0	10.0 bar	0.3 bar	-40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 315 500 0	10.0 bar	0.0 bar	-40 ... +80 °C	11, 12, 21, 22: M22x1.5; 3: snap-on contour
461 316 002 0	10.0 bar	0.0 bar	-40 ... +80 °C	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: M22x1.5
461 323 014 0	20.0 bar	-	-40 ... +80 °C	11, 12, 21, 22: 2x M20x1.5; 3: flap
884 503 124 0	10.0 bar	0.3 bar	-40 ... +80 °C	11, 12: 3/8"-18 NPTF + 1/4"-18 NPTF; 21, 22: 3/8"-18 NPTF; 3: union

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 461 111 002 0	461 106 000 2	Valve ring	■ 461 315 069 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 307 439 0	461 307 002 2	Valve ring	■ 461 315 077 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 307 479 0	461 307 002 2	Valve ring	■ 461 315 082 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 004 0	461 315 005 2 461 315 915 2	Valve Valve	■ 461 315 086 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 008 0	461 315 005 2 461 315 915 2	Valve Valve	■ 461 315 100 0	461 315 934 2	Valve
■ 461 315 012 0	461 315 916 2	Valve	■ 461 315 150 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 019 0	461 315 918 2	Valve	■ 461 315 156 0	461 315 928 2 461 315 930 2	Valve Valve
■ 461 315 036 0	461 315 915 2	Valve	■ 461 315 157 0	461 315 928 2 461 315 930 2	Valve Valve
■ 461 315 038 0	461 315 915 2	Valve	■ 461 315 180 0	461 315 907 2 461 315 924 2	Valve Valve
■ 461 315 040 0	461 315 915 2	Valve	■ 461 315 240 0	461 315 902 2 461 315 920 2	Valve Valve
■ 461 315 042 0	461 315 917 2	Valve	■ 461 315 245 0	461 315 928 2 461 315 004 2	Valve Valve
■ 461 315 061 0	461 315 906 2 461 315 923 2	Valve Valve			
■ 461 315 064 0	461 315 906 2 461 315 923 2	Valve Valve			
■ 461 315 065 0	461 315 005 2 461 315 915 2	Valve Valve			

Product number	Repair kit	Content
■ 461 315 250 0	461 315 928 2 461 315 004 2	Valve Valve
■ 461 315 254 0	461 315 928 2 461 315 004 2	Valve Valve
■ 461 315 255 0	461 315 928 2 461 315 004 2	Valve Valve
■ 461 315 258 0	461 315 902 2 461 315 920 2	Valve Valve
■ 461 315 259 0	461 315 902 2 461 315 920 2	Valve Valve
■ 461 315 261 0	461 315 908 2 461 315 925 2	Valve Valve
■ 461 315 263 0	461 315 908 2 461 315 925 2	Valve Valve
■ 461 315 264 0	461 315 927 2 461 315 914 2	Valve Valve
■ 461 315 267 0	461 315 927 2	Valve
■ 461 315 269 0	461 315 927 2	Valve

Product number	Repair kit	Content
■ 461 315 459 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 479 0	461 315 917 2	Valve
■ 461 315 482 0	461 315 916 2	Valve
■ 461 315 489 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 490 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 491 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 495 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 497 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 315 500 0	461 315 904 2	Valve
■ 461 316 002 0	461 315 005 2 461 315 915 2	Valve Valve

## Foot brake valve (with actuation)

■ Temperature –40 ... +80 °C

Accessories	Part number	Description
■	461 314 790 2	Actuation
■	461 314 791 2	Actuation
■	461 314 793 2	Actuation
■	461 317 784 2	Actuation
■	461 317 790 2	Actuation
■	433 801 020 0	Treadle



461 113 001 0



461 317 000 0



461 317 021 0



461 482 095 0



461 491 102 0



461 499 005 0

Product number	Basic valve	Actuator	Pedal angle	Max. pressure	Predominance	Port
461 106 100 0	461 106 478 0	461 314 790 2	35°	8.0 bar	–	11, 21: M22x1.5; 3: flap
461 106 102 0	461 106 478 0	461 314 790 2	35°	8.0 bar	–	11, 21: M22x1.5; 3: flap
461 106 106 0	461 106 478 0	461 314 791 2	20°	8.0 bar	–	11, 21: M22x1.5; 3: flap
461 113 001 0	461 111 002 0	✓	45°	8.5 bar	–	11, 21: M16x1.5; 3: union
461 307 202 0	461 307 479 0	461 314 790 2	35°	8.0 bar	0.25 bar	11, 12, 21, 22: M22x1.5; 3: flap
461 307 399 0	✓	✓	–	8.0 bar	0.25 bar	11, 12, 21, 22: M22x1.5; 3: flap
461 307 521 0	461 307 479 0	461 314 793 2	30°	8.0 bar	0.25 bar	1, 12, 21, 22: M22x1.5/Voss 230 NG 12; 3: flap
461 317 000 0	461 315 004 0	461 317 790 2	35°	10.0 bar	0.30 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 317 001 0	✓	461 317 790 2	35°	8.5 bar	0.00 bar	11, 12, 21, 22: M16x1.5; 3: silencer

# CONVENTIONAL BRAKING COMPONENTS

Product number	Basic valve	Actuator	Pedal angle	Max. pressure	Predominance	Port
461 317 002 0	✓	✓	30°	8.5 bar	0.30 bar	11, 12, 21, 22: M16×1.5; 3: snap-on contour
461 317 006 0	461 315 043 0	461 317 784 2	30°	10.0 bar	0.00 bar	11, 12, 21, 22: M16×1.5; 3: snap-on contour
461 317 008 0	461 315 004 0	✓	30°	10.0 bar	0.30 bar	11, 12: M16×1.5 + M12×1.5; 21, 22: M16×1.5; 3: union
461 317 019 0	✓	✓	45°	8.5 bar	0.30 bar	11, 12, 21, 22: M16×1.5; 3: flap
461 317 021 0	461 315 012 0	✓	45°	10.0 bar	0.30 bar	11, 12, 21, 22: M16×1.5; 3: flap
461 317 029 0	✓	✓	30°	10.0 bar	0.00 bar	11, 12, 21, 22: M16×1.5; 3: snap-on contour
461 317 050 0	✓	✓	25°	10.0 bar	0.30 bar	11, 12: M16×1.5 + M12×1.5; 21, 22: M16×1.5; 3: with fording ability
461 317 053 0	✓	✓	25°	10.0 bar	0.00 bar	11, 12: M16×1.5 + M12×1.5; 21, 22: M16×1.5; 3: silencer
461 317 054 0	✓	✓	25°	10.0 bar	0.30 bar	11, 12: M16×1.5 + M12×1.5; 21, 22: M16×1.5; 3: silencer
461 482 011 0	✓	✓	–	10.0 bar	0.20 bar	11, 12, 21, 22: M16×1.5; 3: snap-on contour
461 482 095 0	✓	✓	–	10.0 bar	0.30 bar	11, 12, 21, 22: M16×1.5; 3: flap
461 491 102 0	461 307 479 0	✓	–	8.0 bar	0.25 bar	11, 12, 21, 22: M22×1.5; 3: flap
461 499 005 0	✓	✓	–	7.5 bar	0.25 bar	11, 12, 21, 22: M22×1.5; 3: flap
961 317 000 0	✓	✓	40°	9.5 bar	0.20 bar	11, 12, 21, 22: ¾" NPTF; 3: union

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 461 106 100 0	461 106 000 2 461 318 924 2	Valve ring Pedal mounting piece	■ 461 317 008 0	461 318 920 2 461 318 924 2	Pedal cover Pedal mounting piece
■ 461 106 102 0	461 106 000 2	Valve ring	■ 461 317 021 0	461 318 924 2	Pedal mounting piece
■ 461 106 106 0	461 106 000 2	Valve ring	■ 461 317 050 0	461 318 920 2 461 318 924 2 461 315 005 2 461 315 915 2	Pedal cover Pedal mounting piece Valve Valve
■ 461 113 001 0	461 318 920 2 461 318 924 2 461 111 000 2	Pedal cover Pedal mounting piece Valve	■ 461 317 053 0	461 318 920 2 461 318 924 2 461 315 915 2	Pedal cover Pedal mounting piece Valve
■ 461 307 202 0	461 307 002 2	Valve ring	■ 461 317 054 0	461 318 920 2 461 318 924 2 461 315 005 2 461 315 915 2	Pedal cover Pedal mounting piece Valve Valve
■ 461 307 399 0	461 307 002 2	Valve ring	■ 461 482 011 0	461 315 917 2	Valve
■ 461 317 000 0	461 315 005 2 461 315 915 2	Valve Valve	■ 461 482 095 0	461 315 005 2 461 315 915 2	Valve Valve
■ 461 317 001 0	461 318 920 2	Pedal cover	■ 461 491 102 0	461 307 002 2	Valve ring
■ 461 317 002 0	461 315 005 2 461 315 915 2	Valve Valve	■ 461 499 005 0	461 499 000 2	Actuation boot
■ 461 317 006 0	461 318 920 2 461 318 924 2 461 315 917 2	Pedal cover Pedal mounting piece Valve			

## Foot brake valve with empty load function (461 319 ... 0)

■ Temperature      -40 ... +80 °C



461 319 250 0



461 319 264 0



461 319 273 0



461 319 274 0

Product number	Max. pressure	Predominance	Port
461 319 008 0	8.5 bar	0.3 bar	1, 12, 21, 22: M16x1.5; 3: union
461 319 011 0	10.0 bar	0.3 bar	1, 12, 21, 22: M16x1.5; 3: silencer
461 319 018 0	10.0 bar	0.3 bar	1, 12, 21, 22: M16x1.5; 3: union
461 319 082 0	8.5 bar	0.0 bar	1, 12, 21, 22: M16x1.5; 3: M22x1.5 JED-463
461 319 088 0	8.5 bar	0.3 bar	1, 12, 21, 22: M16x1.5; 3: M22x1.5 JED-463
461 319 090 0	8.5 bar	0.0 bar	1, 12, 21, 22: M16x1.5; 3: union
461 319 250 0	10.0 bar	0.4 bar	1, 12, 21, 22: M22x1.5; 3: union
461 319 260 0	10.0 bar	0.4 bar	1, 12, 21, 22: M22x1.5; 3: union
461 319 262 0	10.2 bar	0.3 bar	1, 12, 21, 22: M22x1.5; 3: union
461 319 263 0	10.2 bar	0.3 bar	1, 12, 21, 22: M22x1.5; 3: silencer
461 319 264 0	10.2 bar	0.3 bar	1, 12, 21, 22: M22x1.5; 3: silencer
461 319 270 0	10.0 bar	0.3 bar	1, 12, 21, 22: M22x1.5; 3: union
461 319 271 0	10.0 bar	0.4 bar	1, 12, 21, 22: M22x1.5; 3: union
461 319 272 0	10.2 bar	0.5 bar	1, 12, 21, 22: M22x1.5; 3: union
461 319 273 0	10.2 bar	0.5 bar	1, 12, 21, 22: M22x1.5; 3: silencer
461 319 274 0	10.2 bar	0.5 bar	1, 12, 21, 22: M22x1.5; 3: silencer

### Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 461 319 008 0	461 319 007 2	Valve	■ 461 319 264 0	461 319 900 2	Valve
	461 319 908 2	Valve		461 319 911 2	Valve
■ 461 319 018 0	461 319 007 2	Valve	■ 461 319 270 0	461 319 002 2	Valve
	461 319 908 2	Valve		461 319 903 2	Valve
■ 461 319 082 0	461 319 005 2	Valve	■ 461 319 271 0	461 319 006 2	Valve
■ 461 319 088 0	461 319 005 2	Valve		461 319 907 2	Valve
■ 461 319 090 0	461 319 005 2	Valve	■ 461 319 272 0	461 319 009 2	Valve
■ 461 319 250 0	461 319 004 2	Valve		461 319 910 2	Valve
	461 319 905 2	Valve	■ 461 319 273 0	461 315 930 2	Valve
■ 461 319 260 0	461 319 002 2	Valve		461 319 901 2	Valve
	461 319 903 2	Valve		461 319 912 2	Valve
■ 461 319 262 0	461 319 008 2	Valve	■ 461 319 274 0	461 315 930 2	Valve
	■ 461 319 263 0	461 319 900 2		Valve	461 319 901 2
461 319 911 2		Valve		461 319 912 2	Valve

# CONVENTIONAL BRAKING COMPONENTS

## Foot brake valve with retarder control

■ Temperature -40 ... +80 °C



461 318 026 0



461 318 059 0



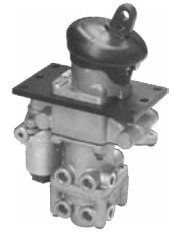
461 318 604 0



461 318 609 0



461 324 520 0



461 478 000 0

Product number	Basic valve	Actuator	Pedal angle	Max. pressure	Predominance	Port
461 310 550 0	✓	✓	20°	8.0 bar	0.25 bar	11, 12, 21, 22, 3: M22x1.5
461 318 000 0	✓	✓	20°	10.0 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 001 0	✓	✓	20°	8.5 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 002 0	✓	✓	20°	10.0 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 318 003 0	461 315 086 0	461 904 798 2	25°	10.0 bar	0.0 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: M22x1.5
461 318 005 0	461 315 479 0	461 318 798 2	30°	10.0 bar	0.0 bar	11, 12, 21, 22: M16x1.5; 3: snap-on contour
461 318 006 0	✓	✓	35°	10.0 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: M22x1.5
461 318 009 0	461 315 482 0	✓	25°	8.5 bar	0.0 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 014 0	✓	✓	25°	8.5 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 019 0	✓	✓	25°	10.0 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: flap
461 318 022 0	✓	461 318 798 2	30°	8.5 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 025 0	461 315 459 0	✓	20°	10.0 bar	0.0 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 026 0	✓	✓	25°	10.0 bar	0.0 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: silencer
461 318 028 0	✓	461 904 798 2	25°	10.0 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: silencer
461 318 035 0	461 315 086 0	461 904 798 2	25°	10.0 bar	0.0 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: M22x1.5
461 318 036 0	✓	✓	45°	8.5 bar	0.3 bar	11, 12, 21, 22: M16x1.5; 3: flap
461 318 040 0	✓	✓	35°	10.0 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: silencer
461 318 047 0	✓	✓	35°	8.5 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 049 0	✓	✓	45°	8	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union
461 318 050 0	✓	✓	20°	8.5 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: union 90°
461 318 051 0	✓	✓	45°	8.5 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour
461 318 053 0	✓	✓	45°	8.5 bar	0.3 bar	11, 12: M16x1.5 + M12x1.5; 21, 22: M16x1.5; 3: snap-on contour



Product number	Basic valve	Actuator	Pedal angle	Max. pressure	Predominance	Port
461 318 056 0	✓	✓	35°	8.5 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 318 057 0	✓	✓	35°	10.0 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> silencer
461 318 059 0	✓	✓	20°	10.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> union
461 318 070 0	461 315 240 0	✓	43°	10.0 bar	0.0 bar	<b>11, 12, 21, 22, 3:</b> M22x1.5
461 318 071 0	461 315 086 0	✓	43°	10.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> M22x1.5
461 318 495 0	✓	✓	25°	10.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> M22x1.5
461 318 551 0	✓	✓	43°	8.5 bar	0.3 bar	<b>11, 12, 21, 22:</b> M22x1.5; <b>3:</b> union 90°
461 318 601 0	461 315 459 0	✓	25°	10.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 318 603 0	✓	✓	43°	10.0 bar	0.0 bar	<b>11, 12, 21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 318 604 0	✓	✓	43°	10.0 bar	0.0 bar	<b>11, 12, 21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 318 605 0	461 315 459 0	✓	25°	10.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 318 606 0	✓	✓	25°	10.0 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 318 609 0	✓	✓	45°	10.0 bar	0.0 bar	<b>11, 12, 21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 318 611 0	✓	✓	30°	10.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 324 001 0	✓	461 324 790 2	20°	8.5 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> flap
461 324 006 0	✓	461 324 791 2	25°	10.0 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> flap
461 324 008 0	✓	461 324 790 2	20°	10.0 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> M22x1.5
461 324 009 0	✓	461 324 791 2	25°	10.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> M22x1.5
461 324 012 0	461 315 489 0	✓	35°	8.5 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 324 018 0	461 315 479 0	✓	30°	10.0 bar	0.0 bar	<b>11, 12, 21, 22:</b> M16x1.5; <b>13, 23:</b> M12x1.5; <b>3:</b> snap-on contour
461 324 022 0	✓	✓	20°	8.5 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> union
461 324 027 0	✓	461 324 797 2	25°	8.5 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 324 034 0	✓	461 324 791 2	25°	10.0 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> flap
461 324 039 0	✓	461 324 791 2	25°	8.0 bar	0.0 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> M22x1.5
461 324 040 0	✓	461 324 792 2	30°	8.5 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour
461 324 041 0	✓	461 324 797 2	25°	8.5 bar	0.3 bar	<b>11, 12:</b> M16x1.5 + M12x1.5; <b>13, 23:</b> M12x1.5; <b>21, 22:</b> M16x1.5; <b>3:</b> snap-on contour

# CONVENTIONAL BRAKING COMPONENTS

Product number	Basic valve	Actuator	Pedal angle	Max. pressure	Predominance	Port
461 324 042 0	461 315 479 0	✓	30°	8.5 bar	0.0 bar	<b>11, 12, 21, 22:</b> M16×1.5; <b>13:</b> 2× M12×1.5; <b>23:</b> M12×1.5; <b>3:</b> snap-on contour
461 324 043 0	✓	461 324 792 2	30°	8.5 bar	0.3 bar	<b>11, 12:</b> M16×1.5 + M12×1.5; <b>13, 23:</b> M12×1.5; <b>21, 22:</b> M16×1.5; <b>3:</b> snap-on contour
461 324 046 0	461 315 459 0	461 324 790 2	20°	10.0 bar	0.0 bar	<b>11, 12:</b> M16×1.5 + M12×1.5; <b>13, 23:</b> M12×1.5; <b>21, 22:</b> M16×1.5; <b>3:</b> snap-on contour
461 324 520 0	–	–	–	10.0 bar	–	<b>13, 23:</b> M12×1.5
461 324 522 0	–	–	–	8.5 bar	–	<b>13, 23:</b> M12×1.5
461 478 000 0	✓	✓	–	10.0 bar	0.3 bar	<b>11, 12:</b> M16×1.5 + M12×1.5; <b>13, 23:</b> M12×1.5; <b>21, 22:</b> M16×1.5; <b>3:</b> flap
461 478 007 0	✓	✓	–	8.5 bar	0.3 bar	<b>11, 12:</b> M16×1.5 + M12×1.5; <b>13, 23:</b> M12×1.5; <b>21, 22:</b> M16×1.5; <b>3:</b> flap
461 494 707 0	✓	✓	25°	12.5 bar	0.45 bar	<b>11, 12, 21, 22:</b> M16×1.5; <b>3:</b> silencer

## Repair solutions

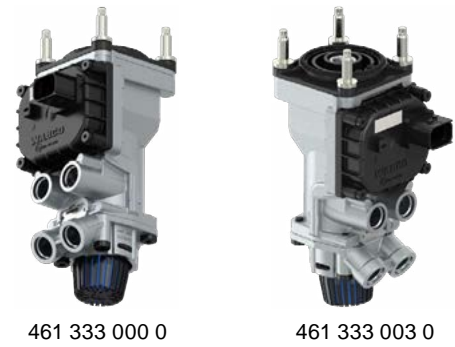
Product number	Repair kit	Content	Product number	Repair kit	Content
■ <b>461 310 550 0</b>	461 310 000 2 461 318 920 2 461 307 002 2	Pedal cover Pedal cover Valve ring	■ <b>461 318 050 0</b>	461 315 005 2 461 315 915 2	Valve Valve
■ <b>461 318 000 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 051 0</b>	461 315 005 2 461 315 915 2	Valve Valve
■ <b>461 318 001 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 053 0</b>	461 315 005 2 461 315 915 2	Valve Valve
■ <b>461 318 002 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 056 0</b>	461 315 005 2 461 315 915 2	Valve Valve
■ <b>461 318 003 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 057 0</b>	461 318 924 2 461 315 915 2	Pedal cover Valve
■ <b>461 318 005 0</b>	461 315 917 2	Valve	■ <b>461 318 070 0</b>	461 315 902 2 461 315 920 2	Valve Valve
■ <b>461 318 006 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 495 0</b>	461 318 920 2 461 315 005 2 461 315 915 2 461 318 924 2	Pedal cover Valve Valve Pedal mounting piece
■ <b>461 318 009 0</b>	461 315 916 2	Valve	■ <b>461 318 551 0</b>	461 315 904 2	Valve
■ <b>461 318 014 0</b>	461 315 916 2	Valve	■ <b>461 318 601 0</b>	461 318 924 2 461 318 925 2	Pedal mounting piece Electrical cover
■ <b>461 318 019 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 603 0</b>	461 315 005 2 461 315 915 2	Valve Valve
■ <b>461 318 022 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 604 0</b>	461 315 005 2 461 315 915 2 461 318 924 2 461 318 925 2 461 318 926 2	Valve Valve Pedal mounting piece Electrical cover Electrical switch
■ <b>461 318 025 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 605 0</b>	461 318 924 2 461 318 925 2 461 318 926 2	Pedal mounting piece Electrical cover Electrical switch
■ <b>461 318 026 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 606 0</b>	461 318 920 2 461 318 924 2 461 318 925 2	Pedal cover Pedal mounting piece Electrical cover
■ <b>461 318 028 0</b>	461 315 005 2 461 315 915 2	Valve Valve	■ <b>461 318 609 0</b>	461 318 924 2 461 318 926 2	Pedal mounting piece Electrical switch
■ <b>461 318 047 0</b>	461 315 005 2 461 315 915 2 461 318 924 2	Valve Valve Pedal mounting piece			
■ <b>461 318 049 0</b>	461 315 005 2 461 315 915 2 461 318 924 2	Valve Valve Pedal mounting piece			

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 461 318 611 0	461 318 925 2	Electrical cover	■ 461 324 034 0	461 318 920 2 461 315 005 2 461 315 915 2 461 318 924 2 461 324 000 2	Pedal cover Valve Valve Pedal mounting piece Pressure control relay valve spring
■ 461 324 001 0	461 318 920 2 461 315 005 2 461 315 915 2 461 318 924 2 461 324 000 2	Pedal cover Valve Valve Pedal mounting piece Pressure control relay valve spring	■ 461 324 039 0	461 318 920 2 461 315 916 2 461 318 924 2 461 324 000 2	Pedal cover Valve Pedal mounting piece Pressure control relay valve spring
■ 461 324 006 0	461 318 920 2 461 315 005 2 461 315 915 2 461 318 924 2 461 324 000 2	Pedal cover Valve Valve Pedal mounting piece Pressure control relay valve spring	■ 461 324 040 0	461 318 920 2 461 315 005 2 461 315 915 2 461 318 924 2 461 324 000 2	Pedal cover Valve Valve Pedal mounting piece Pressure control relay valve spring
■ 461 324 008 0	461 318 920 2 461 318 924 2 461 324 000 2	Pedal cover Pedal mounting piece Pressure control relay valve spring	■ 461 324 041 0	461 318 920 2 461 318 924 2	Pedal cover Pedal mounting piece
■ 461 324 009 0	461 318 920 2 461 315 005 2 461 315 915 2 461 318 924 2 461 324 000 2	Pedal cover Valve Valve Pedal mounting piece Pressure control relay valve spring	■ 461 324 042 0	461 318 920 2 461 318 924 2	Pedal cover Pedal mounting piece
■ 461 324 012 0	461 318 920 2 461 315 005 2 461 315 915 2 461 324 000 2	Pedal cover Valve Valve Pressure control relay valve spring	■ 461 324 043 0	461 318 920 2 461 318 924 2	Pedal cover Pedal mounting piece
■ 461 324 018 0	461 318 920 2 461 315 917 2 461 318 924 2 461 324 000 2	Pedal cover Valve Pedal mounting piece Pressure control relay valve spring	■ 461 324 046 0	461 318 920 2 461 315 005 2 461 315 915 2 461 318 924 2 461 324 000 2	Pedal cover Valve Valve Pedal mounting piece Pressure control relay valve spring
■ 461 324 022 0	461 315 005 2 461 315 915 2 461 324 000 2	Valve Valve Pressure control relay valve spring	■ 461 324 520 0	461 324 000 2	Pressure control relay valve spring
■ 461 324 027 0	461 318 920 2 461 315 916 2 461 318 924 2 461 324 000 2	Pedal cover Valve Pedal mounting piece Pressure control relay valve spring	■ 461 324 522 0	461 324 000 2	Pressure control relay valve spring
			■ 461 478 000 0	461 315 005 2 461 315 915 2 461 324 000 2	Valve Valve Pressure control relay valve spring
			■ 461 478 007 0	461 315 005 2 461 315 915 2 461 324 000 2	Valve Valve Pressure control relay valve spring
			■ 461 494 707 0	461 318 925 2	Electrical cover



## Foot brake valve digital (461 333 ... 0)

■ Temperature −40 ... +80 °C



461 333 000 0

461 333 003 0

Product number	Max. pressure	Predominance	Port
461 333 000 0	12.5 bar	0.3 bar	11, 12, 21, 22: M16×1.5; 3: silencer
461 333 003 0*	12.5 bar	0.3 bar	11, 12, 21, 22: M16×1.5; 3: silencer

\* different Electronic Control Unit (ECU) compared to 461 333 000 0

## Relay valve

### Relay valve - simple (973 00... 0)

■ Temperature −40 ... +80 °C

■ Accessories 432 407 070 0 Silencer (port JED-463)  
432 407 060 0 Silencer (port M22×1.5)



973 001 020 0



973 006 001 0



973 006 003 0

Product number	Max. pressure			Port
	Control	Supply	Response	
973 001 010 0	10.0 bar	22.0 bar	0.3 bar	1, 4: M22×1.5; 2: 2× M22×1.5; 3: exhaust
973 001 013 0	8.0 bar	22.0 bar	0.3 bar	1, 3, 4: M22×1.5; 2: 2× M22×1.5
973 001 018 0	10.0 bar	22.0 bar	0.3 bar	1, 4: M22×1.5; 2: 2× M22×1.5; 3: JED-463
973 001 020 0	8.0 bar	22.0 bar	0.3 bar	1: M22×1.5; 2: 2× M16×1.5; 3: exhaust; 4: M16×1.5
973 001 030 0	8.0 bar	22.0 bar	0.3 bar	1, 4: M22×1.5; 2: 2× M22×1.5; 3: exhaust
973 001 031 0	8.0 bar	22.0 bar	0.3 bar	1, 4: M22×1.5; 2: 2× M22×1.5; 3: exhaust
973 001 210 0	10.0 bar	22.0 bar	0.2 bar	1, 4: M22×1.5; 2: 2× M22×1.5; 3: exhaust
973 001 221 0	10.0 bar	22.0 bar	0.3 bar	1, 3: M22×1.5; 2: 2× M16×1.5; 4: M16×1.5
973 006 001 0	10.0 bar	10.0 bar	0.2 bar	1: M22×1.5 JED-388; 2: 2× M22×1.5 JED-388; 3: JED-463; 4: M16×1.5 JED-388
973 006 003 0	8.5 bar	8.5 bar	0.9 bar	1: V22×1.5 JED-388-2; 2: 2× V22×1.5 JED-388-2; 3: silencer 432 407 027 2; 4: M16×1.5 JED-388

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 973 001 010 0	973 001 000 2	Valve ring	■ 973 001 210 0	973 001 002 2	Valve ring
■ 973 001 020 0	973 001 000 2	Valve ring	■ 973 001 221 0	973 001 006 2	Valve ring



# CONVENTIONAL BRAKING COMPONENTS

## Relay valve - simple (973 011 ... 0)

- **Temperature** -40 ... +80 °C
- **Accessories** 432 407 070 0 Silencer (port JED-463)  
432 407 060 0 Silencer (port M22x1.5)



973 011 000 0



973 011 004 0



973 011 050 0

Product number	Max. pressure			Port
	Control	Supply	Response	
973 011 000 0	10.0 bar	13.0 bar	0.20 bar	1: M22x1.5; 2: 2x M22x1.5; 3: JED-463; 4: M16x1.5
973 011 001 0	10.0 bar	13.0 bar	0.20 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
973 011 002 0	10.0 bar	13.0 bar	0.20 bar	1, 3: M22x1.5; 2: 2x M22x1.5; 4: M16x1.5
973 011 004 0	10.0 bar	13.0 bar	0.20 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 4: M16x1.5 JED-388
973 011 006 0	10.0 bar	13.0 bar	0.28 bar	1: 3/4"-14 NPTF; 2: 4x 3/8"-18 NPTF; 3: exhaust; 4: 1/4"-18 NPTF
973 011 007 0	10.2 bar	13.0 bar	0.20 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: exhaust; 4: M16x1.5 JED-388
973 011 008 0	10.0 bar	13.0 bar	0.20 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 4: M16x1.5 JED-388
973 011 009 0	10.0 bar	13.0 bar	0.50 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 4: M16x1.5 JED-388
973 011 010 0	10.0 bar	13.0 bar	0.38 bar	1, 3: M22x1.5; 2: 2x M22x1.5; 4: M16x1.5
973 011 011 0	10.0 bar	13.0 bar	0.20 bar	1: M22x1.5; 2: 2x M22x1.5; 3: JED-463; 4: M16x1.5
973 011 018 0	10.0 bar	13.0 bar	0.20 bar	1, 4: M22x1.5; 2: 2x M22x1.5; 3: exhaust
973 011 021 0	10.0 bar	13.0 bar	0.28 bar	1: 1/2"-14 NPTF; 2: 3/8"-18 NPTF; 3: exhaust; 4: 1/4"-18 NPTF
973 011 024 0	10.0 bar	13.0 bar	0.38 bar	1: 1/2"-14 NPTF; 2: 2x 3/8"-18 NPTF; 3: exhaust; 4: 1/4"-18 NPTF
973 011 025 0	10.0 bar	13.0 bar	0.28 bar	1: Ø 24 mm; 2: 3/8"-18 NPTF; 3: exhaust; 4: Ø 14.5 mm
973 011 026 0	10.0 bar	13.0 bar	0.38 bar	1: Ø 24 mm; 2: 3/8"-18 NPTF; 3: exhaust; 4: Ø 14.5 mm
973 011 050 0	10.0 bar	13.0 bar	0.20 bar	1: M22x1.5 JED-152; 21: 2x M16x1.5 JED-152; 22, 4: M16x1.5 JED-152; 3: M22x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 973 011 000 0	973 011 000 2	Valve	■ 973 011 011 0	973 011 000 2	Valve
	973 011 003 2	Valve	■ 973 011 021 0	973 011 000 2	Valve
■ 973 011 001 0	973 011 000 2	Valve	■ 973 011 024 0	973 011 000 2	Valve
■ 973 011 002 0	973 011 000 2	Valve	■ 973 011 025 0	973 011 000 2	Valve
	973 011 003 2	Valve	■ 973 011 026 0	973 011 000 2	Valve
■ 973 011 004 0	973 011 000 2	Valve	■ 973 011 050 0	973 011 002 2	Valve
■ 973 011 008 0	973 011 000 2	Valve			
■ 973 011 009 0	973 011 000 2	Valve			
■ 973 011 010 0	472 195 926 2	Valve + filter			

## Relay valve - simple (with predominance)

- **Temperature**            –40 ... +80 °C
- **Predominance**       adjustable
- **Accessories**        432 407 070 0   Silencer (port JED-463)  
                              432 407 060 0   Silencer (port M22x1.5)



973 003 007 0

Product number	Predominance	Max. pressure			Port
		Control	Supply	Response	
973 003 000 0	1.0 bar	12.0 bar	12.0 bar	0.3 bar	1, 41: M22x1.5; 2: 2x M22x1.5; 3: exhaust
973 003 002 0	0.0 bar	10.0 bar	10.0 bar	0.3 bar	1, 3, 41: M22x1.5; 2: 2x M22x1.5
973 003 006 0	0.5 bar	10.0 bar	10.0 bar	0.3 bar	1: M22x1.5 JED-464; 2: 2x M22x1.5 JED-464; 3: silencer 432 407 050 0; 41: M22x1.5 JED-464
973 003 007 0	0.5 bar	10.0 bar	10.0 bar	0.3 bar	1, 2, 3, 41: M22x1.5
973 003 008 0	0.0 bar	10.0 bar	10.0 bar	0.3 bar	1: M22x1.5 JED-464; 2: 2x M22x1.5 JED-464; 3: silencer 432 407 050 0; 41: M22x1.5 JED-464
973 003 010 0	0.4 bar	11.0 bar	13.0 bar	0.3 bar	1: M22x1.5 JED-388-3; 2: 2x M22x1.5 JED-388-3; 3: silencer 432 407 560 2; 41: M22x1.5
973 003 012 0	0.0 bar	11.0 bar	13.0 bar	1.0 bar	1: M22x1.5 JED-388-3; 2: 2x M22x1.5 JED-388-3; 3: silencer 432 407 560 2; 41: M22x1.5

## Overload protection relay valve

- **Temperature**            –40 ... +80 °C
- **Accessories**        432 407 070 0   Silencer (port JED-463)  
                              432 407 060 0   Silencer (port M22x1.5)



473 017 001 0



973 011 200 0



973 011 201 0



973 011 205 0



973 011 206 0

Product number	Max. pressure			Port
	Supply	Control	Response	
473 017 000 0	10.0 bar	10.0 bar	0.4 bar	1, 41, 42: M22x1.5; 2: 2x M22x1.5; 3: exhaust
473 017 001 0	10.0 bar	10.0 bar	0.4 bar	1, 3, 41, 42: M22x1.5; 2: 2x M22x1.5
973 011 200 0	13.0 bar	10.0 bar	0.2 ... 0.3 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 41, 42: M16x1.5 JED-388
973 011 201 0	12.0 bar	10.0 bar	0.2 ... 0.3 bar	1: M22x1.5; 21: 2x M16x1.5; 22, 41, 42: M16x1.5; 3: JED-463
973 011 203 0	10.0 bar	10.0 bar	0.2 ... 0.3 bar	1: M22x1.5 JED-152; 2: 2x M22x1.5 JED-152; 3: JED-463; 41, 42: M16x1.5 JED-152
973 011 205 0	13.0 bar	10.0 bar	0.2 ... 0.3 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 41, 42: M16x1.5 JED-388
973 011 206 0	13.0 bar	10.0 bar	0.2 ... 0.3 bar	1: M22x1.5 JED-388; 21: 2x M22x1.5 JED-388; 22, 41, 42: M16x1.5 JED-388; 3: silencer 432 407 050 0

# CONVENTIONAL BRAKING COMPONENTS

Product number	Max. pressure			Port
	Supply	Control	Response	
973 011 250 0	13.0 bar	10.0 bar	0.2 ... 0.6 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 41, 42: M16x1.5 JED-388

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 473 017 000 0	473 017 000 2	Valve ring	■ 973 011 203 0	973 011 000 2	Valve
■ 473 017 001 0	473 017 000 2	Valve ring	■ 973 011 205 0	973 011 000 2	Valve
■ 973 011 200 0	973 011 000 2	Valve	■ 973 011 206 0	973 011 006 2	Valve
■ 973 011 201 0	973 011 000 2	Valve	■ 973 011 250 0	973 011 007 2	Valve

## Empty-load relay valve

- Temperature      -40 ... +80 °C
- Accessory        432 407 050 0    Silencer



973 011 109 0

Product number	Max. regulating ratio	Max. pressure			Port
		Supply	Control	Response	
973 011 106 0	1:1.5	13.0 bar	10.0 bar	0.25 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 41, 42: M16x1.5 JED-388
973 011 107 0	1:2.7	13.0 bar	10.0 bar	0.25 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 41, 42: M16x1.5 JED-388
973 011 109 0	1:1.5	13.0 bar	10.0 bar	0.50 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 41, 42: M16x1.5 JED-388
973 011 110 0	1:2.7	13.0 bar	10.0 bar	0.50 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer 432 407 050 0; 41, 42: M16x1.5 JED-388

## Repair solutions

Product number	Repair kit	Content
■ 973 011 106 0	973 011 001 2	Valve
■ 973 011 107 0	973 011 001 2	Valve
■ 973 011 109 0	973 011 001 2	Valve
■ 973 011 110 0	973 011 001 2	Valve



973 011 300 0

## Relay valve - special

- Temperature -40 ... +80 °C

Product number	Max. pressure			Port
	Supply	Control	Response	
973 011 300 0	13.0 bar	11.0 bar	0.0 ... 2.3 bar	1, 12: M22x1.5 JED-388-0, 2: 2x M22x1.5 JED-388-0; 3: exhaust; 4: M16x1.5 JED-388-0

## Repair solutions

Product number	Repair kit	Content
■ 973 011 300 0	973 011 005 2	Valve

## Pressure limiting valve

### Pressure limiting valve (475 010 ... 0)



475 010 006 0



475 010 333 0



475 010 400 0

Product number	Pressure		Temperature	Port
	Max. working	Delivered		
475 010 000 0	20 bar	7.0 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 001 0	20 bar	5.3 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 002 0	20 bar	1.8 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 006 0	20 bar	8.0 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 008 0	20 bar	3.0 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 009 0	20 bar	7.5 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 010 0	20 bar	4.0 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 011 0	20 bar	3.5 bar at p1 = 8.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 012 0	20 bar	5.5 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 015 0	20 bar	7.3 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 016 0	20 bar	1.2 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 017 0	20 bar	0.45 bar at p1 = 9.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 025 0	20 bar	4.0 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 032 0	20 bar	8.5 bar at p1 = 12.5 bar	-40 ... +80 °C	1, 2: M22x1.5
475 010 200 0	20 bar	8.0 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M22x1.5

# CONVENTIONAL BRAKING COMPONENTS

Product number	Pressure		Temperature	Port
	Max. working	Delivered		
475 010 201 0	20 bar	10.0 bar at p1 = 12.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 300 0	20 bar	8.5 bar at p1 = 10 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 301 0	20 bar	10.0 bar at p1 = 12.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 302 0	20 bar	5.3 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 303 0	20 bar	1.8 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 304 0	20 bar	7.5 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 305 0	20 bar	6.0 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 306 0	20 bar	5.0 bar at p1 = 9.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 307 0	20 bar	1.8 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 308 0	20 bar	7.8 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 309 0	20 bar	5.7 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 310 0	20 bar	4.0 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 311 0	20 bar	3.5 bar at p1 = 8.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 312 0	20 bar	5.5 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 313 0	20 bar	3.3 bar at p1 = 7.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 314 0	20 bar	7.0 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 317 0	20 bar	6.5 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 318 0	20 bar	8.0 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 322 0	20 bar	4.2 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 324 0	20 bar	1.4 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-152
475 010 325 0	20 bar	3.5 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 328 0	20 bar	2.5 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 330 0	20 bar	6.5 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 332 0	20 bar	3.5 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 333 0	20 bar	9.3 bar at p1 = 12.5 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 335 0	20 bar	8.5 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M22x1.5 JED-388
475 010 400 0	20 bar	8.0 bar at p1 = 9.8 bar	-40 ... +80 °C	1.1, 1.2, 2.1, 2.2, 2.3: M22x1.5 JED-388

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 475 010 000 0	475 010 000 2	Valve	■ 475 010 201 0	475 010 001 2 475 010 002 2	Valve Valve
■ 475 010 001 0	475 010 000 2	Valve	■ 475 010 300 0	475 010 001 2	Valve
■ 475 010 002 0	475 010 000 2	Valve	■ 475 010 301 0	475 010 001 2	Valve
■ 475 010 006 0	475 010 000 2	Valve	■ 475 010 302 0	475 010 001 2	Valve
■ 475 010 008 0	475 010 000 2	Valve	■ 475 010 303 0	475 010 001 2	Valve
■ 475 010 009 0	475 010 000 2	Valve	■ 475 010 304 0	475 010 001 2	Valve
■ 475 010 010 0	475 010 000 2	Valve	■ 475 010 305 0	475 010 001 2	Valve
■ 475 010 011 0	475 010 000 2	Valve	■ 475 010 306 0	475 010 001 2	Valve
■ 475 010 012 0	475 010 000 2	Valve	■ 475 010 307 0	475 010 001 2	Valve
■ 475 010 015 0	475 010 000 2	Valve	■ 475 010 308 0	475 010 001 2	Valve
■ 475 010 016 0	475 010 000 2	Valve	■ 475 010 309 0	475 010 001 2	Valve
■ 475 010 017 0	475 010 000 2	Valve	■ 475 010 310 0	475 010 001 2	Valve
■ 475 010 025 0	475 010 000 2	Valve	■ 475 010 311 0	475 010 001 2	Valve
■ 475 010 032 0	475 010 000 2	Valve	■ 475 010 312 0	475 010 001 2	Valve
■ 475 010 200 0	475 010 001 2 475 010 002 2	Valve Valve	■ 475 010 313 0	475 010 001 2	Valve



Product number	Repair kit	Content
■ 475 010 314 0	475 010 001 2	Valve
■ 475 010 317 0	475 010 001 2	Valve
■ 475 010 318 0	475 010 001 2	Valve
■ 475 010 322 0	475 010 001 2	Valve
■ 475 010 324 0	475 010 001 2	Valve

Product number	Repair kit	Content
■ 475 010 325 0	475 010 001 2	Valve
■ 475 010 333 0	475 010 002 2	Valve
■ 475 010 335 0	475 010 002 2	Valve
■ 475 010 400 0	475 010 002 2	Valve



475 015 063 0



475 015 512 0

## Pressure limiting valve (475 015 ... 0)

Product number	Pressure		Temperature	Port
	Max. working	Delivered		
475 015 001 0	20 bar	7.4 bar at p1 = 16.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 004 0	10 bar	3.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 005 0	20 bar	8.0 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 009 0	20 bar	5.3 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 010 0	20 bar	5.7 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 014 0	8 bar	3.0 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 015 0	20 bar	4.0 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 016 0	20 bar	7.5 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 018 0	20 bar	8.0 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 026 0	14 bar	2.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 028 0	20 bar	7.5 bar at p1 = 8.9 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-464
475 015 030 0	20 bar	6.0 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 031 0	14 bar	7.5 bar at p1 = 11.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 032 0	14 bar	11.0 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 033 0	20 bar	7.0 bar at p1 = 8.9 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-464
475 015 035 0	20 bar	8.7 bar at p1 = 12.5 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 036 0	14 bar	6.7 bar at p1 = 11.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 037 0	14 bar	9.5 bar at p1 = 11.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 039 0	14 bar	8.5 bar at p1 = 11.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 040 0	20 bar	0.45 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 048 0	20 bar	7.0 bar at p1 = 11.0 bar	-30 ... +80 °C	1, 2: M16x1.5
475 015 049 0	10 bar	4.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 057 0	20 bar	2.8 bar at p1 = 12.5 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-464
475 015 063 0	20 bar	8.5 bar at p1 = 12.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 072 0	15 bar	8.5 bar at p1 = 11.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 073 0	15 bar	7.5 bar at p1 = 10.0 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-152
475 015 300 0	20 bar	1.8 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 400 0	20 bar	4.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 500 0	20 bar	6.5 bar at p1 = 8.0 bar	-40 ... +80 °C	1, 2: M16x1.5
475 015 512 0	14 bar	5.5 bar at p1 = 8.5 bar	-40 ... +80 °C	1, 2: M16x1.5 JED-388-3

# CONVENTIONAL BRAKING COMPONENTS

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 475 015 001 0	475 015 001 2	Valve + venting guide	■ 475 015 037 0	475 015 001 2	Valve + venting guide
■ 475 015 004 0	475 015 001 2	Valve + venting guide	■ 475 015 039 0	475 015 001 2	Valve + venting guide
■ 475 015 005 0	475 015 001 2	Valve + venting guide	■ 475 015 040 0	475 015 001 2	Valve + venting guide
■ 475 015 009 0	475 015 001 2	Valve + venting guide	■ 475 015 048 0	475 015 001 2	Valve + venting guide
■ 475 015 010 0	475 015 001 2	Valve + venting guide	■ 475 015 063 0	475 015 001 2	Valve + venting guide
■ 475 015 015 0	475 015 001 2	Valve + venting guide	■ 475 015 072 0	475 015 001 2	Valve + venting guide
■ 475 015 016 0	475 015 001 2	Valve + venting guide	■ 475 015 400 0	475 015 001 2	Valve + venting guide
■ 475 015 018 0	475 015 001 2	Valve + venting guide	■ 475 015 500 0	475 015 001 2	Valve + venting guide
■ 475 015 035 0	475 015 001 2	Valve + venting guide	■ 475 015 512 0	475 015 001 2	Valve + venting guide

## Pressure limiting valve (475 019 ... 0 / 475 020 ... 0)

- Temperature -40 ... +80 °C



475 019 000 0



475 020 011 0

Product number	Pressure		Electrical connection	Port
	Max. working	Delivered		
475 019 000 0	12 bar	0.5 bar at p1 = 12.0 bar	–	1: M22×1.5 JED-388; 2: 2× M22×1.5 JED-388
475 020 006 0	13 bar	4.1 bar at p1 = 10.2 bar	DIN 72585 1A-2.1-Sn/K2	1: M22×1.5 JED-388; 2: 2× M22×1.5 JED-388
475 020 011 0	13 bar	5.0 bar at p1 = 8.5 bar	DIN 72585 1A-2.1-Sn/K2	1: M22×1.5 JED-152; 2: 2× M22×1.5 JED-152
475 020 012 0	13 bar	6.0 bar at p1 = 8.5 bar	DIN 72585 1A-2.1-Sn/K2	1: M22×1.5 JED-152; 2: 2× M22×1.5 JED-152

## Repair solutions

Product number	Repair kit	Content
■ 475 019 000 0	973 001 000 2	Valve ring

## Load sensing valve

### Load sensing valve - mechanical

- Temperature –40 ... +80 °C
- Max. pressure 10 bar
- Max. regulating ratio 1:4



475 701 001 0

Product number	Break point	Stroke		Port
		Total	Control	
475 701 001 0	–	–40° ... +40°	–40° ... +30°	1, 2: M22x1.5 JED-152
475 701 007 0	–	–40° ... +40°	–40° ... +30°	1, 2: M22x1.5 JED-152
475 701 012 0	–	–40° ... +40°	–40° ... +30°	1, 2: M22x1.5 JED-152
475 701 020 0	–	–21° ... +35°	–21° ... +13°	1, 2: M22x1.5 JED-152
475 702 020 0	0.5 bar	–21° ... +35°	–21° ... +13°	1, 2: M22x1.5 JED-152
475 702 022 0	0.5 bar	–21° ... +35°	–21° ... +13°	1, 2: M22x1.5 JED-152

### Repair solutions

Product number	Repair kit	Content
■ 475 701 001 0	475 701 009 2	Diaphragm
■ 475 701 007 0	475 701 009 2	Diaphragm
■ 475 701 012 0	475 701 009 2	Diaphragm
■ 475 701 020 0	475 701 000 2	Diaphragm
■ 475 702 020 0	475 702 001 2	Lever joint + diaphragm
■ 475 702 022 0	475 702 001 2	Lever joint + diaphragm

# CONVENTIONAL BRAKING COMPONENTS

## Load sensing valve - mechanical with integrated relay valve

■ <b>Temperature</b>	-40 ... +80 °C -45 ... +80 °C: 475 710 128 0, 475 710 129 0, 475 710 156 0	
■ <b>Max. control pressure</b>	10 bar 475 710 136 0: 10.2 bar; 475 800 301 0: 8.0 bar	
■ <b>Comment</b>	1) Operating assembly (lever) 2) Test port 3) Test port, solenoid valve (connection DIN 72585-A1-3.1-SN/K1) 4) Regulation (0 ... 7.2 bar) 5) Silencer 432 407 050 0	
■ <b>Accessories</b>	432 407 060 0	Silencer (port M22x1.5)
	432 407 070 0	Silencer (port JED-463 / snap-on contour)



475 710 128 0



475 710 136 0



475 720 003 0



884 057 811 0



884 057 812 0

Product number	Break point	Max. supply line pressure	Max. regulating ratio	Stroke		Port
				Total	Control	
475 710 000 0	0.7 bar	13 bar	1:8	-30°...+110°	0°...+60°	1, 4: M16x1.5 JED-152; 2: 2x M16x1.5 JED-152; 3: JED-463
475 710 003 0	0.6 bar	10 bar	1:8	-30°...+110°	0°...+60°	1, 4: M16x1.5; 2: 2x M16x1.5; 3: M22x1.5
475 710 006 0	0.3 bar	10 bar	1:8	-30°...+110°	0°...+60°	1: M22x1.5; 2: 2x M16x1.5; 3: M22x1.5; 4: M16x1.5
475 710 007 0	0.6 bar	10 bar	1:8	-30°...+110°	0°...+60°	1, 4: M16x1.5; 2: 2x M16x1.5; 3: M22x1.5
475 710 008 0	0.6 bar	13 bar	1:8	-30°...+110°	0°...+60°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
475 710 011 0	0.6 bar	13 bar	1:8	-30°...+110°	0°...+60°	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5
475 710 012 0	0.6 bar	13 bar	1:8	-30°...+110°	0°...+60°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
475 710 013 0	0.6 bar	10 bar	1:8	-30°...+110°	0°...+60°	1: M22x1.5; 2: 2x M16x1.5; 3, 4: JED-463
475 710 016 0	0.6 bar	13 bar	1:8	-30°...+110°	0°...+60°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
475 710 020 0	0.7 bar	13 bar	1:8	-45°...+95°	0°...+30°	1, 4: M16x1.5 JED-152; 2: M16x1.5 JED-152; 3: JED-463
475 710 021 0	0.6 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: snap-on contour; 4: M16x1.5
475 710 022 0 <sup>1)</sup>	0.5 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: snap-on contour; 4: M16x1.5
475 710 024 0	0.5 bar	12 bar	1:8	-40°...+110°	0°...+34°30'	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5
475 710 025 0	0.6 bar	12 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: snap-on contour; 4: M16x1.5
475 710 027 0 <sup>1)</sup>	0.5 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5
475 710 029 0 <sup>1)</sup>	0.5 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: snap-on contour; 4: M16x1.5
475 710 033 0 <sup>1)</sup>	0.5 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: snap-on contour; 4: M16x1.5

Product number	Break point	Max. supply line pressure	Max. regulating ratio	Stroke		Port
				Total	Control	
475 710 035 0	0.5 bar	13 bar	1:12.5	-45°...+95°	0°...+30°	1: M22x1.5 JED-464; 2: 2x M16x1.5 JED-464; 3: JED-463; 4: M16x1.5 JED-464
475 710 036 0	0.6 bar	13 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
475 710 040 0 <sup>1)</sup>	0.4 bar	10 bar	1:8	-50°...+90°	0°...+20°	1: M22x1.5; 2: 2x M16x1.5; 3: snap-on contour; 4: M16x1.5
475 710 042 0	0.6 bar	13 bar	1:8	-50°...+90°	0°...+20°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
475 710 044 0	0.5 bar	12 bar	1:8	-50°...+90°	0°...+20°	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5
475 710 108 0 <sup>1)</sup>	0.7 bar	13 bar	1:8	-30°...+110°	0°...+60°	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463
475 710 121 0	0.7 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: M22x1.5; 4: M16x1.5
475 710 122 0	0.7 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: M22x1.5; 4: M16x1.5
475 710 128 0	0.6 bar	13 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5
475 710 129 0	0.6 bar	13 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5
475 710 134 0	0.6 bar	13 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
475 710 135 0	0.6 bar	13 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4: M16x1.5 JED-388
475 710 136 0	0.6 bar	13 bar	1:8	-54°...+86°	0°...+16°	1: M22x1.5 JED-388; 2: M22x1.5 JED-388 / M16x1.5 JED-388; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-388
475 710 144 0	0.6 bar	13 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5 JED-152; 2: 2x M22x1.5 JED-152; 3: JED-463; 4: M16x1.5 JED-152
475 710 151 0	0.6 bar	10 bar	1:8	-54°...+86°	0°...+16°	1, 3: M22x1.5; 2: 2x M22x1.5; 4: M16x1.5
475 710 156 0	0.6 bar	13 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5 JED-464; 2: 2x M16x1.5 JED-464; 3: JED-463; 4: M16x1.5 JED-464
475 710 157 0	0.5 bar	10 bar	1:8	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: M22x1.5; 4: M16x1.5 JED-388
475 720 001 0 <sup>2)</sup>	0.8 bar	13 bar	1:5.3	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-388
475 720 002 0 <sup>2)</sup>	0.6 bar	13 bar	1:5.3	-30°...+110°	0°...+60°	1: M22x1.5 JED-152; 2: 2x M22x1.5 JED-152; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-152
475 720 003 0 <sup>2)</sup>	0.6 bar	13 bar	1:5.3	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-388
475 720 004 0 <sup>2)</sup>	0.6 bar	13 bar	1:5.3	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-388
475 720 005 0 <sup>2)</sup>	0.6 bar	13 bar	1:5.3	-54°...+86°	0°...+16°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>5)</sup> ; 4: Voss 232 - NG 8
475 720 006 0 <sup>2)</sup>	0.6 bar	13 bar	1:5.3	-51.5°... 88.5°	0°...+18.5°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-388
475 720 008 0 <sup>2)</sup>	0.8 bar	13 bar	1:5.3	-45°...+95°	0°...+30°	1: M22x1.5 JED-152; 2: 2x M16x1.5 JED-152; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-152
475 720 500 0 <sup>3)</sup>	0.8 bar	13 bar	1:5.3	-45°...+95°	0°...+30°	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>5)</sup> ; 4: M16x1.5 JED-388
475 722 000 0 <sup>2)</sup>	0.6 bar	13 bar	1:5.3	-30°...+110°	0°...+52°	1, 4: M16x1.5 JED-152; 2: M16x1.5 JED-152; 3: JED-463
475 800 301 0 <sup>4)</sup>	–	8 bar	1:5.3	–	-30°...+30°	1, 2: M12x1.5
884 057 811 0 <sup>1)</sup>	0.7 bar	13 bar	1:8	-45°...+105°	0°...+30°	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463
884 057 812 0	0.7 bar	13 bar	1:8	-30°...+110°	0°...+60°	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463
884 502 270 0	0.6 bar	10 bar	1:8	-30°...+110°	0°...+60°	1, 3: M22x1.5; 2: 2x M22x1.5; 4: M16x1.5

# CONVENTIONAL BRAKING COMPONENTS

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 475 710 000 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 033 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 003 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 035 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 006 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 036 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 007 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 040 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 008 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 042 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 011 0	475 710 002 2	Diaphragm	■ 475 710 044 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 012 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 121 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 013 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 122 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 016 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 128 0	475 710 002 2	Diaphragm
■ 475 710 020 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 129 0	475 710 002 2	Diaphragm
■ 475 710 021 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 134 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 022 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 135 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 024 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 136 0	475 710 002 2	Diaphragm
■ 475 710 025 0	475 710 001 2	Lever joint + diaphragm	■ 475 710 144 0	475 710 001 2	Lever joint + diaphragm
■ 475 710 027 0	475 710 001 2	Lever joint + diaphragm	■ 475 800 301 0	475 800 004 2	Sealing
■ 475 710 029 0	475 710 001 2	Lever joint + diaphragm			

## Load apportioning valve (475 604 ... 0)

■ Temperature	−40 ... +85 °C
■ Max. pressure	10 bar
■ Port	1, 2: M22x1.5
■ Mounting	Flange DIN 71501



475 604 011 0



475 604 013 0

Product number	Adjustment (pre-adjusted)				
	Empty	1/4	1/2	3/4	Fully loaded
475 604 010 0	0.8...2.2 bar (1.6 bar)	–	2.8...3.7 bar (3.7 bar)	–	Inlet pressure
475 604 011 0	1.4...2.8 bar (2.1 bar)	–	3.4...4.3 bar (4.0 bar)	–	Inlet pressure
475 604 012 0*	0.8...2.2 bar (1.6 bar)	–	2.8...3.7 bar (3.7 bar)	–	Inlet pressure
475 604 013 0*	1.4...2.8 bar (2.1 bar)	–	3.4...4.3 bar (4.0 bar)	–	Inlet pressure
475 604 041 0	1.4...2.8 bar (2.1 bar)	–	3.4...4.3 bar (4.0 bar)	–	Inlet pressure
475 604 110 0	0.7...1.2 bar (0.8 bar)	1.7±0.3	2.8...3.5 bar (2.8 bar)	4.1±0.3	Inlet pressure
475 604 112 0*	0.7...1.2 bar (0.8 bar)	1.7±0.3	2.8...3.5 bar (2.8 bar)	4.1±0.3	Inlet pressure

\* without release position

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 475 604 010 0	475 604 002 2	Valve	■ 475 604 041 0	475 604 002 2	Valve
■ 475 604 011 0	475 604 002 2	Valve	■ 475 604 110 0	475 604 002 2	Valve
■ 475 604 012 0	475 604 002 2	Valve	■ 475 604 112 0	475 604 002 2	Valve
■ 475 604 013 0	475 604 002 2	Valve			



## Load sensing valve - pneumatic

- **Temperature**            −40 ... +80 °C
- **Control medium**       Air
- **Comments**             <sup>1)</sup> Flange mounted DIN 1501  
<sup>2)</sup> Universal valve with transformation set;  
flange mounted DIN 71501  
<sup>3)</sup> Test port



475 700 126 0



475 700 220 0

Product number	Break point	Operation	Max. pressure		Max. regulating ratio	Port
			Control	Braking		
475 700 122 0 <sup>1)</sup>	0.4 bar	1.0 ... 4.6 bar	8.0 bar	10.0 bar	1:4.1 bar	1, 2: M22x1.5; 3: exhaust; 4: M12x1.5
475 700 126 0 <sup>1)</sup>	0.4 bar	0.5 ... 4.1 bar	8.0 bar	10.0 bar	1:4.1 bar	1, 2: M22x1.5; 3: exhaust; 4: M12x1.5
475 700 220 0 <sup>2)</sup>	0.4 bar	0.7 ... 4.25 bar	8.0 bar	10.0 bar	1:3.1 bar	1, 2: M22x1.5; 3: exhaust; 4: M12x1.5
475 723 000 0 <sup>3)</sup>	0.7 bar	1.0 ... 4.6 bar	10.0 bar	10.0 bar	1:5.3 bar	1/4, 22: M16x1.5 JED-152; 3: JED-463; 41: M12x1.5 JED-152
475 723 001 0 <sup>3)</sup>	0.7 bar	0.5 ... 4.1 bar	10.0 bar	10.0 bar	1:5.3 bar	1/4, 22: M16x1.5 JED-152; 3: JED-463; 41: M12x1.5 JED-152

## Load sensing valve - pneumatic with integrated relay valve

- **Temperature**            −40 ... +80 °C
- **Test connection**       **Port 43:** M16x1.5
- **Port 3**                    <sup>1)</sup> Silencer 432 407 050 0
- **Accessories**            432 407 050 0   Silencer (port bayonet)  
432 407 070 0   Silencer (port JED-463 / snap-on contour)



475 711 034 0



475 711 118 0



475 711 155 0



475 721 008 0

Product number	Break point	Operation	Max. pressure on port			Port
			1	4, 1/4	41, 42	
475 711 009 0	0.4 bar	0.5 ... 6.0 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5; 41, 42: M12x1.5
475 711 012 0	0.5 bar	0.35 ... 7.2 bar	13.0 bar	10.0 bar	13.0 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463; 41, 42: M12x1.5
475 711 022 0	0.6 bar	0.85 ... 4.9 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 024 0	0.6 bar	0.6 ... 4.3 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 025 0	0.6 bar	0.6 ... 4.3 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 026 0	0.6 bar	0.8 ... 3.5 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388

# CONVENTIONAL BRAKING COMPONENTS

Product number	Break point	Operation	Max. pressure on port			Port
			1	4, 1/4	41, 42	
475 711 030 0	0.7 bar	0.6 ... 3.5 bar	13.0 bar	10.0 bar	13.0 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: bayonet; 41, 42: M12x1.5
475 711 034 0	0.7 bar	0.4 ... 5.6 bar	12.0 bar	10.0 bar	12.5 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: snap-on contour; 41, 42: M12x1.5
475 711 037 0	1.2 bar	1.8 ... 5.4 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5; 41, 42: M12x1.5
475 711 040 0	0.8 bar	1.2 ... 4.8 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5; 41, 42: M12x1.5
475 711 042 0	0.5 bar	0.2 ... 5.5 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 051 0	0.5 bar	0.4 ... 6.6 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 052 0	0.3	0.8 ... 7.0 bar	13.0 bar	10.0 bar	13.0 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463; 41, 42: M12x1.5
475 711 060 0	0.7 bar	0.6 ... 4.9 bar	13.0 bar	10.0 bar	13.0 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463; 41, 42: M12x1.5
475 711 074 0	0.5 bar	0.5 ... 5.0 bar	13.0 bar	10.0 bar	12.0 bar	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5; 41, 42: M12x1.5
475 711 075 0	0.5 bar	0.5 ... 6.0 bar	13.0 bar	10.0 bar	12.0 bar	1: M22x1.5; 2: 2x M16x1.5; 3: JED-463; 4: M16x1.5; 41, 42: M12x1.5
475 711 076 0	1.2 bar	1.3 ... 4.3 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 087 0	0.5 bar	0.3 ... 4.0 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 089 0	0.7 bar	0.6 ... 5.5 bar	13.0 bar	10.0 bar	12.0 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463; 41, 42: M12x1.5
475 711 097 0	0.5 bar	0.45 ... 5.0 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 099 0	0.5 bar	0.35 ... 7.2 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 110 0	0.7 bar	1.4 ... 3.1 bar	13.0 bar	10.0 bar	13.0 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463; 41, 42: M12x1.5
475 711 111 0	0.5 bar	0.4 ... 3.5 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 114 0	0.8 bar	1.2 ... 4.8 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 118 0	0.6 bar	0.5 ... 3.0 bar	13.0 bar	10.2 bar	13.0 bar	1: 2x M22x1.5 JED-388; 2: 2x M16x1.5 JED-388; 3: silencer <sup>1)</sup> ; 4, 41, 42: M16x1.5 JED-388
475 711 119 0	0.6 bar	0.5 ... 4.5 bar	13.0 bar	10.2 bar	13.0 bar	1: 2x M22x1.5 JED-388; 2: 2x M16x1.5 JED-388; 3: silencer <sup>1)</sup> ; 4, 41, 42: M16x1.5 JED-388
475 711 120 0	0.7 bar	0.5 ... 5.2 bar	13.0 bar	10.0 bar	13.0 bar	1, 4: M16x1.5; 2: 2x M16x1.5; 3: JED-463; 41, 42: M12x1.5
475 711 122 0	0.4 bar	0.4 ... 8.2 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 125 0	0.5 bar	0.4 ... 5.8 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 126 0	0.5 bar	0.5 ... 5.9 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 4, 41, 42: M16x1.5 JED-388
475 711 127 0	0.5 bar	0.8 ... 8.0 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 4, 41, 42: M16x1.5 JED-388
475 711 128 0	0.5 bar	0.5 ... 4.8 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 4, 41, 42: M16x1.5 JED-388
475 711 143 0	1.4 bar	0.5 ... 6.7 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388

Product number	Break point	Operation	Max. pressure on port			Port
			1	4, 1/4	41, 42	
475 711 148 0	0.6 bar	1.2 ... 3.0 bar	13.0 bar	10.2 bar	13.0 bar	1: 2x M22x1.5 JED-388; 2: 2x M16x1.5 JED-388; 3: silencer <sup>1)</sup> ; 4, 41, 42: M16x1.5 JED-388
475 711 149 0	0.6 bar	1.2 ... 4.5 bar	13.0 bar	10.2 bar	13.0 bar	1: 2x M22x1.5 JED-388; 2: 2x M16x1.5 JED-388; 3: silencer <sup>1)</sup> ; 4, 41, 42: M16x1.5 JED-388
475 711 154 0	0.8 bar	0.5 ... 7.7 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M16x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 711 155 0	0.8 bar	0.5 ... 6.7 bar	13.0 bar	10.0 bar	13.0 bar	1: M22x1.5 JED-388; 2: 2x M16x1.5 JED-388; 3: JED-463; 4, 41, 42: M16x1.5 JED-388
475 721 000 0	0.8 bar	0.5 ... 4.7 bar	13.0 bar	10.0 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: M16x1.5 JED-388
475 721 001 0	0.6 bar	0.6 ... 5.0 bar	–	10.0 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: M16x1.5 JED-388
475 721 002 0	2.8 bar	0.4 ... 2.7 bar	13.0 bar	10.0 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: M16x1.5 JED-388
475 721 003 0	2.0 bar	0.3 ... 4.65 bar	13.0 bar	10.0 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: M16x1.5 JED-388
475 721 005 0	0.6 bar	0.5 ... 4.5 bar	13.0 bar	10.2 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: Voss 232-NG 8
475 721 006 0	0.6 bar	0.55 ... 4.1 bar	13.0 bar	10.0 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: M16x1.5 JED-388
475 721 007 0	0.6 bar	0.55 ... 3.1 bar	13.0 bar	10.0 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: M16x1.5 JED-388
475 721 008 0	0.6 bar	0.5 ... 3.0 bar	13.0 bar	10.2 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: Voss 232-NG 8
475 721 009 0	0.6 bar	0.5 ... 2.0 bar	13.0 bar	10.2 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: Voss 232-NG 8
475 721 018 0	0.6 bar	0.5 ... 3.0 bar	13.0 bar	10.2 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: Voss 232-NG 8
475 721 500 0*	0.8 bar	0.5 ... 4.7 bar	13.0 bar	10.0 bar	10.0 bar	1: M22x1.5 JED-388; 2: 2x M22x1.5 JED-388; 3: silencer <sup>1)</sup> ; 1/4, 41, 42: M16x1.5 JED-388

\* with solenoid valve (connection DIN 72585-A1-3.1-SN/K1)

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 475 711 009 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 075 0	475 711 001 2	Diaphragm + valve
■ 475 711 012 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 076 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 022 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 087 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 024 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 089 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 025 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 097 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 026 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 099 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 030 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 110 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 034 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 111 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 037 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 114 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 040 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 118 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 042 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 119 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 051 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 122 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 052 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 126 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 060 0	475 711 000 2	Lever joint + diaphragm	■ 475 711 127 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 074 0	475 711 001 2	Diaphragm + valve	■ 475 711 128 0	475 711 000 2	Lever joint + diaphragm

# CONVENTIONAL BRAKING COMPONENTS

Product number	Repair kit	Content
■ 475 711 148 0	475 711 000 2	Lever joint + diaphragm
■ 475 711 149 0	475 711 000 2	Lever joint + diaphragm

Product number	Repair kit	Content
■ 475 711 155 0	475 711 000 2	Lever joint + diaphragm

## Load sensing valve - hydraulic

■ Temperature	−40 ... +80 °C
■ Control medium	Mineral oil
■ Comments	Universal valve with transformation set; flange mounted DIN 71501



475 700 402 0

Product number	Break point	Operation	Max. pressure		Max. regulating ratio	Port
			Control	Braking		
475 700 402 0	0.4 bar	10 ... 65 bar	300 bar	10.0 bar	1:3.1 bar	1, 2: M22x1.5; 3: exhaust; 41, 42: M12x1.5

## Adapting valve

### Adapting valve (473 30 ... 0)

■ Temperature	−40 ... +80 °C
■ Max. pressure	10 bar 473 303 ... 0: 10.2 bar
■ Break point	473 303 ... 0: 1.0 bar



473 301 003 0



473 302 021 0



473 303 002 0

Product number	Opening pressure (p1)	Regulating ratio	Port
473 300 000 0	–	4:1	1: M22x1.5/M12x1.5; 2: 2x M22x1.5; 3: exhaust; 4: M12x1.5
473 300 001 0	–	3.3:1	1: M22x1.5/M12x1.5; 2: 2x M22x1.5; 3: exhaust; 4: M12x1.5
473 300 003 0	–	2:1	1: M22x1.5/M12x1.5; 2: 2x M22x1.5; 3: exhaust; 4: M12x1.5
473 300 004 0	–	1.5:1	1: M22x1.5/M12x1.5; 2: 2x M22x1.5; 3: exhaust; 4: M12x1.5
473 300 005 0	–	1.35:1	1: M22x1.5/M12x1.5; 2: 2x M22x1.5; 3: exhaust; 4: M12x1.5
473 300 006 0	–	1.15:1	1: M22x1.5/M12x1.5; 2: 2x M22x1.5; 3: exhaust; 4: M12x1.5
473 300 012 0	–	2.7:1	1: M16x1.5/M12 x1.5; 2: 2x M16x1.5; 3: exhaust; 4: M12x1.5
473 300 013 0	–	2:1	1: M16x1.5/M12 x1.5; 2: 2x M16x1.5; 3: exhaust; 4: M12x1.5
473 300 014 0	–	1.5:1	1: M16x1.5/M12 x1.5; 2: 2x M16x1.5; 3: exhaust; 4: M12x1.5
473 300 061 0	–	3.3:1	1: M16x1.5/M12 x1.5; 2: 2x M16x1.5; 3: M22x1.5; 4: M12x1.5
473 300 062 0	–	2.7:1	1: M16x1.5/M12 x1.5; 2: 2x M16x1.5; 3: M22x1.5; 4: M12x1.5
473 301 000 0	–	2:1	1: M22x1.5; 2: 2x M22x1.5; 3: exhaust
473 301 001 0	–	1.5:1	1: M22x1.5; 2: 2x M22x1.5; 3: exhaust
473 301 002 0	–	1.35:1	1, 2.1, 2.2: M22x1.5; 2: 2x M22x1.5; 3: exhaust
473 301 003 0	–	1.15:1	1: M22x1.5; 2: 2x M22x1.5; 3: exhaust
473 301 042 0	–	1.35:1	1, 3: M22x1.5; 2: 2x M22x1.5
473 301 054 0	–	1.7:1	1, 3: M22x1.5; 2: 2x M22x1.5; 4: M12x1.5
473 302 001 0	–	2:1	1, 2.1, 2.2, 4: M16x1.5; 2: 2x M16x1.5; 3: exhaust
473 302 021 0	–	2:1	1, 2.1, 2.2, 4: M16x1.5; 2: 2x M16x1.5; 3: M22x1.5
473 302 022 0	–	2.7:1	1, 2.1, 2.2, 4: M16x1.5; 2: 2x M16x1.5; 3: M22x1.5
473 303 000 0	0.3 bar	2:1	1, 2: M16x1.5 JED-388; 3: silencer

Product number	Opening pressure (p1)	Regulating ratio	Port
473 303 002 0	0.3 bar	1.5:1	1, 2: M16×1.5 JED-388; 3: silencer
473 303 003 0	0.3 bar	1.15:1	1, 2: M16×1.5 JED-388; 3: silencer
473 303 005 0	0.3 bar	1.35:1	1, 2: M16×1.5 JED-388; 3: silencer
473 303 006 0	0.3 bar	1.27:1	1, 2: M16×1.5 JED-388; 3: silencer
473 303 007 0	0.3 bar	1.21:1	1, 2: M16×1.5 JED-388; 3: silencer

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 473 301 001 0	473 301 009 2	Valve	■ 473 302 001 0	473 302 001 2	Valve
■ 473 301 002 0	473 301 009 2	Valve	■ 473 302 021 0	473 302 001 2	Valve
■ 473 301 003 0	473 301 009 2	Valve			

## Adapting valve (975 00 . . . 0)

■ Temperature	−40 ... +80 °C	
■ Max. pressure	10 bar	
■ Regulating ratio	1:1 (after break point)	
■ Adjustment	975 001 . . . 0: 0.3 ... 1.6 bar	
■ Accessory	432 407 018 0	Silencer for venting guide 973 002 222 2



975 002 017 0

Product number	Break point	Opening pressure (p1)	Port
975 001 000 0	3.2 bar	0.7 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× closed); 3: exhaust
975 001 001 0	4.6 bar	1.0 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× closed); 3: exhaust
975 001 002 0	2.3 bar	0.5 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× closed); 3: exhaust
975 001 003 0	1.8 bar	0.3 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× closed); 3: exhaust
975 001 500 0	3.2 bar	0.7 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× test connection); 3: exhaust
975 002 001 0	3.5 bar, 5.7 bar	0.5 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× closed); 3: exhaust
975 002 003 0	2.5 bar, 4.5 bar	0.4 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× closed); 3: exhaust
975 002 005 0	2.0 bar, 3.5 bar	0.5 bar	1, 2.1, 2.2: M22×1.5; 2: 3× M22×1.5 (1× closed); 3: exhaust
975 002 017 0	1.8 bar, 4.1 bar	–	1, 2.1, 2.2, 4: M16×1.5; 2: 3× M16×1.5 (1× closed); 3: exhaust
975 002 071 0	1.8 bar, 4.1 bar	–	1: M22×1.5 JED-388; 2: 2× M22×1.5 JED-388; 2.1, 2.2.: M22×1.5; 3: venting guide 973 002 222 2
975 002 072 0	1.8 bar, 4.1 bar	–	1: M22×1.5 JED-388; 2: 2× M22×1.5 JED-388; 2.1, 2.2.: M22×1.5; 3: silencer 432 407 050 0
975 002 073 0	1.6 bar, 4.1 bar	0.3 bar	1: M22×1.5 JED-388; 2: 2× M22×1.5 JED-388; 2.1, 2.2.: M22×1.5; 3: venting guide 973 002 222 2

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 975 001 000 0	975 001 000 2	Diaphragm	■ 975 001 003 0	975 001 000 2	Diaphragm
■ 975 001 001 0	975 001 000 2	Diaphragm	■ 975 001 500 0	975 001 000 2	Diaphragm
■ 975 001 002 0	975 001 000 2	Diaphragm	■ 975 002 017 0	975 002 001 2	Valve

# CONVENTIONAL BRAKING COMPONENTS

## Pressure switch

### Pressure switch - normal pressure

- **Temperature**            –40 ... +80 °C  
441 042 000 0: –25 ... +70 °C

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- **Adjusting screw**   equipped: 441 009 ... 0, 441 042 000 0

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- **Voltage**                12 / 24 V  
441 009 ... 0: max. 30 V  
441 042 000 0: 24 V



441 014 017 0



441 024 007 0

Product number	Pressure		Function	Medium	Wrench	Port
	Max. working	Switch				
441 009 001 0	10.0 bar	5.0 bar	open	Air	–	2x M22x1.5
441 009 101 0	10.0 bar	5.0 bar	closed	Air	–	2x M22x1.5
441 014 001 0	12.0 bar	2.0 bar	open	Air	24 mm	M12x1.5
441 014 002 0	12.0 bar	1.0 bar	open	Air	24 mm	M10x1 DIN 158
441 014 004 0	12.0 bar	5.5 bar	closed	Air	24 mm	M12x1.5
441 014 005 0	12.0 bar	2.0 bar	open	Air	24 mm	M10x1 DIN 158
441 014 006 0	12.0 bar	2.0 bar	closed	Air	24 mm	M12x1.5
441 014 007 0	12.0 bar	3.0 bar	open	Air	24 mm	M10x1 DIN 158
441 014 008 0	12.0 bar	4.2 bar	closed	Air	24 mm	M10x1 DIN 158
441 014 009 0	12.0 bar	4.0 bar	open	Air	24 mm	M10x1 DIN 158
441 014 010 0	12.0 bar	0.3 bar	closed	Air	24 mm	M12x1.5
441 014 012 0	12.0 bar	3.5 bar	closed	Air	24 mm	M12x1.5
441 014 013 0	12.0 bar	4.1 bar	closed	Air	24 mm	M12x1.5
441 014 014 0	12.0 bar	4.5 bar	closed	Air	24 mm	M12x1.5
441 014 015 0	12.0 bar	5.0 bar	closed	Air	24 mm	M12x1.5
441 014 017 0	12.0 bar	4.0 bar	open	Air	24 mm	M12x1.5
441 014 018 0	12.0 bar	1.2 bar	closed	Air	24 mm	M12x1.5
441 014 019 0	12.0 bar	0.15 bar	open	Air	24 mm	M12x1.5
441 014 020 0	12.0 bar	2.0 bar	closed	Air	24 mm	M10x1 DIN 158
441 014 021 0	12.0 bar	0.5 bar	open	Air	24 mm	M12x1.5
441 014 022 0	12.0 bar	6.0 bar	open	Air	24 mm	M12x1.5
441 014 023 0	12.0 bar	2.5 bar	open	Air	24 mm	M12x1.5
441 014 024 0	12.0 bar	1.0 bar	open	Air	24 mm	M12x1.5
441 014 025 0	12.0 bar	6.0 bar	closed	Air	24 mm	M12x1.5
441 014 026 0	12.0 bar	4.5 bar	open	Air	24 mm	M12x1.5
441 014 029 0	12.0 bar	5.0 bar	open	Air	24 mm	M12x1.5
441 014 032 0	12.0 bar	5.2 bar	closed	Air	24 mm	M12x1.5
441 014 040 0	12.0 bar	3.0 bar	open	Air	24 mm	M12x1.5
441 014 061 0	12.0 bar	5.7 bar	closed	Air	24 mm	M12x1.5
441 014 072 0	12.0 bar	6.6 bar	closed	Air	24 mm	M12x1.5
441 014 073 0	12.0 bar	5.5 bar	open	Air	24 mm	M12x1.5
441 014 086 0	12.0 bar	6.6 bar	closed	Air	24 mm	M12x1.5
441 014 100 0	12.0 bar	0.15 bar	open	Air	24 mm	M12x1.5 DIN 2353
441 014 101 0	12.0 bar	4.5 bar	closed	Air	24 mm	M12x1.5 DIN 2353
441 014 102 0	12.0 bar	5.5 bar	closed	Air	24 mm	M12x1.5 DIN 2353
441 014 104 0	12.0 bar	0.5 bar	open	Air	24 mm	M12x1.5 DIN 2353
441 014 105 0	12.0 bar	5.7 bar	closed	Air	24 mm	M12x1.5 DIN 2353
441 014 140 0	10.0 bar	0.3, 0.6, 1.0 bar	open	Air, Mineral oil	24 mm	M12x1.5
441 014 141 0	15.0 bar	0.3 bar	open	Air, Mineral oil	24 mm	M10x1
441 014 142 0	15.0 bar	0.6 bar	open	Air, Mineral oil	24 mm	M10x1
441 014 144 0	15.0 bar	1.0 bar	open	Air, Mineral oil	24 mm	M10x1



Product number	Pressure		Function	Medium	Wrench	Port
	Max. working	Switch				
441 014 602 0	12.0 bar	0.4 bar	open	Air	27 mm	M16×1.5
441 024 006 0	10.0 bar	5.8 bar	closed	Air, Water, Mineral oil	27 mm	M12×1.5
441 024 007 0	10.0 bar	0.6 bar	open	Air, Water, Mineral oil	27 mm	M12×1.5
441 042 000 0	15.0 bar	1.8 / 1.3 bar	closed / open	Air, Oil	27 mm	G¼"

## Pressure switch - high pressure

- Temperature      –30 ... +100 °C
- Voltage           max. 42 V
- Wrench            24 mm



441 014 055 0

Product number	Pressure		Function	Medium	Port
	Max. working	Switch			
441 014 043 0	200.0 bar	21.0 bar	closed	Air, Water, Mineral oil	M12×1.5
441 014 044 0	200.0 bar	17.0 bar	closed	Air, Water, Mineral oil	M12×1.5
441 014 049 0	200.0 bar	100.0 bar	closed	Air, Water, Mineral oil	M12×1.5
441 014 051 0	200.0 bar	37.0 bar	closed	Air, Water, Mineral oil	M12×1.5
441 014 055 0	200.0 bar	1.0 bar	open	Air, Water, Mineral oil	M12×1.5
441 014 059 0	200.0 bar	3.0 bar	closed	Air, Water, Mineral oil	M12×1.5
441 014 064 0	200.0 bar	9.0 bar	closed	Air, Water, Mineral oil	M12×1.5
441 014 070 0	200.0 bar	54 bar	open	Air, Water, Mineral oil	M12×1.5
441 014 082 0	200.0 bar	26 bar	open	Air, Water, Mineral oil	M12×1.5

## Directional control valve

### 2/2 Directional control valve (463 068 ... 0)

- Max. pressure      10.0 bar
- Port 1, 2          M16×1.5



463 068 013 0

Product number	Pressure		Nominal Ø		Temperature	Mounting
	Opening	Closing	Port 1	Port 2		
463 068 008 0	0.5 ... 1.15 bar	1.0 bar	8.0 mm	8.0 mm	–25 ... +80 °C	2x Ø 9.0 mm
463 068 013 0	1.0 ... 1.73 bar	1.5 bar	8.0 mm	3.5 mm	–31 ... +80 °C	2x Ø 10.5 mm

# CONVENTIONAL BRAKING COMPONENTS

## 3/2 Directional control valve (434 205 ... 0)

■ <b>Function</b>	Safety valve for handbrake valve (manually controlled)
■ <b>Actuation</b>	Force: 70 N (7 bar) Range: 5.0 mm
■ <b>Port</b>	2: exhausted if pressure < 4.0 bar 3: exhaust
■ <b>Mounting</b>	M26x1.5; (434 205 032 0: -)



434 205 026 0



434 205 027 0



434 205 028 0



434 205 030 0



434 205 031 0

Product number	Max. pressure	Nominal Ø	Actuation	Temperature	Port
434 205 026 0	10 bar	Ø 5.0 mm	Push (M6)	-40 ... +80 °C	1, 2: M12x1.5
434 205 027 0	10 bar	Ø 5.0 mm	Push (knob)	-40 ... +80 °C	1, 2: M14x1.5
434 205 028 0	10 bar	-	Push (M6)	-40 ... +80 °C	1, 2: M14x1.5
434 205 030 0	11 bar	Ø 5.0 mm	Push (knob)	-40 ... +80 °C	1, 2: M12x1.5
434 205 031 0	10 bar	Ø 5.0 mm	Push (M6)	-45 ... +80 °C	1, 2: M12x1.5
434 205 032 0	10 bar	-	Push (M6)	-40 ... +80 °C	1: M12x1.5, M10x1; 2: M12x1.5

### Repair solutions

Product number	Repair kit	Content
■ 434 205 026 0	434 205 001 2	Sealing ring
■ 434 205 027 0	434 205 001 2	Sealing ring
■ 434 205 028 0	434 205 001 2	Sealing ring
■ 434 205 030 0	434 205 001 2	Sealing ring
■ 434 205 031 0	434 205 001 2	Sealing ring

## 3/2 Directional control valve - manually controlled (push)

■ Type	3/2
■ Actuation	push
■ Knob	✓
■ Nominal Ø	Ø 4.0 mm; 463 012 000 0: –
■ Comment	1) with hexagon nut SW 32 2) with washer



463 012 000 0



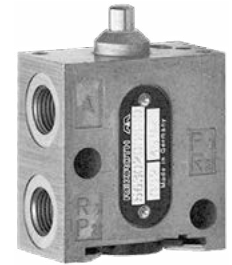
463 013 122 0



463 013 200 0



463 022 021 0



563 020 000 0

Product number	Temperature	Max. pressure	Force		Port
			Actuating	Holding	
463 012 000 0	–40 ... +80 °C	8.0 bar	–	–	1, 2: M12x1.5; 3: exhaust
463 013 012 0	–40 ... +80 °C	10.0 bar	70 N (7 bar)	52 N (7 bar)	1, 2, 3: M12x1.5
463 013 014 0	–40 ... +80 °C	10.0 bar	70 N (7 bar)	52 N (7 bar)	1, 2, 3: M12x1.5
463 013 025 0	–40 ... +80 °C	10.0 bar	70 N (7 bar)	52 N (7 bar)	1, 2, 3: M12x1.5
463 013 110 0	–40 ... +80 °C	10.0 bar	90 N (7 bar)	48 N (7 bar)	1, 2, 3: M12x1.5
463 013 111 0	–40 ... +80 °C	10.0 bar	94 N (7 bar)	50 N (7 bar)	1, 2, 3: M12x1.5
463 013 112 0	–40 ... +80 °C	10.0 bar	90 N (7 bar)	48 N (7 bar)	1, 2, 3: M12x1.5 JED 152
463 013 114 0	–40 ... +80 °C	10.0 bar	90 N (7 bar)	48 N (7 bar)	1, 2, 3: M12x1.5 JED 152
463 013 116 0 <sup>1)</sup>	–40 ... +80 °C	10.0 bar	90 N (7 bar)	48 N (7 bar)	1, 2, 3: M12x1.5
463 013 117 0 <sup>2)</sup>	–40 ... +80 °C	10.0 bar	90 N (7 bar)	48 N (7 bar)	1, 2, 3: M12x1.5
463 013 122 0	–40 ... +80 °C	8.5 bar	160 N (7 bar)	–	1, 2, 3: M12x1.5
463 013 124 0	–40 ... +80 °C	10.0 bar	90 N (7 bar)	65 N (7 bar)	1, 2, 3: M12x1.5
463 013 126 0	–40 ... +80 °C	10.0 bar	94 N (7 bar)	50 N (7 bar)	1, 2, 3: M12x1.5 JED 152
463 013 128 0 <sup>1)</sup>	–40 ... +80 °C	10.0 bar	94 N (7 bar)	50 N (7 bar)	1, 2, 3: M12x1.5
463 013 130 0	–40 ... +80 °C	10.0 bar	90 N (7 bar)	48 N (7 bar)	1, 2, 3: M16x1.5 JED 388
463 013 200 0	–40 ... +80 °C	10.0 bar	91 N (7 bar)	83 N (7 bar)	1, 2: M16x1.5 JED 388; 3: M12x1.5
463 013 210 0	–40 ... +80 °C	10.0 bar	90 N (7 bar)	48 N (7 bar)	1: M16x1.5; 21, 22, 3: M12x1.5
463 022 020 0 <sup>1)</sup>	–40 ... +100 °C	10.0 bar	150 N (7 bar)	–	1, 2: M10x1; 3: exhaust
463 022 021 0 <sup>1)</sup>	–40 ... +100 °C	10.0 bar	150 N (7 bar)	–	1, 2: M10x1 JED 152; 3: exhaust
463 036 024 0	–25 ... +80 °C	10.0 bar	70 N (11 bar)	–	1, 2: M16x1.5; 3: M10x1
563 020 000 0	–25 ... +80 °C	10.0 bar	30/60 N (10 bar)	–	A, P1, R1: M10x1

### Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 463 013 012 0	463 013 001 2	Valve	■ 463 013 124 0	463 013 004 2	Valve
■ 463 013 014 0	463 013 001 2	Valve	■ 463 013 126 0	463 013 004 2	Valve
■ 463 013 110 0	463 013 004 2	Valve	■ 463 013 130 0	463 013 004 2	Valve
■ 463 013 111 0	463 013 004 2	Valve	■ 463 013 210 0	463 013 004 2	Valve
■ 463 013 112 0	463 013 004 2	Valve	■ 463 022 020 0	463 022 001 2	Valve + boot
■ 463 013 114 0	463 013 004 2	Valve	■ 463 022 021 0	463 022 001 2	Valve + boot
■ 463 013 116 0	463 013 004 2	Valve			
■ 463 013 117 0	463 013 004 2	Valve			

# CONVENTIONAL BRAKING COMPONENTS

## 3/2 Directional control valve - manually controlled (turn)

■ Type	3/2
■ Actuation	turn
■ Locking function	✓
■ Nominal Ø	Ø 4.0 mm
■ Accessory	891 500 520 4 locking nut M28x1.5



463 036 000 0



463 036 008 0



463 036 010 0



463 036 016 0

Product number	Temperature	Max. pressure	Knob	Port
463 036 000 0	-25 ... +80 °C	10 bar	✓	1, 2: M10x1; 3: exhaust
463 036 001 0	-25 ... +80 °C	10 bar	✓	1, 2: M10x1; 3: exhaust
463 036 005 0	-25 ... +80 °C	10 bar	✓	1, 2: M16x1.5 JED-388; 3: M10x1
463 036 008 0	-40 ... +80 °C	11 bar	✓	1, 2: M12x1.5; 3: exhaust
463 036 010 0	-25 ... +80 °C	10 bar	-	1, 2: M16x1.5 JED-388; 3: M10x1
463 036 016 0*	-40 ... +80 °C	10 bar	✓	1, 2: M16x1.5; 3: tappet
463 036 018 0	-25 ... +80 °C	10 bar	✓	1, 2: M10x1; 3: exhaust
463 036 025 0	-25 ... +80 °C	10 bar	✓	1, 2: M10x1 JED-388-1; 3: exhaust
463 036 026 0	-40 ... +80 °C	10 bar	-	1, 2: M12x1.5; 3: exhaust
463 036 027 0	-25 ... +80 °C	10 bar	-	1, 2: M10x1; 3: exhaust

\* with hexagon nut SW 32

## 4/2, 4/3 Directional control valve (463 037 ... 0)

■ Function	manually controlled
■ Locking function	✓
■ Actuation	Turn
■ Accessory	891 500 520 4 locking nut M28x1.5



463 037 001 0

Product number	Type	Temperature	Max. pressure	Nominal Ø	Knob	Port
463 037 000 0	4/3	-25 ... +80° C	10 bar	Ø 4.0 mm	-	1, 21, 22: M10x1; 3: exhaust
463 037 001 0	4/3	-25 ... +80° C	10 bar	Ø 2.5 mm	-	1, 21, 22: M10x1; 3: exhaust
463 037 003 0	4/3	-25 ... +80°C	10 bar	Ø 2.5 mm	-	1, 21, 22: M10x1; 3: Ø 9.8
463 037 004 0	4/3	-25 ... +80°C	10 bar	Ø 4.0 mm	✓	1, 21, 22: M10x1; 3: exhaust
463 037 006 0	4/3	-40 ... +80°C	12 bar	Ø 4.0 mm	✓	1, 21, 22: M12x1.5; 3: M10x1
463 037 007 0	4/3	-40 ... +80°C	12 bar	Ø 4.0 mm	✓	1, 21, 22: M12x1.5; 3: M10x1
463 037 110 0	4/2	-40 ... +80°C	10 bar	Ø 3.0 mm	✓	1, 21, 22: M12x1.5; 3: M10x1
463 037 111 0	4/2	-40 ... +80°C	12 bar	Ø 3.0 mm	-	1, 21, 22: M12x1.5; 3: M10x1
463 037 200 0	4/3	-25 ... +80°C	10 bar	Ø 4.0 mm	-	1, 21, 22: M16x1.5; 3: M10x1
463 037 201 0	4/3	-25 ... +80°C	10 bar	Ø 2.5 mm	-	1, 21, 22: M16x1.5; 3: M10x1
463 037 202 0	4/3	-40 ... +80°C	11 bar	Ø 4.0 mm	-	1, 21, 22: M12x1.5; 3: M10x1

## Repair solutions

Product number	Repair kit	Content
■ 463 037 000 0	463 037 000 2	Sealing ring
■ 463 037 001 0	463 037 000 2	Sealing ring
■ 463 037 003 0	463 037 000 2	Sealing ring
■ 463 037 004 0	463 037 000 2	Sealing ring
■ 463 037 006 0	463 037 001 2	Sealing ring
■ 463 037 007 0	463 037 001 2	Sealing ring
■ 463 037 110 0	463 037 001 2	Sealing ring
■ 463 037 200 0	463 037 001 2	Sealing ring
■ 463 037 201 0	463 037 001 2	Sealing ring

## Directional control valve (463 079 ... 0 / 571 040 ... 0)

- **Function** pneumatically controlled
- **Max. pressure** 10 bar



463 079 002 0



571 040 000 0

Product number	Type	Pressure		Temperature	Port
		Supply	Pilot		
463 079 002 0	Slide valve (4/2)	5 bar	3 ... 10 bar	-20 ... +150 °C	1, 41, 42: M10x1; 21, 22: Ø 7 mm; 3: exhaust
463 079 003 0	Slide valve (4/2)	5 bar	2 ... 5 bar	-20 ... +150 °C	1, 4, 41: M10x1; 21, 22: Ø 7 mm; 3: exhaust
463 079 012 0	Spring returned (3/2)	-	3 ... 10 bar	-15 ... +80 °C	A, P1, R1: M14x1.5; Z: M10x1
463 079 030 0	Spring returned (5/2)	-	3 ... 10 bar	-25 ... +80 °C	A, B, S, P, R: Ø 16 mm; Z: M10x1
463 079 031 0	Slide valve (5/2)	-	2 ... 10 bar	-25 ... +80 °C	A, B, S, P, R: Ø 16 mm; Y, Z: M10x1
571 040 000 0	Spring returned (3/2)	-	3 ... 10 bar	-25 ... +80 °C	1, 2, 3: M14x1.5; Z: M10x1

# CONVENTIONAL BRAKING COMPONENTS

## Quick release valve

■ Temperature	-40 ... +80 °C	
■ Max. pressure	Air:	air pressure inlet
	Service:	service pressure
	Supply:	supply pressure
■ Mounting	2x Ø 9.5 mm 973 500 030 0: 2x Ø 11.0 mm	
■ Distance between holes	38 mm 973 500 030 0: 85 mm	



473 501 203 0



973 500 028 0



973 500 045 0



973 500 059 0

Product number	Equipped with	Max. pressure	Port
473 501 000 0	bypass	10.0 bar (Supply)	1, 3: M22x1.5 JED-152; 2: 2x M22x1.5 JED-152
473 501 001 0	double check valve	10.0 bar (Service)	1, 3: M22x1.5; 2: 2x M22x1.5
473 501 004 0	double check valve	10.0 bar (Air)	1, 3: M22x1.5; 2: 2x M22x1.5
473 501 005 0	bypass	10.0 bar (Supply)	1: M22x1.5 JED-152; 2: 2x M22x1.5 JED-152; 3: silencer 432 407 060 0
473 501 201 0	double check valve	10.0 bar (Service)	1, 3: M22x1.5; 2: 2x M22x1.5
473 501 202 0	fording ability	10.0 bar (Service)	1, 3: M22x1.5; 2: 2x M22x1.5
473 501 203 0		10.0 bar (Service)	1, 3: M22x1.5; 2: 2x M22x1.5
973 500 003 0		10.0 bar (Service)	1, 3: G <sup>3</sup> / <sub>8</sub> " J (NFE03004); 2: 2x G <sup>3</sup> / <sub>8</sub> " J (NFE03004)
973 500 006 0		10.0 bar (Service)	1, 3: M16x1.5 JED-464; 2: 2x M16x1.5 JED-464
973 500 014 0		10.0 bar (Service)	1: 1/2" PTF; 2: 2x 3/8" NPTF; 3: 3/8" NPTF
973 500 018 0		10.0 bar (Service)	1, 3: M22x1.5; 2: 2x M16x1.5
973 500 028 0		12.0 bar (Air)	1, 21, 22: M22x1.5; 3: exhaust
973 500 030 0		10.0 bar (Service)	1, 2: M16x1.5; 3: open
973 500 031 0		12.0 bar (Air)	1, 21, 22: M22x1.5; 3: exhaust
973 500 034 0		12.5 bar (Air)	1, 21, 22: M22x1.5 JED-388; 3: exhaust
973 500 039 0		12.0 bar (Air)	1, 3: M22x1.5 JED-464; 2: 2x M22x1.5 JED-464
973 500 042 0		12.5 bar (Supply)	1, 21, 22: M22x1.5 JED-388; 3: M22x1.5 JED-152
973 500 044 0		12.0 bar (Supply)	1, 3: M22x1.5 JED-464; 2: 2x M22x1.5 JED-464
973 500 045 0		12.0 bar (Supply)	1: M22x1.5 JED-464; 2: 2x M22x1.5 JED-464; 3: silencer 432 407 060 0
973 500 047 0		10.0 bar (Supply)	1: M22x1.5; 2: 2x M16x1.5; 3: M16x1.5
973 500 053 0	integrated double cut-off valve	12.0 bar (Supply)	11, 12: M16x1.5; 2: 2x M16x1.5; 3: silencer 432 407 060 0
973 500 057 0	integrated double cut-off valve	12.0 bar (Supply)	11, 12, 3: M16x1.5; 22: M16x1.5
973 500 059 0		12.5 bar (Air)	1, 21, 22: M22x1.5 JED-388; 3: silencer 432 407 070 0
973 500 104 0		10.0 bar	1: 1/2"-14 NPTF; 2: 2x special flange; 3: exhaust
973 500 105 0		10.0 bar	1: 1/2"-14 NPTF; 2: 2x special flange; 3: exhaust
973 500 106 0		10.0 bar	1: 1/2"-14 NPTF; 2: 2x special flange; 3: exhaust



## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 473 501 005 0	473 501 920 2	Diaphragm	■ 973 500 053 0	973 500 004 2	Diaphragm
■ 473 501 202 0	973 500 000 2	Diaphragm	■ 973 500 059 0	973 500 004 2	Diaphragm
■ 973 500 028 0	973 500 001 2	Diaphragm	■ 973 500 105 0	973 500 001 2	Diaphragm
■ 973 500 031 0	973 500 001 2	Diaphragm	■ 973 500 106 0	973 500 001 2	Diaphragm
■ 973 500 034 0	973 500 001 2	Diaphragm			

## Piston operating cylinder

### Piston operating cylinder - single acting (421 410 ... 0)

■ Diameter	Ø 35 mm 421 410 025 0: Ø 30 mm
■ Max. pressure	8.0 bar 421 410 039 0, 421 410 079 0: 10.0 bar
■ Boot equipped	421 410 054 0, 421 410 059 0
■ Comments	<sup>1)</sup> External stop for push-rod <sup>2)</sup> Output force at max. stroke / Inlet pressure



421 410 041 0

Product number	Length	Stroke	Push-rod	Stop <sup>1)</sup>	Temperature	Force <sup>2)</sup>	Wrench	Inlet port
421 410 020 0	172 mm	45.0 mm	M8	–	–40... +80 °C	120 N / 4.5 bar	34 mm	for hose 5x3
421 410 023 0	153 mm	25.0 mm	M6	–	–40... +80 °C	240 N / 4.5 bar	19 mm	for hose 5x3
421 410 025 0	106 mm	25.0 mm	Ø 6 H11	–	–40... +80 °C	229 N / 4.5 bar	19 mm	M10x1
421 410 034 0	107 mm	25.0 mm	M8	–	–20... +80 °C	203 N / 4.5 bar	19 mm	M10x1
421 410 035 0	107 mm	25.0 mm	M8	–	–20... +80 °C	244 N / 4.5 bar	19 mm	M10x1
421 410 039 0	106 mm	25.0 mm	M8	–	–40... +80 °C	240 N / 4.5 bar	19 mm	M10x1
421 410 041 0	162 mm	45.0 mm	M8	✓	–40... +80 °C	120 N / 4.5 bar	34 mm	M10x1
421 410 052 0	120 mm	25.0 mm	M6	–	–40... +80 °C	240 N / 4.5 bar	19 mm	for hose 5x3
421 410 054 0	172 mm	45.0 mm	M8	✓	–40... +80 °C	120 N / 4.5 bar	–	for hose 5x3
421 410 059 0	153 mm	30.0 mm	M6	–	–25...+120 °C	170 N / 4.5 bar	–	M10x1
421 410 060 0	143 mm	25.0 mm	M6	–	–40... +80 °C	240 N / 4.5 bar	19 mm	M10x1
421 410 066 0	172 mm	45.0 mm	M8	✓	–40... +80 °C	120 N / 4.5 bar	34 mm	M10x1
421 410 072 0	106 mm	25.0 mm	M8	–	–20... +80 °C	94 N / 4.5 bar	19 mm	M10x1
421 410 075 0	122 mm	32.0 mm	M8	–	–25...+120 °C	170 N / 4.5 bar	19 mm	M10x1
421 410 078 0	150 mm	55.0 mm	M8	✓	–35... +80 °C	100 N / 6.0 bar	34 mm	M10x1
421 410 079 0	152 mm	56.5 mm	M8	✓	–40... +80 °C	190 N / 4.5 bar	9 mm	M12x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 421 410 020 0	421 410 001 2	Sealing ring	■ 421 410 052 0	421 410 001 2	Sealing ring
■ 421 410 023 0	421 410 001 2	Sealing ring	■ 421 410 054 0	421 410 001 2	Sealing ring
■ 421 410 025 0	421 410 001 2	Sealing ring	■ 421 410 060 0	421 410 001 2	Sealing ring
■ 421 410 039 0	421 410 001 2	Sealing ring	■ 421 410 066 0	421 410 001 2	Sealing ring
■ 421 410 041 0	421 410 001 2	Sealing ring	■ 421 410 075 0	421 410 001 2	Sealing ring

# CONVENTIONAL BRAKING COMPONENTS

## Piston operating cylinder - single acting (421 41 . . . 0)

- **Max. pressure** 10.0 bar  
421 411 500 0, 421 411 501 0: 12.0 bar

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- **Boot equipped** 421 411 070 0, 421 412 000 0

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- **External stop for push-rod** ✓

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- **Inlet port** M12×1.5  
421 411 305 0: ¼"-18 NPTF

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- **Comments** <sup>1)</sup> Output force at max. stroke / Inlet pressure



421 411 021 0

421 411 316 0

Product number	Length	Ø	Stroke	Push-rod	Temperature	Force <sup>1)</sup>	Wrench
421 411 021 0	185.0 mm	40 mm	65 mm	M8	-40... +80 °C	223 N / 5.0 bar	40 mm
421 411 031 0	228.0 mm	40 mm	85 mm	M8	-40... +80 °C	110 N / 4.5 bar	9 mm
421 411 035 0	193.0 mm	40 mm	50 mm	M8	-40... +80 °C	360 N / 6.5 bar	9 mm
421 411 065 0	228.0 mm	40 mm	85 mm	M8	-40... +80 °C	145 N / 4.5 bar	9 mm
421 411 070 0	155.0 mm	40 mm	38 mm	Ø 8 H11	-40... +80 °C	270 N / 6.0 bar	13 mm
421 411 094 0	159.0 mm	40 mm	50 mm	M12	-40... +80 °C	240 N / 4.5 bar	40 mm
421 411 300 0	228.0 mm	43 mm	85 mm	M12	-25...+120 °C	145 N / 4.5 bar	10 mm
421 411 301 0	187.0 mm	43 mm	78 mm	M8	-25...+140 °C	120 N / 4.5 bar	9 mm
421 411 302 0	233.0 mm	43 mm	85 mm	M12×1.5	-25...+120 °C	145 N / 4.5 bar	10 mm
421 411 304 0	248.0 mm	43 mm	85 mm	Ø 8 H11	-40... +80 °C	145 N / 4.5 bar	9 mm
421 411 305 0	180.0 mm	43 mm	54 mm	M8	-25...+120 °C	130 N / 4.5 bar	9 mm
421 411 306 0	227.0 mm	43 mm	85 mm	M8	-40... +80 °C	145 N / 4.5 bar	9 mm
421 411 311 0	187.0 mm	43 mm	73 mm	M8	-25...+140 °C	20 N / 4.5 bar	9 mm
421 411 314 0	180.0 mm	43 mm	60 mm	M8	-25...+120 °C	230 N / 4.5 bar	-
421 411 315 0	180.0 mm	43 mm	54 mm	M8	-25...+120 °C	130 N / 4.5 bar	9 mm
421 411 316 0	180.0 mm	43 mm	60 mm	M8	-25...+120 °C	230 N / 4.5 bar	-
421 411 500 0	166.5 mm	55 mm	53 mm	M10	-25...+190 °C	1075 N / 6.5 bar	-
421 411 501 0	166.5 mm	55 mm	20 mm	M10	-25...+190 °C	9.4 N / 0.5 bar	-
421 412 000 0	221.0 mm	55 mm	65 mm	M12×1.5	-40... +80 °C	410 N / 4.5 bar	10 mm

## Repair solutions

Product number	Repair kit	Content
■ 421 411 021 0	421 901 001 2	Guide piece
■ 421 411 031 0	421 901 001 2	Guide piece
■ 421 411 035 0	421 901 001 2	Guide piece
■ 421 411 065 0	421 901 001 2	Guide piece
■ 421 411 094 0	421 901 001 2	Guide piece
■ 421 412 000 0	421 412 000 2	Boot

## Piston operating cylinder - single acting (421 42 . . . 0, 421 44 . . . 0)

- **External stop for push-rod** ✓  
421 429 003 0, 421 444 020 0: –

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- **Inlet port**  
M12x1.5  
421 425 010 0: for hose 5x3  
421 425 011 0: for pipe Ø6 mm DIN 3901  
421 429 002 0, 421 429 006 0, 421 445 000 0: M10x1

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- **Comments**     <sup>1)</sup> Output force at max. stroke / Inlet pressure



421 425 010 0



421 425 011 0



421 429 003 0



421 444 020 0



421 445 000 0

Product number	Length	Ø	Stroke	Push-rod	Temperature	Max. pressure	Force <sup>1)</sup>	Wrench
421 425 010 0	150.0 mm	31.0 mm	48 mm	M8	–25...+120 °C	8.0 bar	59 N / 6.0 bar	–
421 425 011 0	150.0 mm	31.0 mm	48 mm	M8	–25...+120 °C	8.0 bar	59 N / 6.0 bar	–
421 427 002 0	90.0 mm	25.0 mm	28 mm	Ø 4 mm	–25... +80 °C	7.0 bar	133 N / 7.0 bar	–
421 427 003 0	90.0 mm	25.0 mm	28 mm	Ø 4 mm	–25... +80 °C	7.0 bar	186 N / 7.0 bar	–
421 429 002 0	179.0 mm	41.0 mm	70 mm	M8	–30... +80° C	10.0 bar	140 N / 5.5 bar	–
421 429 003 0	171.4 mm	33.0 mm	48 mm	M8	–25...+140 °C	8.5 bar	70 N / 5.5 bar	–
421 429 006 0	179.0 mm	41.0 mm	41 mm	M8	–30... +80° C	10.0 bar	194 N / 5.5 bar	–
421 442 000 0	163.0 mm	40.0 mm	40 mm	M8	–35... +80 °C	8.0 bar	196 N / 6.0 bar	9 mm
421 442 008 0	193.0 mm	40.0 mm	40 mm	M8	–30...+125 °C	8.0 bar	10 N / 6.0 bar	9 mm
421 442 013 0	168.0 mm	40.0 mm	40 mm	M8	–35... +80 °C	11.2 bar	10 N / 6.0 bar	9 mm
421 442 017 0	168.0 mm	40.0 mm	40 mm	M8	–30... +80° C	11.2 bar	10 N / 6.0 bar	9 mm
421 442 018 0	226.0 mm	40.0 mm	60 mm	M8	–35... +80 °C	8.0 bar	10 N / 6.0 bar	9 mm
421 444 020 0	112.0 mm	24.0 mm	–15 mm	M14x1.5	–35...+100 °C	10.0 bar	–	–
421 445 000 0	156.5 mm	36.5 mm	52 mm	M8	–40...+120 °C	10.0 bar	55 N / 4.5 bar	–

### Repair solutions

Product number	Repair kit	Content
■ 421 427 002 0	421 427 000 2	Guide piece
■ 421 427 003 0	421 427 000 2	Guide piece
■ 421 442 000 0	421 442 000 2	Rod wiper
■ 421 442 013 0	421 442 000 2	Rod wiper
■ 421 442 017 0	421 442 000 2	Rod wiper
■ 421 442 018 0	421 442 000 2	Rod wiper

# CONVENTIONAL BRAKING COMPONENTS

## Piston operating cylinder - double acting

■ Temperature	-35 ... +80 °C
■ Max. pressure	8.0 bar
■ Diameter	Ø 40 mm
■ Wrench	13 mm
■ Push-rod	M8
■ Inlet port	M12x1.5



421 441 020 0

Product number	Length	Stroke	Spring force at stroke				Mounting
			Compression		Expansion		
			Min.	0 mm	0 mm	Max.	
421 441 003 0	172 mm	-32 / +50 mm	324 N	68 N	6.8 N	16 N	M8 female
421 441 020 0	162 mm	-32 / 0 mm	324 N	68 N	-	-	Ball socket B10 DIN 71805
421 441 022 0	265 mm	-55 / 0 mm	360 N	100 N	-	-	M8 female
421 441 060 0	187 mm	-40 / +40 mm	324 N	68 N	8.0 N	16 N	Ball socket B10 DIN 71805

## Repair solutions

Product number	Repair kit	Content
■ 421 441 003 0	421 441 000 2	Rod wiper
■ 421 441 020 0	421 441 000 2	Rod wiper
■ 421 441 060 0	421 441 000 2	Rod wiper

## Silencer

### Silencer (432 407 ... 0, 899 470 ... 0)

- Temperature -40 ... +80 °C



432 407 012 0

432 407 015 0

432 407 050 0

432 407 060 0

432 407 070 0

Product number	Application	Max. pressure	Ø	Port	O-ring
432 407 012 0	Air dryer	18.5 bar	87 mm	snap-on (clamp)	897 086 470 4
432 407 015 0	Air dryer	18.5 bar	87 mm	snap-on (sawtooth)	✓
432 407 016 0	Air dryer	13.0 bar	87 mm	snap-on (sawtooth)	✓
432 407 018 0	Air dryer	13.0 bar	87 mm	snap-on (retaining ring)	-
432 407 050 0	Braking devices	11.0 bar	69 mm	Bayonet	✓
432 407 060 0	ECAS devices, Braking devices, Air dryer	13.0 bar	69 mm	M22x1.5	-

Product number	Application	Max. pressure	Ø	Port	O-ring
432 407 070 0	e.g. relay valves	11.0 bar	69 mm	snap-on (retaining ring)	–
899 470 319 0 <sup>1)</sup>	Air dryer	13.0 bar	87 mm	snap-on (retaining ring)	✓
899 470 332 0 <sup>2)</sup>	Air dryer	13.0 bar	87 mm	snap-on (retaining ring)	✓

<sup>1)</sup> Silencer 432 407 016 0 + PA tube (880 mm)

<sup>2)</sup> Silencer 432 407 016 0 + PA tube (130 mm)

## Silencer (532 40. . . . 0)

- **Temperature** –40 ... +80 °C  
532 401 ... 0: –25 ... +80 °C
- **Max. pressure** 10 bar



532 400 117 0

Product number	Application	Dimensions				Mounting
		Hole Ø	Outer	Inner	Wrench	
532 400 111 0	Pressure control valve	6.0 mm	18.0 mm	6.0 mm	13 mm	M10x1.0
532 400 112 0	Air dryer	8.5 mm	25.0 mm	8.0 mm	17 mm	M14x1.5
532 400 117 0	Solenoid valve	8.5 mm	25.0 mm	8.0 mm	17 mm	M12x1.5
532 401 110 0	Pressure regulator	–	16.5 mm	5.5 mm	–	R 1/8"
532 401 111 0	Solenoid valve	–	20.0 mm	7.1 mm	–	R 1/4"

## Solenoid

- **Voltage** 24 V
- **Electrical connection** <sup>1)</sup> Bayonet DIN 72585 A2-2.1-Sn/K1



442 019 115 1



442 019 135 1



442 019 165 1

Product number	Function	Max. pressure	Electrical connection	Nominal Ø (port 1)	Temperature	Mounting	Distance between holes	Port 1
442 016 112 0	closed	13 bar	M24x1	0.7 mm	–40... +65 °C	4x 7.0 mm	38x42 mm	12H9
442 016 118 0	closed	10 bar	M24x1	0.7 mm	–40... +65 °C	4x 6.5 mm	36x42 mm	12H9
442 019 115 1	closed	13 bar	M24x1	0.7 mm	–40... +65 °C	3x 6.5 mm	38x42 mm	12H9
442 019 135 1	closed	13 bar		0.7 mm	–40... +65 °C	3x 6.5 mm	38x42 mm	12H9
442 019 165 1	closed	13 bar	Bayonet <sup>1)</sup>	0.7 mm	–40... +65 °C	4x 6.5 mm	36x42 mm	12H9
442 022 106 0		10 bar	M27x1	2.2 mm	–40...+100 °C			M26x1.5
442 022 108 0		10 bar	M27x1	2.2 mm	–40...+100 °C			M26x1.5
442 025 108 0		10 bar	M27x1	4.0 mm	–20... +70 °C			M26x1.5
442 026 102 1	closed	10 bar		1.2 mm	–20...+100 °C			M26x1.5
442 043 102 1	closed	13 bar	M27x1	1.0 mm	–40... +80 °C			12H9

# CONVENTIONAL BRAKING COMPONENTS

## Solenoid valve

### Solenoid valve - open

- **Function** normally open
- **Electrical connection**
  - <sup>1)</sup> EN 175301-803-A/ISO 4400 (formerly DIN 43650/A)
  - <sup>2)</sup> Bayonet DIN 72 585 A1-2.1-Sn/K1
  - <sup>3)</sup> Bayonet DIN 72 585 A1-2.1-Sn/K2
  - <sup>4)</sup> Bayonet DIN 72 585 A1-3.2-Sn/K1
  - <sup>5)</sup> Tyco HDSCS Cod. B C-114-18739-1 (Index C)



472 125 707 0



472 171 726 0



472 173 226 0



472 173 700 0



472 176 316 0

Product number	Max. pressure	Nominal Ø (supply)	Voltage	Electrical connection	Temperature	Port
472 102 040 0	8 bar	2.6 mm	10.8 / 28.8 V	EN <sup>1)</sup>	-40... +70 °C	1, 2: M12x1.5
472 106 108 0	10 bar	2.0 mm	24 V	M27x1	-40...+100 °C	1: 2x M12x1.5; 2: M12x1.5
472 125 707 0	8 bar	4.0 mm	12 V	M27x1	-20... +70 °C	1, 2: M12x1.5
472 171 000 0	13 bar	2.2 mm	24 V	M27x1	-40...+100 °C	1: M14x1.5; 2: M12x1.5
472 171 336 0	13 bar	2.2 mm	24 V	Bayonet <sup>3)</sup>	-40...+100 °C	1, 2: M16x1.5 JED-388
472 171 428 0	16 bar	2.2 mm	24 V	Bayonet <sup>4)</sup>	-40...+100 °C	1: M10x1; 2: M12x1.5
472 171 700 0	13 bar	2.2 mm	24 V	M27x1	-40...+100 °C	1, 2: M12x1.5
472 171 704 0	16 bar	2.2 mm	24 V	Bayonet	-40...+100 °C	1, 2: M12x1.5
472 171 706 0	16 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1, 2: M12x1.5
472 171 726 0	16 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1, 2: M12x1.5
472 173 001 0	13 bar	4.0 mm	24 V	Tyco <sup>5)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 173 002 0	13 bar	4.0 mm	24 V	Tyco <sup>5)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 173 011 0	13 bar	4.0 mm	12 V	Tyco <sup>5)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 173 204 0	13 bar	4.0 mm	24 V	Bayonet	-40... +80 °C	1, 2: M12x1.5
472 173 206 0	13 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1: V12x1.5; 2: M12x1.5
472 173 226 0	13 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M12x1.5
472 173 286 0	13 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M12x1.5 JED-464
472 173 316 0	13 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388
472 173 428 0	13 bar	4.0 mm	24 V	Bayonet <sup>4)</sup>	-40... +80 °C	1: M10x1; 2: M12x1.5
472 173 700 0	13 bar	4.0 mm	24 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 173 701 0	13 bar	4.0 mm	12 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 173 703 0	13 bar	4.0 mm	12 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 173 704 0	13 bar	4.0 mm	24 V	Bayonet	-40... +80 °C	1, 2: M12x1.5
472 175 424 0	16 bar	4.0 mm	24 V	Bayonet	-40... +80 °C	1: M10x1; 2: M12x1.5
472 175 426 0	16 bar	4.0 mm	24 V	Bayonet <sup>2)</sup>	-40... +80 °C	1: M10x1; 2: M12x1.5
472 176 316 0	13 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388
472 176 916 0	13 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388
472 178 424 0	16 bar	2.2 mm	24 V	Bayonet	-40...+100 °C	1: M10x1; 2: M12x1.5
472 178 426 0	16 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1: M10x1; 2: M12x1.5
572 740 022 0	10 bar	7.0 mm	24 V	EN <sup>1)</sup>	-15... +50 °C	
577 602 022 0	10 bar	7.0 mm	24 V	EN <sup>1)</sup>	-25... +50 °C	1, 2: M14x1.5



## Repair solutions

Product number	Repair kit	Content
■ 472 173 011 0	472 170 920 2	Exhaust cap
■ 472 176 316 0	472 170 920 2	Exhaust cap

## Solenoid valve - closed

■ <b>Function</b>	normally closed
■ <b>Electrical connection</b>	<sup>1)</sup> EN 175301-803-A/ISO 4400 (formerly DIN 43650/A) <sup>2)</sup> Bayonet DIN 72 585 A1-2.1-Sn/K1 <sup>3)</sup> Bayonet DIN 72 585 A1-2.1-Sn/K2 <sup>4)</sup> Bayonet DIN 72 585 A1-3.2-Sn/K1 <sup>5)</sup> Tyco HDSCS Cod. A C-114-18739-1 (Index C) <sup>6)</sup> Tyco HDSCS Cod. C C-114-18739-1 (Index C) <sup>7)</sup> Tyco HDSCS Cod. A C-114-18743 (Index C)



472 070 339 0



472 072 628 0



472 072 639 0



472 123 107 0



884 501 837 0

Product number	Max. pressure	Nominal Ø (supply)	Voltage	Electrical connection	Temperature	Port
442 207 908 0	10.0 bar	2.2 mm	24 V	M27x1	-40...+100 °C	1: M14x1.5; 3: M26x1.5
472 070 339 0	13.0 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2, 3: M16x1.5 JED-388
472 070 600 0	13.0 bar	4.0 mm	24 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 070 628 0	13.0 bar	4.0 mm	24 V	Bayonet <sup>4)</sup>	-40...+100 °C	1: 3x M12x1.5; 2: M12x1.5
472 070 639 0	13.0 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388
472 072 022 0	13.0 bar	2.2 mm	24 V	Tyco <sup>7)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 072 628 0	12.5 bar	2.2 mm	24 V	Bayonet <sup>4)</sup>	-40...+100 °C	1: 3x M12x1.5; 2: M12x1.5
472 072 639 0	13.0 bar	2.2 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388
472 123 107 0	10.0 bar	2.2 mm	12 V	M27x1	-40...+100 °C	1, 2: M12x1.5
472 123 109 0	19.0 bar	2.2 mm	24 V	M27x1	-40... +80 °C	1, 2: M12x1.5; 3: M14x1.5
472 123 142 0	10.0 bar	2.2 mm	24 V	EN <sup>1)</sup>	-40...+100 °C	1, 2: M12x1.5
472 127 140 0	8.5 bar	2.2 mm	12 / 24 V	EN <sup>1)</sup>	-40... +70 °C	1, 2: M12x1.5
472 129 111 0	10.0 bar	2.2 mm	12 V	M24x1	-40...+100 °C	1, 2: M12x1.5
472 132 198 0	10.0 bar	2.2 mm	24 V	Bayonet	-40...+100 °C	1, 2: M12x1.5
472 135 111 0	10.0 bar	2.2 mm	12 V	M24x1	-40...+100 °C	1, 2: ¼"-18 NPTF
472 137 132 0	11.0 bar	4.0 mm	24 V	Volvo	-40... +80 °C	1, 2: M12x1.5
472 170 001 0	13.0 bar	4.0 mm	24 V	Tyco <sup>5)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 170 012 0	13.0 bar	4.0 mm	12 V	Tyco <sup>6)</sup>	-40... +80 °C	1, 2, 3: V16x1.5 JED-388
472 170 080 0	13.0 bar	4.0 mm	24 V	Tyco <sup>5)</sup>	-40... +80 °C	1, 2, 3: V16x1.5 JED-388
472 170 226 0	11.0 bar	4.0 mm	24 V	Bayonet <sup>2)</sup>	-40... +80 °C	1, 2, 3: M12x1.5
472 170 600 0	13.0 bar	4.0 mm	24 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 170 601 0	13.0 bar	4.0 mm	12 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 170 604 0	13.0 bar	4.0 mm	24 V	Bayonet	-40... +80 °C	1, 2: M12x1.5
472 170 606 0	13.0 bar	4.0 mm	24 V	Bayonet <sup>2)</sup>	-40... +80 °C	1, 2: M12x1.5
472 170 616 0	13.0 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388
472 170 636 0	13.0 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388

# CONVENTIONAL BRAKING COMPONENTS

Product number	Max. pressure	Nominal Ø (supply)	Voltage	Electrical connection	Temperature	Port
472 170 637 0	13.0 bar	4.0 mm	12 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M16x1.5 JED-388
472 170 667 0	13.0 bar	4.0 mm	12 V	Bayonet <sup>2)</sup>	-40... +80 °C	1, 2: ¼"-18 NPT
472 170 686 0	13.0 bar	4.0 mm	24 V	Bayonet <sup>3)</sup>	-40... +80 °C	1, 2: M12x1.5 JED-464
472 170 700 0	13.0 bar	4.0 mm	24 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 170 790 0	13.0 bar	4.0 mm	24 V	M27x1	-40... +80 °C	1: M12x1.5; 2: 14.5 mm
472 170 867 0	13.0 bar	4.0 mm	12 V	Bayonet <sup>2)</sup>	-40... +80 °C	1, 2: ¼"-18 NPT; 3: ⅛"-27 NPT
472 170 990 0	13.0 bar	4.0 mm	24 V	M27x1	-40... +80 °C	1, 2: ¼"-18 NPT; 3: ⅛"-27 NPT
472 170 991 0	13.0 bar	4.0 mm	12 V	M27x1	-40... +80 °C	1, 2: ¼"-18 NPT; 3: ⅛"-27 NPT
472 170 996 0	13.0 bar	4.0 mm	24 V	Bayonet	-40... +80 °C	1, 2: ¼"-18 NPT; 3: ⅛"-27 NPT
472 172 001 0	13.0 bar	2.2 mm	24 V	Tyco <sup>7)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 172 007 0	13.0 bar	2.2 mm	24 V	Tyco <sup>7)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 172 011 0	13.0 bar	2.2 mm	24 V	Tyco <sup>7)</sup>	-40... +80 °C	1, 2, 3: V16x1.5 JED-388
472 172 021 0	13.0 bar	2.2 mm	24 V	Tyco <sup>7)</sup>	-40... +75 °C	1, 2: V16x1.5 JED-388
472 172 600 0	12.5 bar	2.2 mm	24 V	M27x1	-40...+100 °C	1, 2: M12x1.5
472 172 604 0	12.5 bar	2.2 mm	24 V	Bayonet	-40...+100 °C	1, 2: M12x1.5
472 172 606 0	12.5 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1, 2: M12x1.5
472 172 620 0	12.5 bar	2.2 mm	24 V	M27x1	-40...+100 °C	1, 2: M12x1.5
472 172 626 0	12.5 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1, 2: M12x1.5
472 172 686 0	12.5 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1, 2: M12x1.5
472 172 704 0	12.5 bar	2.2 mm	24 V	Bayonet	-40...+100 °C	1, 2, 3: M12x1.5
472 172 724 0	12.5 bar	2.2 mm	24 V	Bayonet	-40...+100 °C	1, 2, 3: M12x1.5
472 172 726 0	12.5 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1, 2, 3: M12x1.5
472 172 784 0	12.5 bar	2.2 mm	24 V	Bayonet	-40...+100 °C	1, 2, 3: M12x1.5
472 172 786 0	12.5 bar	2.2 mm	24 V	Bayonet <sup>2)</sup>	-40...+100 °C	1, 2, 3: M12x1.5
472 172 901 0	13.0 bar	2.2 mm	24 V	Tyco <sup>7)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 174 500 0	13.0 bar	4.0 mm	24 V	M27x1	-40... +80 °C	1, 2: M12x1.5
472 174 504 0	13.0 bar	4.0 mm	24 V	Bayonet	-40... +80 °C	1, 2: M12x1.5
472 174 524 0	13.0 bar	4.0 mm	24 V	Bayonet	-40... +80 °C	1, 2: M12x1.5
472 174 597 0	17.0 bar	3.7 mm	12 V	Bayonet <sup>2)</sup>	-30... +65 °C	1: Voss 8x1; 2: Voss 6x1
472 180 002 0	13.0 bar	4.0 mm	24 V	Tyco <sup>5)</sup>	-40... +80 °C	1, 2: V16x1.5 JED-388
472 223 108 0	10.0 bar	2.2 mm	24 V	2x M27x1	-40...+100 °C	1, 21, 22: M12x1.5
472 270 600 0	13.0 bar	4.0 mm	24 V	2x M27x1	-40... +80 °C	1, 21, 22: M12x1.5
472 279 906 0	13.0 bar	4.0 mm	24 V	2x Bayonet <sup>2)</sup>	-40... +70 °C	1: Voss 12x1.5; 21, 22: Voss 8x1
472 899 005 0	8.1 bar	1.2 mm	12 V	EN <sup>1)</sup>	-40... +80 °C	1, 2: ⅜" NPT
472 899 006 0	10.0 bar	2.4 mm	12 V	EN <sup>1)</sup>	-40... +80 °C	1, 2: ⅜" NPT
472 899 008 0	8.1 bar	1.2 mm	24 V	EN <sup>1)</sup>	-40... +80 °C	1, 2: M12x1.5
472 899 009 0	8.1 bar	1.2 mm	12 V	EN <sup>1)</sup>	-40... +80 °C	1, 2: M12x1.5
474 200 001 0	20.0 bar	2.0 mm	24 V	Bayonet <sup>2)</sup>	-40... +80 °C	1, 12, 2, 21: M22x1.5 Voss-232; 11: M16x1.5 Voss-232
577 202 022 0	10.0 bar	7.0 mm	24 V	EN <sup>1)</sup>	-25... +50 °C	1, 2, 3: M14x1.5
884 501 096 0	10.0 bar	2.2 mm	24 V	M24x1	-40...+100 °C	1, 2: M12x1.5
884 501 634 0	10.5 bar	1.2 mm	12 V	2x EN <sup>1)</sup>	-40... +80 °C	1: M22x1.5; 2: M16x1.5 JED-388
884 501 837 0	10.5 bar	1.2 mm	24 V	EN <sup>1)</sup>	-40... +80 °C	1: M22x1.5; 2: M16x1.5 JED-388
884 501 940 0	10.5 bar	1.2 mm	24 V	2x EN <sup>1)</sup>	-40... +80 °C	1: M22x1.5; 2: M16x1.5 JED-388

Product number	Max. pressure	Nominal Ø (supply)	Voltage	Electrical connection	Temperature	Port
884 501 997 0	10.5 bar	1.2 mm	12 V	EN <sup>1)</sup>	-40... +80 °C	1: M22×1.5; 2: M16×1.5 JED-388
884 502 864 0	10.0 bar	3.0 mm	24 V	M24×1	-40... +80 °C	11, 12, 2: M12×1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 472 070 600 0	472 170 920 2	Exhaust cap	■ 472 170 606 0	472 170 920 2	Exhaust cap
■ 472 070 628 0	472 170 920 2	Exhaust cap	■ 472 170 616 0	472 170 920 2	Exhaust cap
■ 472 072 628 0	472 170 920 2	Exhaust cap	■ 472 170 636 0	472 170 920 2	Exhaust cap
■ 472 123 107 0	472 123 000 2	Solenoid armature	■ 472 172 600 0	472 170 920 2	Exhaust cap
■ 472 123 142 0	472 123 000 2	Solenoid armature	■ 472 172 604 0	472 170 920 2	Exhaust cap
■ 472 132 198 0	472 123 000 2	Solenoid armature	■ 472 172 606 0	472 170 920 2	Exhaust cap
■ 472 135 111 0	472 123 000 2	Solenoid armature	■ 472 172 620 0	472 170 920 2	Exhaust cap
■ 472 170 001 0	472 170 920 2	Exhaust cap	■ 472 172 626 0	472 170 920 2	Exhaust cap
■ 472 170 600 0	472 170 920 2	Exhaust cap	■ 472 223 108 0	472 123 000 2	Solenoid armature
■ 472 170 604 0	472 170 920 2	Exhaust cap	■ 472 270 600 0	472 170 920 2	Exhaust cap



## Air quality matters

Air dryer cartridges from WABCO offer the most reliable protection for air brake systems. Designed to the highest quality standards, they are engineered to keep air brake systems operating at optimum levels of performance, helping to ensure vehicles stay on the road and out of the maintenance bay.



# Anti-lock braking system (ABS)

## ABS electronic control unit (ECU)

- **Voltage** 24 V  
12 V: 446 003 832 0, 446 004 610 0, 446 004 621 0,  
446 004 653 0
- **Accessories** 826 000 066 3 ABS-Label  
894 000 015 2 Cover  
894 590 081 0 Cable with plug
- **Training** Classroom training: ABS



446 004 320 0

Product number	ABS type	System	Diagnostic		Mounting	Distance between holes	Temperature
			Protocol	Software			
446 003 403 0	D	6S/6M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x162.0 mm	-40 ... +75 °C
446 003 404 0	D	6S/6M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x162.0 mm	-40 ... +75 °C
446 003 408 0	D	6S/6M	SAE J1587	ABS SAE	4x Ø 7.5 mm	163.0x162.0 mm	-40 ... +75 °C
446 003 420 0	D	6S/6M	SAE J1587	ABS SAE	4x Ø 7.5 mm	163.0x162.0 mm	-40 ... +75 °C
446 003 708 0	E Universal	6S/6M	SAE J7587	ABS SAE	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 710 0	E Universal	6S/6M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 713 0	E Universal	6S/6M	KWP2000	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 735 0	E Universal	4S/4M	SAE J1587	-	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 747 0	E Universal	6S/6M	SAE J1587	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 749 0	E Universal	4S/4M	KWP2000	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 761 0	E Universal	4S/4M	SAE J1939	-	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 762 0	E Universal	6S/6M	SAE J1939	-	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 765 0	E	4S/4M	KWP2000	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 768 0	E Universal	6S/6M	KWP2000	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 769 0	E4.5	6S/6M	KWP2000	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 003 827 0	E8 Universal	4S/4M	ISO 14229	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +85 °C
446 003 829 0	E8 Universal	6S/6M	ISO 14229	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +85 °C
446 003 830 0	E8 Universal	6S/6M	ISO 14229	-	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +85 °C
446 003 832 0	Universal	4S/4M	ISO 14229	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +85 °C
446 003 833 0	E8 Universal	4S/4M	ISO 14229	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +85 °C
446 003 836 0	E8 Universal	6S/6M	ISO 14229	ABS E+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +85 °C
446 004 310 0	D Basic	4S/4M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 313 0	D Basic	4S/4M	SAE J1587	ABS SAE	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 314 0	D Basic	4S/3M	KWP 2000	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 318 0	D Basic	4S/4M	KWP 2000	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 320 0	E Basic	4S/4M	SAE J1587	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 324 0	E Basic	4S/4M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 330 0	E Basic	4S/3M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 332 0	D Basic	4S/4M	KWP2000	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 333 0	E Basic	4S/3M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 334 0	E Basic	4S/4M-Q	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 335 0	E Basic	4S/4M-Q	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 402 0	SKN	4S/4M	CAN	-	Clamp	-	-40 ... +75 °C
446 004 404 0	D	4S/4M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 004 406 0	D	4S/4M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 004 414 0	D	4S/4M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 004 416 0	D	4S/4M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 004 420 0	D	4S/4M	SAE J1587	ABS SAE	4x Ø 7.5 mm	163.0x162.0 mm	-40 ... +75 °C

# ANTI-LOCK BRAKING SYSTEM (ABS)

Product number	ABS type	System	Diagnostic		Mounting	Distance between holes	Temperature
			Protocol	Software			
446 004 426 0	D	4S/4M	SAE J1587	ABS SAE	4x Ø 7.5 mm	163.0x162.0 mm	-40 ... +75 °C
446 004 427 0	D	4S/4M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 004 428 0	D	4S/4M	ISO 9141	ABS D+	4x Ø 7.5 mm	163.0x122.5 mm	-40 ... +75 °C
446 004 601 0	E Basic	4S/4M	SAE J1587	ABS SAE	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 602 0	E Basic	4S/4M	SAE J1587	ABS SAE	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 606 0	E Basic	4S/4M	KWP 2000	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 607 0	E	4S/4M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 608 0	E Basic	4S/4M	SAE J1587	ABS SAE	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 610 0	E Basic	4S/3M	SAE J1587	-	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 612 0	E Basic	4S/4M	KWP 2000	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 616 0	E Basic	4S/4M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 617 0	E Basic	4S/4M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 621 0	E2 Basic	4S/4M	KWP 2000	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 630 0	E2 Basic	4S/4M	KWP 2000	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 631 0	E Basic	4S/4M	ISO 9141	ABS D+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 634 0	E Basic	4S/4M	KWP 2000	ABS D+/ ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 636 0	E Basic	4S/4M	KWP 2000	ABS D+/ ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 637 0	E Basic	4S/4M	KWP 2000	ABS D+/ ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 643 0	E Basic	4S/4M	KWP 2000	ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 644 0	E4 Basic	4S/4M	KWP 2000	ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 645 0	E4 Basic	4S/4M	KWP 2000	ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 646 0	E4.5 Basic	4S/4M	KWP 2000	ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 647 0	E4.5 Basic	4S/4M	ISO 14229/ KWP 2000	ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C
446 004 653 0	E4 Basic	4S/4M	KWP 2000	ABS E+	3x Ø 7.5 mm	112.0x122.0 mm	-40 ... +75 °C

## ABS solenoid modulator valve

- Temperature -40 ... +80 °C
- Max. pressure 11 bar



472 195 016 0



472 195 078 0



472 195 079 0



472 195 108 0

Product number	Voltage	Electrical connection	Port
472 195 005 0	12 V	M24x1	1, 2: ½"-14 NPTF
472 195 006 0	24 V	M24x1	1, 2: ½"-14 NPTF
472 195 009 0	24 V	Bayonet	1, 2: M22x1.5
472 195 010 0	24 V	M24x1	1, 2: M22x1.5
472 195 011 0	24 V	Bayonet	1, 2: M22x1.5 JED-388
472 195 015 0	24 V	M27x1	1, 2: M22x1.5 JED-464



Product number	Voltage	Electrical connection	Port
472 195 016 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5 JED-388
472 195 018 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5
472 195 046 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 048 0	24 V	Volvo-Plug	1, 2: M22x1.5
472 195 052 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 054 0	12 V	M27x1	1, 2: M22x1.5 JED-464
472 195 055 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5 JED-388
472 195 056 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: M22x1.5 JED-388; 2: M22x1.5
472 195 058 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5
472 195 064 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: RC ⅜"
472 195 066 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5
472 195 071 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5
472 195 072 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5 JED-388
472 195 073 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5
472 195 074 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: Flange (Ø 24); 21, 22: ½"-14 NPTF
472 195 075 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: Flange (Ø 24); 21, 22: ½"-14 NPTF
472 195 076 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: Flange (Ø 24); 21: ½"-14 NPTF
472 195 077 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: Flange (Ø 24); 21: ½"-14 NPTF
472 195 078 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: Flange (Ø 24); 21, 22: ½"-14 NPTF
472 195 079 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: Flange (Ø 24); 21, 22: ½"-14 NPTF
472 195 082 0	12 V	Bayonet	1: Flange (Ø 24); 21, 22: ½"-14 NPTF
472 195 083 0	12 V	Bayonet	1: Flange (Ø 24); 21, 22: ½"-14 NPTF
472 195 086 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: RC ⅜" JIS B 0253
472 195 094 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 095 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 096 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 097 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5
472 195 100 0	12 V	Bayonet ISO 15 170 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 101 0	12 V	Bayonet ISO 15 170 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 102 0	12 V	Bayonet ISO 15 170 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
472 195 105 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1: M22x1.5 JED-388; 2: M22x1.5
472 195 106 0	24 V	Bayonet ISO 15 170 A1-3.1-Sn/K1	1: M22x1.5 JED-388; 2: M22x1.5
472 195 108 0	24 V	Tyco HDSCS 3x 2.8 coding A	1, 2: M22x1.5 JED-388-0
472 195 110 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5 JED-388-4
472 195 121 0	12 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: M22x1.5 JED-388-0
472 196 020 0	24 V	Tyco HDSCS 4x 2.8 coding A	1, 2: M22x1.5 JED-388-4
972 195 045 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: Rc ⅜" JIS B 0253
972 195 064 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF
972 195 065 0	24 V	Bayonet DIN 72585 A1-3.1-Sn/K1	1, 2: ½"-14 NPTF

## Repair solutions

Product number	Repair kit	Content
■ 472 195 058 0	472 195 922 2	Solenoid modulator valve

# ANTI-LOCK BRAKING SYSTEM (ABS)

## ASR proportional valve

- Temperature                    −40 ... +100 °C
- Voltage                         24 V
- Mounting                        2x Ø 9.0 mm
- Distance between holes    42 mm



472 250 000 0

472 250 007 0

Product number	Electrical connection	Max. pressure (supply)	Port
472 250 000 0	M27x1	10.0 bar	M12x1.5
472 250 003 0	Bayonet	11.2 bar	M12x1.5
472 250 007 0	Bayonet DIN 72585 B1-2.1-Sn/K1	11.2 bar	M12x1.5
472 250 008 0	Bayonet DIN 72585 B1-2.1-Sn/K1	11.0 bar	RC ¼"

## ABS trailer control valve

- Temperature                    −40 ... +80 °C
- Accessory                        432 407 012 0    Silencer (port: snap-on contour)



973 002 520 0



973 009 001 0



973 009 006 0



973 009 010 0

Product number	Max. pressure	Predominance	Mounting	Port
973 002 000 0	8.0 bar	0.6 bar	2x M8	1, 2, 41, 42, 43: M22x1.5; 3: flap
973 002 010 0	8.0 bar	0.5 bar	4x M8	1, 2, 41, 42, 43: M22x1.5; 3: flap
973 002 013 0	8.0 bar	0.6 bar	4x M8	1, 2, 41, 42, 43: M22x1.5; 3: flap
973 002 020 0	8.0 bar	0.3 bar	4x M8	1, 2, 41, 42, 43: M22x1.5; 3: flap
973 002 022 0	8.0 bar	0.2 bar	4x M8	1, 2, 41, 42, 43: M22x1.5; 3: flap
973 002 051 0	8.0 bar	0.2 bar	4x M8	1, 2, 41, 42: M22x1.5; 3: flap
973 002 070 0	8.0 bar	0.6 bar	2x M8	1, 2, 41, 42: M22x1.5; 3: snap-on contour
973 002 402 0	8.0 bar	–	4x M8	1, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 403 0	8.0 bar	0.2 bar	2x M8	1, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 404 0	8.0 bar	–	4x M8	1, 2, 41, 42: M16x1.5; 3: flap
973 002 405 0	8.0 bar	–	4x M8	1, 12, 2, 41, 42: M16x1.5; 3: snap-on contour
973 002 406 0	8.0 bar	0.5 bar	2x M8	1, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 409 0	8.0 bar	0.2 bar	4x M8	1, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 418 0	8.0 bar	1.0 bar	4x M8	1, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 419 0	8.0 bar	0.4 bar	3x M8	1, 12, 2, 41, 42: M16x1.5; 3: flap
973 002 422 0	8.0 bar	–	4x M8	1, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 423 0	8.0 bar	0.3 bar	4x M8	1, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 425 0	8.0 bar	0.2 bar	4x M8	1, 12, 2, 41, 42, 43: M16x1.5; 3: flap
973 002 430 0	8.0 bar	–	4x M8	1, 12, 2, 41, 42, 43: M16x1.5; 3: flap

Product number	Max. pressure	Predominance	Mounting	Port
973 002 450 0	8.0 bar	–	4x M8	1, 2, 41, 42, 43: M16x1.5; 3: M22x1.5
973 002 500 0	8.0 bar	–	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 501 0	8.0 bar	0.2 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 505 0	8.0 bar	–	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 520 0	8.0 bar	–	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 521 0	8.5 bar	0.2 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 522 0	8.0 bar	0.5 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 523 0	8.0 bar	0.5 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 527 0	8.0 bar	0.3 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: snap-on contour
973 002 528 0	8.0 bar	–	4 x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 532 0	8.0 bar	0.7 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 535 0	8.0 bar	–	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: snap-on contour
973 002 538 0	8.0 bar	–	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 539 0	8.0 bar	0.3 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 544 0	8.0 bar	–	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 570 0	8.0 bar	0.3 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: flap
973 002 620 0	8.0 bar	0.5 bar	4x M8	12, 22, 41, 42: M16x1.5; 3: flap
973 009 001 0	8.5 bar	0.2 bar	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: snap-on contour; 43: M16x1.5 JED-388
973 009 002 0	8.5 bar	0.2 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: snap-on contour
973 009 004 0	8.5 bar	–	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: snap-on contour; 43: M16x1.5 JED-388
973 009 005 0	8.5 bar	0.5 bar	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: snap-on contour; 43: M16x1.5 JED-388
973 009 006 0	8.5 bar	–	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: snap-on contour; 43: M16x1.5 JED-388
973 009 007 0	8.5 bar	–	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: silencer; 43: M16x1.5 JED-388
973 009 009 0	8.5 bar	0.6 bar	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: silencer; 43: M16x1.5 JED-388
973 009 010 0	8.5 bar	0.4 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: silencer
973 009 011 0	8.5 bar	0.2 bar	2x M10x1.25 with mounting plate	12, 22, 41, 42, 43: M16x1.5; 3: silencer
973 009 013 0	8.5 bar	0.2 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: snap-on contour
973 009 014 0	8.5 bar	–	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: snap-on contour
973 009 015 0	8.5 bar	0.1 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: silencer
973 009 016 0	8.5 bar	0.4 bar	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: silencer; 43: M16x1.5 JED-388
973 009 018 0	8.5 bar	0.2 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: silencer
973 009 022 0	8.5 bar	0.1 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: silencer
973 009 023 0	8.5 bar	0.9 bar	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: snap-on contour; 43: M16x1.5 JED-388
973 009 024 0	8.5 bar	0.2 bar	2x M10 with mounting plate	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: silencer; 43: M16x1.5 JED-388
973 009 025 0	8.5 bar	0.5 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: silencer
973 009 028 0	8.5 bar	0.2 bar	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: snap-on contour; 43: M16x1.5 JED-388
973 009 029 0	8.5 bar	0.2 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: silencer
973 009 100 0	8.5 bar	0.2 bar	4x M8	12, 22, 41, 42, 43: M16x1.5; 3: snap-on contour
973 009 120 0	8.5 bar	–	4x M8	12, 43: blind plugged; 22, 41, 42: M16x1.5; 3: silencer
973 009 300 0	8.0 bar	0.2 bar	4x M8	11, 12, 22, 41, 42: M22x1.5 JED-388; 3: silencer; 43: M16x1.5 JED-388

# ANTI-LOCK BRAKING SYSTEM (ABS)

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 973 002 000 0	973 002 003 2	Valve + diaphragm	■ 973 002 523 0	973 002 005 2	Valve + diaphragm
■ 973 002 010 0	973 002 003 2	Valve + diaphragm	■ 973 002 527 0	973 002 008 2	Valve + diaphragm
■ 973 002 013 0	973 002 003 2	Valve + diaphragm	■ 973 002 528 0	973 002 005 2	Valve + diaphragm
■ 973 002 020 0	973 002 003 2	Valve + diaphragm	■ 973 002 532 0	973 002 005 2	Valve + diaphragm
■ 973 002 022 0	973 002 003 2	Valve + diaphragm	■ 973 002 535 0	973 002 008 2	Valve + diaphragm
■ 973 002 051 0	973 002 003 2	Valve + diaphragm	■ 973 002 538 0	973 002 006 2	Valve
■ 973 002 070 0	973 002 003 2	Valve + diaphragm	■ 973 002 539 0	973 002 005 2	Valve + diaphragm
■ 973 002 402 0	973 002 004 2	Valve + diaphragm	■ 973 002 544 0	973 002 008 2	Valve + diaphragm
■ 973 002 403 0	973 002 003 2	Valve + diaphragm	■ 973 002 570 0	973 002 005 2	Valve + diaphragm
■ 973 002 404 0	973 002 004 2	Valve + diaphragm	■ 973 002 620 0	973 002 005 2	Valve + diaphragm
■ 973 002 405 0	973 002 003 2	Valve + diaphragm	■ 973 009 001 0	973 009 000 2	Valve
■ 973 002 406 0	973 002 003 2	Valve + diaphragm	■ 973 009 002 0	973 009 000 2	Valve
■ 973 002 409 0	973 002 003 2	Valve + diaphragm	■ 973 009 004 0	973 009 000 2	Valve
■ 973 002 418 0	973 002 003 2	Valve + diaphragm	■ 973 009 005 0	973 009 000 2	Valve
■ 973 002 419 0	973 002 003 2	Valve + diaphragm	■ 973 009 006 0	973 009 000 2	Valve
■ 973 002 422 0	973 002 003 2	Valve + diaphragm	■ 973 009 007 0	973 009 000 2	Valve
■ 973 002 423 0	973 002 003 2	Valve + diaphragm	■ 973 009 009 0	973 009 000 2	Valve
■ 973 002 425 0	973 002 009 2	Valve + diaphragm	■ 973 009 010 0	973 009 000 2	Valve
■ 973 002 430 0	973 002 004 2	Valve + diaphragm	■ 973 009 013 0	973 009 000 2	Valve
■ 973 002 450 0	973 002 004 2	Valve + diaphragm	■ 973 009 014 0	973 009 000 2	Valve
■ 973 002 500 0	973 002 006 2	Valve	■ 973 009 015 0	973 009 000 2	Valve
■ 973 002 501 0	973 002 005 2	Valve + diaphragm	■ 973 009 018 0	973 009 000 2	Valve
■ 973 002 505 0	973 002 008 2	Valve + diaphragm	■ 973 009 029 0	973 009 000 2	Valve
■ 973 002 520 0	973 002 006 2	Valve	■ 973 009 100 0	973 009 000 2	Valve
■ 973 002 521 0	973 002 005 2	Valve + diaphragm	■ 973 009 120 0	973 009 000 2	Valve
■ 973 002 522 0	973 002 005 2	Valve + diaphragm	■ 973 009 300 0	973 009 001 2	Valve

## Wheel speed sensor


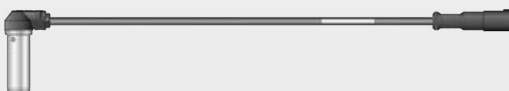

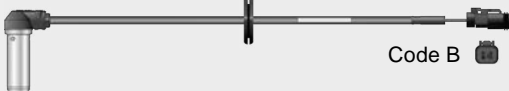

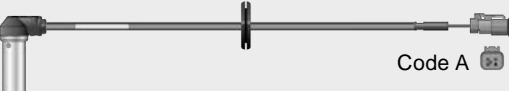
### Sensor set - radial sensor

- **Description** WABCO sensor sets include all components required to affect a proper repair: clamp bushing, grease pad and the corresponding sensor.
- **Sensor head** Ø 16.0 mm



Wheel speed sensor	Product number	Length	Replacement for / Cross references		
			WABCO	OEM number	OEM
	441 032 010 2	250 mm	441 032 171 0	1778553 1778554	DAF
	441 032 013 2	2056 mm	441 032 191 0	B587105K300	Hyundai / Kia
	441 032 017 2	2321 mm	441 032 898 0	21361848 21361849	Volvo
	441 032 018 2	1596 mm	441 032 893 0	21361845	Volvo
	441 032 019 2	L1: 125 mm L2: 160 mm	441 032 518 0	A6555400717	Daimler
	441 032 021 2	1754.5 mm	441 032 177 0	1890167	Scania
	441 032 022 2	2754.5 mm	441 032 178 0	1890168	Scania
	441 032 023 2	1500 mm	441 035 144 0	1869290	DAF
	441 032 024 2	1400 mm	441 035 145 0	1869290	DAF
	441 032 029 2	1422 mm	Knorr: 0486000284 K50 0486000285 N00	81.27120-6216 81.27120-6217	MAN
	441 032 030 2	1572 mm	Knorr: 0486000250 K50 0486000276 N00	81.27120-6177 81.27120-6201 81.27120-6202	MAN
	441 032 031 2	1550 mm	Knorr: 0486000251 K50 0486000277 N00	81.27120-6176 81.27120-6202	MAN

# ANTI-LOCK BRAKING SYSTEM (ABS)














Wheel speed sensor	Product number	Length	Replacement for / Cross references		
			WABCO	OEM number	OEM
	441 035 922 2	895.2 mm	441 032 107 0	5010457732	Renault
	441 035 923 2	1545.2 mm	441 032 855 0	41200559	Iveco
			441 032 856 0	41200560	Iveco
	441 035 924 2	2345.2 mm	441 032 858 0	1524828	DAF
				41200561	Iveco
441 032 859 0			123399	Iveco	
			41200562	Iveco	
	441 035 928 2	2056 mm	441 032 874 0	5010457045	Renault
			441 032 875 0	5010422333	Renault
			441 032 728 0	1517455	DAF
				A0005429618	Daimler
441 035 102 0	-	Hino			
	441 035 935 2	4000 mm	441 032 144 0	5010457879 7580212W	Renault
				20723669 21364022	Volvo
			441 032 151 0	5010457891 7421363486 7580218W	Renault
				21363486	Volvo
441 035 133 0	21570623	Volvo			
	441 035 936 2	2500 mm	441 032 149 0	5010457883 7580216W	Renault
				21363479	Volvo
			441 032 187 0	7421150950	Renault
				21150950	Volvo
			441 032 333 0	7420785816 7420787816 7580246W	Renault
20787816 21363484	Volvo				
	441 035 937 2	3650 mm	441 032 143 0	5010457878 7580211W	Renault
				20723666 21360516	Volvo
			441 032 146 0	5010457880 7580213W	Renault
				21363476	Volvo
			441 032 332 0	7580245W	Renault
				20787815 21363481	Volvo
441 035 131 0	21570619	Renault			
	441 035 938 2	2200 mm	441 032 148 0	5010457882 7580215W	Renault
				21363478	Volvo
			441 032 186 0	7421150949	Renault
				21150949	Volvo







## Sensor set - axial sensor









- Description** WABCO sensor sets include all components required to affect a proper repair: clamp bushing, grease pad and the corresponding sensor.
- Sensor head** Ø 16.0 mm



Wheel speed sensor	Product number	Length	Replacement for / Cross references		
			WABCO	OEM number	OEM
	441 032 025 2	2035 mm	441 032 980 0	41221280	Iveco
 Code A, B, C, D 	441 032 026 2	1685 mm	441 032 377 0 441 032 952 0 441 032 363 0 441 032 364 0 441 032 365 0 441 032 366 0	1890170 1892057 21363499 21363500 21363502 21363503	Scania Renault
 Code A, B, C, D 	441 032 027 2	2710 mm	441 032 378 0 441 032 995 0 441 032 996 0 441 035 321 0 441 035 322 0 441 035 324 0 441 035 325 0 441 035 326 0 441 035 332 0	1890171 41363474 21363475 21663166 21663162 21663167 21663170 21663172 21663163	Scania Volvo
 Code A 	441 032 028 2	1659.75 mm	441 035 301 0 441 035 302 0	21296829 21296849	Volvo
 Code B 	441 035 920 2	1750 mm	441 032 995 0	5010457874 20723702 21363474	Renault Volvo
 Code B 	441 035 921 2	2000 mm	441 032 321 0 441 035 321 0 441 035 327 0	1729798 21363496 7421296839 21296839 21663166 21296845	Scania Volvo Renault Volvo Volvo
	441 035 925 2	2200 mm	441 032 922 0	1518311 A0025422718	DAF Daimler
	441 035 926 2	3000 mm	441 032 920 0 441 032 923 0 441 032 487 0 441 032 921 0 441 032 942 0	1518009 A0025423818 A0025422618 A0005423318 A0015423318 36271206005 A0015428818 920100080 A0015428918	DAF Daimler Daimler Daimler MAN Daimler Solaris Bus Daimler

# ANTI-LOCK BRAKING SYSTEM (ABS)

Wheel speed sensor	Product number	Length	Replacement for / Cross references		
			WABCO	OEM number	OEM
	441 035 927 2	4000 mm	441 032 941 0	A0035423518	Daimler
			441 032 946 0	A0035424618	Daimler
			441 032 727 0	A0005429718	Daimler
				36271206004	MAN
			441 032 947 0	A0035424518	Daimler
			503147652	Iveco	
 Code A	441 035 929 2	3000 mm	441 032 352 0	7420795150 7580252W	Renault
				20916177 21363497	Volvo
			441 032 386 0	738610135	Renault
				21247147	Volvo
			441 032 954 0	21361885	Renault
				20528657 21361885	Volvo
			441 032 961 0	7420528653	Renault
				20528653 21361883	Volvo
			441 035 312 0	7421663556	Renault
				21296831 21663556	Volvo
			441 035 313 0	21296832 21663558	Volvo
			441 035 317 0	21296836 21663557	Volvo
				7421296840	Renault
			441 035 322 0	21296840 21663162	Volvo
441 035 323 0	21296841 21663164	Volvo			
441 035 332 0	21444285 21663163	Volvo			
 Code A	441 035 930 2	3950 mm	441 032 347 0	7420915970	Renault
				20915970 21363488	Volvo
			441 032 353 0	7420794630 7420916178	Renault
				20916178	Volvo
			441 032 965 0	7424427344	Renault
				20509864 21361900 24427344	Volvo
441 035 318 0	21296837 21663559	Volvo			
	7421296846	Renault			
441 035 328 0	21296846 21663165	Volvo			
 Code A	441 035 931 2	4300 mm	441 032 388 0	738610142	Renault
				21247161	Volvo
			441 032 968 0	738610139	Renault
				20509869 21361881	Volvo
			441 032 974 0	20554958	Volvo

Wheel speed sensor	Product number	Length	Replacement for / Cross references		
			WABCO	OEM number	OEM
 Code B 	441 035 932 2	5550 mm	441 032 349 0	5010457871 7420916171 7580249W	Renault
				20732821 20916171 21363493	Volvo
 Code B 	441 035 933 2	2850 mm	441 032 374 0	732520051	Renault
				21097072 21361887	Volvo
			441 032 387 0	738610136	Renault
				21247154	Volvo
			441 032 955 0	20528658	Volvo
			441 032 962 0	7420528654	Renault
		20528654 21361884		Volvo	
		441 032 964 0	738610140 7420509865	Renault	
			20509865 21361893	Volvo	
		441 032 996 0	5010457875 7580299W	Renault	
			20723706 21363475	Volvo	
		2850 mm	441 035 314 0	7421663561	Renault
21296833 21663561	Volvo				
441 035 324 0	7421296842	Renault			
	21296842 21663167	Volvo			
 Code B 	441 035 934 2	3950 mm	441 032 348 0	20732820 20915973 21363492	Volvo
				441 035 319 0	21296838 21663563
			441 035 329 0	21296847 21663169	Volvo
			441 035 330 0	21444282 21663168	Volvo
			441 035 334 0	7421663562	Renault
21444281 21663562	Volvo				
 Code B 	441 035 939 2	5550 mm	441 032 350 0	5010457876 7420916173 7580250W	Renault
				20732822 20916173 21363495	Volvo
			441 032 389 0	738610141	Renault
				21247157	Volvo
441 032 975 0	20554959	Volvo			



# WABCO Cable Catalogue

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Searching for more information on WABCO cables?  
Check our WABCO Cable Catalogue. This document gives  
an overview of the different cables used by WABCO.

Ask your sales representative to provide you with  
a WABCO Cable Catalogue.

**WABCO**

# Electronic braking system (EBS)

## EBS truck electronic control unit (ECU)

■ Voltage	24 V
■ Protection class	IP30 (IEC 529)
■ Temperature	–40 ... +75 °C –40 ... +80 °C: 446 135 202 0, 446 135 203 0, 446 135 240 0, 446 135 250 0
■ Training	Classroom training: Truck EBS



446 135 241 0

Product number	Application		Diagnostic software	Mounting	Distance between holes
	Manufacturer	System			
446 130 014 0	Daimler	4S/4M	EBS EPB MB Truck	Clamp	–
446 130 015 0	Daimler	4S/4M S	EBS EPB MB Truck	Clamp	–
446 130 018 0	Daimler	4S/4M	EBS EPB MB Truck	Clamp	–
446 130 019 0	Daimler	4S/4M S	EBS EPB MB Truck	Clamp	–
446 130 022 0	EvoBus/Travego	4S/4M	EBS EPB Bus	Clamp	–
446 130 023 0	EvoBus/Travego	6S/6M	EBS EPB Bus	Clamp	–
446 130 028 0	EvoBus	4S/4M	EBS EPB Bus	Clamp	–
446 130 029 0	EvoBus	6S/6M	EBS EPB Bus	Clamp	–
446 130 030 0	EvoBus	4S/4M	EBS EPB Bus	Clamp	–
446 130 031 0	EvoBus	6S/6M	EBS EPB Bus	Clamp	–
446 130 053 0	Daimler	4S/4M	EBS EPB MB Truck	Clamp	–
446 130 062 0	EvoBus	4S/4M	EBS EPB Bus	Clamp	–
446 130 067 0	Daimler	4S/4M	–	Clamp	–
446 130 208 0	Daimler	4S/4M	EBS 3	Clamp	–
446 130 210 0	Daimler	4S/4M, 6S/6M	–	Clamp	–
446 130 211 0	EvoBus	4S/4M, 6S/6M	–	Clamp	–
446 130 212 0	Daimler	4S/4M	–	Clamp	–
446 130 220 0	Daimler	4S/4M	–	Clamp	–
446 135 003 0	Nissan Diesel	4S/4M	–	4x Ø 7.5 mm	163.0x182.5 mm
446 135 016 0	Iveco	4S/4M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 017 0	DAF	4S/4M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 018 0	Iveco	4S/4M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 030 0	Neoplan	4S/4M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 031 0	Neoplan	4S/4M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 039 0	DAF	4S/4M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 041 0	Standard Bus	4S/4M, 6S/6M	EBS Bus Standard	4x Ø 7.5 mm	163.0x182.5 mm
446 135 042 0	DAF	4S/4M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 051 0	Hino Motors, Isuzu, Nissan	4S/4M	EBS 1C Asia	4x Ø 7.5 mm	163.0x182.5 mm
446 135 052 0	Nissan Diesel	4S/4M	EBS 1C Asia	4x Ø 7.5 mm	163.0x182.5 mm
446 135 059 0	Hyundai	4S/4M, 6S/6M	EBS Euro	4x Ø 7.5 mm	163.0x182.5 mm
446 135 202 0	DAF	4S/4M ... 6S/5M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm
446 135 203 0	DAF	4S/4M ... 6S/5M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm
446 135 240 0	VDL/Bova	4S/4M ... 6S/6M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm
446 135 241 0	VDL Bus & Coach	4S/4M ... 6S/6M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm
446 135 242 0	VDL/Bova	4S/4M ... 6S/6M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm
446 135 245 0	Hyundai	4S/4M ... 6S/6M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm

# ELECTRONIC BRAKING SYSTEM (EBS)

Product number	Application		Diagnostic software	Mounting	Distance between holes
	Manufacturer	System			
446 135 246 0	FAW, Hino Motors, Isuzu, VDL Bus & Coach, VDL/Bova ...	4S/4M ... 6S/6M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm
446 135 248 0	Kamaz	4S/4M	–	Clamp	–
446 135 250 0	Hino Motors, Mitsubishi Fuso, Nissan Diesel, Hyundai	4S/4M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm
446 135 253 0	Hino Motors	4S/4M	EBS 3	4x Ø 7.5 mm	163.0x122.5 mm

## EBS truck Central Braking Unit (CBU)

- Temperature –40 ... +80 °C
- Voltage 24 V
- Mounting 4x M8



480 020 020 0



480 020 105 0

Product number	Application	Max. pressure	Diagnostic software	Distance between holes	Port
480 020 012 0	Iveco	12.7 bar	–	61x61 mm	11, 12, 21, 22: Ø 13 / Ø 17.9 mm; 23: Ø 8x1; 3: silencer
480 020 020 0	MAN	12.7 bar	EBS CBU MAN	84x32 mm	11, 12, 21, 22: M22x1.5 JED-388-4; 23: M16x1.5 JED-388-4; 3: silencer
480 020 028 0	MAN	12.7 bar	EBS CBU MAN	84x32 mm	11, 12, 21, 22: M22x1.5 JED-388-4; 23: M16x1.5 JED-388-4; 3: silencer
480 020 105 0	Daimler	10.0 bar	–	61x61 mm	11, 12, 21, 22: M22x1.5 JED-388-4; 23: M16x1.5 JED-388-4; 3: silencer

## Repair solutions

Product number	Repair kit	Content
■ 480 020 012 0	480 020 920 2	Cover



# EBS truck modulator

## Truck EBS modulator - generation 1

■ Temperature	-40 ... +80 °C
■ Max. pressure	10 bar
■ Voltage	24 V
■ Electrical connection	Bayonet DIN 72585 1A-4.1-Sn/K2
■ Protection class	IP66 / IP69K
■ Port	11, 12, 13, 21, 22: M22x1.5 JED-388 23: M16x1.5 JED-388 3: integrated silencer



480 103 011 0

Product number	Application		Mounting	Distance	
	Manufacturer	System		bolts	holes
480 103 008 0	EvoBus	additional axle, with backup valve	2x M12x1.50	-	100 mm
480 103 011 0 480 103 011 R	Daimler	4x2	2x M12x1.50	-	100 mm
480 103 012 0 480 103 012 R	Daimler	6x2, 6x2/4, 6x4, 8x4	2x M12x1.50	-	100 mm
480 103 013 0	Daimler	4x2	2x M12x1.50	-	100 mm
480 103 014 0	Daimler	6x2, 6x4, 8x4	2x M12x1.50	-	100 mm
480 103 015 0 480 103 015 R	Daimler	4x2	2x M12x1.50	-	100 mm
480 103 016 0 480 103 016 R	Daimler	all vehicles except 4x2	2x M12x1.50	-	100 mm
480 103 022 0	Iveco	drive axle 4x2, 6x2, 6x4	2x M12x1.75	100 mm	-
480 103 024 0	Iveco	Semitrailer tractor	2x M12x1.75	100 mm	-
480 103 025 0	Iveco	Truck	2x M12x1.75	100 mm	-
480 103 033 0	-	Front axle	2x M12x1.25	100 mm	-
480 103 035 0	Hino Motors	Front axle & AOH	2x M12x1.25	100 mm	-
480 103 041 0	DAF	4x2 with backup valve	2x M12x1.50	-	100 mm
480 103 042 0	DAF	6x2 with backup valve	2x M12x1.50	-	100 mm
480 103 043 0	DAF	4x2 without backup valve	2x M12x1.50	-	100 mm
480 103 061 0	Neoplan	additional axle, with backup valve	2x M12x1.50	-	100 mm
480 103 063 0	Standard bus	drive axle 4x2 with backup valve	2x M12x1.50	-	100 mm
480 103 066 0	EvoBus	drive axle 4x2 with backup valve	2x M12x1.50	-	100 mm

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 480 103 008 0	480 103 921 2	Silencer	■ 480 103 035 0	480 103 921 2	Silencer
■ 480 103 011 0	480 103 921 2	Silencer	■ 480 103 041 0	480 103 921 2	Silencer
■ 480 103 012 0	480 103 921 2	Silencer	■ 480 103 042 0	480 103 921 2	Silencer
■ 480 103 013 0	480 103 921 2	Silencer	■ 480 103 043 0	480 103 921 2	Silencer
■ 480 103 014 0	480 103 921 2	Silencer	■ 480 103 061 0	480 103 921 2	Silencer
■ 480 103 015 0	480 103 921 2	Silencer	■ 480 103 063 0	480 103 921 2	Silencer
■ 480 103 016 0	480 103 921 2	Silencer	■ 480 103 066 0	480 103 921 2	Silencer
■ 480 103 022 0	480 103 921 2	Silencer			
■ 480 103 024 0	480 103 921 2	Silencer			
■ 480 103 025 0	480 103 921 2	Silencer			
■ 480 103 033 0	480 103 921 2	Silencer			

# ELECTRONIC BRAKING SYSTEM (EBS)

## Truck EBS modulator - generation 2

■ Temperature	-40 ... +80 °C
■ Voltage	24 V
■ Electrical connection	Bayonet DIN 72585 1A-4.1-Sn/K2
■ Protection class	IP6K6K / IP6K9K
■ Port	<b>11, 12, 21, 22:</b> M22×1.5 JED-388-4 <b>3:</b> integrated silencer <b>4:</b> M16×1.5 JED-388-4
■ Mounting	2× M12×1.5
■ Distance between holes	100 mm



480 104 003 0

Product number	Application		Max. pressure
	Manufacturer	System	
480 104 001 0	Hino Motors	drive axle 2S 2M	12.5 bar
480 104 002 0	DAF, Hino Motors	drive axle 2S 2M	12.5 bar
480 104 003 0	DAF	drive axle 2S 2M without backup valve	12.5 bar
480 104 005 0	Iveco	drive axle 2S 2M 2W without backup valve	12.5 bar
480 104 006 0	Iveco	drive axle 2S 2M 2W	12.5 bar
480 104 007 0	Standard Bus	additional axle 2S 2M 2W	12.5 bar
480 104 008 0	Hyundai	drive axle 2S 2M 2W	12.5 bar
480 104 009 0	Standard Bus	drive axle 2S 2M 2W	12.5 bar
480 104 106 0	MAN	drive axle 2S 2M 4W	12.8 bar
480 104 107 0	MAN	additional axle 2S 2M 2W/4W	12.8 bar
980 104 005 0	Hino Motors	drive axle 2S 2M	12.5 bar
980 104 006 0	Hino Motors	drive axle 2S 2M	12.5 bar

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 480 104 001 0	480 104 920 2	Valve piston	■ 480 104 007 0	480 104 920 2	Valve piston
	480 104 921 2	Solenoid		480 104 921 2	Solenoid
	480 104 922 2	Pressure sensor module		480 104 922 2	Pressure sensor module
	480 106 920 2	Valve Filter		480 106 920 2	Valve Filter
■ 480 104 002 0	480 104 920 2	Valve piston	■ 480 104 008 0	400 500 925 2	Valve body
	480 104 921 2	Solenoid		480 104 920 2	Valve piston
	480 104 922 2	Pressure sensor module		480 104 921 2	Solenoid
	480 106 920 2	Valve Filter		480 104 922 2	Pressure sensor module
■ 480 104 003 0	480 104 920 2	Valve piston	■ 480 104 009 0	480 104 920 2	Valve piston
	480 104 921 2	Solenoid		480 104 921 2	Solenoid
	480 106 920 2	Valve Filter		480 104 922 2	Pressure sensor module
■ 480 104 005 0	400 500 925 2	Valve body	■ 480 104 106 0	400 500 925 2	Valve body
	480 104 920 2	Valve piston		480 104 920 2	Valve piston
	480 104 921 2	Solenoid		480 104 921 2	Solenoid
	480 106 920 2	Valve Filter		480 106 920 2	Valve Filter
■ 480 104 006 0	400 500 925 2	Valve body	■ 480 104 107 0	400 500 925 2	Valve body
	480 104 920 2	Valve piston		480 104 920 2	Valve piston
	480 104 921 2	Solenoid		480 104 921 2	Solenoid
				480 106 920 2	Valve Filter

## Truck EBS modulator - generation 3

■ Temperature	-40 ... +80 °C
■ Max. pressure	13 bar
■ Voltage	24 V
■ Electrical connection	Bayonet DIN 72585 1A-4.1-Sn/K2
■ Protection class	IP6K6K / IP6K9K
■ Port	11, 21, 22: M22x1.5 JED-388-4 3: integrated silencer 4: M16x1.5 JED-388-4



480 105 006 0

Product number	Application		Mounting	Distance between holes
	Manufacturer	System		
480 105 006 0	EvoBus	4x2	2x M12x1.50	100 mm
480 105 007 0	EvoBus	6x2, 6x4, 8x4	2x M12x1.50	100 mm

## Repair solutions

Product number	Repair kit	Content
■ 480 105 006 0	480 104 921 2	Solenoid
	480 106 920 2	Valve Filter
	480 106 921 2	Valve piston
■ 480 105 007 0	480 104 921 2	Solenoid
	480 106 920 2	Valve Filter
	480 106 921 2	Valve piston

## Truck EBS modulator - generation 4

■ Temperature	-40 ... +80 °C
■ Max. pressure	13 bar
■ Voltage	24 V
■ Electrical connection	HDSCS
■ Protection class	IP6K6K / IP6K9K
■ Port	11, 21, 22: M22x1.5 JED-388-4 3: silencer 4: M16x1.5 JED-388-4



480 106 105 0

Product number	Application		Mounting	Distance between holes
	Manufacturer	System		
480 106 053 0	EvoBus	2-channel	2x M12x1.5	100 mm
480 106 103 0	Hyundai	2-channel	2x M12x1.5	100 mm
480 106 104 0	Hino Motors	2-channel	2x M12x1.5	100 mm
480 106 105 0	DAF	2-channel	2x M12x1.5	100 mm
480 106 106 0	DAF	2-channel	2x M12x1.5	100 mm
480 106 201 0	Standard Bus	2-channel	2x M12x1.5	100 mm
480 106 202 0	Standard Bus	2-channel	2x M12x1.5	100 mm
480 106 203 0	Solaris Bus & Coach	2-channel	2x M12x1.5	100 mm
480 106 204 0	Standard Bus	2-channel	2x M12x1.5	100 mm
480 106 553 0	EvoBus	1-channel	2x M12x1.5	50 mm
480 106 603 0	Hyundai Mobis	1-channel	2x M12x1.5	50 mm
480 106 604 0	Hino Motors	1-channel	2x M12x1.5	50 mm
480 106 605 0	DAF	1-channel	2x M12x1.5	50 mm

# ELECTRONIC BRAKING SYSTEM (EBS)

Product number	Application		Mounting	Distance between holes
	Manufacturer	System		
480 106 606 0	DAF	1-channel	2x M12x1.5	50 mm
480 106 607 0	DAF	1-channel	2x M12x1.5	50 mm
480 106 608 0	DAF	1-channel	2x M12x1.5	50 mm
480 106 701 0	Standard Bus	1-channel	2x M12x1.5	50 mm
480 106 702 0	Solaris Bus & Coach	1-channel	2x M12x1.5	50 mm

## Repair solutions

Product number	Repair kit	Content
■ 480 106 053 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 103 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 104 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 105 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 106 0	480 106 921 2	Valve piston
■ 480 106 201 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 202 0	480 106 921 2	Valve piston
■ 480 106 203 0	480 106 921 2	Valve piston
■ 480 106 204 0	480 106 921 2	Valve piston
■ 480 106 553 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 603 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 604 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 605 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 606 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 607 0	480 106 921 2	Valve piston
■ 480 106 608 0	480 106 921 2	Valve piston
■ 480 106 701 0	480 106 920 2 480 106 921 2	Valve filter Valve piston
■ 480 106 702 0	480 106 921 2	Valve piston

## EBS trailer control valve

■ Temperature	-40 ... +80 °C
■ Protection class	IP6K6K / IP6K9K
■ Mounting	3× M8
■ Distance between holes	80×80 mm



480 204 002 0



480 204 003 0



480 204 030 0



480 204 032 0



480 204 041 0

Product number	Voltage	Electrical connection	Output pressure (p22) / max. pressure	Port
480 204 002 0	24 V	Bayonet DIN 72585	8.5 bar	11, 21, 22: M22×1.5 JED-388-0; 3: silencer; 42, 43: M16×1.5 JED-388-0
480 204 003 0	24 V	Bayonet DIN 72585	8.5 bar	11, 21, 22: M22×1.5 JED-388-0; 3: snap on contour; 42, 43: M16×1.5 JED-388-0
480 204 030 0	24 V	HDSCS connector Code	8.5 bar	11, 21, 22: M22×1.5 JED-388-4; 3: silencer; 42, 43: M16×1.5 JED-388-4
480 204 031 0	24 V	HDSCS connector Code	8.5 bar	11, 21, 22: M22×1.5 JED-388-4; 3: silencer; 42, 43: M16×1.5 JED-388-4
480 204 032 0	24 V	HDSCS connector Code	8.5 bar	11, 21, 22: M22×1.5 JED-388-4; 3: silencer; 42, 43: M16×1.5 JED-388-4
480 204 041 0	12 V	HDSCS connector Code	7.5 bar	11, 21, 22: M22×1.5 JED-388-4; 3: silencer; 43: M16×1.5 JED-388-4
480 204 042 0	12 V	HDSCS connector Code	7.5 bar	11, 21, 22: M22×1.5 JED-388-4; 3: silencer; 42, 43: M16×1.5 JED-388-4

### Repair solutions

Product number	Repair kit	Content
■ 480 204 002 0	480 204 920 2	Valve piston
■ 480 204 003 0	480 204 920 2	Valve piston

# ELECTRONIC BRAKING SYSTEM (EBS)

## EBS brake signal transmitter

■ Temperature	-40 ... +80 °C
■ Electrical connection	* Bayonet DIN 72585
■ Mounting	4x M8 (480 001 300 0: 3x M8x1.5) (480 001 500 0: 3x M8)
■ Distance between bolts	61x61 mm (480 001 300 0: holes 80x50 mm) (480 001 400 0, 480 001 401 0: holes 61x61 mm)



Product number	Application	Max. pressure	Electrical connection	Voltage	Port
480 001 000 0	Mercedes-Benz	10.0 bar	2x Bayonet* 4 pol	8 ... 32 V	<b>11, 12, 21, 22:</b> M22x1.5 JED-388; <b>3:</b> Union Ø 16.0; <b>4:</b> M16x1.5 JED-388
480 001 005 0	EvoBus	10.0 bar	2x Bayonet* 4 pol	8 ... 32 V	<b>11, 12, 21, 22:</b> M22x1.5 JED-388; <b>3:</b> Union Ø 16.0
480 001 010 0	Daimler	10.0 bar	2x Bayonet* 4 pol	9 ... 32 V	<b>11, 12, 21, 22:</b> Voss 232 NG12; <b>3:</b> silencer 480 001 520 2; <b>4:</b> Voss 232 NG8
480 001 011 0	Daimler	10.0 bar	2x Bayonet* 4 pol	9 ... 32 V	<b>11, 12, 21, 22:</b> Voss 232 NG12; <b>3:</b> silencer 480 001 520 2
480 001 300 0	Iveco	10.0 bar	1x Bayonet* 4 pol; 1x Bayonet* 7 pol	8 ... 32 V	<b>11, 12:</b> M16x1.5; <b>21, 22:</b> Ø 13 / Ø 17.9; <b>3:</b> silencer
480 001 400 0	Hino Motors, Nissan Diesel/ UD Trucks	10.0 bar	1x Bayonet* 4 pol; 1x Bayonet* 7 pol	9 ... 32 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-152; <b>3:</b> Union Ø 16.0
480 001 401 0	Isuzu, Hino Motors, Nissan Diesel / UD Trucks	10.0 bar	1x Bayonet* 4 pol; 1x Bayonet* 7 pol	9 ... 32 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-152; <b>3:</b> Union Ø 16.0
480 001 500 0	Paccar, Solaris	10.0 bar	1x Bayonet* 4 pol; 1x Bayonet* 7 pol	8 ... 32 V	<b>11, 12, 21, 22:</b> M22x1.5 JED-388; <b>3:</b> silencer 480 001 520 2
480 003 000 0	Daimler	13.0 bar	2x Bayonet* 4 pol	9 ... 32 V	<b>11, 21:</b> M22x1.5 JED-388; <b>12, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 001 0	Daimler	13.0 bar	2x Bayonet* 4 pol	9 ... 32 V	<b>11, 21:</b> M22x1.5 JED-388; <b>12, 22:</b> M16x1.5 JED-388-4; <b>3:</b> Union Ø 16.0
480 003 002 0	Hino Motors	13.0 bar	2x Bayonet* 4 pol	9 ... 32 V	<b>11, 21:</b> Voss 232 NG12; <b>12, 22:</b> Voss 232 NG8; <b>3:</b> silencer
480 003 003 0	Nissan Diesel/ UD Trucks	13.0 bar	1x Bayonet* 4 pol; 1x Bayonet* 7 pol	9 ... 32 V	<b>11, 21:</b> M22x1.5 JED-388; <b>12, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 004 0	DAF	13.0 bar	1x Bayonet* 4 pol; 1x Bayonet* 7 pol	9 ... 32 V	<b>11, 21:</b> Voss 232 NG12; <b>12, 22:</b> Voss 232 NG8; <b>3:</b> silencer
480 003 030 0	EvoBus	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 032 0	Hino Motors	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> Voss 232 NG8; <b>3:</b> silencer
480 003 033 0	Hunday	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer



Product number	Application	Max. pressure	Electrical connection	Voltage	Port
480 003 038 0	Mercedes-Benz	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 039 0	CNHTC, Kinglong, Yutong	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 041 0	Isuzu	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 042 0	Nissan Diesel/ UD Trucks, Mitsubishi Fuso	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 044 0	DAF	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> Voss 232 NG8; <b>3:</b> silencer
480 003 050 0	Daimler	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 058 0	Daimler	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 003 060 0	Daimler	12.5 bar	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer

## EBS brake signal transmitter with pedal

- **Temperature** -40 ... +80 °C
- **Electrical connection** \* Bayonet DIN 72585
- **Distance between holes** 118x182 mm  
(480 002 202 0: 116x174 mm)  
(480 002 203 0, 480 002 208 0: special)



480 002 000 0



480 002 003 0



480 002 021 0



480 002 103 0

Product number	Application	Max. pressure	Pedal angle	Electrical connection	Voltage	Port
480 002 000 0	EvoBus	10.0 bar	46°	2x Bayonet* 4 pol	8 ... 32 V	<b>11, 12, 21, 22:</b> M22x1.5 JED-388; <b>3:</b> Union Ø 16.0
480 002 003 0	Bus	10.0 bar	45°	2x Bayonet* 4 pol	8 ... 32 V	<b>11, 12, 21, 22:</b> M22x1.5 JED-388; <b>3:</b> Union Ø 16.0
480 002 004 0	EvoBus	10.0 bar	25°	2x Bayonet* 4 pol	8 ... 32 V	<b>11, 12, 21, 22:</b> M22x1.5 JED-388; <b>3:</b> Union Ø 16.0
480 002 020 0	EvoBus	13.0 bar	25°	2x Bayonet* 4 pol	9 ... 32 V	<b>11, 21:</b> M22x1.5 JED-388-4; <b>12, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 002 021 0	VDL Bus & Coach, Foton Motor, Yutong	10.0 bar	25°	1x Bayonet* 4 pol; 1x Bayonet* 7 pol	9 ... 32 V	<b>11, 21:</b> M22x1.5 JED-388-4; <b>12, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 002 022 0	Bus	10.0 bar	46°	2x Bayonet* 4 pol	9 ... 32 V	<b>11, 21:</b> M22x1.5 JED-388-4; <b>12, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 002 102 0	Bus	13.0 bar	25°	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer
480 002 103 0	Daimler, Yutong, Foton Motor, CNHTC	13.0 bar	46°	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16x1.5 JED-388-4; <b>3:</b> silencer

# ELECTRONIC BRAKING SYSTEM (EBS)

Product number	Application	Max. pressure	Pedal angle	Electrical connection	Voltage	Port
480 002 121 0	EvoBus	13.0 bar	25°	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16×1.5 JED-388-4; <b>3:</b> silencer
480 002 202 0	Mitsubishi Fuso	12.5 bar	54°	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16×1.5 JED-388-4; <b>3:</b> silencer
480 002 203 0	Hino Motors	12.5 bar	56°	HDSCS	24 V	<b>11, 12, 21, 22:</b> M16×1.5 JED-388-4; <b>3:</b> silencer
480 002 208 0	Hino Motors	13.0 bar	56°	HDSCS	9 ... 32 V	<b>11, 12, 21, 22:</b> M16×1.5 JED-388-4; <b>3:</b> silencer

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 480 002 000 0	480 002 920 2	Pedal cover	■ 480 002 020 0	480 002 920 2	Pedal cover
■ 480 002 003 0	480 002 920 2	Pedal cover	■ 480 002 021 0	480 002 920 2	Pedal cover
■ 480 002 004 0	480 002 920 2	Pedal cover	■ 480 002 022 0	480 002 920 2	Pedal cover

## EBS proportional relay valve

■ Temperature	-40 ... +80 °C
■ Voltage (V)	24 V
■ Electrical connection	Bayonet DIN 72585
■ Protection class	IP6K6K / IP6K9K
■ Mounting	3× M8
■ Distance between holes	100×64 mm



480 202 004 0

Product number	Max. pressure	Port
480 202 004 0	10.0 bar	<b>1, 21, 22:</b> M22×1.5 JED-388-4; <b>3:</b> silencer; <b>4:</b> M16×1.5 JED-388-4
480 202 005 0	10.0 bar	<b>1:</b> 2× M22×1.5 JED-388-4; <b>21, 22:</b> M22×1.5 JED-388-4; <b>3:</b> silencer 432 407 050 0; <b>4:</b> M16×1.5 JED-388-4
480 202 007 0	10.0 bar	<b>1, 21, 22, 3:</b> M22×1.5 JED-388-4; <b>4:</b> M16×1.5 JED-388-4
480 202 009 0	12.5 bar	<b>1, 21, 22:</b> M22×1.5 JED-388-4; <b>3:</b> silencer 432 407 050 0; <b>4:</b> M16×1.5 JED-388-4
480 202 010 0	12.5 bar	<b>1, 21, 22:</b> M22×1.5 JED-388-4; <b>3:</b> silencer; <b>4:</b> M16×1.5 JED-388-4
480 202 012 0	12.5 bar	<b>1:</b> M22×1.5 JED-388-4 with filter; <b>21, 22:</b> M22×1.5 JED-388-4; <b>3:</b> silencer 432 407 050 0; <b>4:</b> M16×1.5 JED-388-4
480 202 200 0	10.0 bar	<b>1, 21, 22:</b> M22×1.5 JED-388-4; <b>3:</b> silencer 432 407 050 0; <b>4:</b> M16×1.5 JED-388-4

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 480 202 004 0	480 202 921 2	Valve piston	■ 480 202 010 0	480 202 921 2	Valve piston
■ 480 202 005 0	480 202 921 2	Valve piston	■ 480 202 012 0	480 202 921 2	Valve piston
■ 480 202 009 0	480 202 921 2	Valve piston	■ 480 202 200 0	480 202 921 2	Valve piston

## EBS solenoid relay valve

■ Temperature	-40 ... +80 °C
■ Voltage (V)	24 V
■ Electrical connection	Bayonet DIN 72585 1A-2.1-Sn/K2
■ Mounting	4× M8
■ Distance between holes	75×75 mm



480 205 001 0



480 205 102 0



480 205 104 0



480 205 106 0

Product number	Max. pressure	Protection class	Port
480 205 001 0	10.2 bar	IP66 / IP69K	1: M22×1.5 JED-388; 2: M22×1.5 JED-388 + 1x closed; 3: exhaust; 41, 42, 43: M16×1.5 JED-388
480 205 010 0	10.2 bar	IP66 / IP69K	1: M22×1.5 JED-388; 2: M22×1.5 JED-388 + 1x closed; 3: exhaust; 41, 42, 43: M16×1.5 JED-388
480 205 101 0	10.2 bar	IP66 / IP69	1: M22×1.5; 2: 2× M22×1.5; 3: exhaust; 42: M16×1.5
480 205 102 0	13.0 bar	IP6K / IP69	1: M22×1.5; 2: 2× M22×1.5; 3: exhaust; 42: M16×1.5
480 205 103 0	13.0 bar	IP6K7	1: M22×1.5 JED-388; 2: 2× M22×1.5 JED-388; 3: exhaust; 42: M16×1.5 JED-388
480 205 104 0	13.0 bar	IP6K6K / IP6K9K	1: M22×1.5 JED-388; 2: M22×1.5 JED-388 + 1x closed; 3: exhaust; 42: M16×1.5 JED-388
480 205 106 0	13.0 bar	IP6K6K / IP6K9K	1: M22×1.5 JED-388; 2: M22×1.5 JED-388 + 1x closed; 3: snap on contour JED-463-0; 42: M16×1.5 JED-388

### Repair solutions

Product number	Repair kit	Content
■ 480 205 104 0	480 205 921 2	Valve

# ELECTRONIC BRAKING SYSTEM (EBS)

## Parking brake

### Hand brake valve

- Temperature      -40 ... +80 °C
- 961 710 055 0: -40 ... +75 °C
- 961 721 002 0: -20 ... +100 °C



461 700 000 0

961 723 036 0

Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
461 700 000 0	8.0 bar	80°	black	2x Ø 9 mm	25x47 mm	1, 21, 3: M22x1.5
461 700 006 0	8.0 bar	90°	steel untreated	2x Ø 9 mm	47 mm	1, 21, 3: M22x1.5
461 704 035 0	7.36 bar	120°	chromated	2x Ø 8.5 mm	22 mm	1, 21, 3: M12x1.5
461 704 046 0	10.0 bar	7° / 45°	black	2x Ø 8.5 mm	22 mm	1, 21, 3: M12x1.5
884 501 929 0	10.0 bar	73°	black	2x M8	40 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 710 055 0	10.0 bar	50°	–	2x M6	80 mm	1, 21: M12x1.5; 3: hose nozzle Ø 8 mm
961 721 002 0	20.0 bar	90°	black	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 12 mm
961 721 007 0	10.0 bar	90°	black	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 721 037 0	20.0 bar	90°	black/yellow	2x M6	32x39 mm	1, 21: M14x1.5; 3: M12x1
961 721 041 0	10.0 bar	75°	black	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 045 0	10.0 bar	90°	black	2x M6	32x39 mm	1, 21: Rp ¼" (ISO 7/1); 3: flap
961 721 050 0	10.0 bar	90°	red	2x M6	65 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 051 0	10.0 bar	90°	black	2x M6	65 mm	1, 21: M14x1.5; 3: flap
961 721 053 0	10.0 bar	90°	green	2x M6	39x25 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 054 0	10.0 bar	90°	red/ black	2x M6	65 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 722 170 0	10.0 bar	73°	black	2x M8	80 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 171 0	10.0 bar	73°	black	2x M8	80 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 182 0	10.0 bar	73°	black	2x M8	40 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 183 0	10.0 bar	73°	black	2x M8	40 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 187 0	10.0 bar	73°	red	2x M8	40 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 223 0	10.0 bar	73°	black	2x M8	80 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 315 0	10.0 bar	73°	black	2x M8	40 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 316 0	10.0 bar	73°	red	2x M8	40 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 723 033 0	10.0 bar	42°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 034 0	11.0 bar	73°	red/black	2x M6	80 mm	1, 21: M16x1.5; 3: flap
961 723 036 0	10.0 bar	53°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm

Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
961 723 134 0	10.0 bar	53°	black	2x M6	80 mm	1, 21, 22: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
961 723 300 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 304 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 424 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 461 700 000 0	461 700 009 2	Valve	■ 961 721 041 0	961 721 920 2	Valve piston
■ 461 700 006 0	461 700 009 2	Valve	■ 961 721 053 0	961 721 004 2 961 721 920 2	Valve + venting guide Valve piston
■ 461 704 035 0	461 704 009 2	Valve	■ 961 723 300 0	961 723 001 2 961 723 930 2	Filter Protection hood + handle
■ 961 721 002 0	961 721 006 2	Compression spring	■ 961 723 304 0	961 723 001 2	Filter
■ 961 721 007 0	961 721 008 2	Valve			
■ 961 721 037 0	961 721 004 2 961 721 008 2	Valve + venting guide Valve			

## Hand brake valve - parking

- **Temperature**      -40 ... +80 °C  
                               961 701 105 0: -10 ... +120°C  
                               961 710 056 0: -40 ... +75°C  
                               961 721 501 0: -30 ... +80°C
- **Voltage**            \* 24 V  
                               723 539 000 8, 723 539 500 8: 24 ... 28 V



Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
723 539 000 8	10.0 bar	34°/34°	black	2x M6	110 mm	1, 21: M16x1.5; 22: M14x1.5; 3: hose nozzle Ø 9 mm
723 539 500 8	10.0 bar	34°/34°	black	2x M6	110 mm	1, 21: M16x1.5; 22: M14x1.5; 3: hose nozzle Ø 9 mm
884 058 381 0*	10.0 bar	73°	black/red	2x M8	80 mm	1, 21: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
884 502 507 0	10.0 bar	73°	black	2x M8	90 mm	1, 21: M16x1.5; 22: M16x1.5; 3: hose nozzle Ø 11 mm
961 701 100 0	8.0 bar	84°	black	2x Ø 7 mm	75 mm	1, 21, 3: M14x1.5
961 701 105 0	8.0 bar	84°	black	2x Ø 7 mm	75 mm	1, 21, 3: M14x1.5
961 701 110 0	8.0 bar	84°	black	2x Ø 7 mm	75 mm	1, 21, 3: M14x1.5

# ELECTRONIC BRAKING SYSTEM (EBS)

Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
961 710 056 0	12.0 bar	50°	black	2x M6	32x39 mm	1, 21: M12x1.5; 3: hose nozzle Ø 7.9 mm
961 721 004 0	20.0 bar	90°	black	2x M6	65 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 011 0	20.0 bar	90°	black	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 019 0	10.0 bar	90°	black	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 044 0	20.0 bar	90°	black	2x M6	65 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 501 0	10.0 bar	90°	black	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 150 0	10.0 bar	73°	black	2x M8	80 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 151 0	10.0 bar	73°	black	2x M8	40 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 157 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 158 0	10.0 bar	73°	black	2x Ø 6.5 mm	80 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 164 0	10.0 bar	73°	black	2x M8	40 mm	11, 21, 22: M16x1.5 JED-388; 3: hose nozzle Ø 6.0 mm
961 722 179 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-388; 3: hose nozzle Ø 8.5 mm
961 722 210 0	10.0 bar	73°	black	2x M8	40 mm	11, 21: Ø 12.5 mm; 3: hose nozzle Ø 8.5 mm
961 722 232 0	10.0 bar		black	M8		
961 722 251 0	10.0 bar	73°	black	2x M8	40 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 262 0	10.0 bar	73°	black	2x Ø 6.5 mm	80 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 264 0	10.0 bar	73°	black	2x M8	40 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 265 0	10.0 bar	73°	black	3x M6	30x30 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 275 0	10.0 bar	73°	black	2x M8	80 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 284 0	10.0 bar	73°	black	2x M8	80 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 292 0*	10.0 bar	73°	black	2x M6	80 mm	11, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 325 0	10.0 bar	73°	black	2x M8	80 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 326 0	10.0 bar	73°	black	2x Ø 6.5 mm	80 mm	11, 12, 21, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 723 001 0	10.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 003 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 8.5 mm
961 723 004 0	10.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: flap
961 723 005 0	10.0 bar	73°	green-grey	2x M8	90 mm	1, 21: M16x1.5 JED-388; 3: flap
961 723 007 0*	11.0 bar	73°	red	2x M6	80 mm	1, 21: M16x1.5; 3: flap
961 723 008 0	16.5 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 009 0*	10.0 bar	73°	green-grey	2x M8	90 mm	1, 21: M16x1.5 JED-388; 3: flap
961 723 012 0	16.5 bar	73°	black	2x M6	80 mm	1, 21: M16 JED-464; 3: hose nozzle Ø 8.5 mm



Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
961 723 015 0	10.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 016 0	10.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 8.5 mm
961 723 019 0	10.0 bar	73°	black	2x M8	90 mm	1, 21: M16x1.5 JED-388; 3: flap
961 723 021 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 022 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 023 0*	11.0 bar	73°	red	2x M6	80 mm	1, 21: M16x1.5; 3: flap
961 723 025 0	10.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
961 723 026 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 027 0*	13.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 028 0	11.0 bar	85°	black	2x M8	80 mm	1, 21, 22, 3: M16x1.5 JED-388
961 723 030 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
961 723 031 0*	10.0 bar	73°	red	2x M8	90 mm	1, 21: M16x1.5 JED-388; 3: flap
961 723 038 0	10.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 040 0	10.0 bar	85°	grey	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 042 0	10.0 bar	85°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 043 0	10.0 bar	73°	red/black	2x M8	80 mm	1, 21: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
961 723 050 0	10.0 bar	85°	black	2x Ø 7 mm	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 086 0	10.0 bar	85°	black/white	2x Ø 7 mm	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 961 721 011 0	961 721 004 2 961 721 920 2	Valve + venting guide Valve piston	■ 961 723 003 0	961 723 001 2	Filter
■ 961 721 019 0	961 721 004 2 961 721 920 2	Valve + venting guide Valve piston	■ 961 723 004 0	961 723 001 2	Filter
■ 961 721 044 0	961 721 004 2 961 721 920 2	Valve + venting guide Valve piston	■ 961 723 012 0	961 723 001 2	Filter
■ 961 723 001 0	961 723 001 2 961 723 930 2	Filter Protection hood + handle	■ 961 723 015 0	961 723 001 2	Filter
			■ 961 723 016 0	961 723 001 2	Filter
			■ 961 723 040 0	961 723 001 2	Filter

# ELECTRONIC BRAKING SYSTEM (EBS)

## Hand brake valve - parking with additional valve

■ **Temperature**      -40 ... +80 °C  
 961 702 004 0: -10 ... +120°C  
 961 721 127 0: -30 ... +80°C

■ **Voltage**            \* 24 V



961 721 000 0



961 723 118 0



961 723 215 0



961 723 217 0

Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
961 702 001 0	8.0 bar	90°	black	2x Ø 7 mm	75 mm	1, 22, 3: M14x1.5
961 702 004 0	8.0 bar	90°	black	2x Ø 7 mm	75 mm	1, 22, 3: M14x1.5
961 702 005 0	8.0 bar	90°	black	2x Ø 7 mm	75 mm	1, 22, 3: M14x1.5
961 702 011 0	8.0 bar	90°	black	2x Ø 7 mm	75 mm	1, 22, 3: M14x1.5
961 702 030 0	10.0 bar	90°	black	2x Ø 7 mm	75 mm	1, 22, 3: M14x1.5
961 702 031 0	10.0 bar	90°	black	2x Ø 7 mm	75 mm	1, 22, 3: M14x1.5
961 703 002 0	8.0 bar	90°	black	2x Ø 7 mm	75 mm	1, 22, 3: M14x1.5
961 721 000 0	10.0 bar	90°	black	2x M6	39x32 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 040 0	10.0 bar	75°	green grey	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.2 mm
961 721 127 0	10.0 bar	90°	black	2x M6	32x39 mm	1, 21: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 212 0	10.0 bar	73°	black	2x M8	40 mm	11, 21, 22: Ø 12.5 mm; 3: hose nozzle Ø 8.5 mm
961 722 214 0	10.0 bar	73°	black	3x Ø 5.45 mm	70x76 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 240 0	10.0 bar	73°	black	2x M8	80 mm	11, 21, 22: M16x1.5 JED-388; 3: hose nozzle Ø 8.5 mm
961 722 252 0	10.0 bar	73°	black	2x M8	40 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 258 0	10.0 bar	69°	black	2x M6	80 mm	11, 12, 21, 22, 23: M14x1.5; 3: flap
961 722 260 0	10.0 bar	69°	black	2x M8	80 mm	11, 12, 21, 22, 23: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 266 0	10.0 bar	73°	black	2x M8	40 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 267 0*	10.0 bar	73°	black	2x M8	40 mm	11, 21, 22: M14x1.5; 3: flap
961 722 269 0	10.0 bar	73°	black	2x M6	80 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 278 0	10.0 bar	73°	black	2x M8	40 mm	11, 21, 22: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
961 722 291 0*	10.0 bar	73°	black	2x M6	80 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 302 0	10.0 bar	85°	black	2x M6	80 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm
961 722 305 0	10.0 bar	85°	black	2x M6	80 mm	11, 21, 22: M14x1.5; 3: hose nozzle Ø 8.5 mm

Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
961 722 314 0	10.0 bar	73°	black	3x Ø 5.45 mm	70x58 mm	<b>11, 21, 22:</b> M14x1.5; <b>3:</b> hose nozzle Ø 8.5 mm
961 722 324 0	10.0 bar	85°	black	2x M6	80 mm	<b>11, 21, 22:</b> M14x1.5; <b>3:</b> hose nozzle Ø 8.5 mm
961 723 039 0	10.0 bar	73°	grey	2x M6	80 mm	<b>1, 21:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 041 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 049 0	10.0 bar	73°	black	2x M8	90 mm	<b>1, 21:</b> M16x1.5 JED-388; <b>3:</b> flap
961 723 051 0*	10.0 bar	73°	black	2x Ø 9.0 mm	80 mm	<b>1, 21:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 100 0	10.0 bar	73°	black	2x Ø 6.5 mm	80 mm	<b>1, 21, 22:</b> M16x1.5; <b>3:</b> hose nozzle Ø 8.5 mm
961 723 102 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 104 0	10.0 bar	73°	green-grey	2x M8	90 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> flap
961 723 107 0*	10.0 bar	73°	green-grey	2x M8	90 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> flap
961 723 108 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 109 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 111 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 112 0	10.0 bar	73°	black	2x M8	90 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> flap
961 723 116 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 8.5 mm
961 723 117 0*	11.0 bar	73°	red	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5; <b>3:</b> flap
961 723 118 0	10.0 bar	73°	black	2x M8	90 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> flap
961 723 120 0*	10.0 bar	73°	black	2x M8	90 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> flap
961 723 122 0	10.0 bar	73°	black/ white	4x Ø 9.0 mm / 2x Ø 6.5 mm / 2x Ø 6.0 mm	44x80 mm	<b>1, 21, 22:</b> M16x1.5; <b>3:</b> flap
961 723 123 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 124 0	10.0 bar	73°	black	2x M8	90 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> flap
961 723 125 0	11.0 bar	73°	black	2x M8	80 mm	<b>1, 21, 22, 3:</b> M16x1.5 JED-388
961 723 126 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> hose nozzle Ø 6 mm
961 723 127 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> hose nozzle Ø 6 mm
961 723 130 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> hose nozzle Ø 6 mm
961 723 139 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 140 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 143 0	10.0 bar	73°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-388; <b>3:</b> hose nozzle Ø 6 mm
961 723 200 0	10.0 bar	85°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm
961 723 203 0	10.0 bar	85°	black	2x M6	80 mm	<b>1, 21, 22:</b> M16x1.5 JED-464; <b>3:</b> hose nozzle Ø 6 mm

# ELECTRONIC BRAKING SYSTEM (EBS)

Product number	Max. pressure	Actuation	Colour	Mounting	Distance between holes	Port
961 723 204 0	10.0 bar	85°	black	2x M6	80 mm	1, 21, 22: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 208 0	10.0 bar	85°	black	2x M6	80 mm	1, 21, 22: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 212 0	10.0 bar	85°	black	2x M6	80 mm	1, 21, 22: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 214 0*	11.0 bar	85°	red	2x M8	90 mm	1, 21, 22: M16x1.5 JED-388; 3: flap
961 723 215 0	10.0 bar	73°	black	2x M6	80 mm	1, 21, 22: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 217 0	10.0 bar	73°	black/ white	4x Ø 9.0 mm / 2x Ø 6.5 mm / 2x Ø 6.0 mm	44x80 mm	1, 21, 22: M16x1.5; 3: flap
961 723 962 0	10.0 bar	73°	black	2x M6	80 mm	1, 21, 22: M16x1.5; 3: hose nozzle Ø 6 mm
961 724 224 0	8.5 bar	59.5°	dark grey	6x Ø 8.0 mm	special console	1, 21, 22: quick connection; 3: hose nozzle Ø 6 mm
961 724 225 0	8.5 bar	59.5°	dark grey	6x Ø 8.0 mm	special console	1, 21, 22: quick connection; 3: hose nozzle Ø 6 mm

## Repair solutions

Product number	Repair kit	Content
■ 961 721 000 0	961 721 008 2	Valve
■ 961 721 040 0	961 721 920 2	Valve piston
■ 961 721 127 0	961 721 004 2 961 721 920 2	Valve + venting guide Valve piston
■ 961 723 039 0	961 723 001 2	Filter
■ 961 723 102 0	961 723 009 2	Valve
■ 961 723 108 0	961 723 009 2 961 723 930 2	Valve Protection hood + handle
■ 961 723 109 0	961 723 009 2	Valve
■ 961 723 117 0	961 723 009 2	Valve
■ 961 723 122 0	961 723 009 2	Valve
■ 961 723 139 0	961 723 001 2	Filter
■ 961 723 140 0	961 723 001 2	Filter
■ 961 723 143 0	961 723 009 2	Valve
■ 961 723 200 0	961 723 009 2 961 723 930 2	Valve Protection hood + handle
■ 961 723 203 0	961 723 930 2	Protection hood + handle
■ 961 723 204 0	961 723 009 2	Valve
■ 961 723 208 0	961 723 009 2	Valve
■ 961 723 212 0	961 723 009 2	Valve
■ 961 723 214 0	961 723 009 2	Valve
■ 961 723 215 0	961 723 009 2	Valve

## Hand brake valve for trailer control

- Temperature      −40 ... +80 °C
- Voltage            \* 24 V



961 723 403 0



961 723 421 0



961 723 423 0



961 723 428 0

Product number	Max. pressure	Actuating range	Colour	Mounting	Distance between holes	Port
884 501 922 0	10.0 bar	7°/45°	black	2x Ø 8.5 mm	22 mm	1, 21, 22: M16x1.5 JED-388
884 502 105 0	10.0 bar	73°	red	2x M6	80 mm	1, 2: ¼"-18 NPT; 3: hose nozzle Ø 8.5 mm
884 502 521 0	11.0 bar	85°	black	2x M8	90 mm	1, 21, 22: M16x1.5 JED-388; 3: flap
884 503 028 0	10.0 bar	7°/45°	black	2x Ø 8.5 mm	22 mm	1, 21, 3: M16x1.5 JED-388
884 503 166 0	10.0 bar	70°	black	4x M5x1	32x32 mm	1, 2: M14x1.5; 3: hose nozzle Ø 6 mm
961 723 401 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 403 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 405 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 411 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 414 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 418 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 420 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 421 0	10.0 bar	73°	blue/black	2x M8	80 mm	1, 21: M16x1.5 JED-388; 3: flap
961 723 423 0	10.0 bar	73°	blue/black	2x M8	90 mm	1, 21: M16x1.5 JED-388; 3: flap
961 723 425 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 426 0	10.0 bar	73°	blue/black	2x M8	90 mm	1, 21: M16x1.5 JED-388; 3: flap
961 723 428 0*	10.0 bar	73°	black/white	2x Ø 9 mm	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 429 0	10.0 bar	73°	black	2x Ø 7 mm	80 mm	1, 21: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
961 723 430 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-388; 3: hose nozzle Ø 6 mm
961 723 433 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 6 mm
961 723 436 0	10.0 bar	73°	black	2x M6	80 mm	1, 21: M16x1.5 JED-464; 3: hose nozzle Ø 8.5 mm

# ELECTRONIC BRAKING SYSTEM (EBS)

## Repair solutions

Product number	Repair kit	Content
■ 961 723 401 0	961 723 001 2	Filter
■ 961 723 403 0	961 723 001 2 961 723 930 2	Filter Protection hood + handle
■ 961 723 405 0	961 723 001 2	Filter
■ 961 723 411 0	961 723 001 2	Filter
■ 961 723 414 0	961 723 001 2	Filter
■ 961 723 430 0	961 723 009 2 961 723 930 2	Valve Protection hood + handle



# Hydraulic brake systems

## Conventional hydraulic brake

### Load sensing valve - hydraulic

- **Medium** Brake fluid

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- **Temperature** -40 ... +80 °C  
468 402 008 0: -40 ... +100 °C

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- **Mounting** 2x M8



468 404 253 0



468 406 000 0

Product number	Max. pressure	Operation	Stroke		Distance		Port
			total	control	holes	bolts	
468 402 008 0	150 bar	30 ... 150 bar	–	–	55 mm	–	1,1, 1,2, 2,1: M12x1
468 404 253 0	150 bar	5 ... 120 bar	-40° ... +70°	+25°	30 mm	–	1, 2: M12x1
468 404 305 0	150 bar	6 ... 120 bar	-40° ... +70°	+25°	30 mm	–	1, 2: M12x1
468 406 000 0	10/150 bar	5 ... 130 bar	–	–	–	72 mm	1, 2, 4: M12x1

### Repair solutions

Product number	Repair kit	Content
■ 468 402 008 0	468 402 001 2	Extention spring + valve
■ 468 404 253 0	468 404 000 2	Sealing
■ 468 404 305 0	468 404 000 2	Sealing

### Brake valve

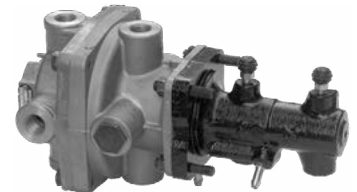
- **Medium** Pneumatic: Air  
Hydraulic: Brake fluid

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- **Temperature** -40 ... +80 °C

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- **Predominance** max. 0.25 bar (fixed setting)



470 012 000 0

Product number	Nominal Ø	Max. pressure		Port
		Pneumatic	Reservoir	
470 012 000 0	10 mm	8 bar	55 bar	1, 2: M14x1; 11, 12, 21, 22: M16x1.5; 3: exhaust

# HYDRAULIC BRAKE SYSTEMS

## Single circuit air - hydraulic servo unit

- **Medium** Brake fluid  
921 399 024 0: Mineral oil

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- **Temperature** -40 ... +80 °C

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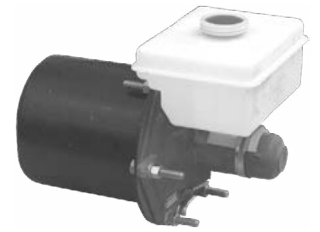
- **Pneumatic pressure** 8 bar

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- **Accessory** 921 399 822 2 Level control switch



921 399 016 0



921 399 200 0

Product number	Hydraulic pressure	Volume		Port
		Swept	Reservoir	
921 399 016 0	120 bar	60 cm <sup>3</sup>	770 cm <sup>3</sup>	11-4: M22x1.5; 12: Ø 44.8x3.62; 2: M12x1
921 399 019 0	120 bar	60 cm <sup>3</sup>	–	11-4: M14x1.5; 12: M14x1.5; 2: M12x1; 5: M16x1.5
921 399 022 0	120 bar	60 cm <sup>3</sup>	770 cm <sup>3</sup>	11-4: M22x1.5; 12: Ø 44.8x3.62; 2: M12x1
921 399 024 0	120 bar	60 cm <sup>3</sup>	770 cm <sup>3</sup>	11-4: M22x1.5; 12: Ø 44.8x3.62; 2: M12x1; 5: M16x1.5
921 399 025 0	120 bar	60 cm <sup>3</sup>	770 cm <sup>3</sup>	11-4: M22x1.5; 12: Ø 44.8x3.62; 2: M12x1
921 399 027 0	120 bar	60 cm <sup>3</sup>	770 cm <sup>3</sup>	11-4: M22x1.5; 12: Ø 44.8x3.62; 2: M12x1; 5: M16x1.5
921 399 200 0	120 bar	30 cm <sup>3</sup>	770 cm <sup>3</sup>	11-4: M22x1.5; 12: Ø 44.8x3.62; 2: M12x1

## Repair solutions

Product number	Repair kit	Content
■ 921 399 025 0	921 399 927 2	Reservoir

## Trailer control valve

### Trailer control valve - 1-circuit (470 015 ... 0)

- **Temperature** -40 ... +80 °C

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- **Lever** ✓

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- **Port** 1, 2: M16x1.5; 3: flap; 4: DIN 74235 - EL M12x1

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- **Mounting** 2x Ø 9.0 mm

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- **Distance** Bolts: 48 mm  
Holes: 50 mm



470 015 054 0

Product number	Limiting pressure	Working pressure	Medium
470 015 010 0	70.0 bar	7.0 / 80.0 bar bar	Brake fluid
470 015 011 0	70.0 bar	7.0 / 80.0 bar	Mineral oil
470 015 051 0	15.0 bar	7.0 / 50.0 bar	Mineral oil
470 015 052 0	20.0 bar	7.0 / 50.0 bar	Brake fluid
470 015 054 0	30.0 bar	7.0 / 50.0 bar	Brake fluid
470 015 055 0	30.0 bar	7.0 / 50.0 bar	Mineral oil
470 015 090 0	45.0 bar	7.0 / 50.0 bar	Brake fluid
470 015 096 0	15.0 bar	7.0 / 50.0 bar	Brake fluid
470 015 098 0	25.0 bar	7.0 / 50.0 bar	Brake fluid
470 015 099 0	20.0 bar	7.0 / 50.0 bar	Brake fluid
470 015 590 0*	45.0 bar	7.0 / 50.0 bar	Brake fluid

\* = 470 015 090 0 + 471 208 000 0

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 470 015 010 0	470 015 001 2	Valve	■ 470 015 096 0	470 015 002 2	Valve
■ 470 015 051 0	470 015 004 2	Valve	■ 470 015 098 0	470 015 003 2	Valve
■ 470 015 052 0	470 015 002 2	Valve	■ 470 015 099 0	470 015 002 2	Valve
■ 470 015 054 0	470 015 003 2	Valve	■ 470 015 590 0	470 015 001 2	Valve
■ 470 015 055 0	470 015 005 2	Valve		471 208 000 2	Valve
■ 470 015 090 0	470 015 001 2	Valve			

## Trailer control valve - 1-circuit (471 20. ... 0)

- Temperature -40 ... +80 °C
- Medium Air



471 200 008 0



471 200 110 0



471 205 040 0



471 208 000 0

Product number	Lever	Working pressure	Mounting	Distance between bolts	Port
471 200 008 0	–	8 bar	4x M10	117x117 mm	1, 2, 4: M22x1.5
471 200 102 0	✓	8 bar	3x M10	165 mm	1, 2, 4: M22x1.5
471 200 110 0	–	8 bar	4x M10	117x117 mm	1, 2, 4: M22x1.5
471 200 113 7	✓	8 bar	4x M10	165 mm	1, 2, 4: M22x1.5
471 200 114 0	–	8 bar	4x M10	165 mm	1, 2, 4: M22x1.5
471 200 117 0	–	8 bar	4x M10	165 mm	1, 2, 4: M22x1.5
471 205 040 0	–	8 bar	3x M10	116x116 mm	1, 2, 4: M22x1.5
471 208 000 0	–	10 bar	2x Ø 8.0 mm	Holes: 58 mm	1, 4: M16x1.5; 2: M22x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 471 200 008 0	471 200 007 2	Valve	■ 471 200 114 0	471 200 007 2	Valve
■ 471 200 102 0	471 200 005 2	Valve	■ 471 200 117 0	471 200 007 2	Valve
■ 471 200 110 0	471 200 007 2	Valve	■ 471 208 000 0	471 208 000 2	Valve

# HYDRAULIC BRAKE SYSTEMS

## Trailer control valve - 2-circuit hydraulic actuated

- Temperature    -40 ... +80 °C
- Lever            ✓
- Mounting        2x Ø 9.0 mm



470 015 203 0



470 015 215 0

Product number	Pressure		Medium	Port
	limiting	working		
470 015 203 0	12.0 bar	7.0 / 50.0 bar	Mineral oil	1, 2: M16x1.5; 3: flap; 4: DIN 74235 - EL M12x1
470 015 214 0	72.5 bar	8.5 / 90.0 bar	Brake fluid	1, 2: M16x1.5; 3: flap; 4: DIN 74235 - EL M10x1
470 015 215 0	20.0 bar	7.0 / 50.0 bar	Mineral oil	1, 2: M16x1.5; 3: flap; 4: DIN 74235 - EL M10x1
470 015 217 0	14.0 bar	8.5 / 50.0 bar	Mineral oil	1, 2: M16x1.5; 3: flap; 4: DIN 74235 - EL M12x1

## Repair solutions

Product number	Repair kit	Content
■ 470 015 203 0	470 015 006 2	Valve
■ 470 015 215 0	470 015 900 2	Valve
■ 470 015 217 0	470 015 006 2	Valve

## Trailer control valve - 2-circuit hydraulic & pneumatic actuated

- Temperature    -40 ... +80 °C
- Lever            ✓
- Port              1, 2: M16x1.5; 3: flap; 42: M12x1.5
- Mounting        2x Ø 9.0 mm



470 015 252 0



470 015 265 0



470 015 259 0



470 015 261 0

Product number	Pressure		Medium	Port 41
	limiting	working		
470 015 252 0	20.0 bar	7.0 / 50.0 bar	Brake fluid	DIN 74235 - EL M10x1
470 015 253 0	20.0 bar	7.0 / 50.0 bar	Mineral oil	DIN 74235 - EL M10x1
470 015 254 0	11.0 bar	7.0 / 50.0 bar	Brake fluid	DIN 74235 - EL M10x1
470 015 255 0	11.0 bar	7.0 / 50.0 bar	Mineral oil	DIN 74235 - EL M10x1
470 015 256 0	19.0 bar	7.0 / 50.0 bar	Brake fluid	DIN 74235 - EL M10x1
470 015 257 0	19.0 bar	7.0 / 50.0 bar	Mineral oil	DIN 74235 - EL M10x1
470 015 258 0	14.0 bar	7.0 / 50.0 bar	Brake fluid	DIN 74235 - EL M10x1
470 015 259 0	8.0 bar	7.0 / 50.0 bar	Mineral oil	DIN 74235 - EL M10x1

Product number	Pressure		Medium	Port 41
	limiting	working		
470 015 261 0	14.0 bar	7.0 / 50.0 bar	Mineral oil	DIN 74235 - EL M10x1
470 015 263 0	4.2 bar	7.4 / 10.0 bar	Mineral oil	DIN 74235 - EL M10x1
470 015 265 0	11.0 bar	7.4 / 50.0 bar	Mineral oil	DIN 74235 - EL M10x1
470 015 267 0	14.0 bar	8.1 / 50.0 bar	Mineral oil	DIN 74235 - FL M10x1
470 015 269 0	14.0 bar	8.5 / 50.0 bar	Mineral oil	DIN 74235 - FL M10x1

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 470 015 252 0	470 015 007 2	Valve	■ 470 015 257 0	470 015 008 2	Valve
■ 470 015 253 0	470 015 008 2	Valve	■ 470 015 259 0	470 015 901 2	Valve
■ 470 015 254 0	470 015 007 2	Valve	■ 470 015 263 0	470 015 902 2	Valve
■ 470 015 255 0	470 015 008 2	Valve	■ 470 015 267 0	470 015 903 2	Valve
■ 470 015 256 0	470 015 007 2	Valve	■ 470 015 269 0	470 015 903 2	Valve

## Hydraulik brake chamber

- Temperature -40 ... +80 °C
- Max. pressure 10 bar
- Total length 147 mm
- Con-rod length 46 mm (at stroke 0)
- Comments
  - <sup>1)</sup> mechanical wear indicator after stroke 37.5 mm
  - <sup>2)</sup> with switch; clamp band position 120°
  - <sup>3)</sup> with switch; clamp band position 180°



423 055 050 0



423 056 000 0



423 056 004 0



423 058 002 0

Product number	Type	Stroke	Mounting	Con-rod radius	Inlet Port		Exhaust
					Position	Thread	
423 054 000 0	16	75 mm	3x M10	5.5 mm	120°	M16x1.5	✓
423 054 001 0	16	75 mm	3x M10	5.5 mm	240°	M16x1.5	✓
423 055 000 0	20	75 mm	3x M10	5.5 mm	240°	M16x1.5	✓
423 055 001 0	20	75 mm	3x M10	5.5 mm	120°	M16x1.5	✓
423 055 006 0	20	62 mm	3x M10	5.5 mm	315°	M22x1.5	✓
423 055 008 0	20	75 mm	3x M10	5.5 mm	30°	M22x1.5	✓
423 055 050 0	20	50 mm	2x M12x1.5 / 2x M10	8.0 mm	0°	M14x1.5	✓
423 055 100 0	20	75 mm	2x M12x1.5 / 3x M10	5.5 mm	0°	M22x1.5 JED-388	M16x1.5 JED-388
423 056 000 0	24	75 mm	2x M12x1.5 / 3x M10	5.5 mm	240°	M16x1.5	✓

# HYDRAULIC BRAKE SYSTEMS

Product number	Type	Stroke	Mounting	Con-rod radius	Inlet Port		Exhaust
					Position	Thread	
423 056 001 0	24	75 mm	2x M12x1.5 / 3x M10	5.5 mm	120°	M16x1.5	✓
423 056 004 0	24	75 mm	2x M12x1.5 / 3x M10	8.0 mm	centre	M16x1.5	✓
423 056 050 0	24	50 mm	2x M12x1.5 / 2x M10	8.0 mm	0°	M14x1.5	✓
423 057 001 0 <sup>1)</sup>	30	75 mm	2x M12x1.5 / 3x M10	7.5 mm	255°	M16x1.5	✓
423 057 003 0 <sup>2)</sup>	30	75 mm	2x M12x1.5 / 3x M10	7.5 mm	centre	M16x1.5	✓
423 057 010 0 <sup>3)</sup>	30	75 mm	2x M12x1.5 / 3x M10	7.5 mm	centre	M16x1.5	✓
423 058 001 0 <sup>1)</sup>	36	75 mm	2x M12x1.5 / 3x M10	7.5 mm	255°	M16x1.5	✓
423 058 002 0 <sup>1)</sup>	36	75 mm	2x M12x1.5 / 3x M10	7.5 mm	centre	M16x1.5	✓
423 060 000 0	14	75 mm	3x M10	5.5 mm	240°	M16x1.5	✓
423 060 004 0	14	62 mm	3x M10	5.5 mm	0°	M22x1.5	✓

## Repair solutions

Product number	Repair kit	Content
■ 423 056 000 0	423 056 000 2	Diaphragm
■ 423 056 001 0	423 056 000 2	Diaphragm
■ 423 056 004 0	423 056 000 2	Diaphragm
■ 423 057 001 0	423 057 000 2	Diaphragm
■ 423 057 003 0	423 057 000 2	Diaphragm
■ 423 058 001 0	423 008 000 2	Diaphragm

## Piston air / hydraulic actuator

■ Temperature	-40 ... +80 °C
■ Con-rod length	46 mm (at stroke 0)
■ Piston	Ø 150 mm
■ Console	✓ 421 305 147 0: -
■ Flanged	with hydraulic master cylinder
■ Mounting	3x M10 to hydraulic cylinder
■ Accessory	441 014 002 0 Pressure switch



421 517 082 0

Product number	Max. pressure	Length	Stroke	Con-rod radius	Push force at pressure	Port
421 305 106 0	8 bar	155 mm	75 mm	8.0 mm	7.0 kn / 4.5 bar; 9.3 kn / 6.0 bar	1: M22x1.5; switch: -
421 305 147 0	8 bar	155 mm	75 mm	8.0 mm	7.0 kn / 4.5 bar; 9.3 kn / 6.0 bar	1: M22x1.5; switch: M10x1
421 512 182 0	10 bar	219 mm	60 mm	7.5 mm	7.2 kn / 4.5 bar; 9.6 kn / 6.0 bar	1, 2: M22x1.5; 3: Ø 10x1; switch: -
421 512 183 0	10 bar	219 mm	60 mm	7.5 mm	7.2 kn / 4.5 bar; 9.6 kn / 6.0 bar	1, 2: M22x1.5; 3: Ø 10x1; switch: -
421 517 082 0	10 bar	230 mm	60 mm	7.5 mm	5.5 kn / 4.5 bar; 7.4 kn / 6.0 bar	1, 2: M22x1.5; 3: Ø 10x1; switch: -



## Repair solutions

Product number	Repair kit	Content
■ 421 305 106 0	421 305 000 2 422 802 003 2	Sealing + filter Sealing
■ 421 305 147 0	421 305 000 2 422 802 003 2	Sealing + filter Sealing
■ 421 512 182 0	421 512 001 2	Sealing
■ 421 512 183 0	421 512 001 2	Sealing

## Electro hydraulic brake

### Hydraulic ABS modulator

■ System	4S/4M		
■ Temperature	-40 ... +85 °C		
■ Medium	Brake fluid FMVSS 116		
■ Working pressure	150 bar		
■ Port	MF: Modulator front MR: Modulator right	FL: front left FR: front right	RL: rear left RR: rear right



478 407 067 0

Product number	Application	Diagnostic		Voltage	Port
		Protocol	Software		
478 407 046 0	Multicar	KWP 2000/SAE J1939	HBS AddOn-E	12 V	MF, MR, FL, RL: M12x1; FR, RR: M10x1
478 407 048 0	Ashok Leyland	KWP 2000/SAE J1939	HBS AddOn-E	24 V	MF, MR, FL, RL: M12x1; FR, RR: M10x1
478 407 067 0	GAZ	KWP 2000/SAE J1939	HBS AddOn-E	12 V	MF, MR, FL, RL: M12x1; FR, RR: M10x1
478 407 072 0	Freightliner	SAE J1587/SAE J1939	–	12 V	MF, FL, RL: 7/16"-24 UNS-2B; MR, FR, RR: 1/2"-20 UNF-2B
478 407 084 0	Multicar	KWP 2000/SAE J1939	HBS AddOn-E	12 V	MF, MR, FL, RL: M12x1; FR, RR: M10x1
478 407 108 0	Hansa	KWP 2000/SAE J1939	–	12 V	MF, MR, FL, RL: M12x1; FR, RR: M10x1

## Repair solutions

Product number	Repair kit	Content
■ 478 407 046 0	446 047 923 2 478 407 944 2	ABS ECU ABS modulator
■ 478 407 048 0	446 047 922 2	ABS ECU

# HYDRAULIC BRAKE SYSTEMS

## ABS hydraulic power brake (HPB)

- **Application** Hyundai
- **Medium** Brake fluid FMVSS 116
- **Port** MF: Modulator front  
MR: Modulator right  
FL: front left  
FR: front right  
RL: rear left  
RR: rear right



468 411 007 0



478 407 127 0

Product number	Max. pressure	Voltage	Temperature	Port
468 411 007 0	–	8 ... 32 V	–20 ... +70 °C	2x M10x1
478 407 127 0	160 bar	24 V	–35 ... +85 °C	MF, MR, FL, FR, RL, RR: M10x1

## Repair solutions

Product number	Repair kit	Content
■ 468 411 007 0	451 900 926 2	Yoke
■ 478 407 127 0	478 407 930 2	Relay valve
	478 407 953 2	DC-motor
	478 408 923 2	DC-motor
	478 408 926 2	Guide

## Hydraulic electronic control unit (ECU)

- **System** 4S/4M
- **Voltage** 12 V
- **Distance between holes** 112x122 mm
- **Mounting** 3x Ø 7.5 mm
- **Diagnostics** Diagnostic software ABS D Hydraulic (KWP 2000)
- **Function<sup>1)</sup>** ETC: Electronic traction control  
EBD: Electronic brakeforce distribution  
4WD: Four-wheel drive



446 044 079 0

Product number	Application	Protection class	Temperature	Comment
446 044 077 0	Renault	IP30 (IEC 529)	–40 ... +70 °C	
446 044 079 0	Multicar	IP30 (IEC 529)	–40 ... +70 °C	with special function <sup>1)</sup> (ETC, EBD, 4WD)

# Brake actuators

## Service brake chamber (UNISTOP™)

### Service brake chamber (UNISTOP™) - disc

#### Type 14

■ Push-rod thread	Ball R8
■ Working pressure	10.2 bar
■ Clamp band	Ø 166 mm
■ Bolt lengths / threads	43 mm / M16x1.5
■ Distance between bolts	120.7 mm
■ Port	<sup>1)</sup> JED-388
■ Temperature	-40 ... +80 °C



423 514 001 0

Product number	Stroke	Length		Position		Port	
		Chamber	Push rod	Clamp band	Side port	Side	Top
423 114 710 0	57 mm	121 mm	15 mm	20°	0°	M16x1.5	M16x1.5
423 514 001 0	57 mm	104 mm	15 mm	0°	-30°	M22x1.5 <sup>1)</sup>	-
423 514 002 0	57 mm	104 mm	15 mm	0°	-60° / 30°	M16x1.5 / M22x1.5 <sup>1)</sup>	-

#### Repair solutions

Product number	Repair kit	Content
■ 423 114 710 0	423 514 000 2	Diaphragm + boot
■ 423 514 001 0	423 514 000 2	Diaphragm + boot
■ 423 514 002 0	423 514 000 2	Diaphragm + boot

#### Type 16

■ Push-rod thread	Ball R8
■ Working pressure	10.0 bar 10.2 bar: 423 104 710 0, 423 504 002 0
■ Clamp band	Ø 166 mm Ø 103 mm: 423 504 002 0
■ Bolt lengths / threads	38 mm / M16x1.5 43 mm: 423 104 710 0, 423 504 002 0
■ Distance between bolts	120.7 mm
■ Temperature	-40 ... +80 °C



423 104 710 0

Product number	Stroke	Length		Position		Port	
		Chamber	Push rod	Clamp band	Side port	Side	Top
423 104 020 0	57 mm	118 mm	15 mm	90°	-	-	M16x1.5
423 104 700 0	73 mm	117 mm	26 mm	180°	-90°	M22x1.5	-
423 104 710 0	57 mm	121 mm	15 mm	20°	0°	M16x1.5	M16x1.5
423 104 711 0	73 mm	117 mm	20 mm	180°	-90°	M22x1.5	-
423 104 712 0	73 mm	117 mm	20 mm	180°	90°	M22x1.5	-
423 504 002 0	57 mm	104 mm	15 mm	-90°	90°	M16x1.5	-

# BRAKE ACTUATORS

## Repair solutions

Product number	Repair kit	Content
■ 423 104 020 0	423 104 002 2	Diaphragm + boot
■ 423 104 710 0	423 104 002 2	Diaphragm + boot
■ 423 104 711 0	423 104 003 2	Diaphragm + boot
■ 423 104 712 0	423 104 003 2	Diaphragm + boot

## Type 20

■ Push-rod thread	Ball R8
■ Working pressure	10.0 bar 10.2 bar: 423 505 000 0
■ Clamp band	Ø 175 mm Ø 174 mm: 423 105 700 0
■ Bolt lengths / threads	38 mm / M16x1.5 43 mm: 423 505 000 0
■ Distance between bolts	120.7 mm
■ Temperature	-40 ... +80 °C



423 505 000 0

Product number	Stroke	Length		Position		Port	
		Chamber	Push rod	Clamp band	Side port	Side	Top
423 105 020 0	57 mm	117 mm	15 mm	90°	-	-	M16x1.5
423 105 700 0	75 mm	115 mm	20 mm	180°	-90°	M22x1.5	-
423 505 000 0	62 mm	117 mm	15 mm	20°	0°	M16x1.5	M16x1.5

## Type 22

■ Push-rod thread	Ball R8
■ Working pressure	10.2 bar
■ Clamp band	Ø 186 mm
■ Bolt lengths / threads	43 mm / M16x1.5
■ Distance between bolts	120.7 mm
■ Temperature	-40 ... +80 °C



423 110 710 0

Product number	Stroke	Length		Position		Port	
		Chamber	Push rod	Clamp band	Side port	Side	Top
423 110 710 0	62 mm	117 mm	15 mm	20°	0°	M16x1.5	M16x1.5

## Type 24

■ Push-rod length / thread	15 mm / Ball R8
■ Working pressure	10.2 bar
■ Bolt lengths / threads	43 mm / M16x1.5 42 mm: 423 506 001 0, 423 506 073 0
■ Distance between bolts	120.7 mm
■ Port	<sup>1)</sup> JED-464-0
■ Temperature	-40 ... +80 °C



423 506 001 0



423 506 120 0

Product number	Stroke	Length chamber	Clamp band	Position		Port	
				Clamp band	Side port	Side	Top
423 506 001 0	64 mm	120.0 mm	Ø 185 mm	20°	0°	M16x1.5	M16x1.5
423 506 072 0	65 mm	121.0 mm	Ø 186 mm	180°	0°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 073 0	64 mm	120.0 mm	Ø 185 mm	0°	20°	M22x1.5	M16x1.5
423 506 093 0	64 mm	115.4 mm	Ø 185 mm	0°	180°	M22x1.5	–
423 506 094 0	64 mm	115.4 mm	Ø 185 mm	0°	180°	M22x1.5	–
423 506 100 0	65 mm	121.0 mm	Ø 186 mm	180°	0°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 101 0	65 mm	121.0 mm	Ø 186 mm	180°	0°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 103 0	65 mm	121.0 mm	Ø 186 mm	-90°	0°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 104 0	65 mm	121.0 mm	Ø 186 mm	90°	0°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 120 0	65 mm	121.0 mm	Ø 186 mm	-135°	90°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 121 0	65 mm	121.0 mm	Ø 186 mm	-135°	0°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 130 0	65 mm	121.0 mm	Ø 186 mm	90°	-90°	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 506 143 0	65 mm	107.0 mm	Ø 186 mm	-45°	-90°	M16x1.5 JED-152	–

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 423 506 001 0	423 506 001 2	Diaphragm + boot	■ 423 506 104 0	925 481 000 2	Diaphragm + spring
■ 423 506 072 0	423 506 001 2 925 461 013 2	Diaphragm + hose stud Diaphragm + hose stud	■ 423 506 121 0	423 506 001 2 925 481 000 2	Diaphragm + hose stud Diaphragm + spring
■ 423 506 100 0	423 506 001 2	Diaphragm + hose stud	■ 423 506 130 0	925 481 000 2	Diaphragm + spring
■ 423 506 101 0	423 506 001 2 925 481 000 2	Diaphragm + hose stud Diaphragm + spring	■ 423 506 143 0	423 506 001 2	Diaphragm + hose stud
■ 423 506 103 0	925 481 000 2	Diaphragm + spring			

# BRAKE ACTUATORS

## Service brake chamber (UNISTOP™) - cam

### Accessories

Product number	Description
895 801 140 4	Yoke: inner thread M14×1.5, bolt diameter Ø 14 H8, length til mid of borehole 48.5 mm
895 801 142 4	Yoke: inner thread M14×1.5, bolt diameter Ø 14 H8, length til mid of borehole 37.0 mm
895 801 210 4	Yoke: inner thread M16×1.5, bolt diameter Ø 14 H8, length til mid of borehole 56.0 mm
895 801 215 2	Yoke
895 802 090 4	Yoke: inner thread M16×1.5, bolt diameter Ø 16 H10, length til mid of borehole 56.0 mm
423 000 900 2	Repair kit incl. yoke 895 801 140 4 (M14×1.5)
423 000 901 2	Repair kit incl. yoke 895 801 210 4 (M16×1.5)
423 000 534 2	Accessory package "hole"
423 000 535 2	Accessory package "long hole"

### Type 12

■ Working pressure	8 bar
■ Push-rod thread	M16×1.5
■ Distance between bolts	76.2 mm
■ Temperature	-40 ... +80 °C



423 103 900 0

Product number	Stroke	Push rod length	Position side port	Yoke	Boot	Port	
						Side	Top
423 103 298 0	57 mm	227 mm	180°	screwed	✓	M16×1.5	M16×1.5
423 103 900 0*	57 mm	186 mm	180°	-	✓	M16×1.5	M16×1.5

\* Push rod length can be shortened according to customer needs

### Type 14

■ Working pressure	10 bar
■ Push-rod thread	M14×1.5
■ Distance between bolts	76.2 mm
■ Temperature	-40 ... +80 °C



423 114 010 0

Product number	Stroke	Push rod length	Position side port	Yoke	Boot	Port	
						Side	Top
423 114 010 0	75 mm	82.5 mm	0°	screwed	✓	M16×1.5	-



## Type 16

- **Push-rod thread** M16x1.5; if yoke welded, push-rod not threaded
- **Distance between bolts** 120.7 mm  
76.2 mm: 423 104 900 0
- **Port** <sup>1)</sup> JED-152
- **Temperature** -40 ... +80 °C



423 104 900 0

Product number	Stroke	Working pressure	Push rod length	Position side port	Yoke	Boot	Port	
							Side	Top
423 104 606 0	57 mm	10.0 bar	37 mm	–	welded	✓	–	M16x1.5
423 104 615 0	57 mm	10.0 bar	37 mm	0°	welded	✓	M16x1.5	M16x1.5
423 104 900 0*	75 mm	8.5 bar	186 mm	180°	–	–	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>

\* Push rod length can be shortened according to customer needs

## Repair solutions

- | Product number  | Repair kit    | Content          |
|-----------------|---------------|------------------|
| ■ 423 104 615 0 | 423 104 001 2 | Diaphragm + boot |

## Type 20

- **Push-rod thread** M16x1.5; if yoke welded, push-rod not threaded
- **Yoke** screwed
- **Distance between bolts** 120.7 mm
- **Port** <sup>1)</sup> JED-152
- **Temperature** -40 ... +80 °C



423 105 900 0

Product number	Stroke	Working pressure	Push rod length	Position side port	Yoke	Boot	Port	
							Side	Top
423 105 111 0	57 mm	10.2 bar	37 mm	–	welded	✓	–	M16x1.5 <sup>1)</sup>
423 105 408 0	57 mm	10.2 bar	37 mm	–	welded	✓	–	M16x1.5 <sup>1)</sup>
423 105 409 0	57 mm	10.2 bar	37 mm	–	welded	✓	–	M16x1.5 <sup>1)</sup>
423 105 414 0	57 mm	8.0 bar	37 mm	0°	welded	✓	M16x1.5	–
423 105 704 0	57 mm	10.2 bar	37 mm	-45°	welded	✓	M16x1.5 <sup>1)</sup>	–
423 105 705 0	57 mm	10.2 bar	37 mm	-135°	welded	✓	M16x1.5 <sup>1)</sup>	–
423 105 900 0*	75 mm	8.5 bar	186 mm	180°	–	–	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>

\* Push rod length can be shortened according to customer needs

## Type 24

- **Push-rod thread** M16x1.5; if yoke welded, push-rod not threaded
- **Distance between bolts** 120.7 mm
- **Port** <sup>1)</sup> JED-152; <sup>2)</sup> JED-464-0
- **Temperature** -40 ... +80 °C



423 106 900 0

Product number	Stroke	Working pressure	Push rod length	Position side port	Yoke	Boot	Port	
							Side	Top
423 106 088 0	75 mm	10.2 bar	70 mm	–	screwed	–	M16x1.5 <sup>1)</sup>	–
423 106 106 0	57 mm	8.5 bar	37 mm	–	welded	✓	–	M16x1.5
423 106 115 0	57 mm	10.2 bar	37 mm	–	welded	✓	–	M16x1.5 <sup>1)</sup>
423 106 201 0	65 mm	10.2 bar	58 mm	180°	–	–	M16x1.5 <sup>2)</sup>	M16x1.5 <sup>2)</sup>
423 106 202 0	65 mm	10.2 bar	102 mm	0°	–	–	M16x1.5 <sup>2)</sup>	M16x1.5 <sup>2)</sup>
423 106 292 0	75 mm	10.0 bar	116 mm	–	welded	✓	–	M16x1.5
423 106 900 0*	75 mm	8.5 bar	186 mm	180°	–	–	M16x1.5	M16x1.5
423 106 926 0	57 mm	10.0 bar	37 mm	0°	screwed	✓	M16x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>

\* Push rod length can be shortened according to customer needs

## Repair solutions

Product number	Repair kit	Content
■ 423 106 201 0	423 106 003 2	Diaphragm
■ 423 106 900 0*	423 106 923 2	Diaphragm

## Type 27

- **Working pressure** 10.2 bar
- **Distance between bolts** 120.7 mm
- **Port** <sup>1)</sup> JED-152; <sup>2)</sup> JED-388; <sup>3)</sup> JED-464-0
- **Temperature** -40 ... +80 °C



423 109 120 0

Product number	Stroke	Push-rod		Position side port	Yoke	Boot	Port	
		Thread	Length				Side	Top
423 109 010 0	65 mm	M16x1.5	247 mm	0°	–	–	M16x1.5 <sup>3)</sup>	M16x1.5 <sup>3)</sup>
423 109 020 0	64 mm	–	54 mm	0°	welded	✓	M22x1.5 <sup>2)</sup>	M12x1.5
423 109 022 0	64 mm	–	54 mm	0°	welded	✓	M22x1.5 <sup>2)</sup>	M12x1.5
423 109 102 0	75 mm	–	37 mm	–	welded	✓	–	M16x1.5 <sup>1)</sup>
423 109 120 0	75 mm	M14x1.5	40 mm	–	screwed	✓	–	M16x1.5 <sup>1)</sup>

## Repair solutions

Product number	Repair kit	Content
■ 423 109 020 0	423 109 921 2	Diaphragm
■ 423 109 022 0	423 109 921 2	Diaphragm
■ 423 109 120 0	423 109 920 2	Diaphragm

## Type 30

■ Push-rod thread	M16x1.5; if yoke welded, push-rod not threaded
■ Distance between bolts	120.7 mm
■ Port	<sup>1)</sup> JED-152; <sup>2)</sup> JED-388
■ Temperature	-40 ... +80 °C



423 107 900 0

Product number	Stroke	Working pressure	Push rod length	Position side port	Yoke	Boot	Port	
							Side	Top
423 107 406 0	64 mm	10.2 bar	54 mm	-30°	welded	✓	M22x1.5 <sup>2)</sup>	M12x1.5 <sup>1)</sup>
423 107 407 0	64 mm	10.2 bar	37 mm	0°	welded	✓	M12x1.5 <sup>1)</sup>	M16x1.5 <sup>1)</sup>
423 107 408 0	64 mm	10.2 bar	54 mm	30°	welded	✓	M22x1.5 <sup>2)</sup>	M12x1.5 <sup>1)</sup>
423 107 410 0	64 mm	10.2 bar	54 mm	0°	welded	✓	M12x1.5 <sup>1)</sup>	M22x1.5 <sup>2)</sup>
423 107 411 0	64 mm	10.2 bar	37 mm	0°	welded	✓	M22x1.5 <sup>2)</sup>	M12x1.5 <sup>1)</sup>
423 107 900 0*	75 mm	8.5 bar	186 mm	180°	-	-	M16x1.5	M16x1.5

\* Push rod length can be shortened according to customer needs

## Type 36

■ Push-rod thread	M16x1.5
■ Distance between bolts	120.7 mm
■ Temperature	-40 ... +80 °C



423 008 919 0

Product number	Stroke	Working pressure	Push rod length	Position side port	Yoke	Boot	Port	
							Side	Top
423 008 919 0*	76 mm	8.0 bar	183 mm	180°	-	✓	M22x1.5	M22x1.5

\* Push rod length can be shortened according to customer needs

## Repair solutions

Product number	Repair kit	Content
■ 423 008 919 0	423 008 000 2	Diaphragm

# BRAKE ACTUATORS

## Service brake chamber (UNISTOP™) - wedge

■ Temperature

−40 ... +80 °C



423 04... 0



423 07... 0



423 14... 0

Product number	Type	Stroke	Working pressure	Chamber length	Clamp band	Mounting	Side port
423 142 001 0	9	44.5 mm	8.0 bar	138.0 mm	Ø 134 mm	1¼"-12 UNS-2A	M16x1.5
423 070 050 0	12	53.0 mm	8.0 bar	174.0 mm	Ø 145 mm	M48x1.5	M16x1.5
423 070 067 0	12	53.0 mm	10.2 bar	213.0 mm	Ø 145 mm	M48x2	M16x1.5 JED-152
423 070 068 0	12	53.0 mm	10.2 bar	213.0 mm	Ø 145 mm	M48x2	M16x1.5 JED-152
423 143 001 0	12	44.5 mm	8.0 bar	138.0 mm	Ø 145 mm	1¼"-12 UNS-2A	M16x1.5
423 143 004 0	12	44.5 mm	8.0 bar	187.0 mm	Ø 145 mm	1¼"-12 UNS-2A	M16x1.5
423 143 012 0	12	44.5 mm	8.0 bar	145.0 mm	Ø 145 mm	1¼"-12 UNS-2A	M16x1.5
423 143 020 0	12	51.0 mm	8.0 bar	215.0 mm	Ø 145 mm	1¼"-12 UNS-2A	M16x1.5
423 143 902 0	12	44.5 mm	8.0 bar	187.0 mm	Ø 145 mm	1¼"-12 UNS-2A	M16x1.5
423 072 201 0	16	53.0 mm	10.0 bar	215.0 mm	Ø 166 mm	M48x2	M16x1.5
423 044 103 0	18	53.0 mm	8.0 bar	183.5 mm	Ø 164 mm	1¼"-12 UNS-2A	M16x1.5
423 073 040 0	18	55.0 mm	10.2 bar	216.0 mm	Ø 174 mm	4x Ø 10.5 mm	Rc 3/8" (ISO 7-1)
423 045 000 0	20	53.0 mm	10.0 bar	202.0 mm	Ø 173 mm	M45x1.5	M16x1.5
423 045 001 0	20	53.0 mm	10.0 bar	255.0 mm	Ø 173 mm	M45x1.5	M16x1.5
423 074 102 0	20	55.0 mm	10.2 bar	215.0 mm	Ø 175 mm	4x Ø 10.5 mm	Rc 3/8" (ISO 7-1)
423 077 050 0	22	55.0 mm	10.2 bar	220.0 mm	Ø 185 mm	4x Ø 10.5 mm	Rc 3/8" (ISO 7-1)
423 046 000 0	24	53.0 mm	10.2 bar	207.5 mm	Ø 186 mm	M45x1.5	M16x1.5
423 046 001 0	24	53.0 mm	10.2 bar	276.5 mm	Ø 186 mm	M45x1.5	M16x1.5
423 076 030 0	24	55.0 mm	10.2 bar	220.0 mm	Ø 185 mm	4x Ø 10.5 mm	Rc 3/8" (ISO 7-1)
423 076 040 0	24	55.0 mm	10.2 bar	250.0 mm	Ø 185 mm	4x Ø 10.5 mm	Rc 3/8" (ISO 7-1)
423 076 041 0	24	55.0 mm	10.2 bar	250.0 mm	Ø 185 mm	4x Ø 10.5 mm	Rc 3/8" (ISO 7-1)
423 076 100 0	24	55.0 mm	10.2 bar	220.0 mm	Ø 186 mm	4x Ø 10.5 mm	Rc 3/8" (ISO 7-1)

### Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 423 045 000 0	425 333 001 2	Diaphragm + hose	■ 423 077 050 0	423 077 000 2	Diaphragm
■ 423 045 001 0	425 333 001 2	Diaphragm + hose	■ 423 143 001 0	423 043 000 2	Diaphragm
■ 423 046 000 0	425 331 000 2	Diaphragm + hose	■ 423 143 004 0	423 043 000 2	Diaphragm
■ 423 046 001 0	425 331 000 2	Diaphragm + hose	■ 423 143 012 0	423 043 000 2	Diaphragm
■ 423 073 040 0	423 073 000 2	Diaphragm	■ 423 143 020 0	423 043 000 2	Diaphragm
■ 423 076 030 0	423 076 000 2	Diaphragm	■ 423 143 902 0	425 327 001 2	Diaphragm + hose stud
■ 423 076 040 0	423 076 000 2	Diaphragm		423 043 000 2	Diaphragm

# Spring brake actuator (TRISTOP™)

## Spring brake actuator (TRISTOP™) - disc

■ Push-rod thread	Ball R8
■ Bolt threads	M16×1.5
■ Distance between bolts	120.7 mm
■ IBV	Internal breathing valve
■ Temperature	-40 ... +80 °C



925 480 004 0



925 480 005 0



925 480 011 0



925 481 150 0



925 481 313 0

Product number	Type	Stroke	Push-rod length	Working pressure	IBV	Port thread
925 486 101 0	12/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 486 104 0	12/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 486 105 0	12/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 486 110 0	12/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 486 111 0	12/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 486 010 0	12/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 486 011 0	12/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 426 200 0	14/16	57/57 mm	15 mm	10.0/8.5 bar	–	11, 12: M22×1.5 JED-388
925 426 201 0	14/16	57/57 mm	15 mm	10.0/8.5 bar	–	11, 12: M22×1.5 JED-388
925 468 033 0	14/16	57/57 mm	15 mm	10.2/8.5 bar	–	11, 12: M22×1.5 JED-388
925 486 420 0	14/16	57/57 mm	15 mm	10.0/10.0 bar	✓	11, 12: M22×1.5 JED-388
925 486 421 0	14/16	57/57 mm	15 mm	10.0/10.0 bar	✓	11, 12: M22×1.5 JED-388
925 488 010 0	14/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 488 014 0	14/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 488 015 0	14/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 424 800 0	16/16	57/57 mm	15 mm	10.0/8.5 bar	–	11, 12: M22×1.5 JED-388
925 424 801 0	16/16	57/57 mm	15 mm	10.0/8.5 bar	–	11, 12: M22×1.5 JED-388
925 464 450 0	16/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5
925 464 451 0	16/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5
925 464 461 0	16/16	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5
925 464 500 0	16/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5
925 484 010 0	16/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22×1.5 JED-388
925 484 011 0	16/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22×1.5 JED-388
925 484 020 0	16/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 484 021 0	16/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22×1.5 JED-388
925 460 027 0	20/24	57/57 mm	15 mm	10.2/8.5 bar	–	11, 12: M16×1.5
925 460 090 0	20/24	64/64 mm	15 mm	10.2/10.0 bar	–	11, 12: M22×1.5 JED-388
925 460 091 0	20/24	64/64 mm	15 mm	10.2/10.0 bar	–	11, 12: M22×1.5 JED-388
925 460 101 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5
925 460 102 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5
925 460 130 0	20/24	75/75 mm	20 mm	10.0/8.0 bar	–	11, 12: M22×1.5 JED-388

# BRAKE ACTUATORS

Product number	Type	Stroke	Push-rod length	Working pressure	IBV	Port thread
925 460 240 0	20/24	75/75 mm	20 mm	10.0/8.5 bar	–	11, 12: M22x1.5
925 480 120 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 480 121 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 460 100 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 480 004 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 480 005 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 480 010 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 480 011 0	20/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 487 000 0	22/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 487 001 0	22/24	64/64 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 461 290 0	24/16	65/45 mm	15 mm	10.5/8.5 bar	–	11, 12: M16x1.5 JED-152
925 461 350 0	24/16	65/45 mm	15 mm	10.5/8.5 bar	–	11, 12: M16x1.5 JED-152
925 481 230 0	24/16	65/45 mm	15 mm	10.5/8.5 bar	✓	11, 12: M16x1.5 JED-152
925 481 231 0	24/16	65/45 mm	15 mm	10.5/8.5 bar	✓	11, 12: M16x1.5 JED-152
925 461 022 0	24/24	75/75 mm	20 mm	10.0/8.5 bar	–	11, 12: M22x1.5
925 461 023 0	24/24	75/75 mm	20 mm	10.0/8.5 bar	–	11, 12: M22x1.5
925 461 052 0	24/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 461 101 0	24/24	65/65 mm	15 mm	10.0/8.5 bar	–	11, 12: M16x1.5
925 461 131 0	24/24	65/65 mm	15 mm	10.0/8.5 bar	–	11, 12: M16x1.5
925 461 210 0	24/24	75/75 mm	26 mm	10.0/8.5 bar	–	11, 12: M22x1.5
925 461 211 0	24/24	75/75 mm	26 mm	10.0/8.5 bar	–	11, 12: M22x1.5
925 461 292 0	24/24	65/65 mm	15 mm	10.2/8.5 bar	–	11, 12: M16x1.5 JED-464-0
925 461 293 0	24/24	75/75 mm	20 mm	10.2/8.5 bar	–	11, 12: M22x1.5 JED-388
925 481 001 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 156 0	24/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 170 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-152
925 481 360 0	24/24	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464
925 481 361 0	24/24	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464
925 481 000 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 012 0	24/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 013 0	24/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 020 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 481 032 0	24/24	65/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464-0
925 481 050 0	24/24	65/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464-0
925 481 051 0	24/24	65/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464-0
925 481 150 0	24/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 151 0	24/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 201 0	24/24	64/64 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-152
925 481 260 0	24/24	75/75 mm	20 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-152
925 481 270 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 271 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 272 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓	11, 12: M22x1.5 JED-388
925 481 021 0	24/24	57/57 mm	15 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 461 470 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	–	11, 12: M16x1.5 JED-152
925 461 471 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	–	11, 12: M16x1.5 JED-152
925 481 070 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464-0
925 481 100 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-152
925 481 102 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-152
925 481 103 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-152
925 481 120 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464-0
925 481 121 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-464-0



Product number	Type	Stroke	Push-rod length	Working pressure	IBV	Port thread
925 481 060 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5 JED-464-0
925 481 312 0	24/30	65/65 mm	15 mm	10.5/8.5 bar	✓	11, 12: M16×1.5 JED-152
925 481 313 0	24/30	65/65 mm	15 mm	10.5/8.5 bar	✓	11, 12: M16×1.5 JED-152
925 481 314 0	24/30	65/65 mm	15 mm	10.5/8.5 bar	✓	11, 12: M16×1.5 JED-152
925 481 345 0	24/30	65/65 mm	15 mm	10.2/8.5 bar	✓	11, 12: M16×1.5 JED-464

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 925 424 800 0	925 426 000 2	Diaphragm + boot	■ 925 481 021 0	925 481 000 2	Diaphragm + spring
■ 925 424 801 0	925 426 000 2	Diaphragm + boot	■ 925 481 032 0	925 481 000 2	Diaphragm + spring
■ 925 426 200 0	925 426 000 2	Diaphragm + boot	■ 925 481 050 0	925 481 004 2 925 481 000 2	Valve Diaphragm + spring
■ 925 426 201 0	925 426 000 2	Diaphragm + boot	■ 925 481 051 0	925 481 000 2 925 481 004 2	Diaphragm + spring Valve
■ 925 460 027 0	925 481 001 2	Diaphragm + boot	■ 925 481 060 0	925 481 000 2	Diaphragm + spring
■ 925 460 090 0	925 481 001 2	Diaphragm + boot	■ 925 481 070 0	925 481 000 2	Diaphragm + spring
■ 925 460 091 0	925 481 001 2	Diaphragm + boot	■ 925 481 100 0	925 481 000 2	Diaphragm + spring
■ 925 460 100 0	925 492 921 2	Screw insert	■ 925 481 102 0	925 481 000 2	Diaphragm + spring
■ 925 460 101 0	925 492 921 2	Screw insert	■ 925 481 103 0	925 481 000 2	Diaphragm + spring
■ 925 460 102 0	925 492 921 2	Screw insert	■ 925 481 103 0	925 481 000 2	Diaphragm + spring
■ 925 460 240 0	925 460 001 2	Diaphragm + boot	■ 925 481 150 0	925 481 000 2	Diaphragm + spring
■ 925 461 022 0	925 461 004 2	Diaphragm + boot	■ 925 481 151 0	925 481 000 2	Diaphragm + spring
■ 925 461 023 0	925 461 004 2	Diaphragm + boot	■ 925 481 156 0	925 481 000 2	Diaphragm + spring
■ 925 461 052 0	925 492 921 2	Screw insert	■ 925 481 170 0	925 481 001 2	Diaphragm + boot
■ 925 461 101 0	925 461 003 2	Diaphragm + boot	■ 925 481 230 0	925 481 000 2	Diaphragm + spring
■ 925 461 210 0	925 461 000 2	Diaphragm + boot	■ 925 481 231 0	925 481 000 2	Diaphragm + spring
■ 925 461 211 0	925 461 000 2	Diaphragm + boot	■ 925 481 260 0	925 481 002 2	Diaphragm + boot
■ 925 461 290 0	925 461 003 2	Diaphragm + boot	■ 925 481 271 0	925 481 001 2	Diaphragm + boot
■ 925 461 292 0	925 461 013 2	Diaphragm + hose stud	■ 925 481 272 0	925 481 001 2	Diaphragm + boot
■ 925 461 470 0	925 461 003 2	Diaphragm + boot	■ 925 481 312 0	925 481 000 2	Diaphragm + spring
■ 925 461 471 0	925 461 003 2	Diaphragm + boot	■ 925 481 313 0	925 481 000 2	Diaphragm + spring
■ 925 464 450 0	925 464 002 2 925 492 921 2	Diaphragm + boot Screw insert	■ 925 481 314 0	925 481 000 2	Diaphragm + spring
■ 925 464 451 0	925 492 921 2	Screw insert	■ 925 481 360 0	925 481 004 2 925 481 000 2	Valve Diaphragm + spring
■ 925 464 461 0	925 492 921 2 925 464 002 2	Screw insert Diaphragm + boot	■ 925 481 361 0	925 481 000 2 925 481 004 2	Diaphragm + spring Valve
■ 925 464 500 0	925 464 002 2 925 492 921 2	Diaphragm + boot Screw insert	■ 925 486 101 0	925 486 000 2	Diaphragm + boot
■ 925 468 033 0	925 481 001 2	Diaphragm + boot	■ 925 486 104 0	925 486 000 2	Diaphragm + boot
■ 925 481 000 0	925 481 001 2	Diaphragm + boot	■ 925 486 105 0	925 486 000 2	Diaphragm + boot
■ 925 481 001 0	925 481 001 2	Diaphragm + boot	■ 925 486 110 0	925 486 000 2	Diaphragm + boot
■ 925 481 012 0	925 481 000 2	Diaphragm + spring	■ 925 486 111 0	925 486 000 2	Diaphragm + boot
■ 925 481 013 0	925 481 000 2	Diaphragm + spring	■ 925 487 000 0	925 487 000 2	Diaphragm + boot
■ 925 481 020 0	925 481 000 2	Diaphragm + spring	■ 925 487 001 0	925 487 000 2	Diaphragm + boot

# BRAKE ACTUATORS

## Spring brake actuator (TRISTOP™) - cam

■ Yoke	s - screwed, w - welded
■ IBV	Internal breathing valve
■ Port 11, 12	<sup>1)</sup> JED-152; <sup>2)</sup> JED-388; <sup>3)</sup> JED-464-0
■ Accessories	895 801 140 4 Yoke: inner thread M14x1.5, bolt diameter Ø 14 H8, length til mid of borehole 48.5 mm 895 801 142 4 Yoke: inner thread M14x1.5, bolt diameter Ø 14 H8, length til mid of borehole 37.0 mm 895 801 210 4 Yoke: inner thread M16x1.5, bolt diameter Ø 14 H8, length til mid of borehole 56.0 mm 895 801 215 2 Yoke 895 802 090 4 Yoke: inner thread M16x1.5, bolt diameter Ø 16 H10, length til mid of borehole 56.0 mm 423 000 900 2 Repair kit incl. yoke 895 801 140 4 (M14x1.5) 423 000 901 2 Repair kit incl. yoke 895 801 210 4 (M16x1.5) 423 000 534 2 Accessory package "hole"



Product number	Type	Stroke	Push-rod		Working pressure	Yoke	IBV	Port 11, 12
			Length	Thread				
925 426 330 0	10/16	57/57 mm	155 mm	M14x1.5	10.2/8.5 bar	s	–	M22x1.5 <sup>2)</sup>
925 455 001 0	12/12	45/45 mm	214 mm	M14x1.5	12.5/12.5 bar	–	–	M16x1.5
925 324 812 0	12/16	57/57 mm	15 mm	Ball R8	10.0/8.0 bar	s	–	M16x1.5
925 324 813 0	12/16	57/57 mm	15 mm	Ball R8	10.0/8.0 bar	s	–	M16x1.5
925 324 000 0	16/24	57/67 mm	187 mm	–	8.0/8.0 bar	s 895 801 140 4	–	M16x1.5
925 324 206 0	16/24	57/57 mm	60 mm	–	8.0/8.0 bar	w	–	M16x1.5
925 324 250 0	16/24	57/57 mm	60 mm	–	10.0/8.0 bar	w	–	M16x1.5
925 324 260 0	16/24	57/57 mm	60 mm	–	10.0/8.0 bar	w	–	M16x1.5
925 424 100 0	16/24	57/57 mm	187 mm	–	10.2/8.5 bar	w	–	M22x1.5 <sup>2)</sup>
925 494 041 0*	16/24	57/57 mm	250 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 494 106 0	16/24	57/57 mm	187 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 494 910 0	16/24	57/57 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 494 911 0	16/24	57/57 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 494 960 0	16/24	57/57 mm	250 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 420 954 0	20/24	57/57 mm	200 mm	M14x1.5	10.2/8.5 bar	s	–	M22x1.5 <sup>2)</sup>
925 490 102 0	20/24	65/65 mm	250 cm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 490 905 0	20/24	57/57 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 490 925 0	20/24	57/57 mm	250 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 320 505 0	20/30	57/57 mm	77 mm	–	10.0/8.0 bar	w	–	M16x1.5
925 320 515 0	20/30	57/57 mm	77 mm	–	10.0/8.0 bar	w	–	M16x1.5
925 490 901 0	20/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 490 906 0	20/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 321 160 0	24/24	57/57 mm	187 mm	–	10.0/8.0 bar	w	–	M16x1.5
925 321 202 0	24/24	57/67 mm	290 mm	M14x1.5	8.0/8.0 bar	s 895 801 140 4	–	M22x1.5
925 321 203 0	24/24	57/67 mm	25 mm	M14x1.5	8.0/8.0 bar	s 895 801 140 4	–	M22x1.5
925 321 292 0	24/24	57/67 mm	187 mm	M14x1.5	8.0/8.0 bar	s 895 801 140 4	–	M16x1.5
925 421 020 0	24/24	57/57 mm	310 mm	–	10.0/8.5 bar	w	–	M16x1.5
925 421 100 0	24/24	57/57 mm	187 mm	–	10.2/8.5 bar	w	–	M22x1.5 <sup>2)</sup>
925 421 141 0	24/24	57/57 mm	50 mm	–	10.2/8.5 bar	w	–	M22x1.5 <sup>2)</sup>

Product number	Type	Stroke	Push-rod		Working pressure	Yoke	IBV	Port 11, 12
			Length	Thread				
925 421 200 0	24/24	65/65 mm	93.5 mm	–	10.0/8.5 bar	s 895 801 215 2	–	M16x1.5
925 421 201 0	24/24	65/65 mm	93.5 mm	–	10.0/8.5 bar	s 895 801 215 2	–	M16x1.5
925 421 342 0	24/24	57/57 mm	112 mm	M16x1.5	10.0/10.0 bar	w	–	M16x1.5
925 421 346 0	24/24	57/57 mm	112 mm	M16x1.5	10.0/10.0 bar	w	–	M16x1.5
925 421 347 0	24/24	57/57 mm	220 mm	M16x1.5	10.0/10.0 bar	w	–	M16x1.5
925 421 750 0	24/24	57/57 mm	75 mm	–	10.2/8.5 bar	w	–	M22x1.5 <sup>2)</sup>
925 421 751 0	24/24	57/57 mm	200 mm	–	10.2/8.5 bar	w	–	M22x1.5 <sup>2)</sup>
925 421 752 0	24/24	57/57 mm	200 mm	–	10.2/8.5 bar	w	–	M22x1.5 <sup>2)</sup>
925 431 033 0	24/24	65/65 mm	70 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 431 094 0	24/24	65/65 mm	58 mm	M16x1.5	10.2/8.5 bar	–	–	M16x1.5
925 431 095 0*	24/24	65/65 mm	247 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5 <sup>3)</sup>
925 431 101 0	24/24	65/65 mm	186 mm	M16x1.5	10.0/9.0	–	–	M16x1.5
925 491 104 0	24/24	65/65 mm	58 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5 <sup>3)</sup>
925 491 105 0	24/24	57/57 mm	187 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 491 106 0	24/24	57/57 mm	187 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 491 107 0	24/24	65/65 mm	58 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5 <sup>3)</sup>
925 491 121 0	24/24	65/65 mm	200 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 491 141 0*	24/24	57/57 mm	250 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 491 900 0	24/24	57/57 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 491 901 0	24/24	57/57 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 321 407 0	24/30	64/64 mm	77 mm	–	10.2/8.5 bar	w	–	M16x1.5
925 321 417 0	24/30	64/64 mm	77 mm	–	10.2/8.5 bar	w	–	M16x1.5
925 421 540 0	24/30	65/65 mm	75 mm	–	10.2/8.5 bar	w	–	M22x1.5 <sup>2)</sup>
925 431 422 0	24/30	65/65 mm	70 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 431 423 0	24/30	65/65 mm	70 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 491 143 0*	24/30	65/65 mm	246 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 491 440 0	24/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
925 491 441 0	24/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22x1.5 <sup>2)</sup>
884 502 393 0	24/30	64/64 mm	38 mm	5/8"-18 UNF	8.0/8.0 bar	–	–	3/8"-18 NPTF
925 491 113 0	24/30	65/65 mm	200 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5 <sup>1)</sup>
925 439 110 0	27/24	65/65 mm	220 mm	M16x1.5	10.0/8.5 bar	–	–	M16x1.5
925 499 003 0	27/24	65/65 mm	220 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5 <sup>3)</sup>
925 329 021 0	27/30	64/64 mm	50.8 mm	M14x1.5	10.0/8.0 bar	–	–	M16x1.5
925 329 031 0	27/30	64/64 mm	50.8 mm	M14x1.5	10.0/8.0 bar	–	–	M16x1.5
925 429 020 0	27/30	65/65 mm	85 mm	–	10.5/8.5 bar	w	–	M16x1.5
925 499 001 0*	27/30	65/65 mm	250 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 432 022 0	30/24	65/65 mm	70 mm	M16x1.5	10.2/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 492 001 0	30/24	65/65 mm	58 mm	–	10.2/8.5 bar	w	✓	M16x1.5 <sup>1)</sup>
925 492 100 0	30/24	65/65 mm	250 mm	M16x1.5	10.2/8.5 bar	–	✓	M16x1.5
925 492 201 0	30/24	65/65 mm	105 mm	5/8"-18UNF-2A	10.2/8.5 bar	–	✓	M16x1.5 <sup>3)</sup>
925 322 205 0	30/30	64/64 mm	37 mm	–	8.0/8.0 bar	w	–	M16x1.5
925 322 215 0	30/30	64/64 mm	37 mm	–	8.0/8.0 bar	w	–	M16x1.5
925 322 241 0	30/30	64/64 mm	77 mm	–	8.0/8.0 bar	w	–	M16x1.5
925 322 251 0	30/30	64/64 mm	77 mm	–	8.0/8.0 bar	w	–	M16x1.5
925 422 070 0	30/30	65/65 mm	38 mm	5/8"-18 UNF	8.5/8.5 bar	s –	–	M16x1.5
925 432 113 0	30/30	65/65 mm	215 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 432 114 0	30/30	65/65 mm	215 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 432 115 0	30/30	65/65 mm	70 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 432 117 0	30/30	65/65 mm	260 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 432 118 0	30/30	65/65 mm	260 mm	M16x1.5	10.5/8.5 bar	s 895 802 090 4	–	M16x1.5 <sup>1)</sup>
925 432 420 0	30/30	65/65 mm	86 mm	M16x1.5	10.0/10.0 bar	s 895 801 210 4	–	M16x1.5 <sup>3)</sup>

# BRAKE ACTUATORS

Product number	Type	Stroke	Push-rod		Working pressure	Yoke	IBV	Port 11, 12
			Length	Thread				
925 432 483 0	30/30	65/65 mm	70 mm	–	10.2/8.5 bar	w	–	M16×1.5 <sup>3)</sup>
925 492 102 0*	30/30	65/65 mm	252 mm	M16×1.5	10.2/8.5 bar	–	✓	M16×1.5
925 492 200 0	30/30	65/65 mm	54 mm	–	10.2/8.5 bar	w	✓	M22×1.5 <sup>2)</sup>
925 492 203 0	30/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22×1.5 <sup>2)</sup>
925 492 208 0	30/30	65/65 mm	200 mm	M16×1.5	10.2/8.5 bar	–	✓	M16×1.5 <sup>1)</sup>
925 492 209 0	30/30	65/65 mm	187 mm	–	10.2/8.5 bar	w	✓	M22×1.5 <sup>2)</sup>
925 492 213 0	30/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22×1.5 <sup>2)</sup>
925 492 221 0	30/30	65/65 mm	187 mm	–	10.2/8.5 bar	w	✓	M22×1.5 <sup>2)</sup>
925 492 300 0	30/30	65/65 mm	200 mm	M16×1.5	10.2/8.5 bar	–	✓	M16×1.5
925 492 902 0	30/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22×1.5 <sup>2)</sup>
925 492 903 0	30/30	65/65 mm	37 mm	–	10.2/8.5 bar	w	✓	M22×1.5 <sup>2)</sup>
925 323 130 0*	36/30	76/76 mm	217 mm	M16×1.5	8.0/8.0 bar	–	–	M16×1.5

\* Push rod length can be shortened according to customer needs

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 925 320 505 0	925 320 000 2	Diaphragm + boot	■ 925 421 201 0	925 431 902 2	Diaphragm + hose stud
■ 925 320 515 0	925 320 000 2	Diaphragm + boot	■ 925 421 342 0	925 321 000 2	Diaphragm + boot
■ 925 321 160 0	925 321 007 2	Diaphragm + boot	■ 925 421 346 0	925 321 000 2	Diaphragm + boot
■ 925 321 202 0	925 321 001 2	Diaphragm + boot	■ 925 421 347 0	925 321 000 2	Diaphragm + boot
■ 925 321 292 0	925 321 001 2	Diaphragm + boot	■ 925 421 540 0	925 421 009 2	Diaphragm + boot
■ 925 321 407 0	925 321 000 2	Diaphragm + boot	■ 925 421 750 0	925 421 920 2	Diaphragm + boot
■ 925 321 417 0	925 321 000 2	Diaphragm + boot	■ 925 421 751 0	925 421 920 2	Diaphragm + boot
■ 925 322 205 0	925 322 006 2	Diaphragm + boot	■ 925 421 752 0	925 421 920 2	Diaphragm + boot
■ 925 322 215 0	925 322 006 2	Diaphragm + boot	■ 925 424 100 0	925 424 002 2	Diaphragm + boot
■ 925 322 241 0	925 322 000 2	Diaphragm + boot	■ 925 426 330 0	925 481 001 2	Diaphragm + boot
■ 925 322 251 0	925 322 000 2	Diaphragm + boot	■ 925 431 033 0	925 431 008 2	Diaphragm + hose stud
■ 925 324 000 0	925 324 000 2	Diaphragm + boot	■ 925 431 094 0	925 431 902 2	Diaphragm + hose stud
■ 925 324 206 0	925 324 003 2	Diaphragm + boot	■ 925 431 422 0	925 431 008 2	Diaphragm + hose stud
■ 925 324 250 0	925 324 003 2	Diaphragm + boot	■ 925 431 423 0	925 431 008 2	Diaphragm + hose stud
■ 925 324 260 0	925 324 003 2	Diaphragm + boot	■ 925 491 104 0	423 106 003 2	Diaphragm
■ 925 324 812 0	925 466 000 2	Diaphragm + boot	■ 925 491 107 0	423 106 003 2	Diaphragm
■ 925 324 813 0	925 466 000 2	Diaphragm + boot	■ 925 491 113 0	423 106 003 2	Diaphragm
■ 925 329 021 0	925 329 000 2 925 431 901 2	Diaphragm + hose stud Diaphragm + hose stud	■ 925 491 121 0	925 492 921 2	Screw insert
■ 925 329 031 0	925 329 000 2 925 431 901 2	Diaphragm + hose stud Diaphragm + hose stud	■ 925 492 001 0	925 492 001 2	Diaphragm
■ 925 420 954 0	925 320 003 2	Diaphragm + boot	■ 925 492 208 0	925 492 920 2	Hose
■ 925 421 100 0	925 421 009 2	Diaphragm + boot	■ 925 492 300 0	925 492 921 2	Screw insert
■ 925 421 141 0	925 421 008 2	Diaphragm + hose stud	■ 925 494 041 0	925 492 921 2	Screw insert
■ 925 421 200 0	925 431 902 2 925 421 001 2	Diaphragm + hose stud Diaphragm + boot	■ 925 494 960 0	925 492 921 2	Screw insert

## Spring brake actuator (TRISTOP™) - wedge

- IBV Internal breathing valve
- Port 11, 12 <sup>1)</sup> JED-388; <sup>2)</sup> JIS B 0253; <sup>3)</sup> ISO-7-1
- Temperature -40 ... +80 °C



425 333 212 0



425 454 070 0



425 454 071 0



425 457 100 0

Product number	Type	Stroke (mm)	Pressure (bar)		Dimensions (mm)		IBV	Mounting	Port 11, 12
			Working	Release	Length	Ø			
425 327 052 0	12/12	44.5/44.5	8.0/8.0	5.2	374	176	–	1.75"-12UNS-2A	M16x1.5
425 327 064 0	12/12	51/51	8.0/8.0	5.2	351*	164	–	1.75"-12 UNS-2A	M16x1.5
425 426 201 0	12/16	53/53	10.0/8.5	5.2	284	176	–	M48x1.5	M22x1.5 <sup>1)</sup>
425 454 070 0	12/16	53/53	10.2/8.5	5.1	366	168.5	–	M48x2	M22x1.5 <sup>1)</sup>
425 454 071 0	12/16	53/53	10.2/8.5	5.1	366	168.5	–	M48x2	M22x1.5 <sup>1)</sup>
425 428 900 0	16/16	53/53	10.2/8.5	5.2	316	186	–	M48x2	M16x1.5
425 429 901 0	18/16	53/53	10.2/8.5	5.2	316	186	–	M48x2	M16x1.5
425 457 100 0	18/24	53/53	10.0/10.0	5.2	323	186	–	M48x 1.5	M22x1.5 <sup>1)</sup>
425 333 002 0	20/16	53/45	8.0/8.0	5.2	370	182	–	M45x1.5	M16x1.5
425 333 100 0	20/20	53/53	10.2/8.5	5.1	394	192	–	M45x1.5	M16x1.5
425 333 101 0	20/20	53/53	10.2/8.5	5.1	334	192	–	M45x1.5	M16x1.5
425 333 102 0	20/20	53/53	10.2/8.5	5.1	420	192	–	M45x1.5	M16x1.5
425 333 200 0	20/24	53/53	10.2/8.0	5.1	358	210	–	M45x1.5	M16x1.5
425 333 201 0	20/24	53/53	10.2/8.0	5.1	325	210	–	M45x1.5	M16x1.5
425 333 202 0	20/24	53/53	8.0/8.0	5.1	370	210	–	M45x1.5	M16x1.5
425 333 212 0	20/24	53/53	10.2/8.0	5.1	389	210	–	M45x1.5	M16x1.5
425 450 080 0	20/24	55/55	10.2/8.5	4.2	351	191	–	4x Ø 10.65 mm	Rc 3/8 <sup>2)</sup>
425 450 081 0	20/24	55/55	10.2/8.5	4.2	351	191	–	4x Ø 10.65 mm	Rc 3/8 <sup>2)</sup>
425 467 010 0	22/24	55/55	10.2/8.5	4.2	356	186	✓	4x Ø 10.5 mm	Rc 3/8 <sup>3)</sup>
425 331 902 0	24/16	53/53	8.0/8.0	4.6	359	198	–	M45x1.5	M16x1.5
425 331 904 0	24/16	53/53	8.0/8.0	4.6	385	198	–	M45x1.5	M16x1.5
425 331 003 0	24/24	53/53	8.0/8.0	5.1	410	210	–	M45x1.5	M16x1.5 JED-152
425 451 080 0	24/24	24/24	10.2/8.5	4.2	356	186	–	4x Ø 10.65 mm	Rc 3/8 <sup>3)</sup>
425 451 081 0	24/24	24/24	10.2/8.5	4.2	356	186	–	4x Ø 10.65 mm	Rc 3/8 <sup>3)</sup>
425 461 000 0	24/24	57/57	10.2/8.5	4.2	386	185	✓	4x Ø 10.5 mm	Rc 3/8 <sup>2)</sup>
425 461 001 0	24/24	57/57	10.2/8.5	4.2	386	185	✓	4x Ø 10.5 mm	Rc 3/8 <sup>2)</sup>
425 461 002 0	24/24	57/57	10.2/8.5	4.2	356	186	✓	4x Ø 10.5 mm	Rc 3/8 <sup>2)</sup>
425 461 003 0	24/24	57/57	10.2/8.5	4.2	356	186	✓	4x Ø 10.5 mm	Rc 3/8 <sup>2)</sup>
425 461 020 0	24/24	55/55	10.2/8.5	4.2	356	186	✓	4x Ø 10.5 mm	Rc 3/8 <sup>3)</sup>
425 451 010 0	24/24	55/55	10.2/8.5	4.2	356	186	–	4x Ø 10.65 mm	Rc 3/8 <sup>3)</sup>
425 451 011 0	24/24	55/55	10.2/8.5	4.2	356	186	–	4x Ø 10.65 mm	Rc 3/8 <sup>3)</sup>
425 326 051 7	9/20	44.5/44.5	8.0/8.0	5.2	262	176	–	1.75"-12UNS-2A	M16x1.5

\* (with nut)

# BRAKE ACTUATORS

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 425 327 052 0	425 327 001 2	Diaphragm + hose stud	■ 425 426 201 0	425 426 001 2	Diaphragm
■ 425 331 003 0	425 331 000 2	Diaphragm + hose	■ 425 428 900 0	425 428 000 2	Diaphragm
■ 425 331 902 0	425 331 001 2	Diaphragm + hose stud	■ 425 429 901 0	425 428 000 2	Diaphragm
■ 425 331 904 0	425 331 001 2	Diaphragm + hose stud	■ 425 450 080 0	425 450 002 2	Diaphragm + hose stud
■ 425 333 002 0	425 333 001 2	Diaphragm + hose	■ 425 450 081 0	425 450 002 2	Diaphragm + hose stud
■ 425 333 100 0	425 333 001 2	Diaphragm + hose	■ 425 451 080 0	425 451 002 2	Diaphragm + hose stud
■ 425 333 101 0	425 333 001 2	Diaphragm + hose	■ 425 451 081 0	425 451 002 2	Diaphragm + hose stud
■ 425 333 102 0	425 333 001 2	Diaphragm + hose	■ 425 461 000 0	425 461 000 2	Diaphragm
■ 425 333 200 0	425 333 001 2	Diaphragm + hose	■ 425 461 001 0	425 461 000 2	Diaphragm
■ 425 333 201 0	425 333 001 2	Diaphragm + hose	■ 425 461 002 0	425 461 000 2	Diaphragm
■ 425 333 202 0	425 333 001 2	Diaphragm + hose	■ 425 461 003 0	425 461 000 2	Diaphragm
■ 425 333 212 0	425 333 001 2	Diaphragm + hose	■ 425 467 010 0	423 077 000 2	Diaphragm



# Air disc brakes

## Tool sets for disc brakes

### Tool set for MAXX™, MAXXUS™ & PAN™ calipers

- **Description** Modular tool set for repairing WABCO calipers and adjusting the return units
- **Product number** 400 608 375 0 WABCO caliper tool set

Product number	Content
300 100 010 2	Tool set 'Basic'
300 100 011 2	Adjuster change
300 100 012 2	Ratchet for return unit
300 100 013 2	Tool set 'Extension'



### Tool set 'Basic'

Product number	Product
300 100 010 2	Tool set 'Basic'



### Tool set 'Extension'

Product number	Product
300 100 013 2	Tool set 'Extension'



### Adjuster change

Product number	Product
300 100 011 2	Adjuster change



### Ratchet for return unit

Product number	Product
300 100 012 2	Ratchet for return unit



# AIR DISC BRAKES

## Application of tool sets

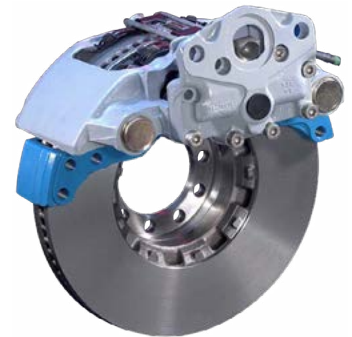
Brake type	300 100 010 2 Tool set 'Basic'	300 100 011 2 Adjuster change	300 100 012 2 Ratchet for return unit	300 100 013 2 Tool set 'Extension'
PAN™17	✓	–	✓	✓
PAN™17 CWS*	✓	✓	✓	✓
PAN™19	✓	–	✓	✓
PAN™22	✓	–	✓	✓
PAN™25	✓	–	✓	✓
MAXX™17	✓	–	✓	✓
MAXX™19	✓	–	✓	✓
MAXX™22	✓	✓	✓	–
MAXX™22T	✓	✓	✓	–
MAXXUS™	✓	✓	✓	–

\* CWS - continuous wear sensor

## PAN™ range

### PAN™ 17 - light duty air disc brake

- **OE brake** \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake** Exchange brake (without brake pads)
- **REMAN brake** Remanufactured brake (without brake pads)



WABCO product number			Mounting side	OE reference	
OE brake*	IAM brake	REMAN brake		Manufacturer	OE number
40 175 051	40 175 049	640 175 049 R	left	MAN	81.50804.6089
40 175 052	40 175 050	640 175 050 R	right		81.50804.6090
40 175 056	40 175 072	640 175 072 R	left	Iveco Anadolu Isuzu	500 371 650 377 777 399 051
40 175 057	40 175 073	640 175 073 R	right	Iveco Anadolu Isuzu	500 371 649 377 777 420 051
40 175 058	40 175 072	640 175 072 R	left	Iveco	500 328 232
40 175 059	40 175 073	640 175 073 R	right		500 328 234
40 175 062	40 175 064	640 175 072 R	left	Renault	501 042 226 0
40 175 063	40 175 065	640 175 073 R	right		501 042 226 1
40 175 070	40 175 072	–	left	DAF, Hendrickson	140 363 2
40 175 071	40 175 073	–	right		140 363 3
40 175 074	640 175 116 0	–	left	Mercedes-Benz	A688 420 740 1
40 175 075	640 175 117 0	–	right		A688 420 750 1
40 175 076	640 175 118 0	–	left	Mercedes-Benz	A688 420 760 1
40 175 077	640 175 119 0	–	right		A688 420 770 1
40 175 080	40 175 049	640 175 049 R	left	MAN	81.50804.6355
40 175 081	40 175 050	640 175 050 R	right		81.50804.6354
640 175 122 0	40 175 072	–	left	DAF	40 130 006
640 175 123 0	40 175 073	–	right		40 130 007
640 175 126 0	40 175 072	640 175 072 R	left	Iveco	580 154 364 1
640 175 127 0	40 175 073	640 175 073 R	right		580 154 363 9

## Repair solutions

Product number	Repair kit	Content
■ 40 175 051	12 480 021	Wear indicator PAN™ 17
40 175 052	12 999 782	Brake pad kit
40 175 080	12 999 802	Brake pad kit
40 175 081	12 999 580VT	Seals
	12 999 699VT	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 175 940 2	Pressure plate PAN™ 17
	640 175 946 2	Clamping unit
■ 40 175 056	12 480 021	Wear indicator PAN™ 17
40 175 057	12 999 698VT	Brake pad kit with wear indicator
40 175 058	12 999 699VT	Sealing and guide bolts
40 175 059	12 999 743VT	Wear indicator PAN™ 17
640 175 126 0	640 175 920 2	Seals for clamping unit
640 175 127 0	640 175 932 2	Wear indicator PAN™ 17
	640 175 940 2	Pressure plate PAN™ 17
	640 175 946 2	Clamping unit
	640 317 922 2	Seals
■ 40 175 062	12 999 699VT	Sealing and guide bolts
40 175 063	12 999 703VT	Brake pad kit with wear indicator
	640 175 920 2	Seals for clamping unit
	640 175 940 2	Pressure plate PAN™ 17
	640 175 946 2	Clamping unit
■ 40 175 070	12 480 021	Wear indicator
40 175 071	12 999 811	Brake disc 7 t front axle
	12 999 812	Brake disc 12 t front axle
	12 999 813	Brake disc rear axle
	12 999 699VT	Sealing and guide bolts
	12 999 743VT	Brake pad kit with wear indicator
	640 175 920 2	Seals for clamping unit
	640 175 940 2	Pressure plate PAN™ 17
	640 175 946 2	Clamping unit
	640 317 922 2	Seals
■ 40 175 074	640 175 920 2	Seals for clamping unit
40 175 075	640 175 942 2	Clamping unit
40 175 076		
40 175 077		
■ 640 175 122 0	12 999 699VT	Sealing and guide bolts
640 175 123 0	12 999 743VT	Brake pad kit with wear indicator
	640 175 940 2	Pressure plate PAN™ 17
	640 175 946 2	Clamping unit

## PAN™ 19 - medium duty air disc brake



- **OE brake**      \* OE production numbers; brakes are not available for Independent Aftermarket

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- **IAM brake**      Exchange brake (without brake pads)

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- **REMAN brake**    Remanufactured brake (without brake pads)

WABCO product number			Mounting side	OE reference	
OE brake*	IAM brake	REMAN brake		Manufacturer	OE number
40 195 009	40 195 021	–	left	Renault	501 052 501 2
40 195 010	40 195 022	–	right		501 052 501 3
40 195 019	40 195 039	640 195 039 R	left	–	–
40 195 020	40 195 040	640 195 040 R	right		
40 195 043	40 195 045	–	left	DAF	140 763 4
40 195 044	40 195 046		right	Albion	NJJ 4883
40 195 047	40 195 039	640 195 039 R	left	Nissan Motor Iberica	41010–9X603
40 195 048	40 195 040	640 195 040 R	right		
40 195 049	40 195 059	–	left	–	–
40 195 050	40 195 060		right		
40 195 057	640 195 092 0	–	left	Volvo	214 549 54
40 195 058	640 195 093 0		right		214 549 55
640 195 062 0	–	–	left	Renault	742 144 416 8
640 195 063 0			right		742 144 417 4
640 195 065 0	640 195 092 0	–	left	Renault	214 441 90
640 195 066 0	640 195 093 0		right		214 441 91
640 195 083 0	40 195 059	–	left	KAMAZ	–
640 195 084 0	40 195 060		right		
640 195 092 0	640 195 092 0	–	left	Renault	742 144 898 7
640 195 093 0	640 195 093 0		right		742 144 898 8
640 195 105 0	40 195 045	–	left	Albion	401 300 09
640 195 106 0	40 195 046		right		401 300 10
640 195 111 0	–	–	left	–	–
640 195 112 0			right		
640 195 119 0	640 195 092 0	–	left	Volvo	225 375 51
640 195 120 0	640 195 093 0		right		225 375 52
640 195 121 0	40 195 041	–	left	Volvo	742 253 754 9
640 195 122 0	40 195 042		right		742 253 755 0
640 195 135 0	–	–	left	–	–
640 195 136 0			right		

### Repair solutions

Product number	Repair kit	Content
■ <b>40 195 009</b>	12 999 770	Brake pad kit with wear indicator
<b>40 195 010</b>	12 999 746VT	Sealing and guide bolts
<b>40 195 019</b>	12 999 747VT	Brake pad kit
<b>40 195 020</b>	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 195 946 2	Brake pad kit without wear indicator

Product number	Repair kit	Content
■ 40 195 043 40 195 044	12 999 791	Brake pad kit with wear indicator
	12 999 776	Sealing and guide bolts
	12 999 759VT	Repair kit of brake disc rear axle
	12 999 760VT	Repair kit of brake disc front axle
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 225 931 2	Cover
■ 40 195 047 40 195 048	12 999 795	Brake pad kit with wear indicator
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 195 946 2	Brake pad kit without wear indicator
■ 40 195 049 40 195 050	12 999 770	Brake pad kit with wear indicator
	12 999 776	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 195 946 2	Brake pad kit without wear indicator
	640 225 931 2	Cover
■ 40 195 057 40 195 058	12 999 776	Sealing and guide bolts
	12 999 795	Brake pad kit with wear indicator
	12 999 738VT	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 195 946 2	Brake pad kit without wear indicator
	640 225 921 2	Sealing and guide bolts
	640 225 931 2	Cover
■ 640 195 062 0 640 195 063 0	12 999 777	Brake pad kit with wear indicator
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
■ 640 195 121 0 640 195 122 0	12 999 777	Brake pad kit with wear indicator
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Seals for clamping unit
■ 640 195 065 0 640 195 066 0 640 195 119 0 640 195 120 0 640 195 092 0 640 195 093 0	12 999 776	Sealing and guide bolts
	12 999 777	Brake pad kit with wear indicator
	12 999 738VT	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 225 921 2	Sealing and guide bolts
	640 225 931 2	Cover
■ 640 195 083 0 640 195 084 0	12 999 776	Sealing and guide bolts
	12 999 737VT	Brake pad kit
	12 999 738VT	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 225 921 2	Sealing and guide bolts
	640 225 931 2	Cover

# AIR DISC BRAKES

## PAN™ 22 - heavy duty air disc brake

### ■ OE brake

\* OE production numbers; brakes are not available for Independent Aftermarket



Product number OE brake*	Mounting side	OE manufacturer
640 225 034 0 640 225 035 0	left right	Fuwa Axle
640 225 066 0 640 225 067 0	left right	Batou BeiBen
640 225 068 0 640 225 069 0	left right	—
640 225 072 0 640 225 073 0	left right	Batou BeiBen
640 225 080 0 640 225 081 0	left right	—
640 225 082 0 640 225 083 0	left right	—
640 225 084 0 640 225 085 0	left right	Fangsheng Axle
640 225 088 0 640 225 089 0	left right	Shanghai Komman Vehicle Component Systems Stock Co., Ltd
640 225 090 0 640 225 091 0	left right	Nanjing CV-HS autoparts Co., Ltd
640 225 092 0 640 225 093 0	left right	Zhengzhou Yutong Group Co., Ltd
640 225 096 0 640 225 097 0	left right	Fangsheng Axle, Dongfeng Dana Axle Co., Ltd
640 225 098 0 640 225 099 0	left right	Nanjing CV-HS Autoparts Co.,Ltd, Dongfeng Auto. Group Co. Ltd
640 225 100 0 640 225 101 0	left right	Dongfeng Dana Axle Co., Ltd
640 225 106 0 640 225 107 0	left right	Qingdao Qingte Zhongli Axle Co., Ltd
640 225 110 0 640 225 111 0	left right	Shaanxi HanDe Axle Co., Ltd
640 225 112 0 640 225 113 0	left right	Zhengzhou Yutong Group Co., Ltd
640 225 114 0 640 225 115 0	left right	Shanghai Komman Vehicle Component Systems Stock Co., Ltd
640 225 132 0 640 225 133 0	left right	Hyundai

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 640 225 034 0 640 225 035 0	12 999 738VT	Sealing and guide bolts	■ 640 225 068 0 640 225 069 0	12 999 738VT	Sealing and guide bolts
	640 195 940 2	Clamping unit		640 225 929 2	Wear indicator
	640 225 929 2	Wear indicator		640 225 931 2	Cover
	640 225 931 2	Cover		640 195 940 2	Clamping unit
	640 225 932 2	Brake pad kit			
■ 640 225 066 0 640 225 067 0	12 999 738VT	Sealing and guide bolts	■ 640 225 072 0 640 225 073 0 640 225 092 0 640 225 093 0	12 999 738VT	Sealing and guide bolts
	640 195 940 2	Clamping unit		640 195 940 2	Clamping unit
	640 225 929 2	Wear indicator		640 225 929 2	Wear indicator
	640 225 931 2	Cover		640 225 931 2	Cover
	640 225 932 2	Brake pad kit		640 225 932 2	Brake pad kit



Product number	Repair kit	Content	Product number	Repair kit	Content
■ <b>640 225 082 0</b> <b>640 225 083 0</b>	12 999 738VT 640 195 940 2 640 225 006 2 640 225 929 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Wear indicator Cover	■ <b>640 225 100 0</b> <b>640 225 101 0</b>	12 999 738VT 640 195 940 2 640 225 006 2 640 225 929 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Wear indicator Cover
■ <b>640 225 084 0</b> <b>640 225 085 0</b>	12 999 738VT 640 195 940 2 640 225 006 2 640 225 929 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Wear indicator Cover	■ <b>640 225 106 0</b> <b>640 225 107 0</b>	12 999 738VT 640 195 940 2 640 225 929 2 640 225 931 2 640 225 932 2	Sealing and guide bolts Clamping unit Wear indicator Cover Brake pad kit
■ <b>640 225 088 0</b> <b>640 225 089 0</b>	12 999 738VT 640 195 940 2 640 225 006 2 640 225 929 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Wear indicator Cover	■ <b>640 225 110 0</b> <b>640 225 111 0</b>	12 999 738VT 640 195 940 2 640 225 929 2 640 225 931 2 640 225 932 2	Sealing and guide bolts Clamping unit Wear indicator Cover Brake pad kit
■ <b>640 225 090 0</b> <b>640 225 091 0</b>	12 999 738VT 640 195 940 2 640 225 006 2 640 225 929 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Wear indicator Cover	■ <b>640 225 112 0</b> <b>640 225 113 0</b>	12 999 738VT 640 195 940 2 640 225 929 2 640 225 931 2 640 225 932 2	Sealing and guide bolts Clamping unit Wear indicator Cover Brake pad kit
■ <b>640 225 092 0</b> <b>640 225 093 0</b>	12 999 738VT 640 195 940 2 640 225 006 2 640 225 929 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Wear indicator Cover	■ <b>640 225 114 0</b> <b>640 225 115 0</b>	12 999 776 12 999 738VT 640 195 940 2 640 225 921 2 640 225 929 2 640 225 931 2 640 225 932 2	Sealing and guide bolts Sealing and guide bolts Clamping unit Sealing and guide bolts Wear indicator Cover Brake pad kit
■ <b>640 225 096 0</b> <b>640 225 097 0</b>	12 999 738VT 640 195 940 2 640 225 006 2 640 225 929 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Wear indicator Cover	■ <b>640 225 132 0</b> <b>640 225 133 0</b> <b>640 225 080 0</b> <b>640 225 081 0</b>	12 999 738VT 640 195 940 2 640 225 922 2 640 225 931 2	Sealing and guide bolts Clamping unit Brake pad kit Cover
■ <b>640 225 098 0</b> <b>640 225 099 0</b>	12 999 738VT 640 195 940 2 640 225 929 2 640 225 931 2 640 225 932 2	Sealing and guide bolts Clamping unit Wear indicator Cover Brake pad kit			

## PAN™ 25 - heavy duty air disc brake

Product number OE brake	Mounting side	OE Manufacturer	OE number
640 250 004 0	left	e.g. Liebherr	640250004 (Kessler)
640 250 005 0	right	e.g. Liebherr	640250005 (Kessler)



## Repair solutions

Product number	Repair kit	Content
■ <b>640 250 004 0</b> <b>640 250 005 0</b>	12 999 797 12 999 738VT 640 175 920 2 640 225 926 2 640 225 931 2 640 250 921 2	Wear indicator Sealing and guide bolts Seals for clamping unit Pressure plate Cover Brake pad kit with wear indicator

## MAXX™ range

### MAXX™ 17 - light duty air disc brake



- **OE brake**      \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake**      Exchange brake (without brake pads)

WABCO product number		Mounting side	OE reference	
OE brake*	IAM brake		Manufacturer	OE number
640 317 001 0	640 317 019 0	left	Daimler	A405 420 130 1
640 317 002 0	640 317 020 0	right		A405 420 140 1
640 317 005 0	640 317 041 0	left	Renault	231 203 00
640 317 006 0	640 317 042 0	right		231 203 01
640 317 010 0	640 317 042 0	right		231 203 04
640 317 007 0	640 317 041 0	left	Volvo	231 203 02
640 317 008 0	640 317 042 0	right		231 203 03
640 317 012 0	640 317 042 0	right		231 203 05
640 317 013 0	640 317 043 0	left	Renault	216 976 02
640 317 014 0	640 317 044 0	right		216 976 03
640 317 015 0	640 317 043 0	left	RT / Mack	216 976 14
640 317 016 0	640 317 044 0	right		216 976 15
640 317 031 0	640 317 049 0	left	GAZ	C41 R11.350 113 7
640 317 032 0	640 317 050 0	right		C41 R11.350 113 6
640 317 033 0	640 317 037 0	left	RT / Mack	223 445 27
640 317 034 0	640 317 038 0	right		223 445 28

### Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ <b>640 317 001 0</b> <b>640 317 002 0</b>	640 175 920 2	Seals	■ <b>640 317 013 0</b> <b>640 317 014 0</b>	640 175 940 2	Pressure plate
	640 175 940 2	Pressure plate		640 317 922 2	Seals and guide bolts
	640 317 928 2	Seals and guide bolts		640 317 926 2	Reset unit
■ <b>640 317 005 0</b> <b>640 317 006 0</b>	640 175 940 2	Pressure plate	640 317 932 2	Brake pad	
	640 317 921 2	Wear sensor	■ <b>640 317 015 0</b> <b>640 317 016 0</b>	640 175 940 2	Pressure plate
	640 317 922 2	Seals and guide bolts		640 317 922 2	Seals and guide bolts
	640 317 926 2	Reset unit		640 317 926 2	Reset unit
640 317 932 2	Brake pad	640 317 932 2		Brake pad	
■ <b>640 317 007 0</b> <b>640 317 008 0</b>	640 175 940 2	Pressure plate	■ <b>640 317 031 0</b> <b>640 317 032 0</b>	640 175 920 2	Seals
	640 317 921 2	Wear sensor		640 175 940 2	Pressure plate
	640 317 922 2	Seals and guide bolts		640 317 928 2	Seals and guide bolts
	640 317 926 2	Reset unit		640 317 929 2	Brake pad
■ <b>640 317 010 0</b> <b>640 317 012 0</b>	640 175 940 2	Pressure plate	■ <b>640 317 033 0</b> <b>640 317 034 0</b>	640 175 940 2	Pressure plate
	640 317 920 2	Wear sensor		640 317 922 2	Seals and guide bolts
	640 317 922 2	Seals and guide bolts		640 317 926 2	Reset unit
	640 317 926 2	Reset unit		640 317 932 2	Brake pad
640 317 932 2	Brake pad				

## MAXX™ 19 - medium duty air disc brake



- **OE brake**      \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake**      Exchange brake (without brake pads)
- **CWS**              Continuous wear sensor

WABCO product number		Wear sensing	Mounting side	OE reference	
OE brake*	IAM brake			Manufacturer	OE number
640 319 001 0	640 319 027 0	CWS (variant A)	left	Renault	231 203 06
640 319 002 0	640 319 028 0	CWS (variant A)	right		231 203 07
640 319 006 0	640 319 028 0	CWS (variant B)	right		231 203 10
640 319 003 0	640 319 027 0	CWS (variant A)	left	Volvo	231 203 08
640 319 004 0	640 319 028 0	CWS (variant A)	right		231 203 09
640 319 008 0	640 319 028 0	CWS (variant B)	right		231 203 12
640 319 009 0	640 319 029 0	Wear indicator	left	Renault	216 976 07
640 319 010 0	640 319 030 0		right		216 976 09
640 319 011 0	640 319 029 0	Wear indicator	left	Volvo	216 976 19
640 319 012 0	640 319 030 0		right		216 976 20
640 319 025 0	640 319 032 0	CWS (variant A)	left	Nissan Diesel / UD Trucks	231 203 13
640 319 026 0	640 319 033 0	CWS (variant A)	right		231 203 14
640 319 031 0	640 319 033 0	CWS (variant B)	right		231 203 15
640 319 034 0	640 319 032 0	CWS (variant A)	left	Nissan Diesel / UD Trucks	231 203 16
640 319 035 0	640 319 033 0	CWS (variant B)	right		231 203 17
640 319 038 0	640 319 032 0	-	left	Hyundai / Kia	58100-6D000
640 319 039 0	640 319 033 0		right		58200-6D000

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 640 319 001 0 640 319 002 0 640 319 003 0 640 319 004 0	640 317 926 2	Return unit	■ 640 319 011 0 640 319 012 0	640 317 926 2	Return unit
	640 319 921 2	Wear sensor		640 319 922 2	Seals and guide bolts
	640 319 922 2	Seals and guide bolts		640 319 929 2	Pressure plate
	640 319 929 2	Pressure plate		640 319 930 2	Brake pad
■ 640 319 006 0 640 319 008 0	640 319 930 2	Brake pad	■ 640 319 025 0 640 319 026 0	640 319 928 2	Brake pad
	640 319 932 2	Wear indicator		640 317 926 2	Return unit
	640 317 926 2	Return unit		640 319 921 2	Wear sensor
	640 319 920 2	Wear sensor		640 319 922 2	Seals and guide bolts
	640 319 922 2	Seals and guide bolts		640 319 929 2	Pressure plate
■ 640 319 009 0 640 319 010 0	640 319 929 2	Pressure plate	■ 640 319 031 0 640 319 034 0 640 319 035 0	640 319 932 2	Wear indicator
	640 319 930 2	Brake pad		640 317 926 2	Return unit
	640 319 932 2	Wear indicator		640 319 920 2	Wear sensor
	640 317 926 2	Return unit		640 319 921 2	Wear sensor for 034
	640 319 922 2	Seals and guide bolts		640 319 922 2	Seals and guide bolts
■ 640 319 038 0 640 319 039 0	640 319 929 2	Pressure plate	■ 640 319 038 0 640 319 039 0	640 319 928 2	Brake pad
	640 319 930 2	Brake pad		640 319 929 2	Pressure plate
	640 319 932 2	Wear indicator		640 319 932 2	Wear indicator
	640 317 926 2	Return unit		640 317 926 2	Return unit
	640 319 922 2	Seals and guide bolts		640 319 922 2	Seals and guide bolts
				640 319 929 2	Pressure plate

# AIR DISC BRAKES

## MAXX™ 22 - heavy duty air disc brake



- **OE brake** \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake** Exchange brake (without brake pads)
- **REMAN brake** Remanufactured brake (without brake pads)

WABCO product number			Mounting side	OE reference	
OE brake*	IAM brake	REMAN brake		Manufacturer	OE number
640 322 004 0	640 322 031 0	640 322 031 R	front axle left	MAN	81.50804-6577
640 322 005 0	640 322 032 0	640 322 032 R	front axle right		81.50804-6576
640 322 007 0	640 322 034 0	640 322 034 R	rear axle left	MAN	81.50804-6581
640 322 008 0	640 322 035 0	640 322 035 R	rear axle right		81.50804-6580
640 322 060 0	640 322 031 0	640 322 031 R	front axle left	MAN	81.50804-6631
640 322 061 0	640 322 032 0	640 322 032 R	front axle right		81.50804-6632
640 322 062 0	640 322 034 0	640 322 034 R	rear axle left	MAN	81.50804-6633
640 322 063 0	640 322 035 0	640 322 035 R	rear axle right		81.50804-6634
640 322 069 0	640 322 031 0	640 322 031 R	front axle left	MAN	81.50804-6635
640 322 070 0	640 322 032 0	640 322 032 R	front axle right		81.50804-6636
640 322 071 0	640 322 034 0	640 322 034 R	rear axle left	MAN	81.50804-6637
640 322 072 0	640 322 035 0	640 322 035 R	rear axle right		81.50804-6638
640 322 073 0	640 322 096 0	—	left	Daimler	A960 420 120 1
640 322 074 0	640 322 097 0	—	right		A960 420 130 1
640 322 077 0	—	—	left	Daewoo	P345 421 601 0
640 322 078 0	—	—	right		P345 421 602 0
640 322 096 0	—	—	left	Daimler	A960 420 150 1
640 322 097 0	—	—	right		A960 420 160 1
640 322 102 0	—	—	left	Shaanxi HanDe Axle Co., Ltd, Fangsheng Axle	244-0229-001
640 322 103 0	—	—	right		244-0229-002
640 322 112 0	—	—	left	Shaanxi HanDe Axle Co., Ltd	DZ910 044 004 0
640 322 113 0	—	—	right		DZ910 044 005 0
640 322 114 0	—	—	left	Shaanxi HanDe Axle Co., Ltd	HD901 293 403 69
640 322 115 0	—	—	right		HD901 293 403 70
640 322 116 0	—	—	left	Shaanxi HanDe Axle Co., Ltd	HD901 293 403 71
640 322 117 0	—	—	right		HD901 293 403 72
640 322 128 0	—	—	left	Fangsheng Axle	JY3501NP9-010-G
640 322 129 0	—	—	right		JY3501NP9-015-G

## Repair solutions

Product number	Repair kit	Content
■ 640 322 004 0	640 322 926 2	Seals and guide bolts
640 322 005 0	640 322 927 2	Reset unit
640 322 060 0	640 322 928 2	Wear sensor
640 322 061 0	640 322 931 2	Pressure plate
640 322 069 0	640 322 932 2	Boot
640 322 070 0	640 322 933 2	Brake pad
■ 640 322 007 0	640 322 926 2	Seals and guide bolts
640 322 008 0	640 322 927 2	Reset unit
640 322 062 0	640 322 928 2	Wear sensor
640 322 063 0	640 322 931 2	Pressure plate
640 322 071 0	640 322 933 2	Brake pad
640 322 072 0		

Product number	Repair kit	Content
■ 640 322 073 0	640 322 941 2	Reset unit
640 322 074 0	640 322 942 2	Boot
640 322 096 0	640 322 943 2	Wear sensor
640 322 097 0	640 322 945 2	Pressure plate (left)
	640 322 946 2	Pressure plate (right)
	640 322 951 2	Seals and guide bolts
	640 322 958 2	Brake pad
■ 640 322 077 0	640 319 922 2	Seals and guide bolts
640 322 078 0	640 322 927 2	Reset unit
	640 322 928 2	Wear sensor
	640 322 931 2	Pressure plate
	640 322 932 2	Boot
	640 322 933 2	Brake pad

Product number	Repair kit	Content
■ 640 322 112 0	640 319 922 2	Seals and guide bolts
640 322 113 0	640 322 134 2	Brake pad
	640 322 931 2	Pressure plate
	640 322 932 2	Boot
	640 322 941 2	Reset unit
■ 640 322 114 0	640 319 922 2	Seals and guide bolts
640 322 115 0	640 322 134 2	Brake pad
640 322 116 0	640 322 931 2	Pressure plate
640 322 117 0	640 322 932 2	Boot
	640 322 941 2	Reset unit

Product number	Repair kit	Content
■ 640 322 102 0	640 319 922 2	Seals and guide bolts
640 322 103 0	640 322 931 2	Pressure plate
640 322 128 0	640 322 932 2	Boot
640 322 129 0	640 322 937 2	Brake pad kit
	640 322 941 2	Reset unit

## MAXX™ 22L - heavy duty air disc brake

- **OE brake** \* OE production numbers; brakes are not available for Independent Aftermarket
- **CWS** Continuous wear sensor



Product number OE brake*	Wear sensing	Mounting side	OE reference	
			Manufacturer	OE number
640 322 075 0 640 322 076 0	CWS	left right	Daimler	A960 420 130 2 A960 420 140 2
640 322 098 0 640 322 099 0	CWS	left right	Daimler	A960 420 160 2 A960 420 170 2
640 322 118 0 640 322 119 0	Wear indicator	left right	Shaanxi HanDe Axle Co., Ltd	HD901 293 403 61 HD901 293 403 62
640 322 120 0 640 322 121 0	Wear indicator	left right	Shaanxi HanDe Axle Co., Ltd	HD901 293 403 63 HD901 293 403 64

## Repair solutions

Product number	Repair kit	Content
■ 640 322 075 0	640 322 958 2	Brake pad
640 322 076 0	640 322 928 2	Wear indicator
	640 322 941 2	Reset unit
	640 322 942 2	Boot for reset unit
	640 322 945 2	Pressure plate
	640 322 951 2	Seals and guide bolts
■ 640 322 098 0	640 322 941 2	Reset unit
640 322 099 0	640 322 942 2	Boot for reset unit
	640 322 943 2	Wear indicator
	640 322 945 2	Pressure plate
	640 322 951 2	Seals and guide bolts

Product number	Repair kit	Content
■ 640 322 118 0	640 322 134 2	Brake pad
640 322 119 0	640 319 922 2	Seals and guide bolts
	640 322 931 2	Pressure plate
	640 322 932 2	Boot for reset unit
	640 322 941 2	Reset unit
■ 640 322 120 0	640 322 134 2	Brake pad
640 322 121 0	640 319 922 2	Seals and guide bolts
	640 322 931 2	Pressure plate
	640 322 932 2	Boot for reset unit
	640 322 941 2	Reset unit

# AIR DISC BRAKES

## MAXXUS™ - heavy duty air disc brake

- **OE brake**      \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake**      Exchange brake (without brake pads)

Product number		Mounting side	OE Manufacturer
OE brake*	IAM brake		
640 322 050 0	640 322 065 0	left	Freightliner, Western Star
640 322 051 0	640 322 066 0	right	Freightliner, Western Star
640 322 079 0	–	left	Kessler
640 322 080 0	–	right	Kessler



### Repair solutions

Product number	Repair kit	Content
■ <b>640 322 050 0</b> <b>640 322 051 0</b>	640 322 927 2	Reset unit
	640 322 932 2	Boot & sealing plug
	640 322 934 2	Brake pad
	640 322 935 2	Pressure plate
	640 322 938 2	Seals and guide bolts
■ <b>640 322 079 0</b> <b>640 322 080 0</b>	640 322 921 2	Wear indicator
	640 322 927 2	Reset unit
	640 322 931 2	Pressure plate
	640 322 932 2	Boot & sealing plug
	640 322 938 2	Cover
	640 322 939 2	Brake pad

### Rotor

Product number	Axle	Application / Brake PAN™ 19-1 plus
13 162 046	front	Dennis Enviro 300 / 40 195 019 / 020 / 039 / 040
13 162 047	rear	Dennis Enviro 300 / 40 195 019 / 020 / 039 / 040





# Hydraulic disc brakes

## Product number explanation

■ <b>Product number</b>	<b>40 244 009</b>	Size Hydraulic disc brake
■ <b>Hydraulic disc brake</b>	<b>244 V-Ö</b>	Actuation Type Size
■ <b>Size</b>	Number of pistons and piston diameter 023 2300 Nm braking torque (can vary depending on the used brake disc) 244 2 pistons, 44 mm piston diameter 485 4 pistons, 85 mm piston diameter	
■ <b>Type</b>	F fixed caliper brake V floating caliper brake	
■ <b>Actuation</b>	I indirect Ö hydraulic (oil pressure) m mechanical parking brake	

## Floating caliper disc brakes

### Hydraulic floating caliper disc brake 230 V-IÖ

- **Application** Engineered Sealing Products

Product number	Brake
40 023 004	Disc brake 230 V-IÖ



## Repair solutions

Repair kit	Content
12 182 091	Brake pad
12 999 387VT	Boot, O-rings
13 230 075	Cover
12 303 003	Set of dished plate springs
13 477 053	Piston
13 701 115	Ring
16 200 083	Bleeding valve
18 425 475	Hex socket set screw DIN 913 M16x40
18 429 151	Hexagon head screw ISO 4017 M6x8
18 429 469	Hexagon head screw DIN 960 M16x1.5x120
18 441 009	Hexagon nut DIN 934 M16
18 444 000	Hexagon castle nut DIN 937 M16x1.5

- **Application** Agricultural and construction vehicles

Product number	Brake
40 023 005	Disc brake 230 V-IÖ

# HYDRAULIC DISC BRAKES

## Repair solutions

Repair kit	Content
12 182 091	Brake pad
12 303 003	Set of dished plate springs
12 999 473VT	Boot, O-rings
13 229 167	Thrust piece
13 230 075	Cover
13 477 053	Piston
13 701 115	Ring
16 200 083	Bleeding valve
17 665 107	Tolerance ring
18 425 475	Hex socket set screw DIN913 M16x40
18 429 151	Hexagon head screw ISO4017 M6x8
18 429 469	Hexagon head screw DIN960 M16x1.5x120
18 441 009	Hexagon nut DIN934 M16
18 444 000	Hexagon castle nut DIN937 M16x1.5

## Hydraulic floating caliper disc brake 340 V-IÖ

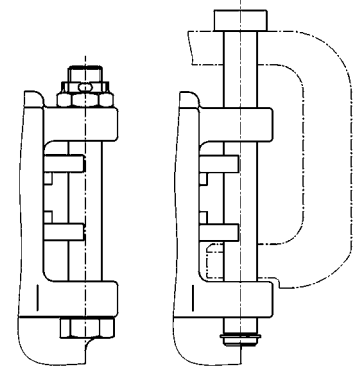
- Application Agricultural vehicles

Product number	Brake
40 034 004	Form B
40 034 005	Form C



Form B

Form C



## Repair solutions

Repair kit	Content
12 182 121	Brake pad
12 303 004	Set of dished plate springs
12 999 521VT	Boots, O-rings
13 227 116	Boot
13 229 167	Thrust piece
13 477 058	Piston
16 200 083	Bleeding valve
17 665 107	Tolerance ring
17 861 001	Magnet
18 425 476	Screw

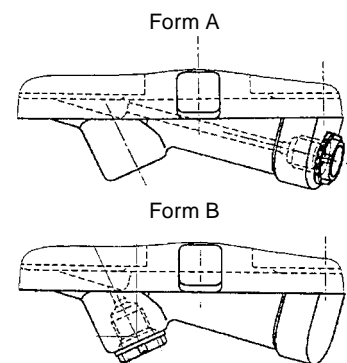
## Hydraulic floating caliper disc brake 244 V-Ö

- Application Mercedes Sprinter (4.6 t) Dual tyres;  
Model: 408 D 1995–04/2002, 410 D 1995–04/2002, 412 D 1995–04/2002, 414 1995–04/2002, 512 D (Vario) 1995–04/2002  
VW LT 46
- Mounting side Vario 512 D: the brakes on the front axle are installed side-inverted

Product number	Mounting side	Vehicle brand	OE number
40 244 009	left, form A	Mercedes VW Claas	A 904 420 08 01 2D0 615.105 B 02608180



Product number	Mounting side	Vehicle brand	OE number
40 244 010	right, form A	Mercedes VW Claas	A904 420 09 01 2D0 615.106 B 02608190
40 244 017	left, form B	Mercedes	A9044201801
40 244 018	right, form B	Mercedes	A9044201901



## Repair solutions

Repair kit	Content
12 174 141	Brake spider
12 999 541VT	Brake pads, spiral springs, screws
12 999 719VT	Caliper, screws (only for 40 244 009)
12 999 720VT	Caliper, screws (only for 40 244 010)
12 999 765	Caliper, screws (only for 40 244 009)
12 999 766	Caliper, screws (only for 40 244 010)
12 999 543VT	Bolts, screws
13 480 023	Wear indicator
16 200 041	Dust cap
16 200 083	Bleeding valve
640 244 921 2	Pistons, boots, sealing rings, plug, screws

## Hydraulic floating caliper disc brake 268 V-Ö

- Application Iveco vehicle

Product number	Wear indicator	Vehicle brand	OE number
40 268 001	–	Iveco	42115918
40 268 002	✓	Iveco	42115919



## Repair solutions

Repair kit	Content
12 999 625VT	Boots, sealing rings, covers, screws
12 999 626VT	Brake pads, leaf springs, pins
12 999 627VT	Brake pad, brake pad with wear indicator, leaf springs, pins (only for 40 268 002)
12 999 628VT	Boots, bolts, screws, bushings
16 200 041	Dust cap
16 200 083	Bleeding valve

- Application Iveco vehicle

Product number	Wear indicator	Vehicle brand	OE number
40 268 003	–	Iveco	42115921
40 268 004	✓	Iveco	42115922

## Repair solutions

Repair kit	Content
12 999 625VT	Boots, sealing rings, covers, screws
12 999 626VT	Brake pads, leaf springs, pins

# HYDRAULIC DISC BRAKES

Repair kit	Content
12 999 627VT	Brake pad, brake pad with wear indicator, leaf springs, pins (only for 40 268 002)
12 999 628VT	Boots, bolts, screws, bushings
16 200 041	Dust cap
16 200 083	Bleeding valve

## Fixed caliper disc brakes

### Hydraulic 4-piston fixed caliper disc brake 444 F-Ö

- Application** Mercedes Van (T1 series);  
 Model: 207 D -8/82, 208 -8/82, 208 D -8/82, 209 D 9/82-94, 210 9/82-94, 210 D 9/82-94, 307 D -8/82, 307 D 9/82-95, 308 -8/82, 308 D -8/82, 308 D 9/82-95, 309 D 9/82-95, 310 9/82-94, 310 D 9/82-95



Product number	Mounting side	Vehicle brand	OE number
40 444 183	left	Mercedes	A0064211998
40 444 184	right	Mercedes	A0064212098

### Repair solutions

Repair kit	Content
12 728 001	Pin
12 999 097VT	Piston
12 999 165VT	Brake pads
12 999 179VT	Piston
12 999 197VT	Boots, sealing rings
13 304 042	Leaf spring
16 200 041	Dust cap
16 200 083	Bleeding valve
17 520 108	Clips detecting element

Product number	Mounting side
40 444 231	left
40 444 232	right

### Repair solutions

Repair kit	Content
12 728 010	Pin
12 999 165 VT	Brake pads
12 999 179 VT	Piston
13 304 039	Leaf spring

- Application** Mercedes off-road vehicle;  
 Model: 230 GE, 280 GE, 240 GD, 250 GD, 290 GD, 300 GD, G 230, G 300, G 300 D, 500 GE AMG

Product number	Mounting side	Vehicle brand	OE number
40 444 239	left	Mercedes	A4614200902
40 444 240	right	Mercedes	A4614201002

## Repair solutions

Repair kit	Content
12 728 001	Pin
12 999 197VT	Boots, sealing rings
12 999 800	Brake pads
13 304 042	Leaf spring
16 200 041	Dust cap
16 200 083	Bleeding valve
640 444 920 2	Piston repair kit

## Hydraulic 4-piston fixed caliper disc brake 450 F-Ö

- **Application** Iveco Transporter Daily Type 59-12 Turbo Intercooler

Product number	Mounting side	Vehicle brand	OE number
40 450 013	left	Iveco	99465473
40 450 014	right	Iveco	99465472



## Repair solutions

Repair kit	Content
12 728 003	Pin
12 999 199VT	Boots, sealing rings
12 999 324VT	Piston
12 999 563VT	Brake pads
13 304 041	Leaf spring
16 200 041	Dust cap
16 200 083	Bleeding valve

## Hydraulic 4-piston fixed caliper disc brake 456 F-Ö

- **Application** Iveco vehicle

Product number	Mounting side	Vehicle brand	OE number
40 456 027	left	Iveco	4846118
40 456 028	right	Iveco	4846119



## Repair solutions

Repair kit	Content
12 728 008	Pin
12 999 116VT	Boots, sealing rings
12 999 195VT	Pipe lines
12 999 206VT	Piston
12 999 250VT	Brake pads
13 304 036	Leaf spring
16 200 041	Dust cap
16 200 083	Bleeding valve

# HYDRAULIC DISC BRAKES

- Application** Leyland/DAF Typ 45 Series Roadrunner Range 6–8 t;  
 Model: FA 600, 800 CN (DAF) 1987–2001; FA 45.120, C6 1991–2001;  
 FA 45.130, C6, C8 1991–2001; FA 45.150, C8 1991–2001; FA 45.160,  
 C8 1991–2001; 6.10, 6.12 1987–1991; 6.13, 6.15 1990–1991; 8.10, 8.12,  
 8.15 1987–1991; 8.13 1990–1991

Product number	Mounting side	Vehicle brand	OE number
40 456 033	left	Albion Avia Ashok Leyland	1203033 291799
40 456 034	right	Albion Avia Ashok Leyland	1203032 291801

## Repair solutions

Repair kit	Content
12 728 008	Pin
12 999 116VT	Boots, sealing rings
12 999 117VT	Piston
12 999 146VT	Piston, boot, sealing ring
12 999 195VT	Pipe lines
12 999 325VT	Brake pads
13 304 038	Leaf spring
16 200 041	Dust cap
16 200 083	Bleeding valve

- Application** Dana vehicle

Product number	Brake	Vehicle brand	OE number
40 456 048	Disc brake 456 F-Ö	Dana	211.07.601.02

## Repair solutions

Repair kit	Content
12 728 008	Pin
12 999 195VT	Pipe lines
12 999 325VT	Brake pads
16 200 083	Bleeding valve
13 304 038	Leaf spring

- Application** Defense vehicles

Product number	Mounting side	Vehicle brand	OE number
40 456 049	left	Steyr/Mercedes-Benz	533331048030
40 456 050	right	Steyr/Mercedes-Benz	533331048040

## Repair solutions

Repair kit	Content
12 728 006	Pin
12 999 116VT	Boots, sealing rings
13 304 036	Leaf spring
16 200 041	Dust cap
16 200 083	Bleeding valve



# Drum brakes

## Product number explanation

■ <b>Product number</b>	610 270 134 0 / 10 410 849 └─ Drum brake ─┘
■ <b>Drum brake</b>	270x80 SM-Öm └─ Actuation └─ Type └─ Size
■ <b>Size</b>	Brake diameter x lining width
■ <b>Type</b>	Z simplex brake D duplex brake S duo servo brake SM duo servo brake with centering
■ <b>Actuation</b>	Ö hydraulic (oil pressure) G mechanical (linkage) E expander unit m mechanical actuation

## Servo / duo servo drum brakes

### Hydraulic servo drum brake 270x80 SM-Öm

- **Application** Iveco Transporter Daily (35-10 T, 35-12 T, 40-10 TW, 49-10 T, 49-12 T Turbo / Basic and Classic)

Product number	Mounting side	Vehicle brand	OE number
10 270 258	left	Iveco	99436612
10 270 259	right	Iveco	99436613



## Repair solutions

Repair kit	Content
12 999 288VT	Pull springs, screws
12 999 529VT	Brake shoe repair kit
13 229 074	Thrust piece
16 001 042	Adjuster
16 120 001	Wheel cylinder

- **Application** Iveco vehicle

Product number	Mounting side	Vehicle brand	OE number
610 270 134 0	left	Iveco	358498, 42558529
610 270 135 0	right	Iveco	358497, 42558530

## Repair solutions

Repair kit	Content
12 999 288VT	Pull springs, screws
16 001 042	Adjuster
16 120 001	Wheel cylinder
610 270 920 2	Brake shoe repair kit

# DRUM BRAKES

## Hydraulic servo drum brake 310×100 SM-Öm

- **Application** Iveco Transporter Daily (59-12 Turbo Intercooler)

Product number	Mounting side	Vehicle brand	OE number
10 310 009	left	Iveco	98452377
10 310 010	right	Iveco	98452378



### Repair solutions

Repair kit	Content
12 999 321VT	Pull springs, screws
12 999 359VT	Spring repair kit: pull springs, pressure springs, spring plate, hook, locking plates
12 999 412VT	Brake pad repair kit: brake linings, wear indicators, rings, washers, rivets
16 001 014	Adjuster
16 923 004	Wheel cylinder

## Hydraulic servo drum brake 315×80 SM-Öm

- **Application** Fork lifter

Product number	Mounting side
10 315 059	rear axle / left, front axle / right
10 315 060	rear axle / right, front axle / left



### Repair solutions

Repair kit	Content
12 258 186VT	Brake shoe repair kit
13 229 103	Thrust piece
16 134 032	Wheel cylinder

## Hydraulic servo drum brake 325×100 SM-Öm

- **Application** Iveco vehicle

Product number	Mounting side	Vehicle brand	OE number
10 325 481	left	Iveco	4846043
10 325 482	right	Iveco	4846044



### Repair solutions

Repair kit	Content
16 001 014	Adjuster

## Simplex / duplex drum brakes

### Simplex expanding wedge drum brake 360×170 Z-E

- Application Alexander Dennis Dart Bus

Product number	Mounting side	Vehicle brand	OE number
10 360 077	front axle left	Alexander Dennis	654975
10 360 078	front axle right	Alexander Dennis	654974
10 360 079	rear axle left	Alexander Dennis	654973
10 360 080	rear axle right	Alexander Dennis	654972



#### Repair solutions

Repair kit	Content
12 155 493	Brake shoe
12 739 075VT	Expander repair kit
12 999 402VT	Wedge, pistons
12 999 403VT	Pressure springs, rings, nuts, bolts, screws
12 999 404VT	Spiral springs, washers, boots
12 999 418VT	Adjusters, Spiral springs, washers, boots
12 999 453VT	Boot
12 999 623VT	Pull springs, leaf springs, washers, screws
13 201 148	Dust shield
13 304 064	Leaf spring
13 601 001	Rivet

- Application Iveco EuroCargo Truck (115.14, 115.17, 135.14, 135.17, 145.17)

Product number	Mounting side	Vehicle brand	OE number
10 360 097	left	Iveco	1908484
10 360 098	right	Iveco	1908485

#### Repair solutions

Repair kit	Content
12 739 077VT	Expander repair kit
12 999 134VT	Wedge, pistons
12 999 403VT	Pressure springs, rings, nuts, bolts, screws
12 999 404VT	Spiral springs, washers, boots
12 999 418VT	Adjusters, Spiral springs, washers, boots
12 999 453VT	Boot
12 999 469VT	Brake shoe repair kit
12 999 623VT	Pull springs, leaf springs, washers, screws
13 201 148	Dust shield
13 601 001	Rivet

- Application Iveco EuroCargo Truck; Types 120 E to 320 E from 09/1991 (120 E, 120 E18, 120 E23, 130 E15, 130 E18, 130 E23, 150 E15, 150 E18, 150 E23, 150 E27, 210 E23, 250 E23, 320 E23)

Product number	Mounting side	Vehicle brand	OE number
10 360 105	left	Iveco	500381595
10 360 106	right	Iveco	500381596

# DRUM BRAKES

## Repair solutions

Repair kit	Content
12 739 075VT	Expander repair kit
12 999 402VT	Wedge, pistons
12 999 403VT	Pressure springs, rings, nuts, bolts, screws
12 999 404VT	Spiral springs, washers, boots
12 999 418VT	Adjusters, Spiral springs, washers, boots
12 999 453VT	Boot
12 999 469VT	Brake shoe repair kit
12 999 623VT	Pull springs, leaf springs, washers, screws
12 155 493	Brake shoe
13 201 148	Dust shield
13 601 001	Rivet
13 701 083	Ring

## Simplex expanding wedge drum brake 410×180 Z-E

- Application Tatra

Product number	Vehicle brand
10 410 827*	Tatra

\* not available for Independent Aftermarket



## Repair solutions

Repair kit	Content
12 155 492	Brake shoe
12 739 075VT	Expander repair kit
12 999 453VT	Boot
13 601 001	Rivet
13 303 021	Spiral spring
13 729 135	Washer
13 229 185	Thrust piece
13 229 186	Thrust piece
13 301 257	Pull spring
13 304 029	Leaf spring
13 354 036	Sliding piece

- Application Iveco EuroTech Truck (240 E38/42/52, 260 E 52, MP 240 E38/42, MP 260 E38/42, MP 400 E38/42, MP 440 E34/38/42/52, MP 190 Off Road, MP 260 Off Road, MP 380 Off Road, MP 400 Off Road, MP 440 Off Road, MP 720 Off Road)

Product number	Mounting side	Vehicle brand	OE number
10 410 837	left	Iveco	41025287
10 410 838	right	Iveco	41025288

## Repair solutions

Repair kit	Content
12 739 076VT	Expander repair kit
12 999 404VT	Spiral springs, washers, boots
12 999 410VT	Wedge repair kit: Wedge, pistons

Repair kit	Content
12 999 411VT	Adjuster repair kit: bolts, pressure springs, rings, screws, nuts
12 999 418VT	Adjusters, Spiral springs, washers, boots
12 999 453VT	Boot
12 999 573VT	Springs repair kit: Pull springs, leaf springs, washers, screws
12 999 709VT	Brake shoe repair kit
12 999 710VT	Brake linings
13 201 124	Dust shield
13 229 185	Thrust piece
13 229 186	Thrust piece
13 354 036	Sliding piece
13 480 042	Wear indicator
13 601 001	Rivet
13 701 083	Ring

■ **Application**      Cranes

Product number	Vehicle brand	OE number
10 410 849*	Liebherr	571831608
	Krupp	–
	Mannesmann-Dematic	–
	Tadano-Faun / Demag	40105512

\* not available for Independent Aftermarket



## Repair solutions

Repair kit	Content
12 174 109	Brake spider
12 739 085VT	Expander repair kit
12 999 292VT	Adjuster repair kit: bolts, pressure springs, rings, screws, nuts
12 999 453VT	Boot
12 999 518VT	Wedge, pistons
13 057 851	Brake lining
13 201 057	Dust shield
13 229 139	Thrust piece
13 301 255	Pull spring
13 303 021	Spiral spring
13 304 019	Leaf spring
13 601 002	Rivet
13 626 005	Hook
13 729 135	Washer
13 730 138	Screw
13 826 000	Plug
13 826 010	Plug
17 429 106	Hexagon screw self locking M14x1/5x30
18 421 106	Thread cutting screw DIN7513-AM8x16
18 523 007	Grooved pin DIN1474-12h11x24

# DRUM BRAKES

## Duplex expanding wedge drum brake 410×180 D-E

- Application Cranes

Product number	Mounting side	Vehicle brand	OE number
10 410 850	left	Liebherr Tadano-Faun / Demag	571848108 40105612
10 410 851	right	Liebherr Tadano-Faun / Demag	571848208 40105712



### Repair solutions

Repair kit	Content
12 258 660VT	Brake shoes & brake linings (only riveted with 16 rivets)
12 739 086VT	Expander repair kit
12 999 292VT	Adjuster repair kit: bolts, pressure springs, rings, screws, nuts
12 999 295VT	Adjuster repair kit: bolts, pressure springs, ring, screws, nut
12 999 404VT	Spiral springs, washers, boots
12 999 453VT	Boot
12 999 518VT	Wedge, pistons
12 999 519VT	Wedge, pistons
13 057 851	Brake lining
13 229 139	Thrust piece
13 229 149	Thrust piece
13 301 255	Pull spring
13 302 008	Pressure spring
13 304 019	Leaf spring
13 730 138	Screw

## Simplex expanding wedge drum brake 410×200 Z-E

- Application Iveco EuroStar Truck; LD 240 E to LD 520 E after 1993 (LD 240 E42/52, LD 380 E, LD 400 E52, LD 420 E, LD 440 E42/52, LD 470 E, LD 520 E)  
Iveco EuroTrakker Truck MP 190 E to MP 440 E

Product number	Mounting side	Vehicle brand	OE number
10 410 839	left	Iveco	41025289
10 410 840	right	Iveco	41025290



### Repair solutions

Repair kit	Content
12 739 076VT	Expander repair kit
12 999 404VT	Spiral springs, washers, boots
12 999 410VT	Wedge repair kit: Wedge, pistons
12 999 411VT	Adjuster repair kit: bolts, pressure springs, rings, screws, nuts
12 999 418VT	Adjusters, Spiral springs, washers, boots
12 999 453VT	Boot
12 999 573VT	Springs repair kit: Pull springs, leaf springs, washers, screws
12 999 711VT	Brake shoe repair kit
12 999 712VT	Brake linings
13 354 036	Sliding piece
13 480 042	Wear indicator
13 601 001	Rivet
13 701 083	Ring



## Simplex expanding wedge drum brake 500×160 Z-E

■ Application      Cranes

Product number	Vehicle brand	OE number
10 500 783	Liebherr Tadano-Faun / Demag	571738708 40105312



### Repair solutions

Repair kit	Content
12 258 652VT	Brake shoes & brake lining
12 739 085VT	Expander repair kit
12 999 292VT	Adjuster repair kit: bolts, pressure springs, rings, screws, nuts
12 999 404VT	Spiral springs, washers, boots
12 999 453VT	Boot
12 999 518VT	Wedge, pistons
13 057 847	Brake lining
13 229 139	Thrust piece
13 301 258	Pull spring
13 304 019	Leaf spring
13 730 138	Screw

## Duplex expanding wedge drum brake 500×180 D-E

■ Application      Cranes

Product number	Mounting side	Vehicle brand	OE number
10 500 784	left	Liebherr Tadano-Faun / Demag	571738208 40075912
10 500 785	right	Liebherr Tadano-Faun / Demag	571738308 40076012



### Repair solutions

Repair kit	Content
12 258 651VT	Brake shoes and brake linings (only riveted with 28 rivets)
12 739 086VT	Expander repair kit
12 999 292VT	Adjuster repair kit: bolts, pressure springs, rings, screws, nuts
12 999 295VT	Adjuster repair kit: bolts, pressure springs, ring, screws, nut
12 999 404VT	Spiral springs, washers, boots
12 999 453VT	Boot
12 999 518VT	Wedge, pistons
12 999 519VT	Wedge, pistons
13 301 161	Pull spring
13 302 008	Pressure spring

# DRUM BRAKES

## Slack adjuster

### Manual slack adjuster

- Clevis pins            Ø 14 C12 mm
- Wrench                SW 19 mm
- Mounting            N 42x1.5x26x9 H DIN 5480



433 506 515 0



433 536 001 0

Product number	Lever length	Vehicle brand	OE number
433 506 103 0	145 mm	Daimler	A0004200438
433 506 514 0	145 mm	Daimler	A3464201738
433 506 515 0	145 mm	Daimler	A3464201838
433 506 536 0	145 mm	Daimler	A3854201438
433 506 728 0	145 mm	Daimler	A3854201938
433 506 729 0	145 mm	Daimler	A3854202038
433 536 001 0	145 mm	Daimler	A9584200238
433 536 105 0	145 mm	Daimler	A3454207538
433 536 526 0	145 mm	Daimler	A3454209138
433 536 527 0	145 mm	Daimler	A3454209238
433 536 529 0	145 mm	Daimler	A3454209338

### Automatic slack adjuster - WABCO EasyFit™

- Wrench                SW 32 mm  
433 225 ... 0: Hex 12
- Internal Spline      Splines standard: ANSI B92.1, tolerance class 6x37  
Teeth x45°x24/48



Product number	Application	Lever length	Mounting	Connectors	Clevis pins
433 225 174 0	FUWA axle	120 / 135 / 150 / 165 / 180 / 250 mm	Internal Spline	6	Ø 14.2 mm + 5x Ø 14.15 mm
433 225 180 0	FUWA axle	152.4 / 177.8 mm	Internal Spline	2	Ø 12.8 mm + Ø 15.0 mm
433 225 184 0	FUWA axle	152.4 / 177.8 mm	Internal Spline	3	Ø 12.8 mm + 2x Ø 13.0 mm
433 543 001 0	Truck	175 mm	A40x36 DIN 5482	1	Ø 14 C12 mm
433 543 027 0	Truck / Off-Highway	145 mm	A38x34/H10 DIN 5482	1	Ø 14 C12 mm
433 543 516 0	Truck / Off-Highway / Trailer	175 mm	A38x34/H10 DIN 5482	1	Ø 14 C12 mm
433 543 517 0	Truck / Off-Highway	175 mm	A38x34/H10 DIN 5482	1	Ø 14 C12 mm
433 543 523 0	Truck	175 mm	A38x34/H10 DIN 5482	1	Ø 14 C12 mm
433 543 525 0	Truck	175 mm	A38x34/H10 DIN 5482	1	Ø 14 C12 mm
433 573 512 0	Truck	145 mm	A38x34/H10-DIN 5482	1	Ø 14 C12 mm
433 576 502 0	Off-Highway	145 mm	N42x1.5x26x9 H DIN 5480	1	Ø 14 C12 mm
433 576 503 0	Off-Highway	145 mm	N42x1.5x26x9 H DIN 5480	1	Ø 14 C12 mm
433 576 711 0		145 mm	N42x1.5x26x9 H DIN 5480	1	Ø 14 C12 mm
433 576 724 0	Trailer / Off-Highway	145 mm	N42x1.5x26x9 H DIN 5480	1	Ø 14 C12 mm
433 578 510 0	Truck	135 / 170 mm	D: 42, M: 1.5, Z: 27 PRE 22-151	1	Ø 14 C12 + Ø 8.0 mm

# Suspension controls

## Conventional air suspension control

### Chassis levelling valve

■ Temperature	-40 ... +85 °C	
■ Working range	90°	
■ Accessories	464 002 350 4	Sliding piece (except 464 002 600 0, 464 002 601 0)
	464 002 730 2	Rod (305 mm) for 464 002 330 0, 464 002 440 0
	464 006 730 2	Rod (305 mm) for 464 006 003 0
	464 006 731 2	Rod (110 mm) for 464 006 012 0
	464 006 350 4	Clamp for 464 002 600 0, 464 002 601 0, 464 006 003 0, 464 006 005 0, 464 006 011 0, 464 006 012 0
	464 006 691 2	Shaft for 464 006 003 0, 464 006 005 0, 464 006 011 0, 464 006 012 0



464 002 330 0



464 002 530 0



464 002 600 0



464 006 000 0

Product number	Circuits	Operating position	Max. pressure	Lever	Mounting	Distance between holes	Port
464 002 330 0	2	4-sided	22 bar	✓	2x Ø 9.0 mm	40 mm	1, 21, 22: M12x1.5; 3: exhaust
464 002 333 0	2	4-sided	22 bar	✓	2x Ø 9.0 mm	40 mm	1, 21, 22: M12x1.5; 3: exhaust
464 002 334 0	2	4-sided	22 bar	✓	2x Ø 9.0 mm	40 mm	1, 21, 22: M12x1.5; 3: exhaust
464 002 440 0	2	4-sided	22 bar	✓	2x Ø 8.8 mm	40 mm	1, 21, 22: M12x1.5; 3: exhaust
464 002 530 0	1	4-sided	22 bar	–	2x Ø 8.8 mm	40 mm	1, 21, 22: M12x1.5; 3: exhaust
464 002 600 0	2	8-sided	12 bar	✓	2x Ø 8.3 mm	40 mm	1: Ø 8; 21: Ø 9; 22: Ø 10; 3: exhaust
464 002 601 0	2	8-sided	12 bar	✓	2x Ø 8.3 mm	40 mm	1: Ø 8; 21: Ø 9; 22: Ø 10; 3: exhaust
464 006 000 0	2	4-sided	13 bar	–	4x Ø 8.8 mm	50/40 mm	1, 21, 22, 3: M12x1.5
464 006 003 0	2	4-sided	13 bar	✓	4x Ø 8.8 mm	50/40 mm	1, 21, 22: ¼"-18 NPTF; 3: silencer
464 006 005 0	2	4-sided	13 bar	–	4x Ø 8.8 mm	50/40 mm	1, 21, 22: ¼"-18 NPTF; 3: silencer
464 006 011 0	2	4-sided	13 bar	–	4x Ø 8.8 mm	50/40 mm	1, 21, 22: M12x1.5; 3: silencer
464 006 012 0	2	4-sided	13 bar	✓	4x Ø 8.8 mm	50/40 mm	1, 21, 22: M12x1.5; 3: silencer

# SUSPENSION CONTROLS

## Repair solutions

Product number	Repair kit	Content
■ 464 002 330 0	464 002 008 2	Valve + sealing
■ 464 002 440 0	464 002 008 2	Valve + sealing
■ 464 006 000 0	464 006 000 2	Tappet
■ 464 006 003 0	464 006 000 2	Tappet
■ 464 006 005 0	464 006 000 2	Tappet
■ 464 006 011 0	464 006 000 2	Tappet



951 814 705 0

951 814 727 0

## Air spring

Product number	Max. Ø	Length	Port 1
951 811 002 0	260 mm	322 mm	male M24x1.5 / female M16x1.5
951 811 004 0	325 mm	270 mm	male M24x1.5 / female M16x1.5
951 811 005 0	295 mm	322 mm	male M24x1.5 / female M16x1.5
951 811 006 0	255 mm	268 mm	male M24x1.5 / female M16x1.5
951 811 007 0	325 mm	341 mm	female M16x1.5
951 811 008 0	282 mm	321 mm	female M16x1.5
951 811 010 0	300 mm	282 mm	male M24x1.5 / female M16x1.5
951 811 011 0	300 mm	255 mm	female M14x1.5
951 811 012 0	290 mm	290 mm	female M14x1.5
951 811 013 0	290 mm	290 mm	female M14x1.5
951 811 014 0	260 mm	210 mm	female 1/4"-18 NPTF
951 811 111 0	295 mm	565 mm	female M22x1.5
951 812 711 0	305 mm	268 mm	male M16x1.5
951 812 712 0	305 mm	268 mm	female M16x1.5
951 812 762 0	300 mm	331 mm	female M16x1.5
951 813 150 0	348 mm	381 mm	male M20x2.5 / female M14x1.5
951 813 711 0	325 mm	412 mm	2x male M24x1.5 / 2x female M16x1.5
951 813 714 0	325 mm	347 mm	male M24x1.5 / 2x female M16x1.5
951 814 705 0	360 mm	404 mm	female M22x1.5
951 814 727 0	320 mm	404 mm	female M14x1.5
951 814 753 0	350 mm	350 mm	female M16x1.5
951 895 050 0	285 mm	282 mm	male M24x1.5 / female M16x1.5
951 895 060 0	285 mm	282 mm	male M24x1.5 / female M16x1.5



896 130 106 4

## Air bellows

Product number	Max. Ø	Length	Mounting
896 130 105 4	210 mm	395 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 106 4	240 mm	460 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 110 4	230 mm	420 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 111 4	240 mm	445 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 117 4	243 mm	392 mm	Ø 150.3 mm / Ø 150.3 mm
896 130 118 4	225 mm	410 mm	Ø 150.3 mm / Ø 130.8 mm
896 130 119 4	240 mm	460 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 120 4	225 mm	345 mm	Ø 150.3 mm / Ø 130.8 mm
896 130 121 4	210 mm	395 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 122 4	300 mm	390 mm	Ø 198.1 mm / Ø 198.1 mm
896 130 123 4	230 mm	495 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 124 4	210 mm	417 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 125 4	300 mm	452 mm	Ø 198.1 mm / Ø 198.1 mm
896 130 146 4	240 mm	370 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 153 4	210 mm	465 mm	Ø 130.8 mm / Ø 102.5 mm
896 130 186 4	190 mm	380 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 187 4	230 mm	495 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 194 4	215 mm	870 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 195 4	265 mm	340 mm	Ø 178.5 mm / Ø 178.5 mm
896 130 200 4	240 mm	340 mm	Ø 150.3 mm / Ø 150.3 mm
896 130 201 4	210 mm	370 mm	Ø 130.8 mm / Ø 130.8 mm
896 130 202 4	260 mm	385 mm	Ø 130.8 mm / Ø 130.8 mm



438 601 067 0



438 601 070 0

## Shock absorber

Product number	Application	Max. rebound length	Ø	Stroke	Mounting
438 600 320 0	DAF	673 mm	76.0 mm	248 mm	Ø 20 mm / Ø 30 mm
438 600 321 0	Scania	946 mm	80.0 mm	390 mm	2x Ø 20 mm
438 600 322 0	MAN	658 mm	80.0 mm	239 mm	Ø 20 mm / Ø 30 mm
438 600 323 0	Scania	690 mm	63.4 mm	279 mm	M14x1.5 / Ø 22.5
438 600 324 0	Volvo	817 mm	76.0 mm	333 mm	M16x1.5 / Ø 16 mm
438 600 325 0	MAN	647 mm	63.4 mm	260 mm	M14x1.5 / Ø 16 mm
438 600 326 0	DAF	697 mm	76.0 mm	258 mm	Ø 20 mm / Ø 30 mm
438 600 327 0	MAN	693 mm	63.4 mm	295 mm	2x M14x1.5
438 600 328 0	Iveco	752 mm	63.4 mm	317 mm	M14x1.5 / Ø 16 mm
438 600 329 0	Volvo	720 mm	60.5 mm	270 mm	2x Ø 16 mm
438 600 333 0	Scania	864 mm	63.4 mm	369 mm	M14x1.5 / Ø 20 mm

# SUSPENSION CONTROLS

Product number	Application	Max. rebound length	Ø	Stroke	Mounting
438 600 334 0	DAF	625 mm	76.0 mm	240 mm	M16x1.5 / Ø 20 mm
438 600 335 0	Scania	820 mm	80.0 mm	336 mm	M16x1.5 / Ø 20 mm
438 600 338 0	MAN	751 mm	76.0 mm	288 mm	2x Ø 20 mm
438 600 340 0	Volvo	719 mm	70.0 mm	287 mm	M16x1.5 / Ø 16 mm
438 600 342 0	Renault	625 mm	63.4 mm	260 mm	2x M14x1.5
438 600 343 0	DAF	618 mm	80.0 mm	234 mm	M16x1.5 / Ø 20 mm
438 600 344 0	Scania	689 mm	80.0 mm	267 mm	M16x1.5 / Ø 22.5 mm
438 600 516 0	Iveco	655 mm	80.0 mm	244 mm	2x Ø 31 mm
438 600 525 0	MAN, Steyr	618 mm	50.0 mm	262 mm	2x M12x1.5
438 600 572 0	MAN, Steyr	659 mm	70.0 mm	253 mm	Ø 12.1 mm / Ø 14.1 mm
438 600 580 0	Scania	693 mm	70.0 mm	280 mm	M14x1.5 / Ø 21 mm
438 600 585 0	Renault	602 mm	70.0 mm	247 mm	2x M14x1.5
438 600 590 0	Mercedes-Benz	725 mm	80.0 mm	280 mm	2x Ø 20.1 mm
438 600 595 0	MAN, Steyr	651 mm	80.0 mm	235 mm	Ø 20.1 mm / Ø 30.1 mm
438 600 598 0	Mercedes-Benz	785 mm	80.0 mm	310 mm	2x Ø 20.1 mm
438 600 604 0	Mercedes-Benz	883 mm	70.0 mm	365 mm	2x Ø 20.1 mm
438 601 067 0	DAF, Volvo, Meritor, Hendrickson	425 mm	80.0 mm	125 mm	2x Ø 24 mm
438 601 068 0	Volvo	478 mm	80.0 mm	154 mm	2x Ø 20 mm
438 601 070 0	BPW, SAF, Volvo	539 mm	80.0 mm	185 mm	2x Ø 24 mm
438 601 072 0	BPW, Volvo, Bartoletti, Calabrese, Mistral	694 mm	80.0 mm	261 mm	2x Ø 24 mm
438 601 073 0	BPW, Volvo, SAF	765 mm	76.0 mm	297 mm	2x Ø 24 mm
438 601 074 0	Volvo, ROLFO, SAF	429 mm	80.0 mm	130 mm	2x Ø 24 mm
438 601 075 0	Renault, SAF, Sauer	479 mm	80.0 mm	151 mm	2x Ø 24 mm
438 601 079 0	Mercedes-Benz, Hendrickson	445 mm	80.0 mm	167 mm	2x Ø 20 mm
438 601 211 0	SAF, Volvo	413 mm	75.0 mm	135 mm	2x Ø 20 mm
438 601 212 0	SAF, Volvo	489 mm	75.0 mm	171 mm	2x Ø 20 mm
438 601 224 0	BPW, Volvo	795 mm	80.0 mm	316 mm	2x Ø 24 mm
438 601 230 0	BPW, Volvo, Gigant	497 mm	80.0 mm	168 mm	2x Ø 24 mm
438 601 238 0	SAF, Volvo	492 mm	80.0 mm	165 mm	2x Ø 24 mm
438 604 101 0	MAN	315 mm	80.5 mm	60 mm	M10x1.25 / Ø 14 mm
438 604 102 0	MAN	292 mm	80.5 mm	40 mm	2x Ø 14 mm
438 604 109 0	MAN	265 mm	80.5 mm	37 mm	2x Ø 14 mm
438 604 110 0	Mercedes-Benz	344 mm	88.5 mm	334...15 mm	Ø 25.2 mm / Ø 14 mm
438 604 111 0	Mercedes-Benz	320 mm	46.0 mm	35 mm	2x Ø 14 mm
438 604 123 0	MAN	290 mm	46.0 mm	50 mm	2x Ø 14 mm
438 604 128 0	Renault	310 mm	38.2 mm	50 mm	2x Ø 12 mm
438 604 134 0	Volvo	259 mm	50.8 mm	24 mm	2x Ø 20 mm
438 604 136 0	Volvo	429 mm	50.8 mm	127 mm	Ø 14 mm / Ø 20 mm
438 604 137 0	Volvo	400 mm	50.8 mm	50 mm	2x Ø 14 mm
438 604 138 0	DAF	280 mm	51.0 mm	42 mm	M14x1.5 / Ø 14 mm
438 604 148 0	DAF	330 mm	51.0 mm	52 mm	M14x1.5 / Ø 25 mm
438 604 149 0	Volvo	336 mm	53.0 mm	106 mm	M12x1.75 / Ø 20 mm
438 604 150 0	Renault	267 mm	53.0 mm	54 mm	2x Ø 14 mm
438 604 160 0	Mercedes-Benz	252 mm	47.0 mm	58 mm	2x Ø 18 mm
438 604 161 0	Scania	308 mm	43.6 mm	100 mm	2x M12x1.75
438 604 164 0	Volvo	410 mm	46.0 mm	50 mm	2x Ø 14 mm
438 604 172 0	DAF	332 mm	51.0 mm	54 mm	M14x1.5 / Ø 25 mm





964 006 019 0

## Cabin air levelling module (CALM)

Product number	Vehicle application	Lever control	Temperature
964 005 007 0		–	–40 ... +80 °C
964 005 008 0		–	–40 ... +80 °C
964 006 019 0	Semitrailer: MAN TGA / TGX (front)	335 mm	–35 ... +80 °C
964 006 020 0	Platform: MAN TGA / TGX (front)	335 mm	–35 ... +80 °C
964 006 021 0	Semitrailer: MAN TGA / TGS / TGX (rear)	300 mm	–35 ... +80 °C
964 006 022 0	Platform: MAN TGA / TGS / TGX (rear)	300 mm	–35 ... +80 °C
964 006 023 0	Semitrailer: MAN TGA / TGS / TGX (rear)	300 mm	–35 ... +80 °C
964 006 024 0	Platform: MAN TGA / TGS / TGX (rear)	300 mm	–35 ... +80 °C

## Cabin levelling valve

- **Port 1, 2** QDC: Quick connection fitting
- **Distance between holes** 46.4 mm  
464 008 005 0, 464 008 011 0: 40 mm
- **Mounting** 2x Ø 8.5 mm



464 007 001 0

464 007 009 0

464 008 005 0

464 008 011 0

Product number	One way valve	Lever			Max. pressure	Port 1, 2, (4)
		Type	Actuating	Length		
464 007 001 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 201.0 mm	11.0 bar	QDC Ø 6 mm
464 007 002 0	✓	Sphere Ø 8 mm	–19° ... +19°	R 201.0 mm	11.0 bar	M10x1
464 007 003 0	✓	Sphere Ø 8 mm	–19° ... +19°	R 201.0 mm	11.0 bar	M10x1
464 007 004 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 201.0 mm	11.0 bar	QDC ¼"
464 007 006 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 274.0 mm	11.0 bar	QDC Ø 6 mm
464 007 007 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 171.0 mm	11.0 bar	QDC Ø 6 mm
464 007 008 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 274.0 mm	11.0 bar	QDC Ø 6 mm
464 007 009 0	–	–	–8° ... +8°	–	11.0 bar	QDC Ø 6 mm
464 007 010 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 160.0 mm	10.0 bar	M10x1
464 007 011 0	✓	Sphere Ø 10 mm	–19° ... +19°	R 195.0 mm	12.5 bar	M10x1
464 007 012 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 274.0 mm	11.0 bar	QDC Ø 6 mm
464 007 013 0	–	Hole Ø 6.5 mm	–19° ... +19°	R 201.0 mm	11.0 bar	QDC Ø 6 mm
464 007 015 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 239.0 mm	11.0 bar	QDC Ø 6 mm
464 007 016 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 239.0 mm	11.0 bar	QDC Ø 6 mm
464 007 018 0	–	–	–8° ... +8°	–	11.0 bar	QDC Ø 6 mm
464 007 019 0	✓	Sphere Ø 8 mm	–19° ... +19°	R 225.0 mm	10.0 bar	M10x1
464 007 020 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 274.0 mm	11.0 bar	QDC Ø 6 mm
464 007 023 0	✓	Hole Ø 6.5 mm	–19° ... +19°	R 201.0 mm	11.0 bar	QDC Ø 6 mm

# SUSPENSION CONTROLS

Product number	One way valve	Lever			Max. pressure	Port 1, 2, (4)
		Type	Actuating	Length		
464 007 027 0	✓	Sphere Ø 14.8 mm	-19° ... +19°	R 195.0 mm	11.0 bar	QDC Ø 6 mm
464 007 028 0	✓	Sphere Ø 14.8 mm	-19° ... +19°	R 195.0 mm	11.0 bar	QDC Ø 6 mm
464 007 030 0	✓	Hole Ø 6.5 mm	-19° ... +19°	R 201.0 mm	11.0 bar	QDC Ø 6 mm
464 007 031 0	-	Hole Ø 6.5 mm	-19° ... +19°	R 171.0 mm	11.0 bar	QDC Ø 6 mm
464 007 032 0	✓	Hole Ø 6.5 mm	-19° ... +19°	R 160.5 mm	11.0 bar	Raufoss ABC small Ø 6 mm
464 007 036 0	✓	Sphere Ø 10 mm	-19° ... +19°	R 200.0 mm	11.0 bar	QDC Ø 6 mm
464 007 039 0	✓	Hole Ø 6.5 mm	-19° ... +19°	R 201.0 mm	11.0 bar	QDC Ø 6 mm
464 007 040 0	✓	Hole Ø 6.5 mm	-19° ... +19°	R 171.0 mm	11.0 bar	QDC Ø 6 mm
464 007 042 0	-	Hole Ø 6.5 mm	-19° ... +19°	R 160.5 mm	11.0 bar	QDC Ø 6 mm
464 007 043 0	-	Hole Ø 6.5 mm	-19° ... +19°	R 201.0 mm	11.0 bar	Raufoss ABC small Ø 6 mm
464 007 044 0	✓	Sphere Ø 10 mm	-19° ... +19°	R 200.0 mm	11.0 bar	QDC Ø 6 mm
464 008 005 0	-	Hole Ø 10x6.5 mm	-50° ... +50°	R 200.0 mm	10.0 bar	¼" NPTF
464 008 011 0	-	Hole Ø 10x6.5 mm	-50° ... +50°	R 200.0 mm	10.0 bar	¼" NPTF Port 4: ¼" NPTF

# ECAS™ - electronically controlled air suspension

## ECAS™ electronic control unit (ECU)

- **Protection class** IP 30 (IEC 529)  
IP 40 (IEC 529): 446 170 216 0, 446 171 201 0
- **Temperature** 446 055 ... 0: -40 ... +70 °C  
446 17... 0: -40 ... +75 °C
- **Training** E-learning: ECAS 200 300 102 0  
Classroom training: ECAS



446 055 307 0



446 055 312 0



446 055 405 0



446 170 230 0

Product number	Application	System	Diagnostic software	Voltage	Pins
446 055 301 0	MAN	4x2 Ratio	ECAS Truck JED/ ECAS Truck and Bus	24 V	25
446 055 302 0	MAN	4x2 Ratio	ECAS Truck JED/ ECAS Truck and Bus	24 V	25
446 055 307 0	Iveco	4x2 Ratio	ECAS Truck JED/ ECAS Truck and Bus	24 V	25
446 055 311 0	DAF	4x2 KWP 2000	ECAS Truck KWP K	24 V	25
446 055 312 0	Leyland / DAF	4x2 KWP 2000	ECAS Truck KWP K	24 V	25
446 055 402 0	Iveco	6x2 - DV	ECAS Truck JED/ ECAS Truck and Bus	24 V	35
446 055 403 0	Renault	6x2 Ratio	ECAS Truck JED/ ECAS Truck and Bus	24 V	35
446 055 405 0	DAF	6x2 Ratio	ECAS Truck JED/ ECAS Truck and Bus	24 V	35
446 055 406 0	Scania	6x2 - DV	ECAS Truck JED/ ECAS Truck and Bus	24 V	35
446 055 407 0	Nissan Diesel	6x2 - DV	ECAS Truck JED/ ECAS Truck and Bus	24 V	35
446 055 408 0	Mitsubishi	6x2 - DV	ECAS Truck JED/ ECAS Truck and Bus	24 V	35
446 055 409 0	MAN	6x2 Ratio	ECAS Truck JED/ ECAS Truck and Bus	24 V	35
446 055 501 0	EvoBus	ECAS Bus	ECAS Bus A	24 V	35
446 055 502 0		Bus ECAS-ESAC 6x2	ECAS Bus A	12 V	35
446 055 503 0	GAZ, Iveco, VDL	ECAS Bus	ECAS Bus A	24 V	35
446 055 504 0	DAF Bus	ECAS Bus	ECAS Bus A	24 V	35
446 055 506 0	Nissan Diesel	ECAS Bus	ECAS Bus A	24 V	35
446 055 508 0	Iveco, Otokar	ECAS Bus	ECAS Bus A	24 V	35
446 170 003 0	MAN	ECAS 4x2 VL CAN	ECAS Truck KWP K	24 V	X1: 15, X2: 15
446 170 025 0	Mercedes-Benz Axor	ECAS 4x2 VL CAN	ECAS ENR MB Truck	24 V	X1: 18, X2: 15
446 170 053 0	MAN	ECAS 6x2 CAN	ECAS Truck JED/ ECAS Truck KWP K	24 V	X1: 15, X2: 15
446 170 055 0	Mercedes-Benz Axor	ECAS 6x2 CAN	ECAS ENR MB Truck	24 V	X1: 18, X2: 15
446 170 084 0	EvoBus	ECAS Bus CAN	ECAS Bus Citaro	24 V	X1: 18, X2: 15
446 170 085 0	EvoBus	ECAS Bus CAN	ECAS Bus Citaro	24 V	X1: 18, X2: 15
446 170 216 0	Scania	ECAS 6x2 Bus CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9

# SUSPENSION CONTROLS

Product number	Application	System	Diagnostic software	Voltage	Pins
446 170 217 0		ECAS 6x2 Bus CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9
446 170 218 0	DAF	ECAS 4x2/2P CAN2	ECAS CAN2	24 V	X1: 18, X2: 15
446 170 219 0	DAF	ECAS 6x2 Bus CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9
446 170 225 0	Hyundai	ECAS 6x2 CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9
446 170 227 0	Solaris Bus & Coach	ECAS 6x2 Bus CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9
446 170 229 0	Iveco	ECAS 4x2 CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15
446 170 230 0	Iveco	ECAS 6x2 CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9
446 170 231 0	Iveco	ECAS 4x2 CAN 2	–	24 V	X1: 18, X2: 15
446 170 232 0	Iveco	ECAS 6x2 CAN 2	–	24 V	X1: 18, X2: 15, X3: 9
446 170 233 0	Kamaz	ECAS 6x2 CAN 2	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9
446 171 201 0	MAN / Solaris Bus & Coach	ECAS-ESAC 6x2 / Bus	ECAS CAN2	24 V	X1: 18, X2: 15, X3: 9, X4: 12, X5: 6

## ECAS™ solenoid valve

- **Temperature** –40 ... +80 °C
- **Electrical connection** <sup>1)</sup> Bayonet DIN 72585
- **Port 3** <sup>2)</sup> 432 407 060 0 Silencer  
<sup>3)</sup> integrated silencer



472 880 001 0



472 880 032 0



472 880 064 0



472 880 065 0



472 880 103 0



472 905 111 0

Product number	Voltage	Working pressure	Electrical connection	Port	Mounting
442 040 602 0	24 V	13 bar	M27x1	–	–
472 880 000 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: <sup>2)</sup>	2x Ø 9 mm
472 880 001 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: <sup>2)</sup>	2x Ø 9 mm
472 880 004 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: <sup>2)</sup>	2x Ø 9 mm
472 880 020 0	24 V	20 bar	<sup>1)</sup> A1-3.6-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: closed	2x Ø 9 mm
472 880 021 0	24 V	20 bar	<sup>1)</sup> A1-2.1-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: closed	2x Ø 9 mm
472 880 023 0	24 V	20 bar	<sup>1)</sup> A1-3.6-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: closed	2x Ø 9 mm
472 880 024 0	24 V	20 bar	<sup>1)</sup> A1-3.6-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: <sup>2)</sup>	2x Ø 9 mm
472 880 030 0	24 V	20 bar	<sup>1)</sup> A1-4.2-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: <sup>2)</sup>	2x Ø 9 mm
472 880 032 0	24 V	20 bar	<sup>1)</sup> A1-3.2-Sn/K2	11, 21, 22, 23: M22x1.5 JED-388; 3: <sup>2)</sup>	2x Ø 9 mm
472 880 050 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-3.6-Sn/K2	11, 21, 22, 23, 26, 27: M22x1.5 JED-388; 3: <sup>2)</sup>	3x M8
472 880 055 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-3.6-Sn/K2	11, 21, 22, 23, 26, 27: M22x1.5 JED-388; 3: <sup>2)</sup>	2x M8

Product number	Voltage	Working pressure	Electrical connection	Port	Mounting
472 880 060 0	24 V	20 bar	<sup>1)</sup> A2-4.1-Sn/K2, A1-4.2-Sn/K2, A1-3.6-Sn/K2	<b>11, 21, 22, 23, 26, 27:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	3x M8
472 880 061 0	24 V	20 bar	<sup>1)</sup> A1-4.2-Sn/K2, A1-3.6-Sn/K2	<b>11, 21, 22, 23:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x Ø 9 mm
472 880 064 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-3.6-Sn/K2	<b>11, 21, 22, 23:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x Ø 9 mm
472 880 065 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-4.2-Sn/K2, A1-3.6-Sn/K2	<b>11, 21, 22, 23, 26, 27:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x M8
472 880 072 0	12 V	20 bar	<sup>1)</sup> A1-4.2-Sn/K2	<b>11, 21, 22, 23:</b> M16x1.5; <b>3:</b> <sup>2)</sup>	2x Ø 9 mm
472 880 100 0	24 V	20 bar	<sup>1)</sup> A2-4.1-Sn/K2, A1-4.2-Sn/K2	<b>11, 21, 22, 23, 26, 27:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x M8
472 880 103 0	24 V	20 bar	<sup>1)</sup> A2-4.1-Sn/K2, A1-4.1-Sn/K2	<b>11, 21, 22, 23, 25, 26, 27:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x M8
472 880 105 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-4.2-Sn/K2	<b>11, 21, 22, 23, 26, 27:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x M8
472 880 106 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-4.1-Sn/K2	<b>11, 21, 22, 23, 25, 26, 27:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x M8
472 890 002 0	24 V	22 bar	HDSCS 4x2.8 coding A	<b>11, 22, 23:</b> M22x1.5 JED-388-4; <b>3:</b> <sup>3)</sup>	3x Ø 8 mm
472 890 022 0	24 V	22 bar	HDSCS 4x2.8 coding A	<b>11, 22, 23:</b> M22x1.5 JED-388-4; <b>3:</b> <sup>3)</sup>	3x Ø 8 mm
472 890 031 0	24 V	22 bar	HDSCS 4x2.8 coding B	<b>11, 22, 23:</b> M22x1.5 JED-388-4; <b>3:</b> <sup>3)</sup>	3x Ø 8 mm
472 890 041 0	24 V	22 bar	HDSCS 4x2.8 coding B	<b>11, 22, 23:</b> M22x1.5 JED-388-4; <b>3:</b> <sup>3)</sup>	3x Ø 8 mm
472 890 061 0	24 V	22 bar	HDSCS 4x2.8 coding A	<b>11, 22, 23:</b> M22x1.5 JED-388-4; <b>3:</b> <sup>3)</sup>	3x Ø 8 mm
472 890 070 0	12 V	22 bar	HDSCS 4x2.8 coding A	<b>11, 22, 23:</b> M16x1.5 ISO-4039-2; <b>3:</b> <sup>3)</sup>	3x Ø 8 mm
472 890 112 0	24 V	22 bar	HDSCS 4x2.8 coding A / B	<b>11, 22, 23, 25, 26, 27:</b> M22x1.5 JED-388-4; <b>3:</b> <sup>3)</sup>	3x Ø 8 mm
472 900 058 0	24 V	20 bar	<sup>1)</sup> A1-2.1-Sn/K2	<b>12, 14, 21, 22, 23:</b> M22x1.5 JED-388; <b>25:</b> M16x1.5 JED-388; <b>3:</b> closed	2x Ø 9 mm
472 900 061 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K1	<b>11, 22, 23:</b> M22x1.5 JED-388; <b>21:</b> closed; <b>3:</b> M22x1.5	2x Ø 9 mm
472 905 111 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-4.2-Sn/K2	<b>11, 21, 22, 23, 24, 25, 26:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x M8
472 905 114 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-4.2-Sn/K2	<b>11, 21, 22, 23, 24, 25:</b> M22x1.5 JED-388; <b>26:</b> closed; <b>3:</b> 2x <sup>2)</sup>	2x M8
472 905 116 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-4.2-Sn/K2	<b>11, 21, 22, 23, 24, 25, 26:</b> M22x1.5 JED-388; <b>3:</b> <sup>2)</sup>	2x M8
472 905 118 0	24 V	20 bar	<sup>1)</sup> A1-4.1-Sn/K2, A1-4.2-Sn/K2	<b>11, 21, 22, 23, 24, 25:</b> M22x1.5 JED-388; <b>26:</b> closed; <b>3:</b> 2x <sup>2)</sup>	2x M8

## Repair solutions

Product number	Repair kit	Content
■ 472 880 000 0	472 900 927 2	3x 3/2 Valve solenoid
■ 472 880 001 0	472 900 927 2	3x 3/2 Valve solenoid
■ 472 880 004 0	472 900 927 2	3x 3/2 Valve solenoid
■ 472 880 030 0	472 900 928 2	2x 3/2 Valve solenoid
■ 472 880 050 0	472 900 927 2	3x 3/2 Valve solenoid
■ 472 880 055 0	472 900 927 2	3x 3/2 Valve solenoid
■ 472 880 060 0	472 900 928 2 472 900 929 2	2x 3/2 Valve solenoid 2/2 Valve solenoid
■ 472 880 061 0	472 900 928 2 472 900 929 2	2x 3/2 Valve solenoid 2/2 Valve solenoid

# SUSPENSION CONTROLS

Product number	Repair kit	Content
■ 472 880 064 0	472 900 927 2 472 900 929 2	3x 3/2 Valve solenoid 2/2 Valve solenoid
■ 472 880 065 0	472 900 927 2 472 900 928 2 472 900 929 2	3x 3/2 Valve solenoid 2x 3/2 Valve solenoid 2/2 Valve solenoid
■ 472 880 100 0	472 900 928 2	2x 3/2 Valve solenoid
■ 472 880 103 0	472 900 927 2	3x 3/2 Valve solenoid
■ 472 880 105 0	472 900 927 2 472 900 928 2	3x 3/2 Valve solenoid 2x 3/2 Valve solenoid
■ 472 880 106 0	472 900 927 2	3x 3/2 Valve solenoid
■ 472 900 058 0	472 900 900 2	Valve
■ 472 900 061 0	472 900 009 2 472 900 925 2	Valve 2x 3/2 Valve solenoid
■ 472 905 114 0	472 900 928 2	2x 3/2 Valve solenoid

## ECAS1 valve replacement

- A smooth changeover from an ECAS1 to an ECAS3 valve requires specific accessory kits. Up to three repair kits are needed to ensure a proper repair.

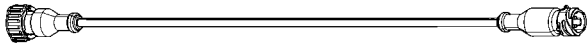
ECAS1 valve	ECAS1 valve replacement			
	ECAS3 valve	Accessory kit	Accessory kit	Accessory kit
472 900 001 0	472 880 001 0	472 880 928 2	–	–
472 900 002 0	472 880 001 0	472 880 928 2	472 900 931 2	–
472 900 008 0	472 880 001 0	472 880 928 2	–	–
472 900 012 0	472 880 001 0	472 880 928 2	472 900 931 2	–
472 900 014 0	472 880 001 0	472 880 928 2	–	–
472 900 021 0	472 880 020 0	472 880 933 2	894 601 134 2	–
472 900 022 0	472 880 020 0	472 880 932 2	472 900 931 2	894 601 134 2
472 900 030 0	472 880 030 0	472 880 929 2	–	–
472 900 032 0	472 880 030 0	472 880 929 2	472 900 931 2	–
472 900 033 0	472 880 030 0	472 880 929 2	–	–
472 900 034 0	472 880 030 0	472 880 929 2	–	–
472 900 050 0	472 880 065 0	472 880 930 2	472 900 931 2	472 900 931 2
472 900 054 0	472 880 020 0	472 880 933 2	–	–
472 900 056 0	472 880 065 0	894 601 161 2	894 601 161 2	–
472 900 057 0	472 880 055 0	894 601 161 2	–	–
472 900 059 0	472 880 065 0	472 880 930 2	–	–
472 900 061 0	472 880 030 0	472 880 931 2	–	–
472 900 064 0	472 880 020 0	472 880 932 2	472 900 931 2	–
472 900 074 0	472 880 020 0	472 880 933 2	894 601 161 2	–
472 900 101 0	472 880 106 0	472 880 928 2	472 880 928 2	–
472 900 104 0	472 880 106 0	472 880 928 2	472 880 928 2	–
472 900 105 0	472 880 105 0	472 880 928 2	472 880 929 2	–
472 900 110 0	472 880 105 0	894 601 161 2	–	–
472 900 112 0	472 880 105 0	472 880 931 2	–	–
472 900 113 0	472 880 105 0	472 880 931 2	–	–
472 900 114 0	472 880 106 0	894 601 161 2	–	–



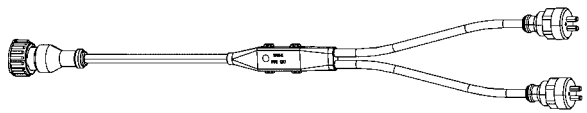
## Solenoid valve connection

- Accessory kits are used to enable the transition from a M27 single solenoid type (ECAS1) to DIN bayonet solenoids (ECAS3).

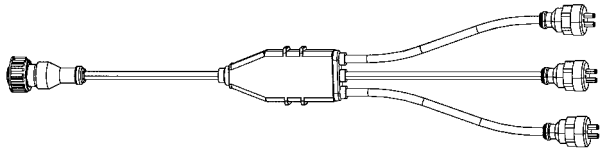
Product number	Accessory kit
894 601 134 2	Adapter cable (1-way)



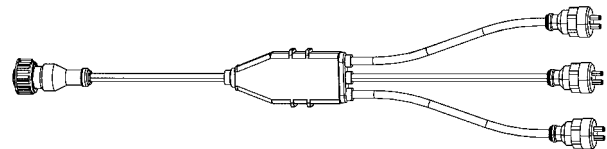
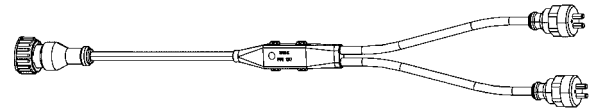
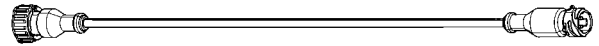
472 880 929 2	Adapter cable (2-way)
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472 880 928 2	Adapter cable (3-way)
---------------	-----------------------



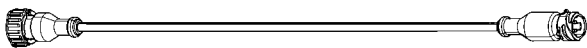
Product number	Accessory kit
472 880 930 2	Adapter cable (1-way, 2-way, 3-way)



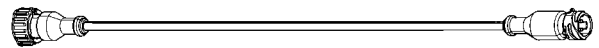
## Electrical connection

- Accessory kits assure the proper electrical port connection.
- The accessory kit 894 601 161 2 works as an extension and sets the pin assignments in the appropriate way.
- The accessory kit 472 880 931 2 - without extension - also converts the pin assignment in a socket.

Product number	Accessory kit
894 601 161 2	Adapter (extension cable)



Product number	Accessory kit
472 880 931 2	Adapter (extension and pin assignment cable)



## Voss connection

- Specific ECAS1 variants have a M16x1.5 Voss pneumatic supply port while the ECAS3 are equipped with an M22x1.5 Voss port. The accessory kits enable a reduction from M22x1.5 to M16x1.5 and assure tightness. The existing pneumatic connection of the vehicle can be used.

Product number	Accessory kit
472 880 932 2	Voss adapter, 2x O-rings (M22x1.5 / M16x1.5), washer



Product number	Accessory kit
472 880 933 2	Voss adapter, O-ring (M22x1.5)



## Pneumatic connection

- Specific ECAS1 valves have standard metric threads on all air ports while all ECAS3 valves have Voss metric connector threads. For these valves, the accessory kit 472 900 931 2 must be used to make the air connection tight.

Product number	Accessory kit
472 900 931 2	4x O-rings



# SUSPENSION CONTROLS

## ECAS™ height sensor

■ Temperature	-40 ... +80 °C				
■ Electrical connection	<sup>1)</sup> Bayonet DIN 72585				
■ Accessories	433 401 003 0	Linkage	441 050 711 2	Lever 209 / 229 mm	
	433 300 384 4	Joint	441 050 712 2	Lever 289 / 309 mm	
	441 050 641 2	Extension for height sensor lever	441 050 713 2	Lever 299 / 319 mm	
	810 304 017 4	Hexagon nut DIN 934-M8	441 050 714 2	Lever 323 / 343 mm	
	893 510 470 2	Hose clamp	441 901 712 2	Lever 235 / 255 mm	
			441 905 711 2	Lever 248 / 268 mm	



441 050 012 0



441 050 100 0



441 050 121 0

Product number	Type	Lever	Protection class	Electrical connection	Mounting	Distance between holes
441 050 006 0	inductive	–	IP6K9K	Bayonet (Schlemmer)	4x Ø 9 mm	40 / 50 mm
441 050 008 0	inductive	–	IP6K9K	M24x1	4x Ø 9 mm	40 / 50 mm
441 050 010 0	inductive	–	IP6K9K	M27x1	4x Ø 9 mm	40 / 50 mm
441 050 011 0	inductive	–	IP6K9K	<sup>1)</sup> A1-2.1-Sn/K2	4x Ø 9 mm	40 / 50 mm
441 050 012 0	inductive	–	IP6K9K	<sup>1)</sup> A1-2.1-Sn/K2	4x Ø 9 mm	40 / 50 mm
441 050 013 0	inductive	–	IP6K9K	<sup>1)</sup> A3-2.1-Sn/K2	4x Ø 9 mm	40 / 50 mm
441 050 100 0	inductive	straight	IP6K9K	<sup>1)</sup> A1-2.1-Sn/K2	2x Ø 10.9 mm	40 mm
441 050 120 0	inductive	cross	IP6K9K	<sup>1)</sup> A1-2.1-Sn/K2	2x Ø 10.9 mm	40 mm
441 050 121 0	inductive	cross	IP6K9K	<sup>1)</sup> A3-2.1-Sn/K2	2x Ø 10.9 mm	40 mm
441 050 123 0	inductive	cross	IP6K9K	<sup>1)</sup> A3-2.1-Sn/K2	2x Ø 10.9 mm	40 mm
441 050 202 0	hall effect	straight	IP6K9K / IP6K8	HDSCS code A	2x Ø 9.05 mm	40 mm
441 050 203 0	hall effect	straight	IP6K9K / IP6K8	HDSCS code A	2x Ø 9.05 mm	40 mm

## ECAS™ pressure sensor

■ Temperature	−40 ... +80 °C 1) −40 ... +100 °C
■ Electrical connection	2) Bayonet DIN 72585 A1-3.1-Sn/K2
■ Port	M16×1.5; 441 044 106 0: ¼" NPTF
■ Sealing	3) not included, use sealing ring 811 401 057 4
■ Accessories	811 401 057 4 Sealing ring DIN 7603-A16×20 897 770 250 4 O-ring ISO 3601-15×2



441 044 102 0



441 044 107 0



441 044 101 0



441 044 203 0

Product number	Sensitivity	Admissible overpressure	Electrical connection	Protection class	Sealing
441 040 004 0	0.500 V/bar	16 bar	M27×1	IP54	— <sup>3)</sup>
441 044 101 0	0.400 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	— <sup>3)</sup>
441 044 102 0	0.400 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	897 770 250 4
441 044 104 0	0.333 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	897 770 250 4
441 044 106 0	0.400 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	—
441 044 107 0	0.400 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	— <sup>3)</sup>
441 044 109 0	0.400 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	897 772 832 4*
441 044 110 0 <sup>1)</sup>	0.400 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	— <sup>3)</sup>
441 044 111 0	0.400 V/bar	16 bar	Bayonet <sup>2)</sup>	IP6K7 / IP6K9K	897 772 832 4*
441 044 203 0 <sup>1)</sup>	0.320 V/bar	20 bar	HDSCS	IP6K7 / IP6K6K / IP6K8 / IP6K9K	897 770 250 4
441 044 204 0 <sup>1)</sup>	0.250 V/bar	23 bar	HDSCS	IP6K7 / IP6K6K / IP6K8 / IP6K9K	— <sup>3)</sup>

\* not sold separately

# SUSPENSION CONTROLS

## ECAS™ remote control unit

■ Temperature	-40 ... +70 °C	
■ Voltage	24 V; 446 056 401 0: 12 V	
■ Protection class	IP64	
■ Function	lifting, lowering, stop	
■ *Axle types	FA	front axle
	RA	rear axle
	BA	both axles
	LA	lift axle
	PTO	power take off
■ Accessories	446 056 010 4	Holder for ECAS
	446 056 052 4	Support
	446 056 053 4	Mounting support
	446 056 410 4	Bracket for ECAS iRCU



446 056 119 0



446 056 120 0



446 056 139 0



446 056 146 0



446 056 250 0



446 056 333 0

Product number	Application	Function		Electrical connection
		Axle*	Memory level	
446 056 113 0		FA / RA / BA	M1, M2, normal	Special 6-pole
446 056 115 0		FA / RA / PTO	lifting lift axle, lowering lift axle, normal	Bayonet 9-pole
446 056 116 0		RA	M1, M2, normal	Bayonet 9-pole
446 056 119 0	Iveco	RA	M1, M2, normal	Bayonet 4-pole
446 056 120 0		FA / RA	M1, M2, normal	Bayonet 4-pole
446 056 124 0	Renault	FA / RA / LA	M1, M2, normal	Bayonet 9-pole
446 056 127 0	MAN	RA	M1, M2, normal	Bayonet 9-pole
446 056 128 0	MAN	FA / RA	M1, M2, normal	Bayonet 9-pole
446 056 129 0	DAF	RA	M1, M2, normal	Bayonet 9-pole
446 056 130 0	DAF	FA / RA / PTO	M1, M2, normal	Bayonet 9-pole
446 056 132 0	Renault	RA	M1, M2, normal	Bayonet 9-pole
446 056 135 0	Isuzu	RA	M1, M2, normal	Bayonet 9-pole
446 056 136 0		RA	M1, M2, normal	Bayonet 9-pole
446 056 137 0		FA / RA	M1, M2, normal	Bayonet 9-pole
446 056 138 0	MAN	RA	M1, M2, normal	Special 4-pole
446 056 139 0	MAN	FA / RA	M1, M2, normal	Special 4-pole
446 056 141 0	DAF	FA / RA	M1, M2, normal	Bayonet 9-pole
446 056 143 0	Isuzu	FA / RA	M1, M2, normal	Bayonet 9-pole
446 056 146 0	Scania	FA / RA	M1, M2, normal	Special 5-pole
446 056 250 0	Truck / trailer	FA / RA / LA	M1, M2, normal	Bayonet 9-pole
446 056 251 0	Truck / trailer	FA / RA / LA	M1, M2, normal	Special 5-pole
446 056 254 0	Truck / trailer	FA / RA / LA	M1, M2, normal	Bayonet 4-pole
446 056 333 0	Mercedes-Benz	RA	M1, M2, normal	Special 6-pole
446 056 334 0	Mercedes-Benz	FA / RA	M1, M2, normal	Special 6-pole
446 056 401 0	Scania - truck / trailer	FA / RA	M1, M2, M3, M4, normal	TE 1563772-1
446 059 100 0	Electronic container	FA / RA	-	Special 6-pole

# Driveline controls

## Pneumatic automated manual transmission (AMT)

AMT solutions increase fuel savings through optimised gear-shifting, and help vehicle operators significantly reduce mechanical wear – thereby increasing vehicle uptime.

WABCO offers an extensive portfolio of repair solutions for a failsafe repair of many components and, in the majority of cases, this repair will replace the requirement to substitute the entire gearbox control unit:

- easy diagnostics
- tailored repair solutions
- simple teach-in procedure

## Aftermarket solutions for Daimler AMT 1<sup>st</sup> / 2<sup>nd</sup> generation

### 2-position cylinder

Product number	Replacement unit
421 351 001 0	2-position cylinder complete unit
421 351 051 0	2-position cylinder complete unit

Repair kit	Content	Basic device*
421 351 001 2	Sealings, O-rings	421 351 000 0
421 351 004 2	Armature, sealings, O-rings	421 351 051 0

\* Basic devices are not available for Independent Aftermarket



421 322 005 0



421 350 001 0

### 3-position cylinder

Product number	Replacement unit
421 322 005 0	3-position cylinder complete unit
421 350 001 0	3-position cylinder complete unit
421 350 061 0	3-position cylinder complete unit
421 350 072 0	3-position cylinder complete unit

Repair kit	Content	Basic device
421 350 006 2	Solenoid valves, sealings, O-rings	421 350 070 0*
421 350 920 2	Solenoid valve	421 350 001 0
421 350 920 2	Solenoid valve	421 350 061 0
421 350 922 2	Solenoid valve	421 350 061 0
421 350 923 2	Double solenoid valve, sealings, O-rings	421 350 070 0*
421 350 924 2	Double solenoid valve, sealings, O-rings	421 350 070 0*
421 351 000 2	Sealings, O-rings	421 351 101 0*

\* Basic devices are not available for Independent Aftermarket



421 350 061 0



421 350 072 0

# DRIVELINE CONTROLS

## Aftermarket solutions for Daimler AMT 3<sup>rd</sup> generation

- **Training** Free online tutorials on YouTube:  
Daimler Trucks | AMT 3<sup>rd</sup> Gen | All how-to videos
- **Diagnostics** WABCO: diagnostic software AMT for Daimler (MB)  
WABCO WÜRTH: diagnostic software W.EASY®



421 351 174 0\*

### 2-position cylinder (select)

Repair kit	Content
421 351 007 2	Solenoid kit
421 351 008 2	Sealing kit

### Repair solutions for basic devices

Basic device*	Applicable repair kit	
	421 351 007 2 Solenoid kit	421 351 008 2 Sealing kit
421 351 135 0	✓	✓
421 351 136 0	✓	✓
421 351 137 0	✓	✓
421 351 138 0	✓	✓
421 351 140 0	✓	✓
421 351 144 0	–	✓
421 351 151 0	✓	✓
421 351 152 0	✓	✓
421 351 153 0	✓	✓
421 351 154 0	✓	✓
421 351 155 0	✓	✓
421 351 156 0	✓	✓
421 351 165 0	✓	✓
421 351 167 0	✓	✓
421 351 171 0	✓	✓

Basic device*	Applicable repair kit	
	421 351 007 2 Solenoid kit	421 351 008 2 Sealing kit
421 351 172 0	✓	✓
421 351 173 0	✓	✓
421 351 174 0	✓	✓
421 351 175 0	✓	✓
421 351 176 0	✓	✓
421 351 177 0	✓	✓
421 351 178 0	✓	✓
421 351 179 0	✓	✓
421 351 184 0	✓	✓
421 351 186 0	✓	✓
421 351 187 0	✓	✓
421 351 188 0	✓	✓
472 405 001 0	✓	✓
472 405 003 0	✓	✓
472 405 004 0	–	✓

\* Basic devices are not available for Independent Aftermarket

### 3-position cylinder (gear shift)

Product number	Replacement unit	Cross reference WABCO OE
421 350 087 0	3-position cylinder (gear shift)	421 350 083 0 421 350 085 0
421 350 088 0	3-position cylinder (gear shift)	421 350 081 0 421 350 082 0 421 350 084 0 421 350 086 0



421 350 087 0

Repair kit	Content
421 350 927 2	Solenoid valve, disc-shaped
421 350 928 2	Solenoid valve, nose-shaped
421 350 930 2	Gasket set
421 350 931 2	Cylinder shaft seals
421 350 932 2	Valve heads: 2x disc-shaped, 2x nose-shaped
421 350 934 2	Exhaust cap
421 350 935 2	Distance sensor, circuit board, gasket set



## Repair solutions for basic devices

Basic device*	Applicable repair kit (Product number 421 350 ... )						
	... 927 2	... 928 2	... 930 2	... 931 2	... 932 2	... 934 2	... 935 2
421 350 080 0	✓	–	✓	✓	–	✓	✓
421 350 081 0	✓	✓	✓	✓	✓	✓	✓
421 350 082 0	✓	✓	✓	✓	✓	✓	✓
421 350 083 0	✓	–	✓	✓	–	✓	✓
421 350 084 0	✓	✓	✓	✓	✓	✓	✓
421 350 085 0	✓	–	✓	✓	–	✓	✓
421 350 086 0	✓	✓	✓	✓	✓	✓	✓
421 350 087 0	✓	–	✓	✓	–	✓	✓
421 350 088 0	✓	✓	✓	✓	✓	✓	✓
421 350 992 0	✓	✓	✓	–	✓	–	–
421 350 993 0	✓	–	✓	–	–	–	–

\* Basic devices are not available for Independent Aftermarket

## GP-cylinder (range)

Product number	Replacement unit	Cross reference WABCO OE
421 352 082 0	GP-cylinder (range)	421 352 080 0

Repair kit	Content
421 352 920 2	Circuit board, exhaust cap, gasket set



421 352 082 0

## Repair solutions for basic devices

Basic device*	Applicable repair kit (Product number 421 352 920 2)
421 352 080 0	✓
421 352 082 0	✓

\* Basic devices are not available for Independent Aftermarket

## Aftermarket solutions for gearbox control units for ZF transmissions

- **Diagnostics** WABCOWÜRTH: diagnostic software W.EASY®

Repair kit	Content	Vehicle application
421 355 928 2	Gasket set between ECU and lower actuator	truck, bus
421 355 929 2	Connector bridge and sealing for gate-cylinder	truck, bus
421 355 930 2	Solenoid block + screws, gaskets	truck, bus
421 355 931 2	Pressure limiting valve	truck, bus
421 355 932 2	Distance sensor + O-ring and screws	truck, bus
421 355 933 2	Repair kit for range-, gear- and split-cylinder	truck, bus
421 355 934 2	Complete sleeve cylinder + gasket	truck, bus
421 355 936 2	End cover for gear-cylinder + screws	truck, bus
421 355 943 2	Repair kit electrical connector	truck
421 355 944 2	Cable	bus
421 355 945 2	External cable (vehicle)	bus
421 355 946 2	Pressure sensor	truck, bus



421 355 012 0\*

# DRIVELINE CONTROLS

Repair kit	Content	Vehicle application
421 355 947 2	Sealings for seat	truck, bus
421 355 948 2	Sealing kit for range-, gear- and split-cylinder	truck, bus
421 355 949 2	Pistons and sealings for gear-cylinder	truck, bus
421 355 950 2	Gearbox unit lower part	truck, bus
421 355 951 2	Single valve	truck, bus
421 355 954 2	Connector bridge and sealing for gate-cylinder	truck

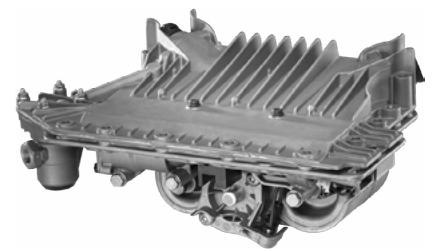
## Repair solutions for basic devices

Repair kit	Basic device truck*				Basic device bus*	
	GS 3.0 truck	GS 3.3 truck		GS 3.6 DAF truck	GS 3.0 bus	GS 3.3 bus
	421 355 011 0	421 355 012 0	421 355 014 0	421 355 015 0	421 355 022 0	421 355 023 0
421 355 928 2	✓	✓	✓	✓	✓	✓
421 355 929 2	✓	✓	✓	–	✓	✓
421 355 930 2	✓	✓	✓	✓	✓	✓
421 355 931 2	✓	✓	✓	✓	✓	✓
421 355 932 2	✓	✓	✓	✓	✓	✓
421 355 933 2	✓	✓	–	✓	✓	✓
421 355 934 2	✓	✓	–	✓	✓	✓
421 355 936 2	✓	✓	–	✓	✓	✓
421 355 943 2	✓	✓	–	✓	–	–
421 355 944 2	–	–	–	–	✓	✓
421 355 945 2	–	–	–	–	✓	✓
421 355 946 2	✓	✓	–	–	✓	✓
421 355 947 2	✓	✓	✓	✓	✓	✓
421 355 948 2	✓	✓	–	✓	✓	✓
421 355 949 2	✓	✓	–	✓	✓	✓
421 355 950 2	✓	✓	–	–	✓	✓
421 355 951 2	✓	✓	–	✓	✓	✓
421 355 954 2	–	–	–	✓	–	–

\* Basic devices are not available for Independent Aftermarket

## REMAN SOLUTIONS mechanical repair kit

Product number	Mechanical repair kit	Cross reference WABCO OE
421 355 950 R	GS 3.0/3.3 repair unit (lower part) without ECU	421 355 950 2



421 355 950 R

## REMAN SOLUTIONS complete devices for AMT specialists

- The remanufactured GS devices are sold without software (empty ECU).
- To purchase these products directly, a special contract is required. The alternative option is to purchase them via one of our dedicated distributors. For more information, please contact your local WABCO sales representative.

Product number	Complete device	Cross reference WABCO OE
421 355 011 R	Gearbox actuator GS 3.0 Standard, without software	421 355 011 0
421 355 012 R	Gearbox actuator GS 3.3 Standard, without software	421 355 012 0
421 355 015 R	Gearbox actuator GS 3.6 Standard, without software	421 355 015 0
421 355 022 R	Gearbox actuator GS 3.0 Bus, without software	421 355 022 0
421 355 023 R	Gearbox actuator GS 3.3 Bus, without software	421 355 023 0

## Aftermarket solutions for gearbox control units for Volvo applications

- **Training** Classroom training: Volvo gearbox actuator
- **Diagnostics** WABCO WÜRTH: diagnostic software W.EASY®

### Repair solutions

Repair kit	Content
421 365 920 2	Static sealing
421 365 921 2	Connector bridge
421 365 922 2	Kit with detents
421 365 923 2	Lip seal & piston kit
421 365 924 2	Cylinder cover (split cylinder)
421 365 925 2	Cylinder cover (1/R cylinder)
421 365 926 2	Cylinder cover (2/3 cylinder)
421 365 927 2	Range cylinder cover with sealing
421 365 928 2	Armature, conical spring for shift fork 2/3
421 365 929 2	Distance sensor
421 365 932 2	Piston rod for split cylinder
421 365 933 2	Piston rod for 1/R cylinder
421 365 934 2	Piston rod for 2/3 cylinder
421 365 935 2	Range piston
421 365 939 2	Stop sheet metal for the split group
421 365 946 2	Connection bridge
421 365 947 2	Pressure sensor kit
421 367 900 2	Pressure sensor module
421 367 921 2	Static sealing
421 367 922 2	connecting bridge
421 367 924 2	Valve unit with sealing
421 367 927 2	Cylinder cover for 1/R cylinder
421 367 928 2	Cylinder cover for split cylinder
421 367 929 2	Cylinder cover 2/3 cylinder
421 367 930 2	Sheet for split cylinder
421 367 931 2	Connection support with sealing
421 369 921 2	Connecting bridge
421 369 923 2	Dynamic sealing kit
421 369 924 2	Cover and piston kit for 1/R cylinder
421 369 925 2	Connection support with sealing
421 369 926 2	Cylinder cover for 2/3 cylinder, lip seals and O-ring for cylinder



421 365 000 0\*



421 365 011 0\*



421 366 001 0\*



421 369 001 0\*

# DRIVELINE CONTROLS

Repair kit	Content
421 369 927 2	Rod kit for 3 cylinder, lip seals and O-ring for cylinder
421 369 928 2	Rod kit for 2 cylinder, lip seals and O-ring for cylinder

## Repair solutions for basic devices

Generation:	Basic device* (Product number 421 ... .. 0)								
	B	C	D 12 V	D 24 V	D / 24 V Retarder	E	F		PS
Applicable repair kit	...365 000	...364 001 ...365 002 ...365 004	...364 002 ...364 003	...365 005 ...365 007 ...365 008 ...365 010 ...365 011 ...365 013	...365 006 ...365 009 ...365 012	...367 001	...366 001 ...366 002	...367 002	...369 001
421 365 920 2	✓	✓	✓	✓	✓	-	-	-	-
421 365 921 2	✓	-	-	-	-	-	-	-	-
421 365 922 2	✓	✓	✓	✓	✓	✓	✓	✓	✓
421 365 923 2	✓	✓	✓	✓	✓	✓	✓	✓	-
421 365 924 2	✓	✓	✓	✓	✓	-	-	-	-
421 365 925 2	✓	✓	✓	✓	✓	-	-	-	-
421 365 926 2	✓	✓	✓	✓	✓	-	-	-	-
421 365 927 2	✓	✓	✓	✓	✓	✓	✓	✓	✓
421 365 928 2	✓	✓	✓	✓	✓	✓	✓	✓	✓
421 365 929 2	✓	✓	✓	✓	✓	✓	✓	✓	✓
421 365 932 2	✓	✓	✓	✓	✓	✓	✓	✓	-
421 365 933 2	✓	✓	✓	✓	✓	✓	✓	✓	✓
421 365 934 2	✓	✓	✓	✓	✓	✓	✓	✓	-
421 365 935 2	✓	✓	✓	✓	✓	✓	✓	✓	✓
421 365 939 2	✓	✓	✓	✓	✓	-	-	-	-
421 365 946 2	-	-	✓	✓	✓	-	-	-	-
421 365 947 2	✓	✓	✓	✓	✓	-	-	-	-
421 367 900 2	-	-	-	-	-	✓	✓	✓	✓
421 367 921 2	-	-	-	-	-	✓	✓	✓	✓
421 367 922 2	-	-	-	-	-	✓	✓	✓	-
421 367 924 2	-	-	-	-	-	✓	-	✓	✓
421 367 927 2	-	-	-	-	-	✓	✓	✓	-
421 367 928 2	-	-	-	-	-	✓	✓	✓	-
421 367 929 2	-	-	-	-	-	✓	✓	✓	-
421 367 930 2	-	-	-	-	-	✓	✓	✓	-
421 367 931 2	-	-	-	-	-	✓	✓	✓	-
421 369 921 2	-	-	-	-	-	-	-	-	✓
421 369 923 2	-	-	-	-	-	-	-	-	✓
421 369 924 2	-	-	-	-	-	-	-	-	✓
421 369 925 2	-	-	-	-	-	-	-	-	✓
421 369 926 2	-	-	-	-	-	-	-	-	✓
421 369 927 2	-	-	-	-	-	-	-	-	✓
421 369 928 2	-	-	-	-	-	-	-	-	✓

\* Basic devices are not available for Independent Aftermarket

## Hydraulic automated manual transmission (AMT)

The hydraulic system consists of two main parts: central unit & gearbox actuator / XY-actuator.

- The central unit is the hydraulic power supply for the XY-actuator and controls the cylinders of the XY-actuator.
- The gearbox actuator / XY-actuator contains hydraulic actuators with stroke sensors and the shift interface to the gearbox.

### Application

- The WABCO central unit and XY-actuator are used in commercial vehicles equipped with hydraulic gearshift systems and with a maximum of six gears.
- WABCO hydraulic AMT solutions are used on trucks and buses from Daimler, Volvo, Renault and MAN.

## REMAN SOLUTIONS complete devices for ZF applications

- The remanufactured devices are sold without software (empty ECU).
- To purchase these products directly, a special contract is required. The alternative option is to purchase them via one of our dedicated distributors. For more information, please contact your local WABCO sales representative.

Product number	Complete device	Basic device*
477 001 030 R	Central unit 2006, without software	477 001 030 0
477 001 031 R	Central unit 2008, without software	477 001 031 0 477 001 036 0 477 001 037 0

\* Basic devices are not available for Independent Aftermarket



477 001 031 R

## Aftermarket solutions for ZF applications

### Repair solutions

Repair kit	Content
477 001 920 2	Pressure sensor kit (pressure sensor 441 043 108 0 = old generation: manufacturing year <2014)
477 001 921 2	Pressure sensor kit (pressure sensor 441 043 110 0 = new generation: manufacturing year >2014)
477 001 923 2	First solenoids for 3/2 way valves
477 001 924 2	First solenoids for 2/2 way valves
477 001 925 2	Check valve
477 010 933 2	Pressure accumulator
477 010 934 2	Reservoir
477 010 935 2	Power unit
477 010 936 2	Distance sensor
477 010 937 2	Sealing kit
477 010 945 2	Pressure valve
477 010 946 2	Front end cover

## Basic devices - vehicle application / cross reference

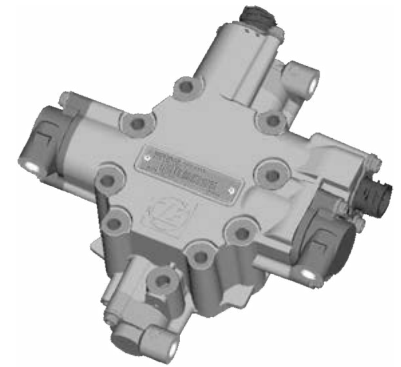
Basic device*	ZF transmission device	Application	ZF cross reference
477 001 030 0	Central unit	ZF applications	6070201011 6070301053 0501331742 0501333581 0501333747
477 001 031 0	Central unit	ZF applications	0501325721 0501331743 0501333617 0501333572 0501336191



477 001 031 0\*

# DRIVELINE CONTROLS

Basic device*	ZF transmission device	Application	ZF cross reference
477 001 036 0	Central unit	Volvo	0501325722 0501331744 0501333582 0501333748 0501336192
477 001 037 0	Central unit	Renault	0501325723 0501331745 0501333583 0501333749 0501336193
477 010 002 0	XY-actuator	ZF applications	6070302028
477 010 005 0	XY-actuator	ZF applications	6070302029
477 010 006 0	XY-actuator	Volvo	0501325726
477 010 007 0	XY-Actuator	Renault	0501325727



477 010 002 0\*

\* Basic devices are not available for Independent Aftermarket

## Repair solutions for ZF central unit

Basic device number*		Repair kit number 477 001 ... 2					Repair kit number 477 010 ... 2				
WABCO	ZF	...920	...921	...923	...924	...925	...933	...934	...935	...937	...945
477 001 030 0	6070201011	✓	–	✓	✓	✓	✓	✓	✓	✓	✓
	6070301053	✓	–	✓	✓	✓	✓	✓	✓	✓	✓
	0501331742	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333581	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333747	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
477 001 031 0	0501325721	✓	–	✓	✓	✓	✓	✓	✓	✓	✓
	0501331743	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333617	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333572	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501336191	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
477 001 036 0	0501325722	✓	–	✓	✓	✓	✓	✓	✓	✓	✓
	0501331744	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333582	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333748	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501336192	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
477 001 037 0	0501325723	✓	–	✓	✓	✓	✓	✓	✓	✓	✓
	0501331745	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333583	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501333749	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	0501336193	–	✓	✓	✓	✓	✓	✓	✓	✓	✓

\* Basic devices are not available for Independent Aftermarket

## Repair solutions for ZF XY-actuator

Basic device*	Repair kit number		
	477 010 936 2	477 010 937 2	477 010 946 2
477 010 002 0	✓	✓	✓
477 010 005 0	✓	✓	✓
477 010 006 0	✓	✓	✓
477 010 007 0	✓	✓	✓

\* Basic devices are not available for Independent Aftermarket



## Aftermarket solutions for Daimler applications

### Repair solutions

Repair kit	Content
477 001 920 2	Pressure sensor kit (pressure sensor 441 043 108 0 = old generation: manufacturing year < 2014)
477 001 921 2	Pressure sensor kit (pressure sensor 441 043 110 0 = new generation: manufacturing year > 2014)
477 010 936 2	Distance sensor



477 001 008 0\*



477 010 001 0\*

### Repair solutions for basic devices

Basic device*		Repair kit number		
Daimler transmission device	WABCO number	477 001 920 2	477 001 921 2	477 010 936 2
Central unit	477 001 006 0	✓	–	–
	477 001 008 0	✓	–	–
	477 001 009 0	–	✓	–
	477 001 021 0	✓	–	–
	477 001 027 0	–	✓	–
XY-actuator	477 010 001 0	–	–	✓
	477 010 003 0	–	–	✓

\* Basic devices are not available for Independent Aftermarket

## Transmission accessories

### Transmission solenoid valve

- **Protection class** IP69K / IP67
- **Electrical connection** Bayonet DIN 72585 A1-3.1-Sn/K2

Product number	Working pressure	Voltage	Temperature
472 400 070 0	10.0 bar	24 V	-25 ... +120 °C



### Shift lever

- **Temperature** -40 ... +75 °C  
433 130 000 0: -40 ... +85 °C
- **Voltage** 24 V  
433 130 000 0: 12 / 24 V
- **Version**
  - EAS: Electronic drive control
  - EPS: Electropneumatic gear shift
  - LHD: Left hand drive
  - RHD: Right hand drive



433 130 000 0

Product number	Application	Version	Electrical connection	Mounting	Distance between bolts
433 130 000 0	Volvo	LHD	JAE IL-AG5 -16S-D3C1-A	2x Ø 6.6 mm	Holes: 123.0 mm
433 140 000 0	Iveco	LHD	AMP 11-Pole	4x M8	83x79 mm
433 140 003 0	Iveco	LHD	AMP 16-Pole	4x M8	83x79 mm
433 140 004 0	Iveco	RHD	AMP 16-Pole	4x M8	83x79 mm
433 140 005 0	Iveco	LHD	AMP 16-Pole	4x M8	83x79 mm
433 140 006 0	Iveco	RHD	AMP 16-Pole	4x M8	83x79 mm
433 150 014 0	Mercedes-Benz	EPS LHD	AMP 18-Pole	2x M8	70 mm
433 150 020 0	Mercedes-Benz	EPS LHD	AMP 18-Pole	2x M8	70 mm
433 150 021 0	Mercedes-Benz	EAS LHD	AMP 18-Pole	2x M8	70 mm
433 150 022 0	Mercedes-Benz	EPS RHD	AMP 18-Pole	2x M8	70 mm
433 150 023 0	Mercedes-Benz	EAS RHD	AMP 18-Pole	2x M8	70 mm
433 150 030 0	Mercedes-Benz	EPS LHD	AMP 18-Pole	2x M8	70 mm
433 150 070 0	Mercedes-Benz	EPS LHD	AMP 18-Pole	2x M8	70 mm
433 150 072 0	Mercedes-Benz	EPS RHD	AMP 18-Pole	2x M8	70 mm



# DRIVELINE CONTROLS

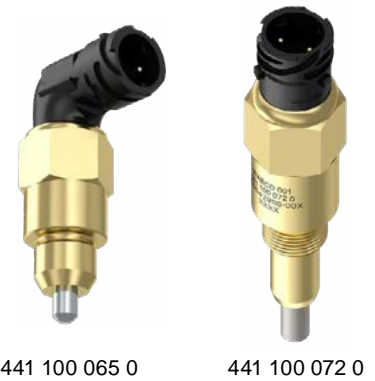
Product number	Type	Working pressure	Mounting	Voltage	Electrical connection	Temperature
463 063 004 0	5/2	10 bar	4x Ø 9 mm	–	–	–20 ... +140 °C
463 063 005 0	5/2	10 bar	4x Ø 9 mm	–	–	–20 ... +140 °C
476 406 005 0	–	16 bar	6x Ø 8 mm	–	–	–25 ... +100 °C
476 406 007 0	–	16 bar	6x Ø 8 mm	–	–	–25 ... +100 °C

## Repair solutions

Product number	Repair kit	Content
■ 463 038 009 0	463 038 000 2	Sealing ring
■ 463 063 002 0	463 063 000 2	Sealing ring
■ 463 063 003 0	463 063 000 2	Sealing ring
■ 463 063 005 0	463 063 000 2	Sealing ring

## Distance sensor

■ Temperature	–40 ... +130 °C
■ Voltage	12 V
■ Electrical connection	M24x1 1) Bayonet DIN 72585 A1-2.1-Ag/K2



Product number	Version	Mounting	Measuring	Protection class
441 100 000 0	0°	Flange		IP66A
441 100 050 0	0°	M18x1.5	9.8 mm	IP66A
441 100 063 0	90°	M20x1.5	9.6 mm	IP66A
441 100 064 0 <sup>1)</sup>	0°	M20x1.5	9.6 mm	IP66A
441 100 065 0 <sup>1)</sup>	90°	M20x1.5	9.6 mm	IP66A
441 100 070 0	0°	M20x1.5	13.5 mm	IP66A
441 100 071 0	0°	M20x1.5	13.5 mm	IP66A
441 100 072 0 <sup>1)</sup>	0°	M20x1.5	13.5 mm	IP6K9K
441 101 000 0	0°	M18x1.5	18.0 mm	IP66A
441 101 010 0	90°	M18x1.5	8.0 mm	IP6K6K
441 101 537 1 <sup>1) 2)</sup>	–	Ø 40	28.0 mm	IP6K6K

<sup>2)</sup> Cable length 250 mm

# Clutch control



965 001 001 0

## Pedal unit

Product number	Application	Pedal type	Max. pressure	Clutch servo fluid	Stroke brake / clutch	Temperature
965 001 001 0	Renault	Brake / clutch	12.5 bar	DOT 4 - SAE J1703	85.10 / 129 mm	-40 ... +80 °C
965 001 002 0	Renault	Brake / clutch	10.0 bar	DOT 4 - SAE J1703	85.10 / 129 mm	-40 ... +80 °C
965 001 020 0	Otokar, Tamsa	Brake / clutch	12.5 bar	DOT 4 - SAE J1703	85.10 / 129 mm	-40 ... +80 °C
965 001 025 0	Renault, Leyland	Brake / clutch	12.5 bar	DOT 4 - SAE J1703	85.10 / 129 mm	-40 ... +80 °C
965 001 026 0	Renault, Leyland	Brake	12.5 bar	-	85.10 / - mm	-40 ... +80 °C
965 001 041 0	Renault	Brake / clutch	15.0 bar	DOT 4 - SAE J1703	80.65 / 129 mm	-40 ... +80 °C
965 001 042 0	Renault	Brake	15.0 bar	-	80.65 / - mm	-40 ... +80 °C
965 001 055 0	DAF	Brake	15.0 bar	-	85.00 / - mm	-35 ... +70 °C
965 001 103 0		Clutch	-	DOT 4 - SAE J1703	- / 194 mm	-40 ... +100 °C
965 001 106 0		Clutch	-	DOT 4 - SAE J1703	- / 215 mm	-40 ... +100 °C
965 001 208 0	Freightliner	Clutch	-	DOT 4 - SAE J1703	- / 215 mm	-40 ... +100 °C

## Repair solutions

Product number	Repair kit	Content
■ 965 001 001 0	965 001 050 2	Sensor cable
	965 001 902 2	Clutch master cylinder + pedal joint
	965 001 903 2	Brake pedal push rod
	965 001 904 2	Sensor cable
	965 001 921 2	Clutch pedal
	965 001 923 2	Bearing bolt
	965 001 924 2	Clutch master cylinder + pedal
	965 001 926 2	Clutch master cylinder
■ 965 001 002 0	461 494 923 2	Silencer
	965 001 921 2	Clutch pedal
	965 001 923 2	Bearing bolt
	965 001 924 2	Clutch master cylinder + pedal
	965 001 926 2	Clutch master cylinder
■ 965 001 020 0	965 001 924 2	Clutch master cylinder + pedal
	965 001 926 2	Clutch master cylinder
■ 965 001 025 0	965 001 010 2	Foot brake valve
	965 001 921 2	Clutch pedal
	965 001 924 2	Clutch master cylinder + pedal
	965 001 926 2	Clutch master cylinder
■ 965 001 026 0	965 001 010 2	Foot brake valve

# CLUTCH CONTROL

Product number	Repair kit	Content
■ 965 001 041 0	965 001 921 2	Clutch pedal
	965 001 922 2	Brake pedal
	965 001 924 2	Clutch master cylinder + pedal
	965 001 925 2	Brake signal transmitter
	965 001 926 2	Clutch master cylinder
	965 001 929 2	Sensor cable
■ 965 001 042 0	965 001 922 2	Brake pedal
	965 001 925 2	Brake signal transmitter
	965 001 926 2	Clutch master cylinder
■ 965 001 055 0	965 001 927 2	Brake pedal
	965 001 928 2	Clutch pedal
■ 965 001 103 0	965 001 009 2	Wiring harness
	965 001 900 2	Brake fluid container
	965 001 901 2	Tank plug
■ 965 001 106 0	965 001 009 2	Wiring harness
	965 001 900 2	Brake fluid container
	965 001 901 2	Tank plug
■ 965 001 208 0	965 001 009 2	Wiring harness
	965 001 900 2	Brake fluid container
	965 001 901 2	Tank plug

## Pneumatic clutch actuator

■ Temperature	-30 ... +90 °C
■ Working pressure	8.5 bar
■ Electrical connection	Bayonet DIN 72585 A1-7.1 Bayonet DIN 72585 A1-2.1



970 150 001 0



970 150 005 0

Product number	Application	Stroke	Port 1
970 150 001 0	Unimog, Mitsubishi Fuso	69.5 mm	M16x1.5
970 150 005 0	Ashok Leyland	70.4 mm	M16x1.5 Voss 230 NG8
970 150 008 0*	Daimler	69.5 mm	M16x1.5

\*same as 970 150 001 0 but with stronger internal spring force

## Repair solutions

Product number	Repair kit	Content
■ 970 150 001 0	970 150 923 2	Solenoid valve
	970 150 924 2	Armature + sealing
■ 970 150 005 0	970 150 921 2	Boot + adapter
	970 150 923 2	Solenoid valve
■ 970 150 008 0	970 150 924 2	Armature + sealing



# Manual transmission

## Clutch servo

■ **Max. pressure** <sup>1)</sup> Maximum supply pressure (air)

■ **Electrical connection** <sup>2)</sup> Bayonet DIN 72585



470 051 114 0



970 051 131 0



970 051 157 0



970 051 159 0



970 051 176 0



970 051 860 0

Product number	Max. pressure <sup>1)</sup>	Temperature	Medium	Stroke	Electrical connection	Port
470 051 114 0	8.0 bar	-40 ... +80 °C	Brake fluid, compressed air	59.5 mm	-	11: M16x1.5; 12, oil inlet: M14x1.5; 31: exhaust
884 503 606 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M12x1.5
884 503 728 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 017 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	81.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 018 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	81.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 025 0	10.0 bar	-20 ... +120 °C	Brake fluid SAE J 1703	82.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 035 0	10.0 bar	-40 ... +100 °C	Mineral oil	85.0 mm	<sup>2)</sup> A1	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 100 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	81.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 101 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	82.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 102 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	67.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 107 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 111 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 114 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	67.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 119 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	81.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 120 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	82.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 124 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	56.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 125 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 126 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	67.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 127 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 128 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 131 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	72.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 135 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5

# CLUTCH CONTROL

Product number	Max. pressure <sup>1)</sup>	Temperature	Medium	Stroke	Electrical connection	Port
970 051 137 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 150 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 151 0	10.0 bar	-20 ... +140 °C	Brake fluid SAE J 1703	65.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 154 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 157 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 158 0	8.0 bar	-20 ... +140 °C	Brake fluid SAE J 1703	75.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 159 0	8.0 bar	-20 ... +140 °C	Brake fluid SAE J 1703	75.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 161 0	10.0 bar	-20 ... +140 °C	Brake fluid SAE J 1703	75.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 162 0	10.0 bar	-20 ... +140 °C	Brake fluid SAE J 1703	65.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 163 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 164 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 170 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 171 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	70.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 172 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 174 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 176 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 179 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 181 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 182 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 183 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 184 0	10.0 bar	-20 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 186 0	10.0 bar	-20 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 187 0	10.0 bar	-20 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 188 0	10.0 bar	-20 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 190 0	10.0 bar	-20 ... +140 °C	Brake fluid SAE J 1703	60.0 mm	-	11, 12: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 191 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M18x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 192 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M16x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M14x1.5
970 051 193 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	11: M14x1.5; 31: exhaust; 32: Ø 8.0 mm; oil inlet: M12x1.5

Product number	Max. pressure <sup>1)</sup>	Temperature	Medium	Stroke	Electrical connection	Port
970 051 194 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	58.5 mm	-	<b>11:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> 7/16 - 20 UNC
970 051 199 0	10.0 bar	-20 ... +140 °C	Brake fluid SAE J 1703	60.0 mm	-	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 204 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	24.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 205 0	10.0 bar	-40 ... +100 °C	Mineral oil	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 206 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 209 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 214 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 217 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 218 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 220 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 224 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 226 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	26.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 228 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	81.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 229 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	82.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 231 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	82.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 232 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	80.0 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 406 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 412 0	10.0 bar	-40 ... +100 °C	Mineral oil	85.0 mm	<sup>2)</sup> A1 - 2.1 - SN K2	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 414 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 417 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	25.2 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 419 0	10.0 bar	-40 ... +110 °C	Brake fluid SAE J 1703	31.0 mm	-	<b>11:</b> M22x1.5 JED-388; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5

# CLUTCH CONTROL

Product number	Max. pressure <sup>1)</sup>	Temperature	Medium	Stroke	Electrical connection	Port
970 051 421 0	10.0 bar	-40 ... +110 °C	Brake fluid SAE J 1703	31.0 mm	–	<b>11:</b> M22x1.5 JED-388; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 422 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	75.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 423 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 424 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 425 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	<sup>2)</sup> A1	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 429 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 430 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 431 0	10.0 bar	-20 ... +80 °C	Brake fluid SAE J 1703	85.0 mm	<sup>2)</sup> A1	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 432 0	10.0 bar	-40 ... +100 °C	Mineral oil	85.0 mm	<sup>2)</sup> A1 - 2.1 - SN K2	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 433 0	10.0 bar	-20 ... +80 °C	Brake fluid SAE J 1703	69.0 mm	<sup>2)</sup> A1	<b>11:</b> M16x1.5 JED-464; <b>31:</b> Union Ø 8.0 mm; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 434 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464-0; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 435 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 436 0	10.0 bar	-20 ... +80 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 437 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 438 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	25.2 mm	–	<b>11:</b> M22x1.5 JED-388; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 439 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	25.0 mm	–	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 440 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 441 0	10.0 bar	-20 ... +80 °C	Mineral oil	85.0 mm	<sup>2)</sup> A1	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 443 0	10.0 bar	-20 ... +80 °C	Mineral oil	69.0 mm	<sup>2)</sup> A1	<b>11:</b> M16x1.5; <b>31:</b> Union Ø 8.0mm; <b>32:</b> M8x1; <b>oil inlet:</b> M16x1.5
970 051 445 0	10.0 bar	-20 ... +80 °C	Brake fluid SAE J 1703	86.5 mm	–	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 446 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	<sup>2)</sup> A1 - 2.1 - SN K2	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 451 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 453 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 454 0	10.0 bar	-20 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	<sup>2)</sup> A1	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 455 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	25.2 mm	–	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 457 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	86.0 mm	–	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5

Product number	Max. pressure <sup>1)</sup>	Temperature	Medium	Stroke	Electrical connection	Port
970 051 458 0	10.0 bar	-40 ... +100 °C	Mineral oil	85.0 mm	<sup>2)</sup> A1 - 2.1 - SN K2	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 459 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	25.2 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 460 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	75.0 mm	-	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 465 0	10.0 bar	-40 ... +100 °C	Mineral oil	65.0 mm	<sup>2)</sup> A1 - 2.1 - SN K2	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 466 0	10.0 bar	-40 ... +100 °C	Mineral oil	85.0 mm	<sup>2)</sup> A1 - 2.1 - SN K2	<b>11:</b> M22x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 473 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	75.0 mm	-	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 474 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	31.0 mm	-	<b>11:</b> M16x1.5 JED-388; <b>12, 22:</b> M10x1.0 JED-388-1; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 478 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 479 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	84.8 mm	-	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 482 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	31.0 mm	-	<b>11:</b> M16x1.5 JED-388; <b>12, 22:</b> M10x1.0 JED-388-1; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 484 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	25.2 mm	-	<b>11:</b> M16x1.5; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 496 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	<b>11:</b> M16x1.5 JED-464-0; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 503 0	100 bar	-40 ... +100 °C	Brake fluid SAE J 1703	53.3 mm	-	
970 051 505 0	50 bar	-30 ... +100 °C	Brake fluid SAE J 1703	25.0 mm	-	
970 051 506 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	25.0 mm	-	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 510 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	25.0 mm	-	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 511 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	25.0 mm	-	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 601 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	86.5 mm	-	<b>11, 31:</b> '2000-1/2'; <b>12, 22:</b> '2000-3/8'; <b>32:</b> Ø 8.0 mm; <b>33:</b> Ø 11.0 mm
970 051 602 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	83.5 mm	-	<b>11, 31:</b> '2000-1/2'; <b>32:</b> Ø 8.0 mm
970 051 604 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	83.5 mm	-	<b>11, 31:</b> '2000-1/2'; <b>12, 22:</b> '2000-3/8'; <b>32:</b> Ø 8.0 mm; <b>33:</b> Ø 11.0 mm
970 051 606 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	<b>11:</b> M16x1.5 JED-388; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 611 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	25.2 mm	-	<b>11:</b> M22x1.5 JED-388; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 621 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	-	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 629 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	25.2 mm	-	<b>11:</b> M22x1.5 JED-388; <b>12, 22:</b> M12x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 809 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	75.0 mm	-	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 810 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	75.0 mm	-	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5



# CLUTCH CONTROL

Product number	Max. pressure <sup>1)</sup>	Temperature	Medium	Stroke	Electrical connection	Port
970 051 811 0	10.0 bar	-30 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 822 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464-0; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 823 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464-0; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 824 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 825 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 051 826 0	10.0 bar	-40 ... +100 °C	Brake fluid SAE J 1703	85.0 mm	–	<b>11:</b> M16x1.5 JED-464; <b>31:</b> exhaust; <b>32:</b> Ø 8.0 mm; <b>oil inlet:</b> M14x1.5
970 052 002 0	10.0 bar	-40 ... +130 °C	MB-SERVO 345.0	85.0 mm	<sup>2)</sup> A1	<b>11:</b> M16x1.5; <b>31:</b> exhaust; <b>32:</b> M8x1; <b>oil inlet:</b> M16x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 470 051 114 0	470 051 006 2	Valve	■ 970 051 183 0	970 051 910 2	Valve + piston
■ 970 051 101 0	970 051 997 2	Valve + piston	■ 970 051 190 0	970 051 917 2	Valve + piston
■ 970 051 102 0	970 051 904 2	Valve + piston	■ 970 051 191 0	970 051 906 2	Valve + piston
■ 970 051 107 0	970 051 006 2 970 051 906 2	Valve Valve + piston	■ 970 051 192 0	970 051 906 2	Valve + piston
■ 970 051 111 0	970 051 006 2 970 051 905 2	Valve Valve + piston	■ 970 051 193 0	970 051 906 2	Valve + piston
■ 970 051 114 0	970 051 904 2	Valve + piston	■ 970 051 194 0	970 051 906 2	Valve + piston
■ 970 051 120 0	970 051 999 2	Valve + piston	■ 970 051 204 0	970 051 904 2	Valve + piston
■ 970 051 124 0	970 051 006 2 970 051 906 2	Valve Valve + piston	■ 970 051 205 0	970 051 907 2 970 051 937 2	Valve + piston Valve
■ 970 051 126 0	970 051 904 2	Valve + piston	■ 970 051 206 0	970 051 904 2	Valve + piston
■ 970 051 127 0	970 051 006 2 970 051 906 2	Valve Valve + piston	■ 970 051 209 0	970 051 909 2 970 051 942 2	Valve + piston 3/2 way valve
■ 970 051 128 0	970 051 906 2	Valve + piston	■ 970 051 214 0	970 051 909 2	Valve + piston
■ 970 051 131 0	970 051 903 2	Valve + boot	■ 970 051 217 0	970 051 911 2 970 051 967 2	Valve + piston Valve + piston
■ 970 051 135 0	970 051 910 2	Valve + piston	■ 970 051 218 0	970 051 937 2 970 051 948 2	Valve Valve + piston
■ 970 051 150 0	970 051 910 2	Valve + piston	■ 970 051 220 0	970 051 910 2 970 051 937 2	Valve + piston Valve
■ 970 051 151 0	970 051 917 2	Valve + piston	■ 970 051 224 0	970 051 967 2	Valve + piston
■ 970 051 154 0	970 051 911 2	Valve + piston	■ 970 051 226 0	970 051 999 2	Valve + piston
■ 970 051 157 0	970 051 006 2 970 051 911 2	Valve Valve + piston	■ 970 051 228 0	970 051 999 2	Valve + piston
■ 970 051 158 0	970 051 916 2	Valve	■ 970 051 231 0	970 051 995 2	Valve + piston
■ 970 051 159 0	970 051 916 2	Valve	■ 970 051 232 0	970 051 995 2	Valve + piston
■ 970 051 162 0	970 051 917 2	Valve + piston	■ 970 051 406 0	970 051 952 2	Valve
■ 970 051 170 0	970 051 919 2	Valve + piston	■ 970 051 412 0	970 051 971 2 970 051 986 2	Valve Distance sensor
■ 970 051 171 0	970 051 944 2	Valve + piston	■ 970 051 414 0	970 051 961 2	Valve
■ 970 051 176 0	970 051 950 2	Valve + piston	■ 970 051 422 0	970 051 961 2 970 051 973 2	Valve Valve + port filter
■ 970 051 182 0	970 051 906 2	Valve + piston			



Product number	Repair kit	Content
■ 970 051 423 0	970 051 961 2	Valve
■ 970 051 424 0	970 051 961 2	Valve
■ 970 051 425 0	970 051 986 2	Distance sensor
■ 970 051 429 0	970 051 970 2	Valve
■ 970 051 430 0	970 051 970 2	Valve
■ 970 051 431 0	970 051 974 2 970 051 986 2	Valve + piston Distance sensor
■ 970 051 432 0	970 051 977 2 970 051 986 2	Valve Distance sensor
■ 970 051 433 0	970 051 986 2	Distance sensor
■ 970 051 435 0	970 051 970 2	Valve
■ 970 051 436 0	970 051 975 2	Valve
■ 970 051 437 0	970 051 961 2 970 051 984 2	Valve Valve
■ 970 051 438 0	970 051 960 2 970 051 961 2 970 051 984 2	Control valve Valve Valve
■ 970 051 439 0	970 051 960 2 970 051 984 2	Control valve Valve
■ 970 051 441 0	970 051 986 2 970 051 987 2	Distance sensor Valve
■ 970 051 443 0	970 051 986 2 970 051 987 2	Distance sensor Valve

Product number	Repair kit	Content
■ 970 051 445 0	970 051 974 2	Valve + piston
■ 970 051 446 0	970 051 986 2	Distance sensor
■ 970 051 454 0	970 051 986 2 970 051 994 2	Distance sensor Valve
■ 970 051 457 0	970 051 961 2	Valve
■ 970 051 458 0	970 051 977 2 970 051 986 2	Valve Distance sensor
■ 970 051 460 0	970 051 973 2	Valve
■ 970 051 465 0	970 051 971 2 970 051 986 2	Valve Distance sensor
■ 970 051 466 0	970 051 971 2 970 051 986 2	Valve Distance sensor
■ 970 051 473 0	970 051 996 2	Valve
■ 970 051 474 0	970 051 961 2 970 051 984 2	Valve Valve
■ 970 051 478 0	970 051 961 2	Valve
■ 970 051 479 0	970 051 961 2	Valve
■ 970 051 482 0	970 051 961 2	Valve
■ 970 051 601 0	970 051 989 2 970 051 990 2	Port coupling piece Load sensing valve
■ 970 051 602 0	970 051 989 2	Port coupling piece
■ 970 051 604 0	970 051 989 2 970 051 990 2	Port coupling piece Load sensing valve



462 012 100 0



974 010 001 0



974 010 008 0

## Servo master

Product number	Max. pressure	Medium	Fluid	Stroke	Push rod	Temperature
462 012 100 0	8.0 bar	Air	–	21,5 mm	–	-40 ... +80 °C
974 010 001 0	60.0 bar	Air / brake fluid	DOT 3 (except silicon), DOT 4, DOT 5	30.0 mm	–	-30 ... +80 °C
974 010 008 0	50.0 bar	Air / mineral oil	M3289	30.0 mm	✓	-40 ... +80 °C

## Repair solutions

Product number	Repair kit	Content
■ 462 012 100 0	462 012 001 2	Boot

## Clutch master cylinder

- **Temperature** –40 ... +80 °C
- **Medium** DOT 3, DOT 4, SAE J 1703



470 053 006 0

Product number	Max. pressure	Cylinder	Stroke	Push rod	Oil inlet	Port 2
470 053 005 0	100 bar	Ø 26.125 mm	37 mm	–	Ø 12	M14x1.5
470 053 006 0	120 bar	Ø 26.125 mm	36 mm	–	Tank	M14x1.5
470 053 009 0	120 bar	Ø 26.125 mm	36 mm	✓	Tank	M14x1.0
470 053 024 0	120 bar	Ø 26.125 mm	36 mm	–	Tank	M14x1.5
470 053 030 0	120 bar	Ø 24.125 mm	38 mm	✓	Ø 12	M10x1.0
470 053 035 0	120 bar	Ø 26.125 mm	36 mm	✓	Tank	M14x1.5
470 053 096 0	120 bar	Ø 26.125 mm	36 mm	✓	Tank	M14x1.5

## Repair solutions

Product number	Repair kit	Content
■ 470 053 030 0	470 053 920 2	Piston + boot

## Retarder control

### Retarder solenoid valve

- **Voltage** 15 ... 32 V
- **Electrical connection** Bayonet DIN 72585 B1-2.1-1-Sn/K1
- **Protection class** IP67 / IP6K9K
- **Nominal diameter** Ø 8 mm
- **Mounting** 4x Ø 8.5
- **Distance between holes** 54x84.5 mm



472 260 005 0

472 260 011 0

Product number	Max. pressure		Temperature	Port
	working	output		
472 260 005 0	12 bar	4 bar	–15 ... +110 °C	1: M22x1.5 JED-152; 2, 3: Ø 15 mm
472 260 006 0	12 bar	4 bar	–20 ... +110 °C	1: M22x1.5 JED-152; 2, 3: Ø 15 mm
472 260 011 0	12 bar	4 bar	–20 ... +100 °C	1: Voss 232 NG12; 2, 32: Ø 15 mm; 31: exhaust

## Vacuum exhaust brake

- Temperature      −40 ... +120 °C
- Max. pressure    10 bar



421 429 017 0

Product number	Ø	Mounting	Distance between holes	Port 1
421 429 017 0	85.8 mm	8× Ø 11.0 mm	Ø 117.5 mm	M10×1
884 501 803 0	73.0 mm	8× Ø 9.5 mm	Ø 101.6 mm	M10×1
884 502 035 0	85.8 mm	8× Ø 11.0 mm	Ø 117.5 mm	¼"-18 NPT
884 502 217 0	98.6 mm	8× Ø 11.0 mm	Ø 130.0 mm	¼"-18 NPTF
884 502 376 0	85.8 mm	8× Ø 11.0 mm	Ø 117.5 mm	¼"-18 NPT
884 502 674 0	73.0 mm	8× Ø 9.5 mm	Ø 101.6 mm	¼"-18 NPT
884 502 675 0	85.8 mm	8× Ø 11.0 mm	Ø 117.5 mm	¼"-18 NPT
884 502 865 0	85.8 mm	8× Ø 11.0 mm	Ø 117.5 mm	M10×1
884 503 281 0	73.0 mm	8× Ø 11.0 mm	Ø 101.6 mm	¼"-18 NPT
884 503 283 0	73.0 mm	8× Ø 9.5 mm	Ø 101.6 mm	¼"-18 NPT
884 503 361 0	85.8 mm	8× Ø 11.0 mm	Ø 117.5 mm	¼"-18 NPT
884 503 753 0	98.6 mm	8× Ø 11.0 mm	Ø 130.0 mm	¼"-18 NPTF

## Hydraulic engine brake cylinder

- Medium            Mineral oil
- Temperature    −30 ... +140 °C
- Working pressure 4 bar
- Force at piston  76 N
- Mounting        2× Ø 8.5 mm



428 750 007 0

Product number	Stroke	Working volume	Port
428 750 006 0	21 mm	7.3 cm <sup>3</sup>	1: M14×1.5; 5: exhaust
428 750 007 0	25 mm	8.7 cm <sup>3</sup>	1: M14×1.5; 5: exhaust
428 750 008 0	25 mm	8.7 cm <sup>3</sup>	1: M14×1.5; 2: M16×1.5 / M18×1.5; 5: exhaust

## Exhaust brake control unit switch

- Temperature    −40 ... +80 °C
- Mounting        M26×1.5



446 081 004 0

Product number	Max. operating force	Electrical connection	Voltage
446 081 004 0	1000 N	3 pole for flat contact DIN 46244-A6.3-0.8	8 ... 30 V



# Keep cool

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with WABCO water valves

WABCO's specialist aftermarket engineers have created components with robust and reliable designs, resistant against corrosion, vibration, overpressure and pressure pulses. They will help fleet operators reduce vehicle downtime and maintenance costs, keeping passengers cool, whatever the weather.

**WABCO**



# Bus systems

## Modular door control

### Door electronic

- **Temperature**    –40 ... +70 °C

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- **Voltage**        24 V

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- **Training**       E-learning: Electronic systems in buses  
                          200 300 108 0  
                          Classroom training: Bus



Product number	System	Diagnostic software	Electrical connection
446 190 001 0	MTX-PX	MTS	X1: 9-pole; X2: 18-pole; X3: 15-pole; X4: 12-pole; X5: 6-pole
446 190 005 0	DCM-P	–	X1: 18-pole; X2: 15-pole; X3: 9-pole
446 190 006 0	MTS2-P	MTS2	X1: 18-pole; X2: 15-pole; X3: 9-pole
446 190 011 0	MTS-EX	MTS	X1: 18-pole; X2: 15-pole; X3: 9-pole; X4: 12-pole; X5: 6-pole
446 190 012 0	MTS-EX	–	X1: 18-pole; X2: 15-pole; X3: 9-pole; X4: 12-pole; X5: 6-pole
446 190 013 0	MTS-EX/SST	–	X1: 18-pole; X2: 15-pole; X3: 9-pole; X4: 12-pole; X5: 6-pole
446 190 014 0	MTS-EX CADS	–	X1: 18-pole; X2: 15-pole; X3: 9-pole; X4: 12-pole; X5: 6-pole
446 190 015 0	DCM-E	–	X1: 9-pole; X2: 18-pole; X3: 15-pole; X4: 12-pole; X5: 6-pole
446 190 021 0	MTS-EX IWN	–	X1: 18-pole; X2: 15-pole; X3: 9-pole; X4: 12-pole; X5: 6-pole

### Door valve

- **Temperature**    –25 ... +80 °C

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- **Working pressure** 10 bar

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- **Voltage**         24 V

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- **Nominal Ø**       4 mm

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- **Accessory**       894 100 470 2   Plug



Product number	System	Type	Electrical connection	Nominal current	Port
372 060 022 0	ETS	4/3-way	3x 3-pole to fit 6.3 DIN 46247	0.115 A	11, 12, 21, 22, 23, 24: M12x1.5; 3: silencer 532 400 117 0; 4: Ø 8x1
372 060 062 0	ETS	4/3-way	3x 3-pole to fit 6.3 DIN 46247	0.115 A	11, 12, 21, 22, 23, 24: M12x1.5; 3: silencer 532 400 117 0; 4: M5
472 600 001 0	MTS	4/3-way	2x 3-pole to fit 6.3 DIN 46247	0.115 A	11, 12, 21, 22, 23, 24: M12x1.5; 3: silencer 532 400 117 0; 41, 42: Ø 8x1
472 600 022 0	MTS	4/3-way	3x 3-pole to fit 6.3 DIN 46247	0.115 A	11, 12, 21, 22, 23, 24: M12x1.5; 3: Ø 8x1; 4: M5
472 601 001 0	MTS2	3x 3/2-way	1x HDSCS 4x 2.8 code A	0.32 A	11, 3: Ø 8x1; 21, 24, 43: M12; 22, 23, 41, 42: Ø 6x1

## Repair solutions

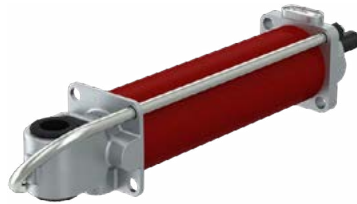
Product number	Repair kit	Content
■ 372 060 022 0	372 060 000 2	Stem + sealing
■ 372 060 062 0	372 060 000 2	Stem + sealing
■ 472 600 022 0	372 060 000 2	Stem + sealing

## Door operating cylinder

■ Accessories	422 903 650 2	Cylinder cover
	422 917 736 4	Push rod
	897 551 210 4	Gasket
	897 650 050 2	Sleeve



422 812 000 0



422 812 002 0



422 814 003 0

Product number	Temperature	Working pressure	Length	Piston Ø	Stroke	Push rod	Port
422 802 301 0	-40 ... 80 °C	8 bar	360 mm	60 mm	160 mm	M16	1, 2: M12×1.5
422 802 309 0	-40 ... 80 °C	8 bar	340 mm	60 mm	140 mm	M16	1, 2: M12×1.5
422 802 310 0	-40 ... 80 °C	8 bar	340 mm	60 mm	140 mm	M16	1, 2: M12×1.5
422 802 320 0	-40 ... 80 °C	8 bar	320 mm	60 mm	120 mm	M12	1, 2: M12×1.5
422 802 325 0	-40 ... 80 °C	8 bar	460 mm	60 mm	260 mm	M16	1, 2: M12×1.5
422 802 326 0	-40 ... 80 °C	8 bar	340 mm	60 mm	140 mm	M16	1, 2: M12×1.5
422 802 421 0	-40 ... 80 °C	8 bar	360 mm	60 mm	160 mm	M12	1, 2: M12×1.5
422 803 327 0	-40 ... 80 °C	8 bar	280 mm	60 mm	60 mm	M12	1, 2: M12×1.5
422 803 328 0	-40 ... 80 °C	8 bar	280 mm	60 mm	95 mm	M12	1, 2: M12×1.5
422 808 106 0	-40 ... 80 °C	8 bar	340 mm	60 mm	140 mm	M16	1, 2: M12×1.5
422 812 000 0	-25 ... 80 °C	10 bar	288 mm	50 mm	140 mm	M14×1.5	1, 2: M12×1.5
422 812 002 0	-25 ... 80 °C	10 bar	308 mm	50 mm	160 mm	M14×1.5	1, 2: M12×1.5
422 814 003 0	-25 ... 80 °C	10 bar	310 mm	50 mm	140 mm	Ball socket*	1, 2: Ø 6 mm

\* Ball socket B-19 with snap ring (DIN 71805)

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 422 802 301 0	422 802 000 2	Hose + sealing	■ 422 802 421 0	422 802 000 2	Hose + sealing
■ 422 802 309 0	422 802 000 2	Hose + sealing	■ 422 803 327 0	422 802 000 2	Hose + sealing
■ 422 802 310 0	422 802 000 2	Hose + sealing	■ 422 803 328 0	422 802 000 2	Hose + sealing
■ 422 802 320 0	422 802 000 2	Hose + sealing	■ 422 808 106 0	422 802 000 2	Hose + sealing
■ 422 802 325 0	422 802 000 2	Hose + sealing	■ 422 812 000 0	422 812 000 2	Hose + sealing
■ 422 802 326 0	422 802 000 2	Hose + sealing	■ 422 812 002 0	422 812 000 2	Hose + sealing



## Door sensor

■ System	MTS
■ Temperature	-40 ... +80 °C
■ Voltage	15 V
■ Resistance	R1: 1 kΩ; R2: 2 k7Ω
■ Linearity	2.5 % FS
■ Electrical connection	3-pole AMP 180941-0



446 190 150 0



446 190 152 0

Product number	Cable length	Operating angle	Pressure switch port
446 190 150 0	300 mm	Electrical: 125° / Mechanical: >360°	✓
446 190 151 0	300 mm	Electrical: 180° / Mechanical: >360°	-
446 190 152 0	300 mm	Electrical: 125° / Mechanical: >360°	-
446 190 153 0	600 mm	Electrical: 180° / Mechanical: >360°	-

## Door solenoid valve

■ Temperature	-40 ... +100 °C
■ Working pressure	8 bar
■ Nominal Ø	3 mm
■ Protection class	IP 66
■ Electrical connection	Receptacle 6.3 DIN 46247



472 017 480 0

Product number	Voltage	Rated current	Port
472 017 480 0	24 V	2.1 A	11, 12, 21, 22, 23, 24, 5: M12x1.5; 3: diffuser 899 470 310 0
472 017 481 0	12 V	4.3 A	11, 12, 21, 22, 23, 24, 5: M12x1.5; 3: diffuser 899 470 310 0

## Repair solutions

Product number	Repair kit	Content
■ 472 017 480 0	472 017 000 2	Valve + seesaw
■ 472 017 481 0	472 017 000 2	Valve + seesaw

## Emergency cock

■ Temperature	-40 ... +80 °C
■ Working pressure	10 bar
■ Nominal Ø	3 mm
■ Distance between holes	36.0×36.0 mm
■ Accessory	899 851 693 4 Hand grip (red)



952 003 023 0



952 003 032 0



952 004 002 0

Product number	Type	Switch		Port			
		micro	closed	1	2 (2.2)	3	4 (2.1)
952 003 023 0 <sup>1)</sup>	4/2	–	–	M12×1.5	M12×1.5	M12×1.5	M12×1.5
952 003 029 0	4/2	–	–	M12×1.5	M12×1.5	M12×1.5	M12×1.5
952 003 032 0	4/2	–	normally	M12×1.5	M12×1.5	M12×1.5	M12×1.5
952 004 001 0	2/2	✓	normally	6.0 mm <sup>2)</sup>	–	6.0 mm <sup>2)</sup>	–
952 004 002 0	2/2	–	–	6.0 mm <sup>2)</sup>	–	6.0 mm <sup>2)</sup>	–

<sup>1)</sup> with hand grip; <sup>2)</sup> quick connection

## Repair solutions

Product number	Repair kit	Content
■ 952 003 023 0	952 003 000 2	Disc spring
■ 952 003 029 0	952 003 000 2	Disc spring

## Climate control

### Climate control electronic control unit (ECU)

■ <b>Name</b>	ATC HVAC	Automatic Temperature Control Heating, Ventilation, Air Conditioning Control
■ <b>Training</b>	E-learning: Electronic systems in buses 200 300 108 0 Classroom training: Bus	
■ <b>Accessories</b>	446 024 000 0 446 024 012 0 446 024 020 0	Air blower output stage Blower module Start up module



446 195 007 0



446 197 004 0



446 295 000 0

Product number	Application	Name	Diagnostic software	Temperature	Voltage
446 195 007 0	EvoBus	ATC	ATC Coach	-20 ... +65 °C	24 V
446 195 010 0	Solaris Bus & Coach	ATC	ATC Coach	-20 ... +65 °C	24 V
446 195 021 0	EvoBus	ATC	-	-20 ... +65 °C	24 V
446 195 022 0	EvoBus	ATC	-	-20 ... +65 °C	24 V
446 195 023 0	Solaris Bus & Coach	ATC	-	-20 ... +65 °C	24 V
446 195 024 0	MAN	ATC	-	-20 ... +65 °C	24 V
446 196 002 0	EvoBus	ATC	-	-40 ... +80 °C	24 V
446 197 001 0	EvoBus	ATC	ATC Coach	-20 ... +65 °C	24 V
446 197 002 0	EvoBus	ATC	ATC Coach	-20 ... +65 °C	24 V
446 197 003 0	EvoBus	ATC	ATC Coach	-20 ... +65 °C	24 V
446 197 004 0	EvoBus	ATC	ATC Coach	-20 ... +65 °C	24 V
446 197 005 0		ATC	ATC KWP Citaro Travego / ATC Coach	-20 ... +65 °C	24 V
446 197 040 0	Bova	ATC	ATC Coach	-20 ... +65 °C	24 V
446 197 041 0	Temsa	ATC	ATC Coach	-20 ... +65 °C	24 V
446 197 043 0		ATC	ATC Coach	-20 ... +65 °C	24 V
446 295 000 0	EvoBus	HVAC	-	-20 ... +70 °C	24 V

### Repair solutions

Product number	Repair kit	Content
■ 446 195 007 0	446 195 920 2	Cover + torision button
■ 446 197 040 0	446 197 921 2	Cover + torision button
■ 446 197 041 0	446 197 921 2	Cover + torision button

# BUS SYSTEMS

## Water quantity control valve

- Accessories 446 091 014 2 Adapter
- 446 091 015 2 Adapter



Product number	Voltage	Electrical connection	Working pressure	Maximum flow rate	Application
446 091 001 0	24 V	Bush contacts	2.0 bar	1400 L/h at $\Delta p = 0.02$ bar	-40 ... +80 °C
446 091 002 0	24 V	AMP-No. 929 505 - 1	2.0 bar	1400 L/h at $\Delta p = 0.02$ bar	-40 ... +80 °C
446 091 004 0	24 V	Bosch No. 1 928 403 095	2.0 bar	1800 L/h at $\Delta p = 0.02$ bar	-40 ... +100 °C
446 091 030 0	24 V	Scania No. 1505950	2.0 bar	1000 L/h	-40 ... +70 °C
446 091 031 0	–	–	2.0 bar	1000 L/h	-40 ... +80 °C
446 091 032 0	–	–	2.0 bar	1000 L/h	-40 ... +80 °C
446 091 200 0	24 V	Bosch No. 1 928 403 095	2.0 bar	1800 L/h at $\Delta p = 0.02$ bar	-40 ... +100 °C
446 091 301 0	24 V	A 230 000 32 99, 2-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 302 0	24 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 303 0	12 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 304 0*	24 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 306 0	24 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 307 0	12 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 308 0	24 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 310 0*	12 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 311 0	24 V	2-pole connector	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 314 0*	12 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C
446 091 315 0	24 V	Tyco HDSCS, 3-pole	2.5 bar	350 L/h at $\Delta p = 0.075$ bar	-40 ... +105 °C

\* with bypass water connection

## Temperature sensor



Product number	Electrical connection	Cable length	Application	Resistance	Measuring
446 092 002 0	Tyco AMP 108-20020	500 mm	-40 ...+85 °C	10 k $\Omega$ at 25 °C	-40 ... +125 °C
446 092 003 0	Tyco AMP 108-18013-0	200 mm	-40 ...+85 °C	10 k $\Omega$ at 25 °C	-40 ... +125 °C
446 093 001 0	2-pole AMP 6.3x0.8 mm	–	-40 ...+80 °C	10 k $\Omega$ at 25 °C	-40 ... +80 °C
446 097 000 0	Tyco AMP 108-18013-0	1500 mm	-40 ...+85 °C	10 k $\Omega$ at 25 °C	-40 ... +125 °C
446 097 001 0	Tyco AMP 114-18050	1013 mm	-40 ...+85 °C	10 k $\Omega$ at 25 °C	-40 ... +125 °C
446 097 002 0	Tyco AMP 1-967239-1	338 mm	-40 ...+85 °C	10 k $\Omega$ at 25 °C	-40 ... +125 °C
446 097 005 0	Tyco AMP 108-94177-1	900 mm	-40 ...+85 °C	10 k $\Omega$ at 25 °C	-40 ... +85 °C

# Retrofit solutions

## OptiTire™ - tire pressure monitoring system

OptiTire is a tire pressure monitoring system. It helps to:

- prevent downtime related to tire defects
- reduce the frequency and costs of tire replacement
- prevent increased fuel consumption due to underinflation

### OptiTire™ electronic control unit (ECU)

■ <b>Description</b>	receives the sensor signals and recognises all changes from programmed nominal tire pressure values.	
■ <b>Temperature</b>	-40 ... +85 °C	
■ <b>Mounting</b>	2x Ø 11.0 mm	
■ <b>Distance between holes</b>	182 mm	
■ <b>Accessory</b>	446 220 000 4	Fixing bracket (supports mounting of the ECU)
■ <b>Diagnostics</b>	Diagnostic software OptiTire	
■ <b>Training</b>	E-learning: OptiTire 200 300 110 0	



Product number	Application	Electrical connection	Voltage
446 220 100 0	Towing vehicle and bus	HDSCS Code A	12 / 24 V

### OptiTire™ cable

Product number	Length	Application	Cable end
894 600 001 2	L: 0.15 m	Adapter cable	Socket HDSCS, 8-pin; bayonet plug, 7-pin
894 607 295 0*	L1: 9.0 m, L2: 2.5 m, L3: 2.0 m	Bus cable set, 5-pin	Bayonet socket, 7-pin; plug display + diagnosis socket with blue cap, 7-pin + open, 4-strand, 4x 0.5 mm <sup>2</sup>
894 607 390 0*	L1: 9.0 m, L2: 2.5 m, L3: 2.0 m	Cable set towing vehicle, 7-pin	Bayonet socket, 7-pin; plug display + diagnosis socket with blue cap, 7-pin + open, 4-strand, 4x 0.5 mm <sup>2</sup>

\* In addition, adapter cable 894 600 001 2 needed.

## OptiTire™ external sensor - wheel module 2 (WM2)

■ <b>Pressure</b>	2 ... 14 bar correspond to the nominal values of pressures from 3 ... 10 bar
■ <b>Temperature</b>	-40 ... +90 °C, 24 h up to 120 °C
■ <b>Protection class</b>	IP 6K6K / 6K7 / 6K9K
■ <b>Transmission interval</b>	With constant pressure: 9 min In dependency to measured values (e.g. pressure loss or speed detection) the transmission interval decreases
■ <b>Counterweight</b>	Required. Twin tires: two external sensors and no counterweight
■ <b>Installation</b>	Fastening by means of standard wheel nuts on the outside of the rim Connected via a PA tube to the valve
■ <b>Start-up</b>	With magnet or WABCO TPMS Manager 300 200 001 0
■ <b>Retrofit</b>	Tires do not need to be removed from the rim
■ <b>Port</b>	1: VG 8 2: Voss 203 Ø 6x1.5



WM2 without bracket



WM2 with B-shape bracket



WM2 with T-shape bracket

Product number	Application	Bracket shape	Radius	Ø Hole	Angle		
					Port	between holes	Bracket
960 731 001 0	Single pressure sensor without bracket (for own bracket application)	–	–	2x M4	90°	–	–
960 731 003 0	Single pressure sensor without bracket (for own bracket application)	–	–	2x M4	170°	–	–
960 731 019 0		B	425.00 mm	2x Ø 23 mm	90°	30°	0°
960 731 031 0	Twin tires, super-single	T	335.00 mm	2x Ø 26 mm	170°	36°	70°
960 731 041 0	Twin tires, super-single	T	335.00 mm	2x Ø 32 mm	170°	36°	70°
960 731 051 0	Towing vehicle: front axle, load axle	L	335.00 mm	2x Ø 26 mm	170°	36°	60°
960 731 053 0	Towing vehicle: front axle, load axle	L	335.00 mm	2x Ø 32 mm	170°	36°	0°
960 731 055 0	Towing vehicle: front axle, load axle	L	335.00 mm	2x Ø 26 mm	170°	36°	60°
960 731 057 0		L	335.00 mm	2x Ø 23 mm	170°	36°	0°
960 731 061 0	Towing vehicle: front axle, load axle	L	335.00 mm	2x Ø 32 mm	170°	36°	33°
960 731 063 0		L	335.00 mm	2x Ø 26 mm	170°	36°	33°
960 731 073 0	Twin tires, super-single	T	285.75 mm	2x Ø 26 mm	170°	36°	70°
960 731 075 0	Towing vehicle: front axle, load axle	L	285.75 mm	2x Ø 26 mm	170°	36°	33°
960 731 081 0	Twin tires, super-single	T	225.00 mm	2x Ø 26 mm	170°	36°	70°
960 731 100 0		–	–	2x M4	90°	–	–
960 731 110 0	Single tire (e.g. tag axle)	B	335.00 mm	2x Ø 26 mm	90°	36°	0°
960 731 130 0		T	335.00 mm	2x Ø 26 mm	170°	36°	70°
960 731 140 0	Twin tires, aluminium rims	T	335.00 mm	2x Ø 32 mm	170°	36°	70°



## Counterweight

- Description** To prevent the external sensor causing an imbalance on the wheel. Not needed for axles with twin tires.



960 730 822 2



960 905 821 4



960 905 823 4






Product number	Application	Hole, wheel, bolt	Ø Bolt hole	Angle
960 730 820 4	Counterweight independent wheels	2× 26 mm	335 mm	0°
960 730 822 2	Counterweight for L-shape sensor	2× 26 mm	335 mm	0°
960 730 828 2	Counterweight for L-shape sensor	2× 32 mm	335 mm	0°
960 905 820 4	Counterweight independent wheels	2× 26 mm	335 mm	0°
960 905 821 4	Counterweight independent wheels	2× 32 mm	335 mm	0°
960 905 822 4	Counterweight for L-shape sensor	3× 26 mm	335 mm	0°
960 905 823 4	Counterweight for L-shape sensor	3× 32 mm	335 mm	0°

## Connecting tube

- Description** Connects the external sensors to the tires

Product number	Product
960 731 800 0	
960 731 801 0	
960 731 802 0	
960 731 803 0	
960 731 804 0	
960 731 808 0	
960 731 810 0	
960 731 816 0	
960 731 821 0	

# RETROFIT SOLUTIONS

Product number	Product
960 731 822 0	
960 731 823 0	
960 731 825 0	
960 731 826 0	
960 731 827 0	

## OptiTire™ valve-mounted internal sensor (WIS)

- **Pressure** 0 ... 13 bar correspond to the nominal values of pressures from 3 ... 10 bar
- **Temperature** -40 ... +120 °C
- **Transmission interval** With constant pressure: every minute  
In dependency to measured values (e.g. pressure loss or speed detection) the transmission interval decreases
- **Installation** Installation on the rim by means of valve neck
- **Start-up** With WABCO TPMS Manager 300 200 001 0
- **Retrofit** Tires need to be removed from the rim



Product number	Diameter	Mounting	Protection class
960 732 000 0	Ø 540 mm	1x 6.2x10 mm	IP 5K4

## Valve set

- **Content** Valve, nut and locking screw (without internal sensor WIS)



Product number	Application	Surface	Outer contour
960 732 100 0	Standard steel rims 17 ... 22.5"	Brass	ETRTO V0.07.3
960 732 101 0	Standard steel rims 17 ... 22.5", tighter rim crank	Nickel	ETRTO V3.22.1
960 732 102 0	Standard steel rims 17 ... 22.5", additional 5° inclined section	Nickel	ETRTO V3.22.1

## OptiTire™ strap-mounted internal sensor (SMS)

- **Pressure** 0 ... 13 bar correspond to the nominal values of pressures from 3 ... 10 bar
- **Transmission interval** With constant pressure: every minute  
In dependency to measured values (e.g. pressure loss or speed detection) the transmission interval decreases
- **Installation** Installation on the rim by means of fastening strap
- **Start-up** With WABCO TPMS Manager 300 200 001 0
- **Retrofit** Tires need to be removed from the rim
- **Product number** 960 733 000 0 Strap-mounted sensor



## Fastening straps

Product number	Ø Rim	Colour of seam	Adjustable circumference
960 733 117 0	17.5"	red	1200 ... 1350 mm
960 733 119 0	19.5"	blue	1300 ... 1450 mm
960 733 122 0	22.5"	yellow	1535 ... 1685 mm
960 733 124 0	24.5"	green	1725 ... 1875 mm



## OptiTire™ display

- **Description** The display is used to show all pressure and leakage information and to relay any necessary information on the OptiTire system. It operates in combination with the OptiTire ECU.
- **Display** Up to 16 tires (towing vehicle and up to five trailers)
- **Voltage** 12 / 24 V

Product number	Type
446 221 000 0	Standard version
446 221 100 0	Special variant for straddle carrier



## OptiTire™ TPMS manager

- **Description** To stimulate and read all types of WABCO tire pressure sensors (WM2, WIS and SMS). Read-out data (temperature, pressure, lifetime of internal batteries, IDs, etc.)
- **Product number** 300 200 001 0



# RETROFIT SOLUTIONS

## TailGUARD™

WABCO TailGUARD™ is a rear blind spot detection system for commercial vehicles. TailGUARD™ helps avoid accidents and damage to trailers. Ultrasonic sensors detect if the area behind the trailer is clear, and TailGUARD™ brakes the vehicle automatically at a pre-set distance between 50...200 cm from objects located in the rear blind spot.

### TailGUARD™ electronic

■ Temperature	-40 ... +65 °C
■ Protection class	IP 6K9K
■ Mounting	4x Ø 8.8 mm
■ Distance between holes	160.6x172.1 mm
■ Diagnostics	Diagnostic software TEBS-E
■ Accessories	895 310 005 2 Enclosure cover for electronic extension module



Product number	Type	Version	Voltage
446 122 070 0	Electronic extension module with cover 895 310 005 2	9x GIO	12 / 24 V
446 122 071 0	Electronic control unit (ECU) without cover	4x GIO	12 / 24 V

### Functions

Function	TailGUARD™ electronic	
	446 122 070 0	446 122 071 0
Compatible with TEBS E Premium (from version E2) and TEBS E Standard from version E5	✓	✓
TailGUARD function incl. buzzer and deactivation button	✓	✓
Supports applications with 2 ... 6 sensors	✓	✓
Connection of side lane keeping lamps and reversing lamp (for activating TailGUARD) ISO 12098	✓	✓
TailGUARD for truck & bus	✓	-
GIO extension	✓	-
Battery charge and battery operation with wake-up button	✓	-
Trailer Remote Control	✓	-
ECAS™ 2-point control	✓	-

### TailGUARD™ cable

■ Accessories	898 020 462 2	Protective cap GIO
	898 020 463 2	Protective cap subsystem
	480 102 931 2	Locking set
	446 122 633 0	Cable box; use as required; 4x M20x1.5 mm 10 flat connector 3.6x0.8 mm

Product number	Length	Type	Application	Cable end
449 303 020 0	2.0 m	Supply cable	Supply	Code E, 8-pin; code C, 8-pin
449 303 025 0	2.5 m			
449 303 050 0	5.0 m			
449 303 100 0	10.0 m			
449 806 060 0	6.0 m	GIO	LIN ultrasonic sensor	Sensor socket, 3-pin; code B, 4-pin
894 600 024 0	0.5 m	GIO	LIN splitter cable	2x sensor socket, 3-pin; sensor plug, 3-pin
449 747 060 0	6.0 m	GIO	LIN extension cable	2x sensor socket, 3-pin; sensor plug, 3-pin

Product number	Length	Type	Application	Cable end
449 908 060 0 449 908 100 0	6.0 m 10.0 m	GIO	Universal cable	Open, 8-strand, 3x 1.0 mm <sup>2</sup> , 3x 0.5 mm <sup>2</sup> , 2x 0.35 mm <sup>2</sup> ; code C, 8-pin
449 535 010 0 449 535 060 0 449 535 100 0 449 535 150 0	1.0 m 6.0 m 10.0 m 15.0 m	GIO	Universal cable	Open, 4-strand, 4x 1.5 mm <sup>2</sup> ; code B, 4-pin
449 443 008 0 449 443 010 0 449 443 020 0 449 443 040 0 449 443 060 0 449 443 100 0	0.8 m 1.0 m 2.0 m 4.0 m 6.0 m 10.0 m	GIO	Buzzer 894 450 000 0	Bayonet socket, ISO 15170-B1-2.1-Sn/K1, 4-pin; code B, 4-pin

## TailGUARD™ sensor

- Temperature -40 ... +80 °C
- System LIN
- Electrical connection 3-Pole Plug



446 122 40 . 0

446 122 450 0

Product number	Cable length	Inclination	Operational range	Rated current	Side of mounting	Mounting	Distance between bolts	Protection class
446 122 401 0*	3.0 m	0°	0.25 ... 4.5 m	0.040 A		2x M6	63 mm	IP 6K4
446 122 402 0*	3.0 m	15°	0.25 ... 4.5 m	0.040 A	Right (Default)	2x M6	63 mm	IP 6K4
446 122 403 0*	0.3 m	15°	0.25 ... 4.5 m	0.040 A		2x M6	63 mm	IP 6K4
446 122 404 0*	3.0 m	15°	0.25 ... 4.5 m	0.040 A	Left (Default)	2x M6	63 mm	IP 6K4
446 122 450 0	2.5 m	10°	0.30 ... 4.5 m	0.015 A		2x M5	62 mm	IP 6K9K

\* for repairs only (for new retrofits use 446 122 450 0)



446 122 080 0



894 450 000 0

## TailGUARD™ accessories

Product number	Product	Description
446 122 080 0	Trailer Remote Control (TRC)	Holder and connecting cable included; each bar represents a distance of 50 cm. In close proximity (red LEDs) the following also applies: each LED has two states, constant and flashing. This indicates the distance with a precision of 25 cm.
894 450 000 0	Buzzer	Can output acoustic warning signals in addition to Trailer Remote Control

# RETROFIT SOLUTIONS

## OnGuardACTIVE™

Advanced Emergency Braking System (AEBS) helps avoid or mitigate rear-end collisions

This active safety system assists truck drivers in recognizing and responding to dangerous driving scenarios that could lead to a rear-end collision with a moving or stationary vehicle ahead.

- Helps to prevent one of the most common causes of truck accidents
- Supports accident prevention, vehicle uptime and on-time delivery
- Releases drivers from frequent distance adaptations

- **Training** E-learning: OnGUARD
- **Diagnostics** Diagnostic software OnGuardPlus

## OnGuardACTIVE™ radar sensor

- **Description** The radar sensor is used to detect vehicles and obstacles. It is mounted in the front of the vehicle near the centre of the bumper and recessed in the bumper in most applications.
- **Function**
  - ACC Adaptive Cruise Control
  - FCW Forward Collision Warning
  - EBA Extended Brake Assist
  - AEBS Advanced Emergency Braking System



Product number	Baud rate	Function				Vehicle application
		ACC	FCW	EBA	AEBS	
446 067 000 0	250 kBd	✓	✓	✓	✓ <sup>1)</sup>	
446 067 002 0	250 kBd	–	✓	✓	✓ <sup>1)</sup>	
446 067 003 0	500 kBd	✓	✓	✓	✓ <sup>1)</sup>	
446 067 005 0	500 kBd	–	✓	✓	✓	
446 067 006 0	250 kBd	✓	✓	✓	✓	
446 067 007 0	500 kBd	✓	✓	✓	✓ <sup>1)</sup>	
446 067 010 0	250 kBd	✓	✓	–	–	Iveco
446 067 019 0	500 kBd	✓	✓	✓	✓ <sup>2)</sup>	
446 067 035 0	500 kBd	✓	✓	–	✓ <sup>3)</sup>	DAF

<sup>1)</sup> AEBS variant A1; <sup>2)</sup> AEBS variant A5; <sup>3)</sup> AEBS variant A2

To retrofit an OnGUARD system please contact your WABCO sales representative



## OnLaneALERT™

OnLaneALERT™ is a camera-based lane departure warning system (LDWS) that helps avoid lane drifting. The system utilizes a forward-looking windshield-mounted camera to monitor the vehicle's position within the lane. When OnLaneALERT detects the vehicle crossing lane markings without a turn signal, the system provides a warning sound from the speaker on the side of the vehicle where it crosses the lane markings.

- Warns the driver to lane drifting
- Prevents potential collisions or road run-offs
- Promotes turn signal usage for lane change
- Camera-based detection of road markings and vehicle position relative to road markings

■ **Training** E-Learning: OnLane Installation 200 300 302 0

■ **Diagnostics** Diagnostic software OnLane LDW  
Diagnostic software OnLane2

### OnLaneALERT™ set

Product number	Description
446 069 010 0	LDW-camera set & equipment
446 069 020 0	LDW-camera set & equipment

### OnLaneALERT™ camera

- Attaches to bracket using a snap-in method

Product number	Mounting	Baud rate
446 070 025 0	4.5° bottom mount camera	250 kbps
446 070 026 0	2.0° top mount camera	250 kbps
446 070 105 0	top mount camera	
446 070 115 0	top mount camera	250 kbps CAN
446 070 525 0	4.5° bottom mount camera	500 kbps



### OnLaneALERT™ mounting bracket

- Attaches to windshield using pressure-sensitive adhesive

Product number	Mounting
446 070 900 0	Bottom mount 14° bracket
446 070 901 0	Bottom mount 2.5° bracket
446 070 920 0	Bottom mount 14° bracket





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# VEHICLE CONNECTION



# Content

## Vehicle connection

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# Connecting devices

## Pneumatical connection

### Coupling head - towing vehicle

- **Filter** without filter
- **Temperature** -40 ... +80 °C

Product number	Colour	Working pressure	Port 1
452 200 211 0	red	10.0 bar	M22×1.5
452 200 212 0	yellow	10.0 bar	M22×1.5
452 300 031 0	black	8.5 bar	M22×1.5
452 303 031 0*	red	10.0 bar	M22×1.5
452 303 032 0*	yellow	10.0 bar	M22×1.5
952 200 007 0	red	10.0 bar	M16×1.5
952 200 210 0	red	10.0 bar	2x M16×1.5
952 200 221 0	red	10.0 bar	M16×1.5
952 200 222 0	yellow	10.0 bar	M16×1.5
952 200 225 0	red	10.0 bar	M16×1.5
952 200 226 0	yellow	10.0 bar	M16×1.5
952 200 901 0	red	10.0 bar	2x M16×1.5
952 200 902 0	red	10.0 bar	M16×1.5
952 200 905 0	yellow	10.0 bar	M16×1.5

\* for Swiss type brake system



952 200 221 0



952 200 222 0

### Coupling head - trailer

#### Coupling head without filter - trailer

- **Temperature** -40 ... +80 °C

Product number	Colour	Working pressure	Test connection	Port 1
452 200 000 0	without cover	8.5 bar	–	M22×1.5
452 200 004 0	black	8.5 bar	–	M22×1.5
452 200 011 0	red	8.5 bar	–	M22×1.5
452 200 012 0	yellow	8.5 bar	–	M22×1.5
452 203 031 0*	red	10.0 bar	–	M22×1.5
452 203 032 0*	yellow	10.0 bar	–	M22×1.5
952 200 021 0	red	8.5 bar	–	M16×1.5
952 200 022 0	yellow	10.0 bar	–	M16×1.5
952 200 033 0	yellow	10.0 bar	–	M16×1.5
952 200 034 0	yellow	10.0 bar	–	M22×1.5
952 200 035 0	yellow	8.5 bar	–	M16×1.5
952 200 037 0	red	8.5 bar	–	M22×1.5
952 200 038 0	red	8.5 bar	–	M16×1.5
952 200 040 0	yellow	10.0 bar	✓	M16×1.5
452 201 010 0	black	8.5 bar	–	M22×1.5

\* for Swiss type brake system



952 200 021 0



952 200 022 0



## Coupling head with filter - trailer

- Temperature -40 ... +80 °C
- Working pressure 8.5 bar

Product number	Colour	Test connection	Port 1
952 201 001 0*	yellow	–	M16×1.5
952 201 002 0*	red	–	M16×1.5
952 201 003 0	yellow	–	M16×1.5
952 201 004 0	red	–	M16×1.5
952 201 007 0*	yellow	✓	M16×1.5
952 201 008 0	yellow	✓	M16×1.5
952 201 011 0	yellow	–	M16×1.5
952 201 012 0	red	–	M16×1.5
952 201 013 0	yellow	✓	M16×1.5
952 201 014 0	yellow	✓	M24×1.5
952 201 015 0	red	✓	M24×1.5
952 201 016 0	yellow	–	M16×1.5
952 201 017 0	red	–	M16×1.5
952 201 018 0	red	–	½"-14 NPTF
952 201 019 0	blue	–	½"-14 NPTF

\* with lock nut M24×1.5

## Repair solutions

Product number	Repair kit	Content
■ 952 201 001 0	952 201 920 2	Covers, sealings, screws
■ 952 201 002 0	952 201 920 2	Covers, sealings, screws
■ 952 201 003 0	952 201 920 2	Covers, sealings, screws
■ 952 201 004 0	952 201 920 2	Covers, sealings, screws
■ 952 201 007 0	952 201 920 2	Covers, sealings, screws
■ 952 201 008 0	952 201 920 2	Covers, sealings, screws
■ 952 201 011 0	952 201 920 2	Covers, sealings, screws
■ 952 201 012 0	952 201 920 2	Covers, sealings, screws
■ 952 201 013 0	952 201 920 2	Covers, sealings, screws
■ 952 201 014 0	952 201 920 2	Covers, sealings, screws
■ 952 201 015 0	952 201 920 2	Covers, sealings, screws
■ 952 201 016 0	952 201 920 2	Covers, sealings, screws
■ 952 201 017 0	952 201 920 2	Covers, sealings, screws



952 201 001 0



952 201 002 0



952 201 014 0

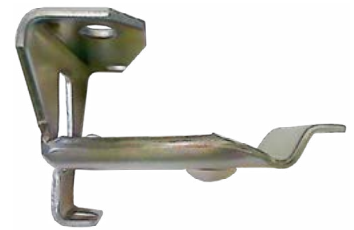


952 201 015 0



## Coupling head - dummy coupling

Product number	Application
452 402 000 0	for 452 200 ... 0 / 952 200 ... 0; for trailer dual line
452 402 002 0	for 452 201 ... 0; for trailer single line



452 402 000 0

## Line filter

- Working pressure 20 bar
- Wrench size 30 mm

Product number	Temperature	Flow direction	Port
432 500 005 0	-40 ... +80 °C	1 ↔ 2	½"-14 NPTF
432 500 020 0	-40 ... +80 °C	1 ↔ 2	M22×1.5
432 500 021 0	-40 ... +80 °C	1 ↔ 2	M16×1.5
432 500 025 0	-40 ... +125 °C	1 → 2	M22×1.5



432 500 020 0

## DuoMatic

- Working pressure 10.0 bar
- Temperature -40 ... +80 °C
- Homologation ABE - Allgemeine Betriebserlaubnis  
General operating permit
- Accessory 452 204 910 0 Adapter DuoMatic



452 802 009 0

452 804 012 0

Product number	Application	Type	ABE	Lever	Port
452 802 000 0	Motor vehicle	Drawbar	-	✓	1: ¼" - 18NPSF; 4: M22×1.5
452 802 007 0	Trailer	Semitrailer	-	✓	1: M16×1.5; 4: M22×1.5
452 802 009 0	Motor vehicle	Drawbar	✓	✓	1: M16×1.5; 4: M22×1.5
452 804 012 0	Trailer	Drawbar	✓	-	1, 4: M16×1.5
452 802 011 0	Motor vehicle	Drawbar	-	-	1: M16×1.5; 4: M22×1.5
452 803 004 0	Motor vehicle	Semitrailer	-	✓	1: M22×1.5; 4: M16×1.5
452 803 005 0	Trailer	Semitrailer	✓	✓	1: M22×1.5; 4: M16×1.5
452 804 001 0	Trailer	Drawbar	-	-	1, 4: G ⅜"
452 805 004 0	Motor vehicle	Semitrailer	✓	-	1, 4: M16×1.5
452 810 001 0	Special vehicle (agriculture)	-	-	-	1, 4: Ø 15 mm
452 811 008 0	Special vehicle (agriculture)	-	-	✓	1, 4: M22×1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 452 802 000 0	452 802 003 2	Valve	■ 452 802 011 0	452 802 003 2	Valve
■ 452 802 007 0	452 802 003 2	Valve	■ 452 805 004 0	452 802 003 2	Valve
■ 452 802 009 0	452 802 003 2	Valve			

## TrioMatic

- Working pressure 10.0 bar
- Temperature -40 ... +80 °C
- Type Drawbar



Product number	Application	Lever	Port
452 806 000 0	Motor vehicle	✓	1, 4, Auxil: ¼" - 18NPTF
452 808 002 0	Trailer	-	1, 4, Auxil: ¼" - 18NPTF

## Repair solutions

Product number	Repair kit	Content
■ 452 806 000 0	452 802 003 2	Valve

## Coiled tube

- Version with fittings
- Temperature -40 ... +70 °C
- Working pressure 10 bar
- Material TPU: Thermoplastic polyurethane  
TPC - ET: Thermoplastic polyester elastomers
- Max. working length ~4 m (890 034 293 0 ~6 m)
- Ø coiled tube Ø 12.0x1.5 (452 713 ... 0 / 890 034 293 0: Ø 12.0x2.0)  
Inner Ø 9 mm (452 713 ... 0 / 890 034 293 0: 8 mm)
- Accessory 893 900 033 2 Handle set (1x yellow / 1x red)



893 900 033 2

Product number	Colour		Material	Length	Port
	Tube	Kink protection			
452 711 056 0	black	red	TPC - ET	550 mm	1, 2: male M16x1.5
452 711 057 0	black	yellow	TPC - ET	550 mm	1, 2: male M16x1.5
452 711 058 0	black	red	TPC - ET	550 mm	1, 2: male M22x1.5
452 711 059 0	black	yellow	TPC - ET	550 mm	1, 2: male M22x1.5
452 711 060 0	black	red	TPC - ET	556 mm	1: male M16x1.5; 2: female M18x1.5
452 711 061 0	black	yellow	TPC - ET	556 mm	1: male M16x1.5; 2: female M18x1.5
452 711 062 0	black	red	TPC - ET	562 mm	1, 2: female M18x1.5
452 711 063 0	black	yellow	TPC - ET	562 mm	1, 2: female M18x1.5
452 711 064 0	black	black	TPC - ET	562 mm	1, 2: female M18x1.5
452 711 065 0	black	black	TPC - ET	556 mm	1: male M16x1.5; 2: female M18x1.5
452 711 066 0	black	red	TPC - ET	550 mm	1: male M16x1.5; 2: male M18x1.5
452 711 067 0	black	yellow	TPC - ET	550 mm	1: male M16x1.5; 2: male M18x1.5
452 711 068 0	black	black	TPC - ET	550 mm	1: male M16x1.5; 2: male M18x1.5
452 711 069 0	black/black	yellow/red	TPC - ET	730 mm	1, 2: female M18x1.5

Product number	Colour		Material	Length	Port
	Tube	Kink protection			
452 711 903 0	blue/red	black/black	TPC - ET	730 mm	1, 2: female M18x1.5 / male ½" BSP
452 711 904 0	black/black	yellow/red	TPC - ET	980 mm	1, 2: male ½" BSP external
452 713 001 0	red	red	TPU	700 mm	1, 2: male M16x1.5
452 713 002 0	yellow	yellow	TPU	700 mm	1, 2: male M16x1.5
452 713 003 0	black	red	TPU	700 mm	1, 2: male M16x1.5
452 713 004 0	black	yellow	TPU	700 mm	1, 2: male M16x1.5
452 713 005 0	yellow/red	yellow/red	TPU	700 mm	1, 2: male M16x1.5
452 713 006 0	black/black	yellow/red	TPU	700 mm	1, 2: male M16x1.5
890 034 293 0	black/black	yellow/red	TPU	800 mm	1, 2: male M16x1.5

## Straight tube DIN 74324

- **Application** Air braking systems / secondary devices
- **Standard** DIN 74324

Product number	Type	Colour	Length
828 251 978 6	Ø 4.0x1.0 mm	black	100 m
828 251 106 6	Ø 6.0x1.0 mm	black	25 m
828 251 970 6	Ø 6.0x1.0 mm	black	50 m
828 251 967 6	Ø 6.0x1.0 mm	black	100 m
828 251 108 6	Ø 8.0x1.0 mm	black	25 m
828 251 971 6	Ø 8.0x1.0 mm	black	50 m
828 251 008 6	Ø 8.0x1.0 mm	black	100 m
828 251 124 6	Ø 8.0x1.0 mm	black / red	100 m
828 251 123 6	Ø 8.0x1.0 mm	black / yellow	100 m
828 252 113 6	Ø 8.0x1.0 mm	black	500 m
828 251 110 6	Ø 10.0x1.0 mm	black	25 m
828 251 915 6	Ø 10.0x1.0 mm	black	50 m
828 251 010 6	Ø 10.0x1.0 mm	black	100 m
828 251 934 6	Ø 10.0x1.25 mm	black	100 m
828 251 122 6	Ø 10.0x1.25 mm	black / red	100 m
828 251 121 6	Ø 10.0x1.25 mm	black / yellow	100 m
828 252 110 6	Ø 10.0x1.5 mm	black	25 m
828 251 011 6	Ø 10.0x1.5 mm	black	50 m
828 251 112 6	Ø 12.0x1.5 mm	black	25 m
828 251 914 6	Ø 12.0x1.5 mm	black	50 m
828 251 012 6	Ø 12.0x1.5 mm	black	100 m
828 251 126 6	Ø 12.0x1.5 mm	black/red	100 m
828 251 125 6	Ø 12.0x1.5 mm	black / yellow	100 m
828 251 013 6	Ø 12.0x1.5 mm	black	200 m
828 252 115 6	Ø 12.0x1.5 mm	black	500 m
828 252 112 6	Ø 12.0x1.75 mm	black	25 m
828 251 114 6	Ø 14.0x2.0 mm	black	25 m
828 251 115 6	Ø 15.0x1.5 mm	black	25 m
828 251 972 6	Ø 15.0x1.5 mm	black	50 m
828 251 968 6	Ø 15.0x1.5 mm	black	100 m
828 251 128 6	Ø 15.0x1.5 mm	black / red	100 m
828 251 127 6	Ø 15.0x1.5 mm	black / yellow	100 m
828 251 942 6	Ø 15.0x2.0 mm	black	50 m
828 251 977 6	Ø 15.0x2.0 mm	black	100 m



828 251 112 6

# CONNECTING DEVICES

Product number	Type	Colour	Length
828 252 116 6	Ø 16.0x2.0 mm	black	25 m
828 251 116 6	Ø 16.0x2.25 mm	black	25 m
828 251 118 6	Ø 18.0x2.0 mm	black	25 m
828 251 969 6	Ø 18.0x2.0 mm	black	100 m

## Straight tube DIN 73378

- **Application** only for auxiliary circuits
- **Standard** DIN 73378

Product number	Type	Colour	Length
828 876 953 6	Ø 4.0x1.0 mm	black	25 m
828 251 924 6	Ø 4.0x1.0 mm	blue	25 m
828 876 952 6	Ø 4.0x1.0 mm	red	25 m
828 251 951 6	Ø 8.0x1.0 mm	blue	100 m
828 251 015 6	Ø 8.0x1.0 mm	blue	500 m
828 251 953 6	Ø 8.0x1.0 mm	green	100 m
828 251 017 6	Ø 8.0x1.0 mm	green	500 m
828 251 952 6	Ø 8.0x1.0 mm	red	100 m
828 251 016 6	Ø 8.0x1.0 mm	red	500 m
828 251 950 6	Ø 8.0x1.0 mm	yellow	100 m
828 251 014 6	Ø 8.0x1.0 mm	yellow	500 m
828 251 018 6	Ø 15.0x1.5 mm	red	500 m



## Straight tube DIN 7628

- **Application** Thermoplastics tubing for air braking systems
- **Standard** DIN 7628

Product number	Type	Colour	Length
828 251 020 6	Ø 4.0x1.0 mm	black	100 m
828 251 021 6	Ø 6.0x1.0 mm	black	25 m
828 251 022 6	Ø 6.0x1.0 mm	black	50 m
828 251 023 6	Ø 6.0x1.0 mm	black	100 m
828 251 032 6	Ø 8.0x1.0 mm	black	25 m
828 251 033 6	Ø 8.0x1.0 mm	black	50 m
828 251 028 6	Ø 8.0x1.0 mm	yellow	100 m
828 251 029 6	Ø 8.0x1.0 mm	blue	100 m
828 251 030 6	Ø 8.0x1.0 mm	red	100 m
828 251 031 6	Ø 8.0x1.0 mm	green	100 m
828 251 034 6	Ø 8.0x1.0 mm	black	100 m
828 251 035 6	Ø 8.0x1.0 mm	black	200 m
828 251 024 6	Ø 8.0x1.0 mm	yellow	500 m
828 251 025 6	Ø 8.0x1.0 mm	blue	500 m
828 251 026 6	Ø 8.0x1.0 mm	red	500 m
828 251 027 6	Ø 8.0x1.0 mm	green	500 m
828 251 036 6	Ø 8.0x1.0 mm	black	500 m
828 251 037 6	Ø 10.0x1.0 mm	black	25 m
828 251 038 6	Ø 10.0x1.0 mm	black	50 m
828 251 039 6	Ø 10.0x1.0 mm	black	100 m



Product number	Type	Colour	Length
828 251 041 6	Ø 10.0x1.25 mm	black	100 m
828 251 042 6	Ø 10.0x1.25 mm	black	500 m
828 251 043 6	Ø 10.0x1.5 mm	black	25 m
828 251 044 6	Ø 10.0x1.5 mm	black	50 m
828 251 045 6	Ø 10.0x1.5 mm	black	100 m
828 251 046 6	Ø 12.0x1.5 mm	black	25 m
828 251 047 6	Ø 12.0x1.5 mm	black	50 m
828 251 048 6	Ø 12.0x1.5 mm	black	100 m
828 251 049 6	Ø 12.0x1.5 mm	black	200 m
828 251 050 6	Ø 12.0x1.5 mm	black	500 m
828 251 051 6	Ø 12.0x1.5 mm	blue	500 m
828 251 052 6	Ø 15.0x1.5 mm	black	25 m
828 251 053 6	Ø 15.0x1.5 mm	black	50 m
828 251 054 6	Ø 15.0x1.5 mm	black	100 m
828 251 057 6	Ø 15.0x2.0 mm	black	100 m
828 251 058 6	Ø 16.0x2.0 mm	black	25 m
828 251 059 6	Ø 16.0x2.0 mm	black	100 m
828 251 061 6	Ø 18.0x2.0 mm	black	25 m
828 251 062 6	Ø 18.0x2.0 mm	black	100 m

## Brake hose

- Temperature -40 ... +70 °C
- Material Rubber
- Colour black

Product number	Length	Inner Ø	Comments
828 876 011 6	20 m	11.0 mm	smooth
828 876 013 6	20 m	13.0 mm	smooth
828 876 411 6	40 m	11.0 mm	smooth
828 876 413 6	40 m	13.0 mm	smooth
828 877 000 6	20 m	13.0 mm	wrapped
828 877 001 6	20 m	11.0 mm	wrapped
828 877 004 6	50 m	9.5 mm	smooth
886 902 610 6	20 m	11.0 mm	wrapped

## Tire inflating hose

- Working pressure 15 bar
- Version with fittings
- Port 2 M16x1.5

Product number	Length	Ø	
		Outer	Inner
452 601 000 0	60 m	9.0 mm	4.5 mm
452 601 002 0	80 m	9.0 mm	4.5 mm
452 601 005 0	100 m	9.0 mm	4.5 mm
452 601 008 0	40 m	9.0 mm	4.5 mm



## Metal corrugated hose

- Working pressure 20 bar
- Temperature ≤220 °C
- Port M18×1.5

Product number	Length	Hex.	Material
452 700 001 0	335 mm	SW 30	Stainless steel



## Fitting case

- A clearly structured list of contents with illustrations is attached on the inside of the case to facilitate re-ordering the used parts.
- Removable partitions permit adding additional items as required. This can be useful if you regularly require more units of a particular coupling type than the corresponding compartment can accommodate.

## Fitting case - composite fittings

- Product number 893 000 035 0

Product number	Content	Quantity
893 800 091 2	Quick Coupling, regular, 8×1.0, L: 8	4
893 920 324 2	Quick Coupling, regular, 8×1.0, L1: 33, L2: 21	4
893 800 092 2	Quick Coupling, regular, 10×1.0, L: 11	4
893 920 325 2	Quick Coupling, regular, 10×1.0, L1: 35, L2: 24	4
893 800 093 2	Quick Coupling, regular, 12×1.5, L: 18	4
893 920 314 2	Quick Coupling, regular, M12×1.5, wrench size: 18	4
893 920 326 2	Quick Coupling, regular, 12×1.5, L1: 37, L2: 24	4
893 920 317 2	Quick Coupling, regular, M16×1.5, wrench size: 22	4
893 920 318 2	Quick Coupling, regular, M22×1.5, wrench size: 28	3
893 920 320 2	Quick Coupling, heavy duty, M22×1.5, wrench size: 28	4
893 920 328 2	Quick Coupling, heavy duty, 16×2.0, L1: 46, L2: 24	2
893 800 099 2	Quick Coupling, heavy duty, 16×2.0, L: 21	2
893 920 327 2	Quick Coupling, heavy duty, 15×1.5, L1: 46, L2: 24	2
893 800 098 2	Quick Coupling, heavy duty, 15×1.5, L: 21	2
893 920 319 2	Quick Coupling, heavy duty, M16×1.5, wrench size: 22	4
893 022 001 4	Plug, 8×1.0	8
893 022 016 4	Plug, 12×1.5	4
893 997 791 4	Adapter, regular & regular, wrench size: 18	4
893 997 795 4	Adapter, regular, T: 31, L1: 26, L2: 27	2
893 997 788 4	Adapter, regular, L: 45	4
893 880 011 0	Push in test point	4
893 400 862 4	Elbow, regular, L: 25	2
893 400 864 4	Elbow, regular, L: 29	4
893 400 867 4	Elbow, regular, L: 55	2
893 503 072 4	Tee Piece, regular	3
899 700 114 4	Tool, regular, wrench size: 18	4
899 700 115 4	Tool, regular, wrench size: 20	4
899 700 116 4	Tool, regular, wrench size: 22	4





## Fitting case - fittings with New Line Technology

■ Product number 893 000 200 0

Product number	Content	Quantity
893 129 191 2	Screwed Socket with Plug-In P5 / M12x1.5	4
893 129 192 2	Screwed Socket with Plug-In P5 / M16x1.5	6
893 129 193 2	Screwed Socket with Plug-In P5 / M22x1.5	4
893 401 797 4	90° Elbow with Plug-In P5 / M16x1.5	4
893 401 015 2	90° Elbow with Plug-In P5 / M16x1.5	4
893 501 194 4	L-Union with Plug-In P5 / M16x1.5	4
893 501 196 4	Plug-In Female Tee / Inverted Tee P5 / M16x1.5	4
893 401 818 4	F-Union with Plug-In P5 / M16x1.5	2
893 800 082 2	Male Push-In Connector New Line Ø 6x1.0 / M16x1.5	4
893 800 007 2	Male Push-In Connector New Line Ø 8x1.0 / M12x1.5	8
893 800 001 2	Male Push-In Connector New Line Ø 8x1.0 / M16x1.5	6
893 800 009 2	Male Push-In Connector New Line Ø 10x1.0 / M16x1.5	6
893 800 808 2	Male Push-In Connector New Line Ø 10x1.0 / M22x1.5	6
893 800 002 2	Male Push-In Connector New Line Ø 12x1.5 / M16x1.5	6
893 800 008 2	Male Push-In Connector New Line Ø 12x1.5 / M22x1.5	6
893 803 013 0	Male Push-In Connector Ø 18x2.0 / M22x1.5	4
893 800 004 2	Male Push-In Connector New Line Ø 15x1.5 / M22x1.5	4
893 800 003 2	Male Push-In Connector New Line Ø 16x2.0 / M22x1.5	4
893 104 064 4	Female / Female Stud M16x1.5	8
893 022 000 2	Screw Plug with O-ring M12x1.5	4
893 022 014 4	Screw Plug with O-ring M16x1.5	4
893 022 015 4	Screw Plug with O-ring M22x1.5	4
463 703 120 0	Pressure Test Connection M16x1.5	4
463 703 115 0	Pressure Test Connection M22x1.5	4
893 104 297 2	Bulkhead with preassembled Lock nut M22x1.5 / M16x1.5 / M16x1.5	3
893 104 296 2	Bulkhead with preassembled Lock nut M22x1.5 / M16x1.5 / M22x1.5	3



## Electrical connection

### Electrical cable



Product number	Type	Design
446 008 234 0	ABS plug with coiled cable to ISO 7638	24 V connector; ABS 5-pin "Economy"; max. working length: 2.5 m
446 008 238 0	ABS plug with coiled cable to ISO 7638	12 V connector; ABS 5-pin "Economy"; max. working length: 2.5 m
446 008 240 0	ABS plug with coiled cable to ISO 7638	24 V connector; ABS 5-pin "Classic"; max. working length: 3 m
446 008 243 0	ABS plug with coiled cable to ISO 7638	24 V connector; ABS / EBS 7-pin "Classic"; max. working length: 3 m
446 008 244 0	ABS plug with coiled cable to ISO 7638	24 V connector; ABS / EBS 7-pin "Economy"; max. working length: 3 m
446 008 700 0	ABS plug with coiled cable to ISO 7638	24 V connector; ABS / EBS 7-pin "Standard"; max. working length: 3 m
446 008 710 0	ISO 12098	24 V connector; Lighting 15-pin; max. working length: 3 m

# CONNECTING DEVICES

## Socket

- **Accessories**      446 008 310 4    Contact pin 1.5 mm<sup>2</sup> for ISO 7638
- 894 070 780 4    Contact pin 4.0 mm<sup>2</sup> for ISO 7638
- 446 008 311 4    Contact pin 6.0 mm<sup>2</sup> for ISO 7638

Product number	Type	Design
446 008 361 2	for semitrailers with ABS or EBS	24 V socket; for cable Ø 10 ... 14 (2x 6 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 380 2	for semitrailers with ABS or EBS	24 V socket; for cable Ø 7 ... 12 (2x 4 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 381 2	for semitrailers with ABS or EBS	24 V socket; for cable Ø 10 ... 14 (2x 6 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 385 2	for semitrailers with ABS or EBS	12 V socket; for cable Ø 7 ... 12 (2x 4 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 386 2	for semitrailers with ABS or EBS	12 V socket; for cable Ø 10 ... 14 (2x 6 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 404 2	for semitrailers with ABS or EBS	24 V socket; for cable Ø 10 ... 14 (2x 4 mm <sup>2</sup> / 5x 1.5 mm <sup>2</sup> )
446 008 420 2	for semitrailers 15-pin	24 V socket; for cable Ø 16 (2x 2.5 mm <sup>2</sup> / 12x 1.5mm <sup>2</sup> )
446 008 433 2	for semitrailer with ABS or EBS	24 V socket; for cable Ø 10 ... 14 (2x 4 mm <sup>2</sup> / 5x 1.5 mm <sup>2</sup> ); Screwed contacts



446 008 361 2



446 008 433 2

## Connector

- **Accessories**      446 008 315 4    Contact bushing 1.5 mm<sup>2</sup> for ISO 7638
- 894 070 781 4    Contact bushing 4.0 mm<sup>2</sup> for ISO 7638
- 446 008 316 4    Contact bushing 6.0 mm<sup>2</sup> for ISO 7638

Product number	Type	Design
446 008 360 2	for drawbar trailers with ABS or EBS 7-pin	24 V connector; for cable Ø 14.5 ... 15.5 (2x 6 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 371 2	for drawbar trailers with ABS or EBS 7-pin	24 V connector; for cable Ø 10 ... 14 (2x 6 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 390 2	for drawbar trailers with ABS or EBS 7-pin	24 V connector; for cable Ø 7 ... 12 (2x 6 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 391 2	for drawbar trailers with ABS or EBS 7-pin	24 V connector; for cable Ø 10 ... 14 (2x 4 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 395 2	for drawbar trailers with ABS or EBS 7-pin	12 V connector; for cable Ø 7 ... 12 (2x 4 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 396 2	for drawbar trailers with ABS or EBS 7-pin	12 V connector; for cable Ø 10 ... 14 (2x 6 mm <sup>2</sup> / 3x 1.5 mm <sup>2</sup> )
446 008 414 2	for drawbar trailers with ABS or EBS 7-pin	24 V connector; for cable Ø 10 ... 14 (2x 4 mm <sup>2</sup> / 5x 1.5 mm <sup>2</sup> )
446 008 421 2	for drawbar trailers Lighting 15-pin	24 V socket; 2x 2.5 mm <sup>2</sup> / 12x 1.5mm <sup>2</sup>
446 008 600 2	ABS parking receptacle	24 V ISO 7638
446 008 605 2	ABS parking receptacle	12 V ISO 7638





**WABCO**

TRAILER



# Content

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# Air storage

## Air reservoir

- **Material** Steel  
\*) Aluminum
- **Colour** black  
grey: 950 020 011 0, 950 020 013 0  
non-painted: 950 080 903 0, 950 530 903 0,  
950 740 904 0, 950 960 002 0



Product number	Capacity	Ø	Length	Working pressure	Temperature	Port	
						Thread	Number
950 000 900 0*	100.0 l	396 mm	919.0 mm	11.0 bar	-50...+65 °C	M22x1.5	
950 020 000 0	10.0 l	206 mm	371.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 001 0	4.0 l	144 mm	321.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 002 0	25.0 l	246 mm	606.5 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 003 0	30.0 l	276 mm	584.5 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 004 0	25.0 l	276 mm	494.5 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 005 0	35.0 l	276 mm	662.5 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 006 0	20.0 l	246 mm	496.5 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 007 0	25.0 l	246 mm	604.5 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 020 008 0	4.0 l	154 mm	273.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 020 009 0	30.0 l	310 mm	462.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 020 010 0	40.0 l	310 mm	604.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 020 011 0	30.0 l	276 mm	568.0 mm	14.5 bar	-50...+100 °C	M22x1.5	
950 020 012 0	36.0 l	300 mm	609.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 020 013 0	30.0 l	250 mm	705.0 mm	13.0 bar	-50...+100 °C	M22x1.5	
950 060 000 0	60.0 l	396 mm	575.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 060 003 0	60.0 l	310 mm	893.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 060 004 0	60.0 l	396 mm	580.0 mm	10.0 bar	-50...+100 °C	M22x1.5	
950 060 009 0	60.0 l	300 mm	942.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 060 900 0*	60.0 l	396 mm	609.0 mm	11.0 bar	-50...+65 °C	M22x1.5	
950 060 904 0*	60.0 l	396 mm	609.0 mm	11.0 bar	-50...+65 °C	M22x1.5	
950 080 000 0	80.0 l	396 mm	751.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 080 900 0*	80.0 l	396 mm	749.0 mm	11.0 bar	-50...+65 °C	M22x1.5	



# AIR STORAGE

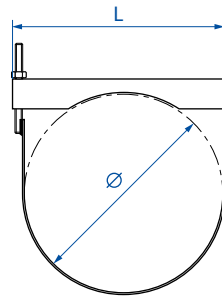
Product number	Capacity	Ø	Length	Working pressure	Temperature	Port	
						Thread	Number
950 080 002 0	80.0 l	396 mm	750.0 mm	10.0 bar	-50...+100 °C	M22x1.5	
950 080 903 0*	80.0 l	396 mm	745.0 mm	11.0 bar	-50...+100 °C	M22x1.5	
950 100 002 0	100.0 l	396 mm	915.0 mm	10.0 bar	-50...+100 °C	M22x1.5	
950 105 001 0	5.0 l	154 mm	341.0 mm	20.0 bar	-50...+100 °C	M22x1.5	
950 108 002 0	7.7 l	154 mm	486.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 110 002 0	10.0 l	154 mm	615.0 mm	20.0 bar	-50...+100 °C	M22x1.5	
950 310 001 0	10.0 l	206 mm	386.0 mm	15.5 bar	-50...+100 °C	½"-14 NPSI	
950 405 001 0	4.5 l	206 mm	185.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 406 001 0	6.0 l	206 mm	241.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 410 004 0	10.0 l	206 mm	368.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 410 902 0	10.0 l	206 mm	355.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 415 005 0	15.0 l	206 mm	527.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 420 003 0	20.0 l	206 mm	691.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 430 001 0	30.0 l	206 mm	992.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 430 002 0	30.0 l	206 mm	989.0 mm	12.0 bar	-50...+100 °C	½"-14 NPSI	
950 515 000 0	15.0 l	246 mm	396.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 515 003 0	15.0 l	246 mm	380.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 516 004 0	16.0 l	246 mm	411.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 520 003 0	20.0 l	246 mm	495.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 520 900 0*	20.0 l	246 mm	504.0 mm	12.5 bar	-50...+65 °C	M22x1.5	
950 525 001 0	25.0 l	246 mm	601.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 527 005 0	27.0 l	246 mm	645.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 530 002 0	30.0 l	246 mm	709.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 530 900 0*	30.0 l	246 mm	724.0 mm	12.5 bar	-50...+65 °C	M22x1.5	
950 530 903 0*	30.0 l	246 mm	729.5 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 537 001 0	37.0 l	246 mm	862.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 540 001 0	40.0 l	246 mm	927.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 560 002 0	60.0 l	246 mm	1365.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 620 005 0	20.0 l	246 mm	503.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 620 006 0	20.0 l	246 mm	487.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 620 007 0	20.0 l	246 mm	504.0 mm	15.5 bar	-50...+100 °C	M22x1.5	



Product number	Capacity	Ø	Length	Working pressure	Temperature	Port	
						Thread	Number
950 628 001 0	28.0 l	246 mm	665.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 630 001 0	30.0 l	246 mm	708.0 mm	12.5 bar	-50...+100 °C	½"-14 NPSI	
950 630 002 0	30.0 l	246 mm	708.0 mm	12.5 bar	-50...+100 °C	½"-14 NPSI	
950 630 005 0	30.0 l	246 mm	718.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 630 006 0	30.0 l	246 mm	718.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 720 005 0	20.0 l	276 mm	414.0 mm	14.5 bar	-50...+100 °C	M22x1.5	
950 722 002 0	22.0 l	276 mm	452.0 mm	14.5 bar	-50...+100 °C	M22x1.5	
950 730 006 0	30.0 l	276 mm	590.5 mm	14.5 bar	-50...+100 °C	M22x1.5	
950 730 007 0	30.0 l	276 mm	583.0 mm	14.5 bar	-50...+100 °C	M22x1.5	
950 740 000 0	40.0 l	276 mm	767.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 740 002 0	40.0 l	276 mm	758.0 mm	14.5 bar	-50...+100 °C	M22x1.5	
950 740 900 0*	40.0 l	276 mm	768.0 mm	12.5 bar	-50...+65 °C	M22x1.5	
950 740 904 0*	40.0 l	276 mm	766.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
950 740 906 0	40.0 l	310 mm	618.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 760 002 0	60.0 l	276 mm	1108.0 mm	14.5 bar	-50...+100 °C	M22x1.5	
950 820 001 0	20.0 l	300 mm	381.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 830 004 0	30.0 l	300 mm	528.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 836 001 0	36.0 l	300 mm	603.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 845 001 0	45.0 l	300 mm	743.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 845 002 0	45.0 l	300 mm	743.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 860 004 0	60.0 l	300 mm	942.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 960 001 0	60.0 l	310 mm	898.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
950 960 002 0*	60.0 l	310 mm	902.0 mm	11.0 bar	-50...+100 °C	M22x1.5	
950 960 900 0*	60.0 l	310 mm	895.0 mm	11.0 bar	-50...+65 °C	M22x1.5	
951 002 133 0	4.0 l	206 mm	192.0 mm	12.5 bar	-50...+100 °C	M22x1.5	
951 002 157 0	4.25 l	206 mm	192.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
951 002 158 0	4.0 l	154 mm	278.0 mm	15.5 bar	-50...+100 °C	M22x1.5	
951 005 010 0	1.0 l	102 mm	170.0 mm	15.5 bar	-50...+200 °C	M22x1.5	

## Clamp band

- **Colour** black
- **Wrench size** 19 mm
- **Mounting** 2x Ø 11.0 mm



Version 1-part



Version 2-parts

Product number	Version	Distance between holes	Length	Nominal Ø
451 999 206 2	1-part	124 mm	225 mm	206 mm
451 999 246 2	1-part	164 mm	265 mm	246 mm
451 999 276 2	1-part	194 mm	295 mm	276 mm
451 999 310 2	1-part	229 mm	330 mm	310 mm
451 999 396 2	1-part	309 mm	410 mm	396 mm
950 001 351 2	2-parts	262 mm	410 mm	396 mm
950 405 351 2	2-parts	77 mm	225 mm	206 mm
950 515 351 2	2-parts	117 mm	265 mm	246 mm
950 720 351 2	2-parts	147 mm	295 mm	276 mm
950 949 351 2	2-parts	182 mm	330 mm	310 mm

## Drain valve

### Drain valve - manually operated

- Working pressure 20.0 bar (434 300 009 0: 12.5 bar)
- Temperature -40 ... +80 °C (934 300 041 / 042 0: -40 ... +100 °C)



Product number	Ring	Port	Sealing	Wrench size
434 300 009 0	✓	Male M22x1.5	✓	27 mm
934 300 001 0	–	Male M22x1.5	–	27 mm
934 300 002 0	–	Male G½"	✓	28 mm
934 300 003 0	✓	Male M22x1.5	–	27 mm
934 300 005 0	✓	Male M22x1.5	–	27 mm
934 300 006 0	✓	Male ½"-14 PTF-SAE short	–	22 mm
934 300 007 0	✓	Male ½"-14 PTF-SAE short	–	22 mm
934 300 009 0	✓	Male M22x1.5	–	27 mm
934 300 016 0	–	Male M22x1.5	–	27 mm
934 300 023 0	✓	Male 2x ½"-14 PTF-SAE short	–	27 mm
934 300 024 0	✓	Male ½"-14 PTF-SAE short	–	27 mm
934 300 025 0	✓	Male M22x1.5	–	27 mm
934 300 038 0	✓	Male M22x1.5	✓	28 mm
934 300 041 0	✓	Male 2x M22x1.5	–	27 mm
934 300 042 0	✓	Male 2x M22x1.5	–	27 mm

### Drain valve - automatic with control port

- Working pressure 10.0 bar
- Temperature -40 ... +80 °C

Product number	Port	Sealing
434 300 000 0	Female 2x M12x1.5	–
434 300 003 0	Female 2x M12x1.5	–



### Drain valve - automatic

- Temperature -30 ... +80 °C
- Port Male M22x1.5
- Wrench size 27 mm

Product number	Working pressure	Drain function
934 301 000 0	20.0 bar	$\Delta p < 0.4$ bar
934 301 003 0	20.0 bar	$0.3 < \Delta p < 0.7$ bar
934 301 005 0	10.0 bar	$\Delta p > 0.6$ bar





# WABCO

## Off-Highway Catalogue

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Should you like to have an overview of WABCO's range of hydraulic, pneumatic, electro-hydraulic and electro-pneumatic products and systems with the focus on applications in agricultural vehicles, construction machines, mining vehicles and all types of special vehicles?

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**WABCO**



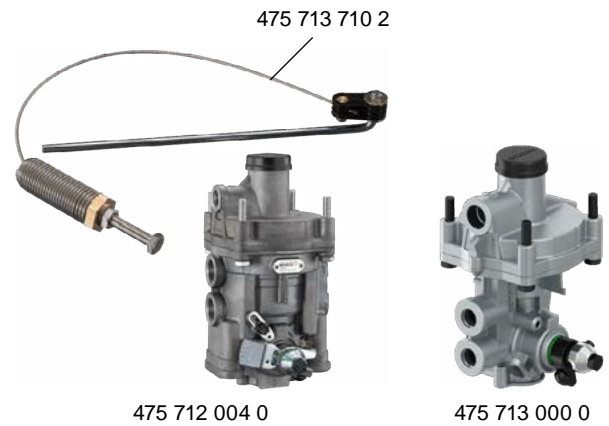
# Air brake systems

## Conventional braking components

### Load sensing valve

#### Load sensing valve - mechanical

■ Temperature	-40 ... +80 °C	
■ Working pressure	10 bar	
■ Mounting	4x M8	
■ Distance between bolts	84x84 mm	
■ Accessories	899 144 630 4	Label
	475 712 710 2	Lever (475 712 000 0)
	475 713 710 2	Lever (475 712 004 0, 475 713 500 0, 475 713 501 0)



Product number	Equipped with	Actuation	Operation
475 712 000 0	Lever; relay emergency valve included	-50° ... 20°	
475 712 004 0	Lever and tension spring (adjustment: 10 ... 20 mm); relay emergency valve included	-45° ... 30°	
475 713 000 0	—	-40° ... 34°30'	dynamic
475 713 002 0	Lever	-50° ... 20°	dynamic
475 713 500 0	Lever and tension spring (adjustment: 10 ... 20 mm)	-50° ... 20°	static
475 713 501 0	Lever and tension spring (adjustment: 10 ... 20 mm)	-40° ... 33°	static

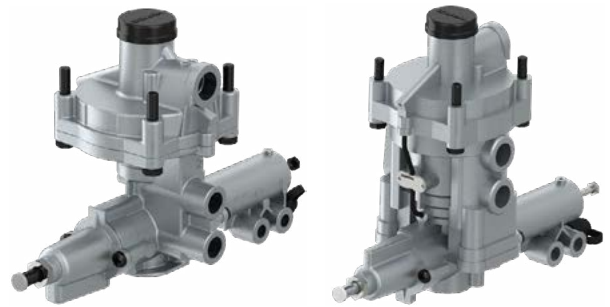
### Repair solutions

Product number	Repair kit	Content
■ 475 712 000 0	475 712 000 2	Lever joint + diaphragm
■ 475 712 004 0	475 712 000 2	Lever joint + diaphragm
■ 475 713 000 0	475 713 000 2	Diaphragm + valve
■ 475 713 500 0	475 713 000 2	Diaphragm + valve
■ 475 713 501 0	475 713 000 2	Diaphragm + valve

# AIR BRAKE SYSTEMS

## Load sensing valve - pneumatic

■ Operation	Static
■ Temperature	-40 ... +80 °C
■ Regulating ratio	1:8
■ Mounting	4x M8
■ Distance between bolts	84x84 mm
■ Port	475 714 ... 0: 1: M22x1.5; 2: 2x M16x1.5; 41, 42: M12x1.5; 43: test connection 475 715 ... 0: 1: M16x1.5; 1-2: M22x1.5; 2: 4x M16x1.5, 2x M22x1.5; 41, 42: M12x1.5; 43: test connection
■ Accessories	899 144 631 4 Label



475 714 500 0

475 715 500 0

Product number	Break point	Max. pressure		Actuation
		Inlet	Control	
475 714 500 0 <sup>1)</sup>	0.5 bar	10 bar	12 bar	0.70 ... 3.80 bar
475 714 501 0	0.5 bar	10 bar	12 bar	0.20 ... 2.80 bar
475 714 503 0	0.4 bar	10 bar	12 bar	0.90 ... 2.50 bar
475 714 504 0	0.4 bar	10 bar	12 bar	1.65 ... 3.25 bar
475 714 505 0	0.5 bar	10 bar	12 bar	0.35 ... 5.60 bar
475 714 509 0 <sup>2)</sup>	0.5 bar	10 bar	12 bar	0.70 ... 4.70 bar
475 714 510 0	0.5 bar	10 bar	12 bar	0.40 ... 3.60 bar
475 714 511 0	0.5 bar	10 bar	12 bar	0.70 ... 6.10 bar
475 714 514 0	0.5 bar	10 bar	12 bar	0.40 ... 4.70 bar
475 715 500 0 <sup>2)</sup>	0.5 bar	10 bar	12 bar	0.70 ... 3.80 bar
475 715 501 0	0.5 bar	10 bar	12 bar	0.40 ... 5.10 bar
475 715 505 0	0.5 bar	10 bar	12 bar	0.50 ... 4.40 bar
475 715 507 0	0.5 bar	10 bar	12 bar	0.20 ... 5.70 bar
475 715 511 0	0.5 bar	10 bar	12 bar	0.25 ... 3.60 bar
475 715 513 0	0.5 bar	10 bar	12 bar	0.70 ... 4.70 bar
475 715 514 0	0.5 bar	10 bar	12 bar	0.40 ... 4.70 bar

<sup>1)</sup> Universal variant; 475 714 530 2 Rebuilding set (minigrip bag, pipe, spring)

<sup>2)</sup> Universal variant

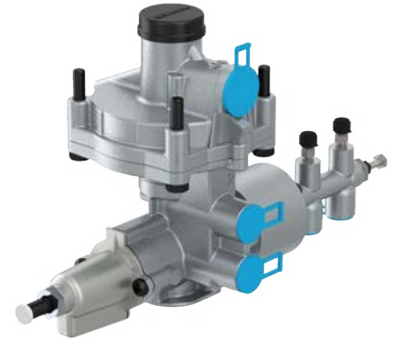
## Repair solutions

Product number	Repair kit	Content
■ 475 714 500 0	475 714 000 2	Diaphragm + valve
■ 475 714 501 0	475 714 000 2	Diaphragm + valve
■ 475 714 503 0	475 714 000 2	Diaphragm + valve
■ 475 714 504 0	475 714 000 2	Diaphragm + valve
■ 475 714 509 0	475 714 000 2	Diaphragm + valve
■ 475 714 510 0	475 714 000 2	Diaphragm + valve
■ 475 715 500 0	475 715 000 2	Diaphragm + valve
■ 475 715 501 0	475 715 000 2	Diaphragm + valve
■ 475 715 505 0	475 715 000 2	Diaphragm + valve
■ 475 715 507 0	475 715 000 2	Diaphragm + valve
■ 475 715 511 0	475 715 000 2	Diaphragm + valve
■ 475 715 514 0	475 715 000 2	Diaphragm + valve



## Load sensing valve - hydraulic

■ Type of operation	Static
■ Medium	Mineral oil
■ Temperature	-40 ... +80 °C
■ Regulating ratio	1:8
■ Mounting	4x M8
■ Distance between bolts	84x84 mm
■ Port	1: M22x1.5; 2: 2x M16x1.5; 41, 42: M12x1.5
■ Accessories	899 144 631 4 Label



Product number	Break point	Max. pressure		Actuation
		Inlet	Control	
475 714 600 0	0.4 bar	10 bar	160 bar	20 ... 140 bar
475 714 603 0	0.4 bar	10 bar	160 bar	20 ... 55 bar

## Repair solutions

Product number	Repair kit	Content
■ 475 714 600 0	475 714 001 2	Valve + sealing
■ 475 714 603 0	475 714 001 2	Valve + sealing

## Relay emergency valve

### Relay emergency valve - single line air braking system

- Port 1, 2, 1-2: M22x1.5



Product number	Working pressure	Temperature	Equipped with		
			Relay emergency valve	Release valve	Manual load apportioning valve
471 003 020 0	5.3 bar	-40 ... +80 °C	-	-	-
471 003 530 0	5.3 bar	-40 ... +80 °C	471 003 020 0	-	475 604 010 0
471 003 700 0	5.3 bar	-40 ... +80 °C	471 003 020 0	963 001 013 0	-

## Repair solutions

Product number	Repair kit	Content
■ 471 003 020 0	471 003 009 2	Valve
■ 471 003 530 0	471 003 009 2	Valve
	475 604 002 2	Valve
■ 471 003 700 0	471 003 009 2	Valve
	963 001 000 2	Sealing ring
	963 006 000 2	Piston + push button

## Relay emergency valve

■ Temperature	-40 ... +80 °C
■ Port 3	Exhaust
■ Mounting	2x Ø 11.0 mm
■ Distance between holes	71 mm



971 002 150 0

971 002 300 0

971 002 620 0

Product number	Adjustment	Working pressure	Port		
			1, 4	2	1-2
971 002 150 0	0 ... 1 bar	10.0 bar	1, 4: M22x1.5	2x M22x1.5	M22x1.5
971 002 151 0	0 ... 1 bar	10.0 bar	1, 4: M16x1.5	2x M22x1.5 / 4x M16x1.5	M22x1.5
971 002 152 0	0 ... 1 bar	10.0 bar	1, 4: M16x1.5	2x M22x1.5 / 4x M16x1.5	M22x1.5
971 002 157 0	-	10.0 bar	1, 4: M16x1.5	M22x1.5 / 4x M16x1.5	M22x1.5
971 002 300 0	0 ... 1 bar	8.5 bar	1: M22x1.5 4: M16x1.5	3x M22x1.5	M22x1.5
971 002 301 0	-	8.5 bar	1: M22x1.5 4: M16x1.5	3x M22x1.5	M22x1.5
971 002 303 0	-	8.5 bar	1, 4: M22x1.5	3x M22x1.5	M22x1.5
971 002 304 0	0 ... 1 bar	8.5 bar	1, 4: M22x1.5	3x M22x1.5	M22x1.5
971 002 305 0	0 ... 1 bar	8.5 bar	1: M22x1.5 4: M16x1.5	3x M22x1.5	M22x1.5
971 002 307 0	-	8.5 bar	1, 4: M22x1.5	2x M22x1.5	M22x1.5
971 002 308 0	0 ... 1 bar	8.5 bar	1: M22x1.5 4: M22x1.5	2x M22x1.5	M22x1.5
971 002 620 0*	0 ... 1 bar	10.0 bar	1-1: M16x1.5 4: M22x1.5	M22x1.5	M22x1.5

\* with brake valve, apportioning valve and release valve

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 971 002 150 0	971 002 003 2	Valve	■ 971 002 304 0	971 002 008 2	Valve
■ 971 002 151 0	971 002 004 2	Valve	■ 971 002 305 0	971 002 008 2	Valve
■ 971 002 152 0	971 002 004 2	Valve	■ 971 002 620 0	475 604 002 2	Valve
■ 971 002 300 0	971 002 008 2	Valve		963 001 000 2	Sealing ring
■ 971 002 301 0	971 002 008 2	Valve		971 002 003 2	Valve + Exhaust Valve

## Relay emergency valve with release valve

■ Temperature	-40 ... +80 °C
■ Port 3	Exhaust
■ Adjustment	0 ... 1 bar (971 002 703 0: -)
■ Mounting	2x Ø 11.0 mm
■ Distance between holes	71 mm



Product number	Equipped with		Working pressure	Port
	Relay emergency valve	Release valve		
971 002 531 0	971 002 150 0	963 001 012 0	10.0 bar	1-1: M16x1.5; 1-2, 4: M22x1.5; 2: 2x M22x1.5
971 002 532 0	971 002 155 0	963 001 013 0	8.5 bar	1-1, 1-2, 4: M22x1.5; 2: 2x M22x1.5

Product number	Equipped with		Working pressure	Port
	Relay emergency valve	Release valve		
971 002 533 0	971 002 150 0	963 001 013 0	10.0 bar	1-1, 1-2, 4: M22x1.5; 2: 2x M22x1.5
971 002 700 0	971 002 300 0	963 001 013 0	8.5 bar	1-1, 1-2: M22x1.5; 2: 3x M22x1.5; 4: M16x1.5
971 002 701 0	971 002 300 0	963 001 012 0	8.5 bar	1-1, 4: M16x1.5; 1-2: M22x1.5; 2: 3x M22x1.5
971 002 703 0	971 002 301 0	963 001 012 0	8.5 bar	1-1, 4: M16x1.5; 1-2: M22x1.5; 2: 3x M22x1.5
971 002 704 0	971 002 305 0	963 001 012 0	8.5 bar	1-1, 4: M16x1.5; 1-2: M22x1.5; 2: 3x M22x1.5

## Repair solutions

Product number	Repair kit	Content
■ 971 002 531 0	963 006 000 2 971 002 003 2	Piston + push button Valve
■ 971 002 532 0	963 006 000 2 971 002 003 2	Piston + push button Valve
■ 971 002 533 0	963 006 000 2 971 002 003 2	Piston + push button Valve

## Relay emergency valve with load apportioning valve

■ Temperature	-40 ... +80 °C
■ Working pressure	10.0 bar
■ Adjustment	0 ... 1 bar
■ Mounting	2x Ø 11.0 mm
■ Distance between holes	71 mm



Product number	Equipped with		Port
	Relay emergency valve	Load apportioning valve	
971 002 570 0	971 002 150 0	475 604 011 0	1, 2, 4, 1-2: M22x1.5; 3: Exhaust
971 002 580 0	971 002 150 0	475 604 041 0	1, 2, 4, 1-2: M22x1.5; 3: Exhaust

## Repair solutions

Product number	Repair kit	Content
■ 971 002 570 0	475 604 002 2 971 002 003 2	Valve Valve + Exhaust Valve
■ 971 002 580 0	475 604 002 2 971 002 003 2	Valve Valve + Exhaust Valve

## Relay emergency valve with relay valve

- Temperature –40 ... +80 °C
- Port 3 Exhaust



Product number	Working pressure	Port		
		Emergency, Service	Delivery	Reservoir
971 005 000 0	9.4 bar	1/4"-18 NPTF	2x 1/4"-18 NPTF, 2x 3/8"-18 NPTF	3/8"-18 NPTF, 3/4"-14 NPTF
971 005 002 0	9.4 bar	1/4"-18 NPTF	4x 3/8"-18 NPTF	3/8"-18 NPTF, 3/4"-14 NPTF

## Trailer release valve

### Trailer release valve - single

- Temperature –40 ... +80 °C
- Port 3 Exhaust



463 034 005 0



963 001 000 0



963 001 013 0



963 006 003 0

Product number	Knob colour	Working pressure	Mounting	Port
463 034 000 0	silver	8.0 bar	–	1, 2: M22x1.5
463 034 002 0	black	8.0 bar	–	1, 2: M22x1.5; 3-4: M16x1.5
463 034 005 0	black	8.0 bar	Flange	1, 2: M22x1.5; 3-4: M16x1.5
963 001 000 0	black	8.0 bar	Flange	1-1: M22x1.5; 1-2: Ø 7.0 mm; 2: Ø 21.5 mm
963 001 012 0	black	8.5 bar	Flange	1-1: M16x1.5; 1-2: Ø 7.0 mm; 2: Ø 21.5 mm
963 001 013 0	black	8.5 bar	Flange	1-1: M22x1.5; 1-2: Ø 7.0 mm; 2: Ø 21.5 mm
963 001 016 0	red	8.5 bar	Flange	1-2: Ø 7.0 mm; 2: Ø 21.5 mm
963 006 001 0	black	8.5 bar	2x Ø 8.5 mm	1-1, 1-2, 2: M16x1.5
963 006 003 0	red	8.5 bar	2x Ø 8.5 mm	1-2, 2: M16x1.5
963 006 005 0	green	8.5 bar	2x Ø 8.5 mm	1-2, 2: M16x1.5
963 006 006 0	yellow	8.5 bar	2x Ø 8.5 mm	1-2, 2: M16x1.5
963 006 007 0	blue	8.5 bar	2x Ø 8.5 mm	1-2, 2: M16x1.5
963 006 008 0	white	8.5 bar	2x Ø 8.5 mm	1-2, 2: M16x1.5

## Repair solutions

Product number	Repair kit	Content
■ 963 001 000 0	963 001 000 2	Sealing ring
■ 963 001 012 0	963 006 000 2	Piston + push button
■ 963 001 013 0	963 006 000 2	Piston + push button
■ 963 006 001 0	963 006 000 2	Piston + push button

## Trailer release valve - double

■ Temperature	−40 ... +80 °C
■ Working pressure	8.5 bar
■ Knob colour	black / red
■ Mounting	2× M8
■ Distance between holes	86 mm
■ Port	1-1, 1-2, 2-1, 2-2: M16×1.5; 3: Exhaust
■ Accessory	899 200 695 4 Plate



Product number	Comments	Equipped with	
		Plate	Trailer release valve
963 001 050 0	–	–	963 001 012 0 + 963 001 016 0
963 001 051 0	with non-return valve	899 200 695 4	963 001 012 0 + 963 001 016 0
963 001 052 0	–	899 200 695 4	963 001 012 0 + 963 001 016 0
963 001 053 0	with non-return valve	–	963 001 012 0 + 963 001 016 0

## Repair solutions

Product number	Repair kit	Content
■ 963 001 050 0	963 001 001 2	Push button + valve
■ 963 001 051 0	963 001 001 2	Push button + valve
■ 963 001 052 0	963 001 001 2	Push button + valve
■ 963 001 053 0	963 001 001 2	Push button + valve

## Quick release valve

■ Temperature	−40 ... +80 °C
■ Working pressure	12 bar
■ Mounting	2× Ø 9.5 mm
■ Distance between holes	38 mm



Product number	Equipped with	Port
973 500 000 0	double check valve	1, 2, 3: M22×1.5
973 500 038 0	–	1, 21, 22, 23, 24, 3: M22×1.5
973 500 051 0	integrated double cut-off valve	2: 4× M16×1.5; 11, 12, 3: M22×1.5

## Repair solutions

Product number	Repair kit	Content
■ 973 500 000 0	973 500 003 2	Diaphragm
■ 973 500 051 0	973 500 004 2	Diaphragm

# AIR BRAKE SYSTEMS

## Shut-off cock

■ Temperature	-40 ... +80 °C
■ Working pressure	10 bar (952 002 000 0: 11 bar)
■ Port	1, 2: M22x1.5
■ Mounting	2x Ø 10 mm (952 002 000 0: 2x Ø 9.5 mm)
■ Distance between holes	60x84 mm

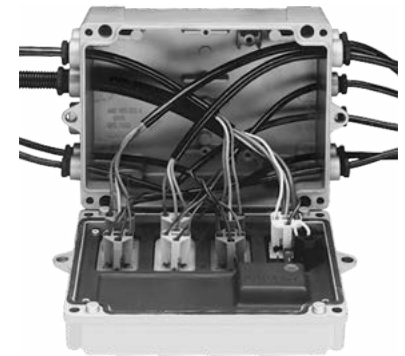


Product number	Valve type	Lever position			Actuation direction	Exhaust
		90° left	0°	90° right		
452 002 131 0	2/2	–	pressurized	closed	One 90°	–
452 002 132 0	2/3	vented	pressurized	vented	Both 90°	✓
452 002 133 0	2/3	closed	vented	pressurized	Both 90°	✓
952 002 000 0	2/2	–	pressurized	closed	One 90°	✓

## Anti-lock braking system (ABS)

### Exchange of Vario C

■ Description	Exchange sets for repair of older trailer vehicles with ABS systems of the Vario C type to be replaced by the installation of a VCS II electronic control unit.	
■ Product number	446 105 926 2	Exchange of the Vario C equipment
	446 105 927 2	Exchange of Vario C system



Vario C ECU

Product number	Content	Length	Exchange set	
			Equipment 446 105 926 2	System 446 105 927 2
400 500 081 0	VCS II (Premium, 2S/2M...4S/3M)	–	1x	–
446 108 085 0	VCS II (separate ECU, 2S/2M...4S/3M)	–	–	1x
449 320 150 0	VCS II cable with open end	L: 15.0 m	1x	–
449 386 143 0	VCS II Y-supply cable with separating point	L1: 1.0 m, L2: 3.0 m	–	1x
449 544 248 0	VCS II cable for A-, B- and C-modulators	L1: 3.0 m, L2: 6.0 m	–	1x
449 616 235 0	VCS II Y-cable for diagnosis and socket for A-modulator	L1: 8.0 m, L2: 5.0 m	1x	–
449 712 060 0	Sensor extension cable	L: 6.0 m	2x	2x
449 712 080 0	Sensor extension cable	L: 8.0 m	2x	2x
893 401 826 2	Elbow	–	1x	–
894 601 133 2	Solenoid valve adapter cable	L: 0.15 m	1x	3x
898 020 456 4	Protection cap	–	1x	1x

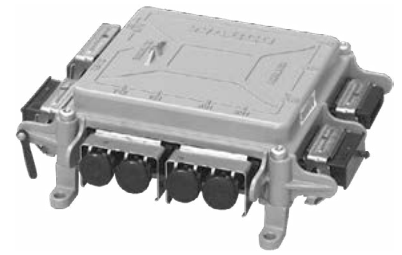
## Repair solutions

Product number	Repair kit	Content
■ 400 500 081 0	400 500 925 2	Sealing kit



## Exchange of VCS I

- **Description** Exchange sets for repair of older trailer vehicles with ABS systems of the VCS I type to be replaced by the installation of a VCS II electronic control unit.
- **Product number** 446 108 920 2 Exchange VCS I Electronic Unit for VCS II ECU  
446 108 921 2 Exchange of the complete VCS I compact unit

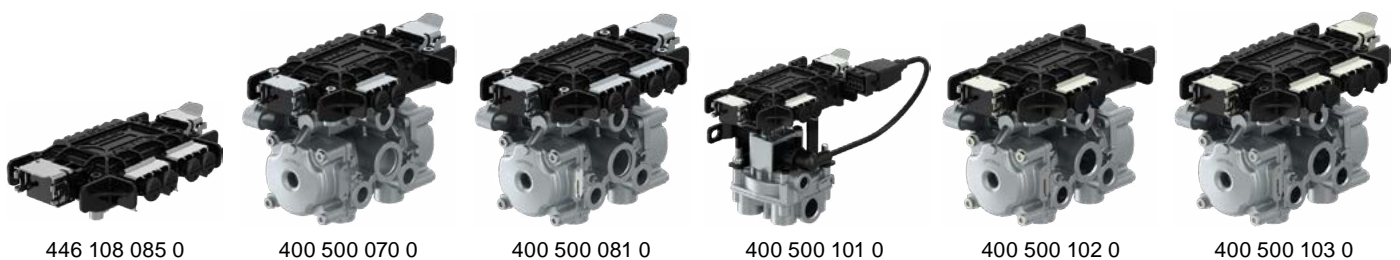


VCS I ECU

Product number	Content	Length	Exchange set	
			ECU 446 108 920 2	System 446 108 921 2
400 500 081 0	VCS II (Premium, 2S/2M...4S/3M)	–	–	1x
446 108 085 0	VCS II (separate ECU, 2S/2M...4S/3M)	–	1x	–
449 384 323 0	VCS II Y-supply cable with separating point	L1: 1.0 m, L2: 12.0 m	–	1x
449 386 143 0	VCS II Y-supply cable with separating point	L1: 1.0 m, L2: 3.0 m	1x	–
449 544 190 0	VCS II cable for A-, B- and C-modulators	L1: 4.0 m, L2: 4.0 m	1x	–
449 616 235 0	VCS II Y-cable for diagnosis and socket for A-modulator	L1: 8.0 m, L2: 5.0 m	–	1x
893 401 826 2	Elbow	–	–	1x
894 601 133 2	Solenoid valve adapter cable	L: 0.15 m	3x	1x
894 607 411 0	VCS / VCS II power supply cable	L: 0.30 m	1x	1x
898 020 456 4	Protection Cap	–	1x	1x

## Vario Compact ABS (VCS II)

- **Temperature** –40 ... +65 °C
- **Working pressure** 13 bar
- **Port 3** Exhaust
- **Diagnostics** Diagnostic software VCS II
- **Training** E-learning: VCS II 200 300 101 0  
Classroom training: Trailer ABS



446 108 085 0

400 500 070 0

400 500 081 0

400 500 101 0

400 500 102 0

400 500 103 0

Product number	Voltage	System	ABS relay valve	Type	Port
446 108 085 0	24 V	2S/2M...4S/3M	–	Separate ECU	–
400 500 070 0	24 V	2S/2M	2x	Standard	1: 2x M26x1.5; 21, 22: 3x M16x1.5; 4: M16x1.5
400 500 081 0	24 V	2S/2M...4S/3M	2x	Premium	1: 2x M26x1.5; 21, 22: 3x M16x1.5; 4: M16x1.5
400 500 082 0	24 V	2S/2M...4S/3M	2x	Premium; painted	1: 2x M26x1.5; 21, 22: 3x M16x1.5; 4: M16x1.5
400 500 083 0	12 V	2S/2M...4S/3M	2x	Premium	1: 2x M26x1.5; 21, 22: 3x M16x1.5; 4: M16x1.5
400 500 086 0	24 V	2S/1M	1x	Basic	1: 2x M26x1.5; 2: 4x M16x1.5; 4: M16x1.5

# AIR BRAKE SYSTEMS

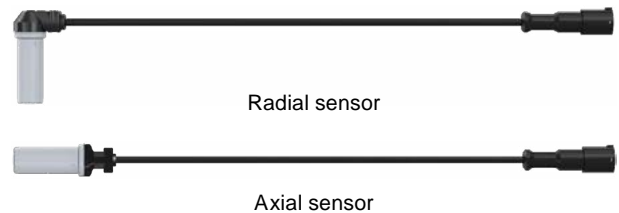
Product number	Voltage	System	ABS relay valve	Type	Port
400 500 087 0	24 V	2S/2M...4S/3M	2x	Premium	1: 2x M26x1.5; 21, 22: 3x M16x1.5; 4: M16x1.5
400 500 088 0	24 V	2S/2M...4S/3M	2x	COM-Variant	1: 2x M26x1.5; 21, 22: 3x M16x1.5; 4: M16x1.5
400 500 101 0	12 V	2S/1M	–	Basic	1: 2x 3/4"-14 NPTF; 2: 4x 3/8"-18 NPTF; 4: 3/8"-18 NPTF
400 500 102 0	12 V	2S/2M	–	Standard	1: 2x 3/4"-14 NPTF; 21, 22: 3x 3/8"-18 NPTF; 4: 1/4"-18 NPTF
400 500 103 0	12 V	4S/3M	–	Premium	1: 2x 3/4"-14 NPTF; 21, 22: 3x 3/8"-18 NPTF; 4: 1/4"-18 NPTF
400 500 105 0	12 V	4S/3M Plus	–	Premium	1: 2x 3/4"-14 NPTF; 21, 22: 3x 3/8"-18 NPTF; 4: 1/4"-18 NPTF

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 400 500 070 0	400 500 925 2	Sealing kit	■ 400 500 088 0	400 500 925 2	Sealing kit
■ 400 500 087 0	400 500 925 2 400 500 926 2	Sealing kit ECU kit	■ 400 500 105 0	400 500 925 2	Sealing kit

## Wheel speed sensor

■ Temperature	–40 ... +80 °C
■ Cable	Ø 4.4 mm
■ Electrical Connection	Socket



Product number	Version	Length	Sensor head	Comment
441 032 154 0	Radial	400 mm	Ø 16.0 mm	
441 032 806 0	Radial	400 mm	Ø 16.0 mm	Protection cap
441 032 807 0	Radial	400 mm	Ø 16.0 mm	
441 032 808 0	Radial	400 mm	Ø 16.0 mm	
441 032 879 0	Radial	1000 mm	Ø 16.0 mm	Grommet
441 032 905 0	Axial	350 mm	Ø 16.0 mm	
441 035 001 0	Axial	400 mm	Ø 11.0 mm	Mini-Sensor

## Sensor set

■ Description	WABCO sensor sets include all components required to affect a proper repair: clamp bushing, grease pad and the corresponding sensor.
■ Cable	Ø 4.4 mm
■ Sensor head	Ø 16.0 mm



Product number	Wheel speed sensor	Version	Length
441 032 921 2	441 032 808 0	radial	400 mm
441 032 960 2	441 032 806 0	radial	400 mm
441 032 963 2	441 032 905 0	axial	350 mm
441 032 997 2	441 032 879 0	radial	1000 mm

## Trailer ABS relay valve

■ Temperature	-40 ... +80 °C
■ Working pressure	10.0 bar
■ Port 3	Exhaust
■ Voltage	24 V (* 12 V)
■ Electrical connection	Bayonet DIN 72585 A1-3.1-Sn/K1 (472 195 025 0: M24x1.0)
■ Protection class	IP 66 / IP 69K (472 195 025 0: IP 68)
■ Accessory	894 601 132 2 Adapter cable



Product number	Rated current	Mounting	Distance between bolts	Port
472 195 025 0	1.65 A	4x M8	75x75 mm	1: M22x1.5; 2: 2x M22x1.5; 3: Exhaust; 4: M16x1.5
472 195 031 0	1.65 A	4x M8	75x75 mm	1: M22x1.5; 2: 2x M22x1.5; 3: Snap-on contour; 4: M16x1.5
472 195 033 0*	2.22 A	4x 5/16"-18 UNC-2A	75x75 mm	1: 2x 3/4"-18 NPTF; 2: 4x 3/8"-18 NPTF; 3: 3/4"-18 NPTF; 4: 3/8"-18 NPTF
472 195 034 0*	2.22 A	4x M8	75x75 mm	1: M22x1.5; 2: 2x M22x1.5; 3: Snap-on contour; 4: M16x1.5
472 195 035 0	1.65 A	4x M8	75x75 mm	1: M22x1.5; 2: 2x M22x1.5; 3: Snap-on contour; 4: M16x1.5
472 195 037 0	1.65 A	4x M8	75x75 mm	1: M22x1.5; 2: 2x M22x1.5; 3: Snap-on contour; 4: M16x1.5
472 195 038 0	1.24 A	4x M8	75x75 mm	1: M22x1.5; 2: 2x M22x1.5; 3: Snap-on contour; 4: M16x1.5
472 195 041 0	1.65 A	3x M8	70x35 mm	1: M22x1.5; 21: M22x1.5 closed; 22, 23: 3x M22x1.5; 3: Exhaust; 4: M16x1.5
472 195 043 0**	1.65 A	3x M8	70x35 mm	1: M22x1.5; 21: M22x1.5 closed; 22, 23: 3x M22x1.5; 3: Exhaust; 4: M16x1.5
472 195 044 0*	2.22 A	3x M8	70x35 mm	1: M22x1.5; 21: M22x1.5 closed; 22, 23: 3x M22x1.5; 3: Exhaust; 4: M16x1.5
472 196 003 0*	2.22 A	3x 5/16"-18 UNC-2A	75x75 mm	1: 3/4"-14 NPTF; 2: 2x 3/8"-18 NPTF; 3: Exhaust; 4: 3/8"-18 NPTF

\* Voltage: 12 V

\*\* Black paint coat

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 472 195 025 0	472 195 926 2	Valve + filter	■ 472 195 038 0	472 195 926 2	Valve + filter
■ 472 195 031 0	472 195 926 2	Valve + filter	■ 472 195 041 0	472 195 926 2	Valve + filter
■ 472 195 033 0	472 195 926 2	Valve + filter	■ 472 195 043 0	472 195 926 2	Valve + filter
■ 472 195 034 0	472 195 926 2	Valve + filter	■ 472 195 044 0	472 195 926 2	Valve + filter

# AIR BRAKE SYSTEMS

## Electronic braking system (EBS)

### Trailer EBS D modulator

■ Temperature	-40 ... +65 °C	
■ Working pressure	8.5 bar	
■ Mounting	2x M10	
■ Accessories	441 032 043 4	Protection cap sensor connection X7...X10 (2pin)
	441 032 044 4	Protection cap sensor connection X5...X6 (3pin)
	894 110 139 2	Protection cap connector X1...X4 (with sealing)
■ Repair kit	480 102 934 2	Sealing kit for 480 102 010 0 / 480 102 014 0
■ Diagnostics	Diagnostic software TEBS D Diagnostic software ODR-Tracker Diagnostic software CAN-Viewer	
■ Training	Classroom training: Trailer EBS	



Product number	Type	System	Voltage	Port	
				1 / 2.1 / 2.2	2.1 / 4 / 5
480 102 010 0	Standard; replaced by 480 102 014 0	4S/2M	24 V	M22x1.5	M16x1.5
480 102 014 0	Premium	4S/3M	24 V	M22x1.5	M16x1.5
480 102 014 R	Premium (remanufactured variant)				
480 102 015 0	with Trailer Central Electronic	4S/3M	24 V	M22x1.5	M16x1.5
480 102 020 0	Standard	4S/2M	12 V	M22x1.5*	M16x1.5*

\* 3 ports closed: 2x 2.1, 1x 2.2

### Trailer EBS E modulator

■ Generic In / Out	Type Standard: 1...4; Type Premium, Multi-Voltage: 1...7	
■ Temperature	-40 ... +65 °C	
■ Working pressure	8.5 bar	
■ Mounting	2x M12	
■ Accessories	898 020 462 2	Protection cap 4pin connector
	898 020 463 2	Protection cap 8pin connector
■ Repair kits	461 513 920 2	Sealing kit PEM for variants with PEM
	480 102 931 2	Locking clip
	480 102 933 2	Fitting kit for variants with fittings
	480 102 935 2	Sealing kit
■ Diagnostics	Diagnostic software TEBS E Diagnostic software ODR-Tracker Diagnostic software CAN-Viewer	
■ Training	Classroom training: Trailer EBS E-Learning: 200 300 104 0 Trailer EBS E 200 300 114 0 Trailer EBS E1-E2 200 300 124 0 Trailer EBS E2.5-E4 200 300 134 0 Trailer EBS E5	



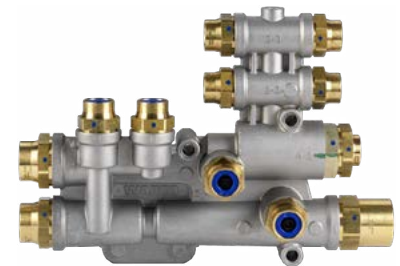
Product number	Type	System	Voltage	Port			Comment
				1	2.1 / 2.2	4 / 5	
480 102 030 0	Standard	2S/2M	24 V	M22x1.5	M16x1.5	M16x1.5	
480 102 031 0	Standard	2S/2M	24 V	Ø 16x2	Ø 12x1.5	Ø 8x1	PEM 461 513 021 0
480 102 032 0	Standard	2S/2M	24 V	Ø 15x1.5	Ø 12x1.5*	Ø 8x1	
480 102 033 0	Standard	2S/2M	24 V	Ø 15x1.5	Ø 12x1.5	Ø 8x1	PEM 461 513 000 0
480 102 034 0	Standard	2S/2M	24 V	M22x1.5	M16x1.5	M16x1.5	PEM 461 513 002 0
480 102 035 0	Standard	2S/2M	24 V	Ø 15x1.5	Ø 12x1.5	Ø 8x1	PEM 461 513 003 0
480 102 036 0	Standard	2S/2M	24 V	Ø 15x1.5	Ø 12x1.5	Ø 8x1	PEM 461 513 020 0

Product number	Type	System	Voltage	Port			Comment
				1	2.1 / 2.2	4 / 5	
480 102 040 R	Standard	2S/2M	24 V	M22x1.5	M16x1.5	M16x1.5	Software TEBS E0
480 102 060 0	Premium	4S/3M	24 V	M22x1.5	M16x1.5	M16x1.5	PEM 461 513 021 0
480 102 061 0	Premium	4S/3M	24 V	∅ 16x2	∅ 12x1.5	∅ 8x1	
480 102 062 0	Premium	4S/3M	24 V	∅ 15x1.5	∅ 12x1.5*	∅ 8x1	PEM 461 513 000 0
480 102 063 0	Premium	4S/3M	24 V	∅ 15x1.5	∅ 12x1.5	∅ 8x1	
480 102 064 0	Premium	4S/3M	24 V	M22x1.5	M16x1.5	M16x1.5	PEM 461 513 002 0
480 102 065 0	Premium	4S/3M	24 V	∅ 15x1.5	∅ 12x1.5	∅ 8x1	PEM 461 513 003 0
480 102 066 0	Premium	4S/3M	24 V	∅ 15x1.5	∅ 12x1.5	∅ 8x1	PEM 461 513 020 0
480 102 080 0	Multi-Voltage	4S/3M	12/24 V	M22x1.5	M16x1.5	M16x1.5	PEM 461 513 002 0
480 102 084 0	Multi-Voltage	4S/3M	12/24 V	M22x1.5	M16x1.5	M16x1.5	

\* 480 102 062 0: Port 2.1/2.2 - 1x ∅ 8x1

## Pneumatic Extension Module (PEM)

- **Temperature** -40 ... +65 °C
- **Working pressure** 9.5 bar
- **Charging pressure** 6.2 bar
- **Material** Aluminium; (461 513 02 . 0: Plastic)
- **Fittings** yes; (461 513 002 0, 461 513 010 0: no)
- **PEM exchange** For PEM exchange repair kit 461 513 920 2 is always required.



Product number	Application	Air suspension	Air suspension	Air reservoir	Test connector	Spring brake cylinder	PREV	PREV
		1-1	1-1	1	2-4	2-3	1	4-2
461 513 000 0	480 102 033 0 / R, 480 102 063 0 / R	2x ∅ 8x1	2x ∅ 12x1.5	∅ 15x1.5	∅ 8x1	4x ∅ 8x1	∅ 8x1	∅ 8x1
461 513 001 0	–	2x ∅ 8x1	2x ∅ 8x1.5	∅ 16x2	∅ 8x1	4x ∅ 8x1	∅ 8x1	∅ 8x1
461 513 002 0	480 102 034 0, 480 102 064 0, 480 102 084 0	2x M16x1.5	2x M22x1.5	M22x1.5	M16x1.5	4x M16x1.5	M16x1.5	M22x1.5
461 513 003 0	480 102 035 0, 480 102 065 0	2x ∅ 8x1	2x ∅ 8x1.5	∅ 15x1.5	closed	4x ∅ 8x1	∅ 10x1	∅ 12x1.5
461 513 010 0	with mounting plate	2x M16x1.5	2x M22x1.5	M22x1.5	M16x1.5	4x M16x1.5	M16x1.5	M22x1.5
461 513 020 0	480 102 036 0, 480 102 066 0	2x ∅ 8x1	2x ∅ 12x1.5	∅ 15x1.5	∅ 8x1	4x ∅ 8x1	∅ 8x1	∅ 8x1
461 513 021 0	480 102 031 0, 480 102 061 0	2x ∅ 8x1	2x ∅ 8x1.5	∅ 16x2	∅ 8x1	4x ∅ 8x1	∅ 8x1	∅ 8x1

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 461 513 000 0	461 513 920 2	Sealing kit PEM	■ 461 513 002 0	461 513 920 2	Sealing kit PEM
	461 513 921 2	4-2 fitting	■ 461 513 020 0	461 513 922 2	4-2 fitting with tube bush
	480 102 933 2	Fitting kit	■ 461 513 021 0	461 513 922 2	4-2 fitting with tube bush
■ 461 513 001 0	461 513 920 2	Sealing kit PEM			

# AIR BRAKE SYSTEMS

## Trailer EBS relay valve

■ Working pressure	10 bar
■ Electrical connection	3x bayonet DIN 72585
■ Port	1, 2: M22x1.5; 3: Exhaust with integrated silencer; 4: M12x1.5
■ Mounting	3x M8
■ Distance between bolts	75x75 mm



Product number	Voltage	Temperature	Protection class
480 207 001 0	24 V	-40 ... +80 °C	IP69K
480 207 202 0	12 V	-40 ... +65 °C	IP6K9K

## Repair solution

Product number	Repair kit	Content
■ 480 207 001 0	480 207 920 2 480 207 921 2	Bush, screw, o-ring, sealing EBS relay valve



971 002 301 0



971 002 805 0

## Relay emergency valve for Trailer EBS

■ Temperature	-40 ... +80 °C
■ Max. pressure	8.5 bar

Product number	Mounting	Distance between holes	Port
971 002 301 0*	2x Ø 11.0 mm	71 mm	1, 1-2: M22x1.5 JED-152; 2: 3x M22x1.5; 3: exhaust; 4: M16x1.5 JED-152
971 002 805 0	2x M8	79 mm	1, 1-2: M22x1.5; 2: M16x1.5; 3: exhaust; 4: M16x1.5

\* without predominance

## Accessories

Product number	Accessory	Content
■ 971 002 805 0	971 002 103 4 971 002 921 2 971 002 922 2	Port cover Wiring harness with sensor and pressure switch, TEBS C with software status C1, C2 Wiring harness with sensor, TEBS C/D with software status C3, D

## Park release emergency valve

■ Temperature	-40 ... +65 °C
■ Working pressure	8.5 bar
■ Knob colour	black / red
■ Accessory	971 002 103 4 Plate



Product number	Plate	Test connection	Port
971 002 900 0	971 002 103 4	-	1-1, 1-2, 21, 22, 4: M16x1.5
971 002 902 0	-	-	1-1, 1-2, 21, 22, 4: M16x1.5
971 002 910 0	-	-	1-1, 1-2, 21, 22, 4: Ø 8x1
971 002 911 0	-	-	1-1, 1-2: Ø 10x1; 21, 22, 4: Ø 8x1
971 002 912 0	971 002 103 4	✓	1-1, 21, 22, 4: Ø 8x1; 1-2: Ø 8x1 with test connection
971 002 913 0	-	-	1-1, 1-2, 22: Ø 10x1; 21, 4: Ø 8x1



# Brake actuators

## Service brake chamber (UNISTOP™)

### Service brake chamber (UNISTOP™) - disc

■ Operation	Disc
■ Push-rod length / thread	15 mm / Ball R8
■ Working pressure	10.2 bar
■ Bolt threads	M16x1.5
■ Distance between bolts	120.7 mm
■ Port	Side / top: M16x1.5 (423 504 002 0: side M16x1.5 / top –)
■ Temperature	–40 ... +80 °C



423 104 710 0



423 110 710 0



423 506 001 0

Product number	Type	Stroke	Length		Clamp band	Position	
			Chamber	Bolt		Clamp band	Side port
423 114 710 0	14	57 mm	121 mm	43 mm	Ø 166 mm	20°	0°
423 104 710 0	16	57 mm	121 mm	43 mm	Ø 166 mm	20°	0°
423 104 716 0	16	57 mm	119 mm	43 mm	Ø 206 mm	–90°	90°
423 504 002 0	16	57 mm	104 mm	43 mm	Ø 206 mm	–90°	90°
423 504 003 0	16	57 mm	117 mm	43 mm	Ø 166 mm	90°	90°
423 112 710 0	18	62 mm	117 mm	43 mm	Ø 175 mm	20°	0°
423 505 000 0	20	62 mm	117 mm	43 mm	Ø 175 mm	20°	0°
423 505 004 0	20	62 mm	117 mm	43 mm	Ø 175 mm	–90°	90°
423 110 710 0	22	62 mm	117 mm	43 mm	Ø 186 mm	20°	0°
423 506 001 0	24	64 mm	120 mm	42 mm	Ø 185 mm	20°	0°

### Repair solutions

Product number	Repair kit	Content
■ 423 104 710 0	423 104 002 2	Diaphragm + boot
■ 423 114 710 0	423 514 000 2	Diaphragm + boot
■ 423 506 001 0	423 506 001 2	Diaphragm + hose stud

# BRAKE ACTUATORS

## Service brake chamber (UNISTOP™) - cam

■ <b>Bolt threads</b>	M16x1.5 M6: 423 020 000 0 M12: 423 103 298 0 M12x1.5: 423 102 900 0, 423 103 900 0, 423 104 900 0
■ <b>Distance between bolts</b>	120.7 mm 44.5 mm: 423 020 000 0 76.2 mm: 423 102 900 0, 423 103 298 0, 423 103 900 0, 423 104 900 0
■ <b>Position clamp band</b>	-45° 0°: 423 106 106 0 - : 423 020 000 0
■ <b>Position side port</b>	180° -90°: 423 007 019 0 - : 423 020 000 0, 423 106 106 0
■ <b>Temperature</b>	-40 ... +80 °C
■ <b>Accessories</b>	895 801 140 4 Yoke: inner thread M14x1.5, bolt diameter Ø 14 H8, length til mid of borehole 48.5 mm 895 801 142 4 Yoke: inner thread M14x1.5, bolt diameter Ø 14 H8, length til mid of borehole 37.0 mm 895 801 210 4 Yoke: inner thread M16x1.5, bolt diameter Ø 14 H8, length til mid of borehole 56.0 mm 895 801 215 2 Yoke 895 802 090 4 Yoke: inner thread M16x1.5, bolt diameter Ø 16 H10, length til mid of borehole 56.0 mm 423 000 900 2 Repair kit incl. yoke 895 801 140 4 (M14x1.5) 423 000 901 2 Repair kit incl. yoke 895 801 210 4 (M16x1.5) 423 000 534 2 Accessory package "hole" 423 000 535 2 Accessory package "long hole"



423 104 900 0



423 105 900 0



423 106 900 0



423 107 900 0

Product number	Type	Stroke	Chamber length	Working pressure	Push-rod length	Clamp band	Port	
							Side	Top
423 020 000 0	3	42 mm	93 mm	8.0 bar	51 mm	Ø 100 mm	-	¼"-18 NPSF
423 102 900 0*	9	57 mm	108 mm	8.0 bar	186 mm	Ø 135 mm	M16x1.5	-
423 103 298 0	12	57 mm	136 mm	8.0 bar	227 mm	Ø 144 mm	M16x1.5	M16x1.5
423 103 900 0*	12	57 mm	128 mm	8.0 bar	186 mm	Ø 144 mm	M16x1.5	M16x1.5
423 104 900 0*	16	75 mm	128 mm	8.5 bar	186 mm	Ø 166 mm	M16x1.5 JED-152	M16x1.5 JED-152
423 105 900 0*	20	75 mm	134 mm	8.5 bar	186 mm	Ø 174 mm	M16x1.5 JED-152	M16x1.5 JED-152
423 106 106 0	24	57 mm	115 mm	8.5 bar	37 mm	Ø 185 mm	-	M16x1.5
423 106 900 0*	24	75 mm	127 mm	8.5 bar	186 mm	Ø 185 mm	M16x1.5	M16x1.5
423 007 019 0	30	65 mm	123 mm	10.2 bar	137 mm	Ø 209 mm	M22x1.5 JED-152	-
423 107 900 0*	30	75 mm	135 mm	8.5 bar	186 mm	Ø 209 mm	M16x1.5	M16x1.5
423 008 919 0*	36	76 mm	172 mm	8.0 bar	183 mm	Ø 234 mm	M22x1.5	M22x1.5

\* Push rod length can be shortened according to customer needs

### Repair solutions

Product number	Repair kit	Content
■ 423 008 919 0	423 008 000 2	Diaphragm
■ 423 106 900 0	423 106 923 2	Diaphragm

# Double diaphragm spring brake actuator (TRISTOP™ D)

## Double diaphragm spring brake actuator (TRISTOP™ D) - disc

■ Operation	Disc
■ Version	With internal breathing valve (IBV) Without boot
■ Push-rod length / thread	15.0 mm / Ball R8
■ Working pressure	10.5 / 8.5 bar 8.0 / 8.0 bar: 925 384 026 0
■ Release pressure	5.1 bar
■ Cylinder diameter	Ø 184 mm
■ Bolt lengths / threads	43 mm / M16x1.5
■ Distance between bolts	120.7 mm
■ Temperature	-40 ... +80 °C



Product number	Type	Stroke	Cylinder length	Clamp band	Position		Port
					Clamp band	Side port	
925 384 010 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	-135°	90°	11, 12: M16x1.5
925 384 011 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	90°	-45°	11, 12: M16x1.5
925 384 013 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	-90°	0°	11, 12: M16x1.5
925 384 016 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	-135°	90°	11, 12: M16x1.5 pipe extension
925 384 017 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	-135°	90°	11, 12: M16x1.5
925 384 024 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	160°	90°	11, 12: M16x1.5
925 384 026 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	180°	0°	11, 12: 3/8"-18 NPTF
925 384 029 0	16/24	57/57 mm	229.0 mm	Ø 167 mm	160°	90°	11, 12: M16x1.5
925 380 101 0	20/24	64/64 mm	240.5 mm	Ø 178 mm	-135°	90°	11, 12: M16x1.5
925 380 103 0	20/24	64/64 mm	240.5 mm	Ø 178 mm	160°	90°	11, 12: M16x1.5
925 380 104 0	20/24	64/64 mm	240.5 mm	Ø 178 mm	-135°	90°	11, 12: M16x1.5 pipe extension
925 380 106 0	20/24	64/64 mm	240.5 mm	Ø 178 mm	160°	90°	11, 12: M16x1.5

## Repair solutions

Product number	Repair kit	Content
■ 925 380 101 0	925 384 019 2 925 384 018 2	Dust plug Reset screw
■ 925 380 104 0	925 384 019 2 925 384 018 2	Dust plug Reset screw
■ 925 384 010 0	925 384 019 2 925 384 018 2	Dust plug Reset screw
■ 925 384 011 0	925 384 019 2 925 384 018 2	Dust plug Reset screw

# BRAKE ACTUATORS

Product number	Repair kit	Content
■ 925 384 013 0	925 384 019 2 925 384 018 2	Dust plug Reset screw
■ 925 384 016 0	925 384 019 2 925 384 018 2	Dust plug Reset screw
■ 925 384 017 0	925 384 019 2 925 384 018 2	Dust plug Reset screw
■ 925 384 026 0	925 384 019 2	Dust plug

## Double diaphragm spring brake actuator (TRISTOP™ D) - cam

■ Operation	Cam
■ Version	With internal breathing valve (IBV) Without boot (with boot: 925 392 019 0)
■ Push-rod thread	M16x1.5
■ Working pressure	10.2 / 8.5 bar 8.0 / 8.0 bar: 925 392 019 0
■ Release pressure	4.8 bar 4.6 bar: 925 392 019 0 4.9 bar: 925 376 201 0, 925 377 201 0
■ Cylinder diameter	Ø 206.5 mm
■ Cylinder length	262.0 mm 239.0 mm: 925 376 201 0, 925 377 201 0
■ Bolt lengths / threads	42.5 mm / M16x1.5
■ Distance between bolts	120.7 mm
■ Port	11, 12: M16x1.5
■ Temperature	-40 ... +80 °C



925 376 112 0



925 376 121 0



925 376 124 0



925 377 121 0

Product number	Type	Stroke	Yoke	Push-rod length	Clevis pins	Clamp band	Position	
							Clamp band	Side port
925 375 110 0	20/30	75/75 mm	–	213.0 mm	–	Ø 175 mm	45°	-90°
925 376 112 0	24/30	75/75 mm	✓	279.0 mm	Ø 13.94 mm	Ø 186 mm	45°	-90°
925 376 113 0	24/30	75/75 mm	✓	227.0 mm	Ø 13.94 mm	Ø 186 mm	45°	-90°
925 376 121 0	24/30	75/75 mm	–	213.0 mm	–	Ø 186 mm	45°	-90°
925 376 122 0	24/30	75/75 mm	–	213.0 mm	–	Ø 186 mm	-135°	0°
925 376 123 0	24/30	75/75 mm	✓	190.0 mm	Ø 13.94 mm	Ø 186 mm	45°	-90°
925 376 124 0	24/30	75/75 mm	✓	264.0 mm	Ø 13.94 mm	Ø 186 mm	45°	-90°
925 376 125 0	24/30	75/75 mm	✓	120.0 mm	Ø 13.94 mm	Ø 186 mm	-135°	0°
925 376 126 0	24/30	75/75 mm	✓	227.0 mm	Ø 13.94 mm	Ø 186 mm	45°	-90°
925 376 201 0	24/30	64/64 mm	–	224.0 mm	–	Ø 186 mm	45°	-90°
925 377 110 0	30/30	75/75 mm	✓	288.0 mm	Ø 13.94 mm	Ø 209 mm	45°	-90°
925 377 121 0	30/30	75/75 mm	–	212.0 mm	–	Ø 209 mm	45°	-90°
925 377 122 0	30/30	75/75 mm	✓	268.0 mm	Ø 13.94 mm	Ø 209 mm	45°	-90°
925 377 123 0	30/30	75/75 mm	✓	268.0 mm	Ø 13.94 mm	Ø 209 mm	-135°	0°
925 377 124 0	30/30	75/75 mm	✓	227.0 mm	Ø 13.94 mm	Ø 209 mm	45°	-90°

Product number	Type	Stroke	Yoke	Push-rod length	Clevis pins	Clamp band	Position	
							Clamp band	Side port
925 377 125 0	30/30	75/75 mm	–	212.0 mm	–	Ø 209 mm	45°	–35°
925 377 201 0	30/30	64/64 mm	–	225.0 mm	–	Ø 209 mm	45°	–90°
925 392 019 0	30/30	75/75 mm	–	212.0 mm	–	Ø 209 mm	45°	–90°

## Repair solutions

Product number	Repair kit	Content
■ 925 375 110 0	925 384 019 2	Dust plug
■ 925 376 112 0	925 384 019 2	Dust plug
■ 925 376 113 0	925 384 019 2	Dust plug
■ 925 376 121 0	925 376 920 2 925 384 019 2	Diaphragm + spring Dust plug
■ 925 376 122 0	925 384 019 2 925 376 920 2	Dust plug Diaphragm + spring
■ 925 376 123 0	925 376 920 2 925 384 019 2	Diaphragm + spring Dust plug
■ 925 376 124 0	925 384 019 2 925 376 920 2	Dust plug Diaphragm + spring
■ 925 376 125 0	925 384 019 2 925 376 920 2	Dust plug Diaphragm + spring
■ 925 376 126 0	925 384 019 2 925 376 920 2	Dust plug Diaphragm + spring
■ 925 376 201 0	925 384 019 2 423 106 009 2	Dust plug Diaphragm
■ 925 377 110 0	925 384 019 2	Dust plug
■ 925 377 121 0	925 384 019 2	Dust plug
■ 925 377 122 0	925 384 019 2	Dust plug
■ 925 377 123 0	925 384 019 2	Dust plug
■ 925 377 124 0	925 384 019 2	Dust plug
■ 925 377 125 0	925 384 019 2	Dust plug
■ 925 377 201 0	925 384 019 2	Dust plug
■ 925 392 019 0	925 384 019 2	Dust plug

# BRAKE ACTUATORS

## Spring brake actuator (TRISTOP™)

### Spring brake actuator (TRISTOP™) - disc

■ Operation	Disc
■ Push-rod length / thread	15.0 mm / Ball R8
■ Release pressure	5.1 bar 6.1 bar: 925 480 004 0, 925 480 005 0
■ Bolt lengths	43.0 mm 38.0 mm: 925 426 200 0, 925 426 201 0
■ Bolt threads	M16x1.5
■ Distance between bolts	120.7 mm
■ IBV	Internal breathing valve
■ Temperature	-40 ... +80 °C



925 460 100 0



925 460 101 0



925 480 004 0



925 480 005 0

Product number	Type	Stroke	Working pressure	IBV	Port
925 426 200 0	14/16	57/57 mm	10.0/8.5 bar	–	11, 12: M22x1.5 JED-388
925 426 201 0	14/16	57/57 mm	10.0/8.5 bar	–	11, 12: M22x1.5 JED-388
925 464 450 0	16/16	57/57 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 464 451 0	16/16	57/57 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 464 461 0	16/16	57/57 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 464 500 0	16/24	57/57 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 463 502 0	18/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 460 032 0	20/24	57/57 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 460 090 0	20/24	64/64 mm	10.2/10.0 bar	–	11, 12: M22x1.5 JED-388
925 460 091 0	20/24	64/64 mm	10.2/10.0 bar	–	11, 12: M22x1.5 JED-388
925 460 100 0	20/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 460 101 0	20/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 460 102 0	20/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 480 004 0	20/24	64/64 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 480 005 0	20/24	64/64 mm	10.2/8.5 bar	✓ HFL3	11, 12: M22x1.5 JED-388
925 461 050 0	24/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 461 051 0	24/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 461 052 0	24/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5
925 481 201 0	24/24	64/64 mm	10.2/8.5 bar	✓	11, 12: M16x1.5 JED-152



## Repair solutions

Product number	Repair kit	Content
■ 925 426 200 0	925 426 000 2	Diaphragm + boot
■ 925 426 201 0	925 426 000 2	Diaphragm + boot
■ 925 460 090 0	925 481 001 2	Diaphragm + boot
■ 925 460 091 0	925 481 001 2	Diaphragm + boot
■ 925 460 100 0	925 492 921 2	Screw Insert
■ 925 461 050 0	925 492 921 2	Screw Insert
■ 925 461 051 0	925 492 921 2	Screw Insert
■ 925 461 052 0	925 492 921 2	Screw Insert
■ 925 463 502 0	925 492 921 2	Screw Insert
■ 925 464 450 0	925 464 002 2 925 492 921 2	Diaphragm + boot Screw Insert
■ 925 464 451 0	925 464 002 2 925 492 921 2	Diaphragm + boot Screw Insert
■ 925 464 461 0	925 492 921 2 925 464 002 2	Screw Insert Diaphragm + boot
■ 925 464 500 0	925 464 002 2 925 492 921 2	Diaphragm + boot Screw Insert

# BRAKE ACTUATORS

## Spring brake actuator (TRISTOP™) - cam

■ <b>Operation</b>	Cam	
■ <b>Version</b>	Without internal breathing valve (IBV) With boot Without boot: 925 321 202 0, 925 431 101 0	
■ <b>Release pressure</b>	5.1 bar 4.9 bar: 925 431 101 0	
■ <b>Bolt threads</b>	M16x1.5	
■ <b>Distance between bolts</b>	120.7 mm	
■ <b>Temperature</b>	-40 ... +80 °C	
■ <b>Accessories</b>	895 801 140 4	Yoke: inner thread M14x1.5, bolt diameter Ø 14 H8, length til mid of borehole 48.5 mm
	895 801 142 4	Yoke: inner thread M14x1.5, bolt diameter Ø 14 H8, length til mid of borehole 37.0 mm
	895 801 210 4	Yoke: inner thread M16x1.5, bolt diameter Ø 14 H8, length til mid of borehole 56.0 mm
	895 801 215 2	Yoke
	895 802 090 4	Yoke: inner thread M16x1.5, bolt diameter Ø 16 H10, length til mid of borehole 56.0 mm
	423 000 900 2	Repair kit incl. yoke 895 801 140 4 (M14x1.5)
	423 000 901 2	Repair kit incl. yoke 895 801 210 4 (M16x1.5)
	423 000 534 2	Accessory package "hole"



925 321 202 0



925 323 130 0



925 324 000 0

Product number	Type	Stroke	Working pressure	Push-rod		Yoke (screwed)	Port
				Length	Thread		
925 324 000 0	16/24	57/67 mm	8.0/8.0 bar	187 mm	–	895 801 140 4	11, 12: M16x1.5
925 321 202 0	24/24	57/67 mm	8.0/8.0 bar	290 mm	M14x1.5	895 801 140 4	11, 12: M22x1.5
925 431 101 0	24/24	65/65 mm	10.0/9.0 bar	186 mm	M16x1.5	–	11, 12: M16x1.5
925 422 910 0	30/24	65/65 mm	10.2/8.5 bar	85 mm	–	810 612 020 4	11, 12: M16x1.5 JED-152
925 323 130 0*	36/30	76/76 mm	8.0/8.0 bar	217 mm	M16x1.5	–	11, 12: M16x1.5

\* Push rod length can be shortened according to customer needs

### Repair solutions

Product number	Repair kit	Content
■ 925 321 202 0	925 321 001 2	Diaphragm + boot
■ 925 324 000 0	925 324 000 2	Diaphragm + boot

# Air disc brakes

## Tool sets for disc brakes

### Tool set for MAXX™, MAXXUS™ & PAN™ calipers

- Description** Modular tool set for repairing WABCO calipers and adjusting the return units
- Product number** 400 608 375 0 WABCO caliper tool set

Product number	Content
300 100 010 2	Tool set 'Basic'
300 100 011 2	Adjuster change
300 100 012 2	Ratchet for return unit
300 100 013 2	Tool set 'Extension'



### Tool set 'Basic'

Product number	Product
300 100 010 2	Tool set 'Basic'



### Tool set 'Extension'

Product number	Product
300 100 013 2	Tool set 'Extension'



### Adjuster change

Product number	Product
300 100 011 2	Adjuster change



### Ratchet for return unit

Product number	Product
300 100 012 2	Ratchet for return unit



# AIR DISC BRAKES

## Application of tool sets

Brake type	300 100 010 2 Tool set 'Basic'	300 100 011 2 Adjuster change	300 100 012 2 Ratchet for return unit	300 100 013 2 Tool set 'Extension'
PAN™ 17	✓	–	✓	✓
PAN™ 19	✓	–	✓	✓
PAN™ 22	✓	–	✓	✓
MAXX™ 22T	✓	✓	✓	–

## PAN™ range

### PAN™ 17 - light duty air disc brake

- **OE brake** \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake** Exchange brake (without brake pads)



WABCO product number		Mounting side	OE reference	
OE brake*	IAM brake		Manufacturer	OE number
40 175 090	40 175 072	left	Gigant Hendrickson IMT	709285196 D-34766-L 40 175 090
40 175 091	40 175 073	right	Gigant Hendrickson IMT	709285195 D-34766-R 40 175 091

## Repair solutions

Product number	Repair kit	Content
■ 40 175 090	12 999 806	Brake pad
■ 40 175 091	12 999 699VT	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 175 940 2	Pressure plate PAN™ 17

### PAN™ 19 - medium duty air disc brake

- **OE brake** \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake** Exchange brake (without brake pads)
- **REMAN brake** Remanufactured brake (without brake pads)



WABCO product number			Mounting side	OE reference	
OE brake*	IAM brake	REMAN brake		Manufacturer	OE number
40 195 001	40 195 037	640 195 037 R	left	SAF-Holland	3.080.0019.01
40 195 002	40 195 038	640 195 038 R	right		3.080.0018.01
40 195 017	40 195 037	640 195 037 R	left	SAF-Holland	3.080.0033.20
40 195 018	40 195 038	640 195 038 R	right		3.080.0032.20

WABCO product number			Mounting side	OE reference	
OE brake*	IAM brake	REMAN brake		Manufacturer	OE number
40 195 027 40 195 028	40 195 037 40 195 038	–	left right	Fuwa Axle Gigant IMT	–
40 195 055 40 195 056	40 195 045 40 195 046	–	left right	Samro / Fontenax	210 024 2 210 024 3
640 195 068 0 640 195 069 0	640 195 071 0 640 195 072 0	640 195 037 R 640 195 038 R	left right	SAF-Holland	3.080.0071.21 3.080.0072.21
640 195 085 0 640 195 086 0	640 195 095 0 640 195 096 0	640 195 037 R 640 195 038 R	left right	Schmitz Cargobull	109 380 7 109 380 8
640 195 087 0 640 195 088 0	40 195 037 40 195 038	–	left right	Fuwa Axle	503 000 03 503 020 03
640 195 109 0 640 195 110 0	–	–	left right	Fuwa Axle	–
640 195 131 0 640 195 132 0	40 195 037 40 195 038	–	left right	Fuwa Axle	–

## Repair solutions

Product number	Repair kit	Content
■ 40 195 001 40 195 002	12 999 737VT 12 999 738VT 12 999 755VT 640 175 920 2 640 195 936 2 640 195 940 2 640 225 931 2	Brake pad kit Sealing and guide bolts Wear indicator Seals for clamping unit Pressure plate PAN™ 19 Clamping unit Cover
■ 40 195 017 40 195 018	12 999 737VT 12 999 738VT 12 999 755VT 640 175 920 2 640 195 936 2 640 195 940 2 640 225 931 2	Brake pad kit Sealing and guide bolts Wear indicator Seals for clamping unit Pressure plate PAN™ 19 Clamping unit Cover
■ 40 195 027 40 195 028	12 999 737VT 12 999 738VT 640 175 920 2 640 195 936 2 640 195 940 2 640 225 921 2 640 225 931 2	Brake pad kit Sealing and guide bolts Seals for clamping unit Pressure plate PAN™ 19 Clamping unit Sealing and guide bolts Cover
■ 40 195 055 40 195 056	12 999 776 12 999 777 12 999 737VT 640 175 920 2 640 195 936 2 640 195 940 2 640 225 931 2	Sealing and guide bolts Brake pad with wear indicator Brake pad kit Seals for clamping unit Pressure plate PAN™ 19 Clamping unit Cover
■ 640 195 068 0 640 195 069 0	12 999 737VT 12 999 738VT 12 999 755VT 640 175 920 2 640 195 936 2 640 195 940 2 640 225 931 2	Brake pad kit Sealing and guide bolts Wear indicator Seals for clamping unit Pressure plate PAN™ 19 Clamping unit Cover

# AIR DISC BRAKES

Product number	Repair kit	Content
■ 640 195 085 0 640 195 086 0	12 999 776	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 195 933 2	Brake pad kit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 225 931 2	Cover
■ 640 195 087 0 640 195 088 0	12 999 776	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 195 933 2	Brake pad kit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 225 931 2	Cover
■ 640 195 109 0 640 195 110 0	12 999 737VT	Brake pad kit
	12 999 738VT	Sealing and guide bolts
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 225 931 2	Cover
■ 640 195 131 0 640 195 132 0	12 999 737VT	Brake pad kit
	640 175 920 2	Seals for clamping unit
	640 195 936 2	Pressure plate PAN™ 19
	640 195 940 2	Clamping unit
	640 225 930 2	Cover

## PAN™ 22 - heavy duty air disc brake

- **OE brake** \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake** Exchange brake (without brake pads)
- **REMAN brake** Remanufactured brake (without brake pads)



WABCO product number			Mounting side	OE reference	
OE brake*	IAM brake	REMAN brake		Manufacturer	OE number
40 225 007 40 225 008	40 225 015 40 225 016	640 225 015 R 640 225 016 R	left right	SAF-Holland	308 000 512 0 308 000 502 0
40 225 011 40 225 012	40 225 015 40 225 016	—	left right	IMT Gigant Reyco Granning	—
640 225 022 0 640 225 023 0	640 225 025 0 640 225 026 0	640 225 015 R 640 225 016 R	left right	SAF-Holland	308 000 670 0 308 000 680 0
640 225 030 0 640 225 031 0	640 225 040 0 640 225 041 0	640 225 015 R 640 225 016 R	left right	Schmitz Cargobull	106 303 6 106 303 7
640 225 032 0 640 225 033 0	—	—	left right	FAW Fuwa Axle	—
640 225 036 0 640 225 037 0	640 225 080 0 640 225 081 0	—	left right	Hendrickson	—
640 225 050 0 640 225 051 0	—	—	left right	Hendrickson	—
640 225 056 0** 640 225 057 0**	—	—	left right	Fuwa Axle Tonar Sespel VALX	—



WABCO product number			Mounting side	OE reference	
OE brake*	IAM brake	REMAN brake		Manufacturer	OE number
640 225 060 0	640 225 062 0	640 225 015 R	left	Fuwa Axle	503 000 000 2
640 225 061 0	640 225 063 0	640 225 016 R	right		503 020 000 2
640 225 120 0	–	–	left	Fuwa Axle	–
640 225 121 0			right		

\*\* available for Independant Aftermarket (IAM)

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 40 225 007 40 225 008	12 999 796	Brake pad kit	■ 640 225 032 0 640 225 033 0	640 175 920 2	Seals for clamping unit
	12 999 797	Wear indicator		640 225 921 2	Sealing and guide bolts
	12 999 738VT	Sealing and guide bolts		640 225 922 2	Brake pad kit
	640 175 920 2	Seals for clamping unit		640 225 926 2	Pressure plate
	640 195 940 2	Clamping unit		640 225 931 2	Cover
	640 225 926 2	Pressure plate		■ 640 225 050 0 640 225 051 0	12 999 776
640 225 931 2	Cover	640 175 920 2	Seals for clamping unit		
■ 40 225 011 40 225 012	12 999 796	Brake pad kit	640 195 940 2		Clamping unit
	12 999 797	Wear indicator	640 225 922 2		Brake pad kit
	12 999 738VT	Sealing and guide bolts	640 225 926 2		Pressure plate
	640 175 920 2	Seals for clamping unit	640 225 931 2		Cover
	640 195 940 2	Clamping unit	■ 640 225 056 0 640 225 057 0	12 999 738VT	Sealing and guide bolts
	640 225 921 2	Sealing and guide bolts		640 225 922 2	Brake pad kit
640 225 926 2	Pressure plate	640 175 920 2		Seals for clamping unit	
640 225 931 2	Cover	640 195 940 2		Clamping unit	
■ 640 225 022 0 640 225 023 0	12 999 796	Brake pad kit		640 225 931 2	Cover
	12 999 797	Wear indicator		■ 640 225 060 0 640 225 061 0	12 999 776
	12 999 738VT	Sealing and guide bolts	640 175 920 2		Seals for clamping unit
	640 175 920 2	Seals for clamping unit	640 195 940 2		Clamping unit
	640 195 940 2	Clamping unit	640 225 922 2		Brake pad kit
	640 225 926 2	Pressure plate	640 225 926 2		Pressure plate
640 225 931 2	Cover	640 225 931 2	Cover		
■ 640 225 030 0 640 225 031 0	12 999 776	Sealing and guide bolts	■ 640 225 120 0 640 225 121 0	12 999 796	Brake pad kit
	12 999 797	Wear indicator		640 175 920 2	Seals for clamping unit
	640 175 920 2	Seals for clamping unit		640 195 940 2	Clamping unit
	640 195 940 2	Clamping unit		640 225 930 2	Cover
	640 225 922 2	Brake pad kit			
	640 225 926 2	Pressure plate			
640 225 931 2	Cover				

## MAXX™ range

### MAXX™ 17 - light duty air disc brake



- **OE brake**      \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake**      Exchange brake (without brake pads)

WABCO product number		Mounting side	OE reference	
OE brake*	IAM brake		Manufacturer	OE number
640 317 045 0	640 317 035 0	left	Hendrickson	41 ALC 0017
640 317 046 0	640 317 036 0	right		41 ARC 0017

### Repair solutions

Product number	Repair kit	Content
■ 640 317 045 0	640 175 940 2	Pressure plate
640 317 046 0	640 317 922 2	Seals and guide bolts

### MAXX™ 22T - heavy duty air disc brake



- **OE brake**      \* OE production numbers; brakes are not available for Independent Aftermarket
- **IAM brake**      Exchange brake (without brake pads)

WABCO product number		Mounting side	OE reference	
OE brake*	IAM brake		Manufacturer	OE number
640 222 001 0	640 222 003 0	left	Schmitz Cargobull	115 680 0
640 222 002 0	640 222 004 0	right		115 680 2
640 222 005 0	640 222 007 0	left	Hendrickson	D-34470-1L
640 222 006 0	640 222 008 0	right		D-34470-1R
640 322 136 0	—	left	Fuwa Axle	0.B02058.0025
640 322 137 0	—	right		0.B02058.0026

### Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 640 222 001 0	640 175 920 2	Seals	■ 640 322 136 0	640 222 928 2	Seals and guide bolts
640 222 002 0	640 222 923 2	Brake pad		640 322 134 2	Brake pad
	640 222 925 2	Wear indicator		640 322 931 2	Pressure plate
	640 222 928 2	Seals and guide bolts		640 322 941 2	Reset unit
	640 225 926 2	Pressure plate		640 322 951 2	Seals and guide bolts
■ 640 222 005 0	640 175 920 2	Seals	640 322 942 2	Boot	
640 222 006 0	640 222 923 2	Brake pad			
	640 222 928 2	Seals and guide bolts			
	640 225 926 2	Pressure plate			

# Suspension controls

## Conventional air suspension control

### Chassis levelling valve

■ Version	with lever
■ Temperature	-40 ... +80 °C
■ Working pressure	13 bar
■ Nominal diameter	Ø 3 mm
■ Working range	90°
■ Mounting	4x Ø 8.8 mm
■ Distance between holes	40x50 mm
■ Accessories	433 401 003 0 Linkage (in addition needed for composite variants) 464 006 731 2 Rod



Product number	Type	Material	Height limitation	Port
464 006 002 0	2-circuit	aluminium	–	1, 21, 22: M12x1.5; 3: silencer
464 006 014 0	2-circuit	aluminium	–	1, 21, 22: M12x1.5; 3: silencer
464 006 100 0	2-circuit	aluminium	✓	1, 21, 22: M12x1.5; 12, 23: M16x1.5; 3: exhaust
464 006 101 0	2-circuit; same as 464 006 100 0, but black	aluminium	✓	1, 21, 22: M12x1.5; 12, 23: M16x1.5; 3: exhaust
464 006 102 0	2-circuit; with fittings	aluminium	–	1, 21, 22: Ø 8x1; 3: silencer
464 006 201 0	2-circuit; with fittings	aluminium	✓	1, 12, 21, 22, 23: Ø 8x1; 3: exhaust
464 006 500 0	2-circuit	composite	–	1, 21, 22: Ø 8x1; 3: silencer
464 006 520 0	2-circuit	composite	✓	1, 12, 21, 22, 23: Ø 8x1; 3: exhaust
464 006 540 0	1-circuit	composite	–	1, 22: Ø 8x1; 3: silencer
464 006 580 0	2-circuit; rod-mounted from right hand	composite	–	1, 21, 22: Ø 8x1; 3: silencer

### Repair solutions

Product number	Repair kit	Content
■ 464 006 002 0	464 006 000 2	Tappet
■ 464 006 100 0	464 006 001 2	Joint + tappet

### Rotary slide valve

■ Temperature	-40 ... +80 °C
■ Mounting	4x Ø 8.8 mm
■ Distance between holes	55 mm



Product number	Comments	Handle length	Working pressure	Dead man's switch	Port
463 032 020 0	–	122 mm	10.0 bar	–	1: M16x1.5; 21, 22, 23, 24: M12x1.5
463 032 022 0	–	122 mm	10.0 bar	–	1, 21, 22, 23, 24: M12x1.5

# SUSPENSION CONTROLS

Product number	Comments	Handle length	Working pressure	Dead man's switch	Port
463 032 023 0	single circuit	122 mm	10.0 bar	–	1, 21, 22: M12x1.5
463 032 120 0	–	122 mm	8.5 bar	✓	1: M16x1.5; 21, 22, 23, 24: M12x1.5
463 032 130 0	handle with grip	171 mm	8.5 bar	✓	1: M16x1.5; 21, 22, 23, 24: M12x1.5
463 032 220 0	with fittings	122 mm	10.0 bar	–	1, 21, 22, 23, 24: Ø 8x1

## Repair solutions

Product number	Repair kit	Content
■ 463 032 020 0	463 032 001 2	Valve
■ 463 032 023 0	463 032 001 2	Valve
■ 463 032 120 0	463 032 001 2	Valve
■ 463 032 130 0	463 032 001 2	Valve

## TASC™

■ Temperature	–40 ... +65 °C
■ Working pressure	10 bar
■ Voltage	24 V
■ Electrical connection	Bayonet ISO 15170-B1-2.1-Sn/K1
■ Nominal current	0.22 A
■ Protection class	IP6K9K
■ Mounting	4x M8
■ Distance between holes	56.6x56.6 mm
■ Handle length	122 mm



Product number	Type	Deadman control	Test connection	Port
463 090 012 0	1-circuit	–	✓	1, 21: M12x1.5; 24: M16x1.5
463 090 020 0	2-circuit	–	✓	1, 21, 23: Ø 8x1; 22, 24: Ø 12x1.5
463 090 021 0	2-circuit	–	–	1, 21, 23: Ø 8x1; 22, 24: Ø 12x1.5
463 090 023 0	2-circuit	–	–	1, 21, 23: M12x1.5; 22, 24: M16x1.5
463 090 025 0	2-circuit	–	–	1, 21, 22, 23, 24: Ø 8x1
463 090 123 0	2-circuit	✓	–	1, 21, 23: M12x1.5; 22, 24: M16x1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 463 090 012 0	463 090 920 2 463 090 921 2	Hand grip Coil	■ 463 090 023 0	463 090 920 2 463 090 921 2	Hand grip Coil
■ 463 090 020 0	463 090 920 2 463 090 921 2	Hand grip Coil	■ 463 090 025 0	463 090 920 2 463 090 921 2	Hand grip Coil
■ 463 090 021 0	463 090 920 2 463 090 921 2	Hand grip Coil	■ 463 090 123 0	463 090 920 2 463 090 921 2	Hand grip Coil

## TASC™ - 24 V (new generation)

■ Temperature	-40 ... +65 °C
■ Working pressure	10 bar
■ Voltage	24 V
■ Electrical connection	DIN 72585-A1-3.6-Sn/K2
■ Nominal current	0.34 A
■ Protection class	IP 6K9K
■ Mounting	4x M8
■ Distance between holes	56.6x56.6 mm
■ Handle length (mm)	122 mm



463 090 330 0

Product number	Type	System	Deadman control	Locking in lowering	Test connection	Port
463 090 310 0	2-circuit	Standard	-	✓	✓	1, 21: Ø 8x1; 24: Ø 12x1.5
463 090 311 0	2-circuit	Height limitation	-	✓	-	1, 1-1, 21, 24: Ø 8x1
463 090 312 0	2-circuit	Height limitation	-	✓	✓	1, 21: M12x1.5; 1-1: Ø 8x1; 24: M16x1.5
463 090 313 0	2-circuit	Standard	-	✓	✓	1, 21: M12x1.5; 24: M16x1.5
463 090 314 0	2-circuit	Height limitation	✓	-	-	1, 21: M12x1.5; 1-1: Ø 8x1; 24: M16x1.5
463 090 315 0	2-circuit	Standard	-	✓	✓	1, 21, 24: Ø 8x1
463 090 316 0	2-circuit	Height limitation	-	✓	✓	1, 1-1, 21: Ø 8x1; 24: Ø 12x1.5
463 090 330 0	1-circuit	Height limitation	-	✓	-	1, 1-1, 21: Ø 8x1; 24: Ø 12x1.5
463 090 331 0	1-circuit	Height limitation	-	✓	✓	1, 21: M12x1.5; 1-1: Ø 8x1; 24: M16x1.5
463 090 332 0	1-circuit	Standard	-	✓	✓	1, 21: M12x1.5; 24: M16x1.5

## TASC™ - 12 V (new generation)

■ Temperature	-40 ... +65 °C
■ Working pressure	10 bar
■ Voltage	12 V
■ Electrical connection	DIN 72585-A1-3.6-Sn/K2
■ Nominal current	0.34 A
■ Protection class	IP 6K9K
■ Mounting	4x M8
■ Distance between holes	56.6x56.6 mm
■ Handle length	122 mm



463 090 304 0

Product number	Type	System	Deadman control	Locking in lowering	Test connection	Port
463 090 300 0	2-circuit	Standard	-	✓	✓	1, 21: Ø 8x1; 24: Ø 12x1.5
463 090 301 0	2-circuit	Standard	-	✓	-	1, 21, 24: Ø 8x1
463 090 302 0	2-circuit	Height limitation	-	✓	-	1, 1-1, 21, 24: Ø 8x1
463 090 303 0	2-circuit	Height limitation	-	✓	✓	1, 21: M12x1.5; 1-1: Ø 8x1; 24: M16x1.5
463 090 304 0	2-circuit	Standard	-	✓	✓	1, 21: M12x1.5; 24: M16x1.5
463 090 305 0	2-circuit	Height limitation	✓	-	-	1, 21: M12x1.5; 1-1: Ø 8x1; 24: M16x1.5
463 090 306 0	2-circuit	Standard	✓	-	-	1, 21: M12x1.5; 24: M16x1.5
463 090 320 0	1-circuit	Height limitation	-	✓	-	1, 1-1, 21: Ø 8x1; 24: Ø 12x1.5
463 090 321 0	1-circuit	Standard	-	✓	-	1, 21: Ø 8x1; 24: Ø 12x1.5

# SUSPENSION CONTROLS

Product number	Type	System	Deadman control	Locking in lowering	Test connection	Port
463 090 322 0	1-circuit	Height limitation	–	✓	✓	1, 21: M12×1.5; 1-1: Ø 8×1; 24: M16×1.5
463 090 323 0	1-circuit	Standard	–	✓	✓	1, 21: M12×1.5; 24: M16×1.5

## Lift axle control valve

### Lift axle control valve - 1-circuit

■ Actuation	electric
■ Electrical connection	DIN 72585-A1-3.6-SN/K1
■ Protection class	IP6K9K
■ Working pressure	13 bar



Product number	Voltage	Rated current	Temperature	Port
463 084 031 0	24 V	0.22 A	–40 ... +80 °C	11: M16×1.5; 21, 22: 2× M16×1.5; 31: exhaust
463 084 041 0	24 V	0.22 A	–40 ... +65 °C	11, 12: Ø 8×1; 21, 22: 2× Ø 8×1; 31: M22×1.5
463 084 042 0	24 V	0.22 A	–40 ... +65 °C	11: Ø 12×1.5; 12: Ø 8×1; 21, 22: 2× Ø 8×1; 31: exhaust
463 084 050 0	12 V	0.62 A	–40 ... +65 °C	11: 3/8-18 NPTF; 21, 22: 2× 3/8-18 NPTF; 31: M22×1.5

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 463 084 000 0	463 084 000 2 463 084 920 2	Valve sealing Push button + stem	■ 463 084 003 0	463 084 920 2	Push button + stem
■ 463 084 001 0	463 084 000 2 463 084 920 2	Valve sealing Push button + stem	■ 463 084 010 0	463 084 001 2	Valve sealing
■ 463 084 002 0	463 084 000 2 463 084 920 2	Valve sealing Push button + stem	■ 463 084 011 0	463 084 001 2	Valve sealing
			■ 463 084 020 0	463 084 002 2	Valve sealing



## Lift axle control valve - 2-circuit

- **Temperature** −40 ... +80 °C

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- **Working pressure** 13 bar

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- **Port** 1, 21, 22, 23, 24, 41: M16×1.5  
2: M22×1.5  
3: Exhaust  
42: Test connection



463 084 000 0



463 084 010 0



463 084 021 0

Product number	Actuation	Switch pressure	Bolt length	Rated current	Electrical connection	Adjustment	Voltage
463 084 000 0	manual	4.0 bar	12 mm	–	–	2.0 ... 7.0 bar	–
463 084 001 0	manual	4.0 bar	18 mm	–	–	2.0 ... 7.0 bar	–
463 084 002 0	manual	2.4 bar	12 mm	–	–	2.0 ... 7.0 bar	–
463 084 003 0	manual	3.7 bar	12 mm	–	–	2.0 ... 7.0 bar	–
463 084 010 0	electric	–	12 mm	0.22 A	M27×1	–	24 V
463 084 011 0	electric	–	18 mm	0.22 A	M27×1	–	24 V
463 084 020 0	automatic	lowering: 4.5 bar lifting: 2.5 bar	12 mm	–	–	2.5 ... 7.0 bar	–
463 084 021 0	automatic	lowering: 4.5 bar lifting: 2.5 bar	18 mm	–	–	2.5 ... 7.0 bar	–

## Lift axle control valve - 2-circuit (pulse-controlled)

- **Actuation** electric

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- **Version** dual-circuit

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- **Electrical connection** DIN 72585-A1-4.2-SN/K2

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- **Protection class** IP6K6K

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- **Working pressure** 13 bar



Product number	Voltage	Rated current	Temperature	Port
463 084 100 0	24 V	0.34 A	−40 ... +65 °C	1, 21, 22, 23, 24, 25, 31: M22×1.5 32: silencer 432 407 060 0

# SUSPENSION CONTROLS



951 811 106 0

951 812 702 0

## Air spring

Product number	Max. Ø	Length	Port 1
951 811 003 0	355 mm	385 mm	male M20x1.5 / female M12x1.5
951 811 106 0	295 mm	381 mm	male M22x1.5 / female M12x1.5
951 811 111 0	295 mm	565 mm	female M22x1.5
951 811 702 0	320 mm	385 mm	female M22x1.5
951 811 703 0	305 mm	340 mm	female M22x1.5
951 811 705 0	295 mm	360 mm	female M22x1.5
951 811 750 0	320 mm	360 mm	female M22x1.5
951 811 752 0	325 mm	340 mm	female M22x1.5
951 811 763 0	325 mm	340 mm	female M22x1.5
951 811 764 0	300 mm	400 mm	female M22x1.5
951 811 772 0	320 mm	400 mm	male M20x1.5 / female M12x1.5
951 811 773 0	315 mm	660 mm	male M20x1.5 / female M12x1.5
951 811 781 0	325 mm	350 mm	female M22x1.5
951 811 799 0	315 mm	340 mm	male M18x1.5
951 811 801 0	340 mm	340 mm	male M20x1.5 / female M12x1.5
951 812 425 0	325 mm	216 mm	female 1/4"-18 NPTF
951 812 701 0	332 mm	385 mm	male M20x1.5 / female M12x1.5
951 812 702 0	332 mm	385 mm	male M20x1.5 / female M12x1.5
951 812 703 0	332 mm	385 mm	female M22x1.5
951 812 706 0	328 mm	345 mm	male M20x1.5 / female M12x1.5
951 812 721 0	332 mm	385 mm	male M20x1.5 / female M12x1.5
951 812 739 0	320 mm	395 mm	female M22x1.5
951 812 740 0	320 mm	445 mm	male M22x1.5
951 812 749 0	300 mm	400 mm	female M22x1.5
951 812 771 0	355 mm	385 mm	male M20x1.5 / female M12x1.5
951 813 150 0	348 mm	381 mm	male M20x2.5 / female M14x1.5
951 813 726 0	315 mm	360 mm	male M20 x 2.5 / female M12x1.5
951 813 732 0	350 mm	450 mm	male M20x1.5 / female M12x1.5
951 814 700 0	310 mm	610 mm	female M22x1.5
951 814 701 0	310 mm	430 mm	female M22x1.5
951 814 706 0	341 mm	400 mm	female M22x1.5
951 814 708 0	310 mm	415 mm	female M22x1.5
951 814 712 0	310 mm	415 mm	female M22x1.5
951 814 716 0	360 mm	349 mm	female M22x1.5
951 814 721 0	360 mm	400 mm	male M22x1.5
951 814 724 0	395 mm	340 mm	female M22x1.5
951 814 728 0	350 mm	795 mm	female M22x1.5
951 814 729 0	360 mm	404 mm	female M22x1.5
951 814 730 0	360 mm	349 mm	female M22x1.5
951 814 747 0	390 mm	415 mm	female M22x1.5
951 814 748 0	350 mm	415 mm	female M22x1.5
951 814 756 0	390 mm	415 mm	female M22x1.5

Product number	Max. Ø	Length	Port 1
951 814 757 0	390 mm	340 mm	female M22x1.5
951 814 781 0	390 mm	451 mm	female M22x1.5
951 814 782 0	375 mm	400 mm	female M22x1.5
951 814 784 0	375 mm	400 mm	female M22x1.5
951 899 001 0	340 mm	400 mm	female M16x1.5



## Air bellow

Product number	Max. Ø	Length	Mounting
896 130 125 4	300 mm	452 mm	Ø 198.1 mm / Ø 198.1 mm
896 130 126 4	295 mm	360 mm	Ø 198.1 mm / Ø 198.1 mm



438 601 066 0



438 601 070 0

## Shock absorber

Product number	Application	Max. rebound length	Ø	Stroke	Mounting
438 601 066 0	Battaglino, BPW, Schwarmüller, Miele, Kögel, Cardi, Gigant, Lecitrailer, Lecinena, Rolfo	498 mm	Ø 80 mm	198 mm	2x Ø 24 mm
438 601 068 0	Fruehauf, Traylor, Acerbi	478 mm	Ø 80 mm	154 mm	2x Ø 20 mm
438 601 069 0	SAF, Traylor, Meritor, Schmitz, Sauer, Kaiser	478 mm	Ø 80 mm	154 mm	2x Ø 20 mm
438 601 070 0	BPW, Schmitz, SAF	539 mm	Ø 80 mm	185 mm	2x Ø 24 mm
438 601 071 0	Fruehauf, Acerbi	445 mm	Ø 80 mm	132 mm	2x Ø 20 mm
438 601 072 0	BPW, Bartoletti, Cardi, Lecitrailer, Calabrese, Viberti	694 mm	Ø 80 mm	261 mm	2x Ø 24 mm
438 601 073 0	BPW, SAF, Viberti	765 mm	Ø 76 mm	297 mm	2x Ø 24 mm
438 601 074 0	BPW, SAF, Rolfo	429 mm	Ø 80 mm	130 mm	2x Ø 24 mm
438 601 075 0	SAF, Sauer, Langendorf	479 mm	Ø 80 mm	151 mm	2x Ø 24 mm
438 601 077 0	Miele, Zorzi	425 mm	Ø 80 mm	129 mm	2x Ø 20 mm
438 601 078 0	Lohr	489 mm	Ø 80 mm	160 mm	2x Ø 20 mm
438 601 081 0	Fruehauf	363 mm	Ø 80 mm	100 mm	2x Ø 20 mm
438 601 201 0	Meritor, Battaglino, Tecma, Cardi	637 mm	Ø 80 mm	241 mm	2x Ø 20 mm
438 601 202 0	Meritor, Battaglino, Fadi, Cardi	553 mm	Ø 80 mm	198 mm	2x Ø 20 mm
438 601 205 0	Viberti, Bartoletti, Cardi	688 mm	Ø 80 mm	257 mm	2x Ø 24 mm
438 601 211 0	SAF	413 mm	Ø 75 mm	135 mm	2x Ø 20 mm
438 601 212 0	SAF	489 mm	Ø 75 mm	171 mm	2x Ø 20 mm
438 601 224 0	BPW	795 mm	Ø 80 mm	316 mm	2x Ø 24 mm
438 601 227 0	Fruehauf, Meritor	475 mm	Ø 80 mm	153 mm	2x Ø 24 mm
438 601 230 0	BPW, Gigant	497 mm	Ø 80 mm	168 mm	2x Ø 24 mm
438 601 232 0	Montenegro	536 mm	Ø 70 mm	181 mm	2x Ø 22.8 mm
438 601 236 0	Fruehauf, Traylor	423 mm	Ø 80 mm	115 mm	2x Ø 20 mm
438 601 238 0	SAF, Piacenza	492 mm	Ø 80 mm	165 mm	2x Ø 24 mm

# SUSPENSION CONTROLS

## ECAS™ - electronically controlled air suspension

### ECAS™ electronic control unit (ECU)

■ Protection class	IP54A	
■ Accessory	446 055 522 2	ECAS equipment pack
	446 105 013 4	Body
	894 130 312 2	Cable fitting: PG 11 for cable Ø 5 ... 10 mm
■ Diagnostics	Diagnostic software TECAS	
■ Training	E-learning: ECAS 200 300 102 0 Classroom training: ECAS	

Product number	Version	Voltage	Temperature
446 055 065 0	ECAS-VCS	24 V	-40 ... +65 °C
446 055 066 0	ECAS-TEBS / VCS II	24 V	-40 ... +65 °C



### ECAS™ supply cable

Product number	Length	Application	Cable end
449 336 030 0	L: 3.0 m	VCS II (ECAS ECU 446 055 066 0)	open, 6-strand with push-on contacts 4x 1.5 mm <sup>2</sup> , 2x 0.5 mm <sup>2</sup> ; X6 auxiliary plug, 8-pin
449 382 060 0	L: 6.0 m	TEBS D (ECAS ECU 446 055 066 0)	open, 7-strand with push-on contacts, PG screw connection 3x 1.5 mm <sup>2</sup> , 4x 0.5 mm <sup>2</sup> ; X2 diagnosis, 8-pin
449 438 050 0	L: 5.0 m	TEBS E (ECAS ECU 446 055 066 0)	open, 3-strand with push-on contacts, PG screw connection 3x 1.00 mm <sup>2</sup> ; code B, 4-pin
449 438 080 0	L: 8.0 m		

### ECAS™ set

Product number	Content	Length	ECAS set (Product number 446 120 ... )						
			... 020 0	... 021 0	... 022 0	... 023 0	... 024 0	... 031 0	... 032 0
446 055 066 0	ECU	–	1x	1x	1x	1x	1x	1x	1x
446 055 522 2	ECAS equipment pack	–	1x	1x	1x	1x	1x	1x	1x
446 105 013 4	Body	–	1x	1x	1x	1x	1x	1x	1x
–	Cable solenoid valve	L: 2.0 m	1x	–	2x	–	2x	–	–
449 422 050 0	Cable solenoid valve	L: 5.0 m	–	1x	–	2x	–	1x	2x
449 732 060 0	Cable pressure sensor	L: 6.0 m	–	–	–	–	–	–	1x
449 742 030 0	Cable height sensor	L: 3.0 m	1x	–	1x	–	1x	–	–
449 742 050 0	Cable height sensor	L: 5.0 m	–	1x	–	1x	1x	1x	1x
–	Cable diagnosis	L: 4.0 m	–	1x	–	1x	–	–	–
449 621 060 0	Cable diagnosis	L: 6.0 m	–	–	–	–	1x	1x	1x
449 621 080 0	Cable diagnosis	L: 8.0 m	1x	–	1x	–	–	–	–
–	Supply cable TEBS D	L: 1.5 m	1x	–	1x	–	–	–	–
449 382 060 0	Supply cable TEBS D	L: 6.0 m	–	1x	–	1x	–	–	–
449 438 050 0	Supply cable TEBS E	L: 5.0 m	–	–	–	–	1x	–	–
–	Fastener	–	2x	2x	2x	2x	2x	2x	2x

## ECAS™ solenoid valve

- **Temperature**            –40 ... +80 °C
- **Working pressure**   13 bar
- **Voltage**                 24 V (472 880 072 0: 12 V)
- **Accessory**             432 407 060 0   Silencer



472 880 030 0

472 905 114 0

Product number	Application	Electrical connection	Mounting	Port
472 880 001 0	Semitrailer / central axle trailer*; Drawbar trailers; ECAS valve for 2-point, R/L at front or rear axle	Bayonet DIN 72585-A1-4.1-Sn/K2	2x Ø 9 mm	11, 21, 22, 23: M22x1.5; 3: silencer
472 880 020 0	Drawbar trailer*; 1-point, front axle	Bayonet DIN 72585-A1-3.6-Sn/K2	2x Ø 9 mm	11, 21, 22, 23: M22x1.5; 3: exhaust
472 880 021 0	1-point, R/L at front axle	Bayonet DIN 72585-A1-2.1-Sn/K2	2x Ø 9 mm	11, 21, 22, 23: M22x1.5; 3: exhaust
472 880 030 0	Semitrailer / central axle trailer*; Drawbar trailer*; rear axle	Bayonet DIN 72585-A1-4.2-Sn/K2	2x Ø 9 mm	11, 21, 22, 23: M22x1.5; 3: silencer
472 880 050 0	Semitrailer / drawbar trailer*; rear axle / front axle	Bayonet DIN 72585-A1-4.1-Sn/K2	3x M8	11, 22, 23, 26, 27: M22x1.5; 21: closed; 3: silencer
472 880 072 0	Semitrailer / central axle trailer*; Multi-Voltage	Bayonet DIN 72585-A1-4.2-Sn/K2	2x Ø 9 mm	11, 21, 22, 23: M16x1.5; 3: silencer
472 905 111 0	Semitrailer / drawbar trailer with lifting axle; 2-point; pulse-controlled	Bayonet DIN 72585-A1-4.1-Sn/K2; Bayonet DIN 72585-A1-4.2-Sn/K2	2x M8	1, 21, 22, 23, 24, 25, 26, 32: M22x1.5; 31: silencer
472 905 114 0	Semitrailer / drawbar trailer with lifting axle; 1-point; pulse-controlled	Bayonet DIN 72585-A1-4.1-Sn/K2; Bayonet DIN 72585-A1-4.2-Sn/K2	2x M8	1, 21, 22, 23, 24, 25: M22x1.5; 26: closed; 31, 32: silencer

\* without lifting axle

## ECAS™ solenoid valve cable

Product number	Length	Application	Cable end
449 422 030 0 449 422 050 0 449 422 100 0 449 422 150 0 449 422 200 0	L: 3.0 m L: 5.0 m L: 10.0 m L: 15.0 m L: 20.0 m	ECAS	Bayonet socket, ISO 72585-B1-4.1-Sn/K1, 4-pin; open, 4-strand with push-on contacts and PG screw connection, 4x 1.0 mm <sup>2</sup>
449 439 030 0	L: 3.0 m	TEBS E (GIO); for ECAS valves 472 880 001 0, 472 905 111 0 (2-point control)	Bayonet socket, ISO 15170-B1-4.1-Sn/K1, 4-pin; code B, 4-pin
449 445 010 0 449 445 030 0 449 445 050 0 449 445 060 0	L: 1.0 m L: 3.0 m L: 5.0 m L: 6.0 m	TEBS E (GIO); for ECAS valves 472 880 020 / 030 / 072 0, 472 905 111 / 114 0	Bayonet socket, ISO 15170-B1-3.1-Sn/K1, 4-pin; code B, 4-pin

# SUSPENSION CONTROLS

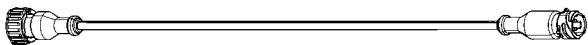
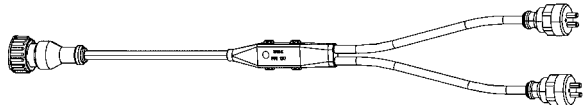
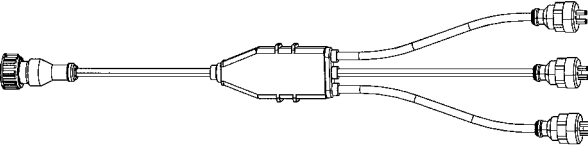
## ECAS1 valve replacement

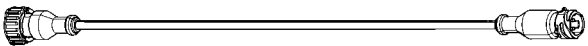
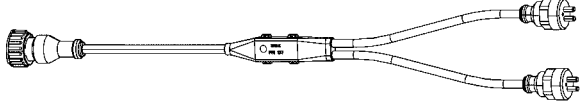
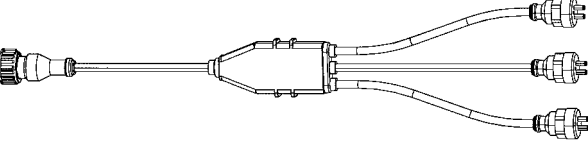
- A smooth changeover from an ECAS1 to an ECAS3 valve requires specific accessory kits. Up to three accessory kits are needed to ensure a proper repair.

ECAS1 valve	ECAS1 valve replacement			
	ECAS3 valve	Accessory kit	Accessory kit	Accessory kit
472 900 001 0	472 880 001 0	472 880 928 2	–	–
472 900 002 0	472 880 001 0	472 880 928 2	472 900 931 2	–
472 900 008 0	472 880 001 0	472 880 928 2	–	–
472 900 012 0	472 880 001 0	472 880 928 2	472 900 931 2	–
472 900 014 0	472 880 001 0	472 880 928 2	–	–
472 900 021 0	472 880 020 0	472 880 933 2	894 601 134 2	–
472 900 022 0	472 880 020 0	472 880 932 2	472 900 931 2	894 601 134 2
472 900 030 0	472 880 030 0	472 880 929 2	–	–
472 900 032 0	472 880 030 0	472 880 929 2	472 900 931 2	–
472 900 033 0	472 880 030 0	472 880 929 2	–	–
472 900 034 0	472 880 030 0	472 880 929 2	–	–
472 900 054 0	472 880 020 0	472 880 933 2	–	–
472 900 061 0	472 880 030 0	472 880 931 2	–	–
472 900 064 0	472 880 020 0	472 880 932 2	472 900 931 2	–
472 900 074 0	472 880 020 0	472 880 933 2	894 601 161 2	–

## Solenoid valve connection

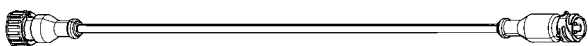
- Accessory kits are used to enable the transition from a M27 single solenoid type (ECAS1) to DIN bayonet solenoids (ECAS3).

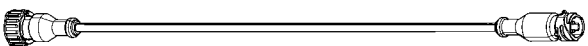
Product number	Accessory kit
894 601 134 2	Adapter cable (1-way)
	
472 880 929 2	Adapter cable (2-way)
	
472 880 928 2	Adapter cable (3-way)
	

Product number	Accessory kit
472 880 930 2	Adapter cable (1-way, 2-way, 3-way)
	
	
	

## Electrical connection

- Accessory kits assure the proper electrical port connection.
- The accessory kit 894 601 161 2 works as an extension and sets the pin assignments in the appropriate way.
- The accessory kit 472 880 931 2 - without extension - also converts the pin assignment in a socket.

Product number	Accessory kit
894 601 161 2	Adapter (extension cable)
	

Product number	Accessory kit
472 880 931 2	Adapter (extension and pin assignment cable)
	



## Voss connection

- Specific ECAS1 variants have a M16x1.5 Voss pneumatic supply port while the ECAS3 are equipped with an M22x1.5 Voss port. The accessory kits enable a reduction from M22x1.5 to M16x1.5 and assure tightness. The existing pneumatic connection of the vehicle can be used.

Product number	Accessory kit
472 880 932 2	Voss adapter, 2x O-rings (M22x1.5 / M16x1.5), washer



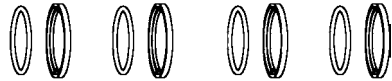
Product number	Accessory kit
472 880 933 2	Voss adapter, O-ring (M22x1.5)



## Pneumatic connection

- Specific ECAS1 valves have standard metric threads on all air ports while all ECAS3 valves have Voss metric connector threads. For these valves, the accessory kit 472 900 931 2 must be used to make the air connection tight.

Product number	Accessory kit
472 900 931 2	4x O-rings



## ECAS™ height sensor

- Type** inductive
- Temperature** -40 ... +80 °C
- Protection class** IP6K9K
- Accessories**
  - Lever:
    - 441 050 711 2 209 mm
    - 441 050 712 2 289 mm
    - 441 050 713 2 299 mm
    - 441 050 714 2 323 mm
    - 441 901 712 2 235 mm
    - 441 905 711 2 248 mm
  - Extension for height sensor lever:
    - 441 050 641 2 215 / 245 / 275 / 305 mm
    - 441 050 718 2 225 / 250 / 275 mm



441 050 012 0



441 050 100 0

Product number	Application	Lever	Electrical connection	Mounting	Distance between holes
441 050 010 0	ECAS Trailer	–	M27x1	4x Ø 9.0 mm	40 / 50 mm
441 050 011 0	ECAS Trailer	–	Bayonet	4x Ø 9.0 mm	40 / 50 mm
441 050 012 0	Trailer central electronic	–	Bayonet	4x Ø 9.0 mm	40 / 50 mm
441 050 100 0	TEBS E	✓	Bayonet	2x Ø 10.9 mm	40 mm

# SUSPENSION CONTROLS

## ECAS™ height sensor - cable

Product number	Length	Application	Cable end
449 626 188 0	L1: 3.0 m; L2: 4.0 m	TEBS E (GIO)	open, 3-strand, 3x 1.0 mm <sup>2</sup> + bayonet socket, ISO 15170-B1-2.1-Sn/K1, 4-pin; code B, 4-pin
449 742 010 0	L: 1.0 m	ECAS	DIN bayonet, ISO 72585-B1-2.1-Sn/K1, 4-pin; open, 2-strand with push-on contacts, PG screw connection 2x 0.75 mm <sup>2</sup>
449 742 030 0	L: 3.0 m		
449 742 050 0	L: 5.0 m		
449 742 060 0	L: 6.0 m		
449 742 100 0	L: 10.0 m		
449 742 150 0	L: 15.0 m		
449 752 010 0	L: 1.0 m	TEBS E (GIO)	Bayonet socket, ISO 72585-B1-3.1-Sn/K1, 4-pin; sensor socket, 3-pin
449 752 020 0	L: 2.0 m		
449 752 030 0	L: 3.0 m		
449 752 080 0	L: 8.0 m		
449 752 100 0	L: 10.0 m		
449 804 228 0	L1: 3.0 m; L2: 5.0 m	Trailer central electronic (2x height sensor, 1x battery box)	3x bayonet socket, DIN 72585-B1-2.1-Sn/K1, 4-pin; X42 height sensor + battery, 6-pin
449 814 228 0	L1: 3.0 m; L2: 5.0 m	Trailer central electronic (height sensor, battery box)	2x bayonet socket, DIN 72585-B1-2.1-Sn/K1, 4-pin; X42 height sensor + battery, 6-pin
449 814 292 0	L1: 5.0 m; L2: 8.0 m		
449 811 010 0	L: 1.0 m	TEBS E (GIO)	Bayonet socket, ISO 15170-B1-2.1-Sn/K1, 4-pin; code B, 4-pin
449 811 030 0	L: 3.0 m		
449 811 050 0	L: 5.0 m		
449 811 080 0	L: 8.0 m		
449 811 120 0	L: 12.0 m		

## ECAS™ pressure sensor

■ Protection class	IP6K7 / IP6K9K
■ Electrical connection	Bayonet DIN 72585 A1-3.1-Sn/K2
■ Admissible overpressure	16 bar
■ Supply voltage	8 ... 32 V (441 044 110 0: 5 V)
■ Sensitivity	0.4 V/bar (441 044 104 0: 0.333 V/bar)
■ Offset	0.5 V
■ Accessory	811 401 057 4 Sealing



Product number	Temperature	Sealing	Measuring	Port
441 044 101 0	-40 ... +80 °C	-	0.00 ... 10.00 bar	M16x1.5
441 044 102 0	-40 ... +80 °C	897 770 250 4	0.00 ... 10.00 bar	M16x1.5
441 044 104 0	-40 ... +80 °C	897 770 250 4	0.00 ... 12.00 bar	M16x1.5
441 044 106 0	-40 ... +80 °C	-	0.00 ... 10.00 bar	¼" NPTF
441 044 107 0	-40 ... +80 °C	-	0.00 ... 10.00 bar	M16x1.5
441 044 108 0*	-40 ... +80 °C	-	0.85 ... 10.85 bar	M16x1.5
441 044 110 0**	-40 ... +100 °C	-	0.00 ... 10.00 bar	M16x1.5

\* only for 3<sup>rd</sup> modulator / EBS relay valve 480 207 ... 0

\*\* for coupling status at WABCO TrailerGUARD

## ECAS™ pressure sensor - cable

Product number	Length	Application	Cable end
449 732 060 0 449 732 100 0	L: 6.0 m L: 10.0 m	ECAS	Bayonet socket, ISO 72585-B1-3.1-Sn/K1, 4-pin; open with push-on contacts and PG screw connection, 3-strand, 3x 0.5 mm <sup>2</sup>
449 812 004 0 449 812 030 0 449 812 040 0 449 812 100 0 449 812 120 0 449 812 180 0 449 812 260 0 449 812 320 0 449 812 440 0	L: 0.4 m L: 3.0 m L: 4.0 m L: 10.0 m L: 12.0 m L: 18.0 m L: 26.0 m L: 32.0 m L: 44.0 m	TEBS E (GIO)	Bayonet socket, ISO 15170-B1-3.1-Sn/K1, 4-pin; Code B, 4-pin

## ECAS™ remote control

### ECAS™ control box

- Voltage 18 ... 32 V
- Temperature -40 ... +70 °C
- Protection class IP6K6K / IP6K9K



Product number	Application	Button: Function
446 156 020 0	Semitrailer with lifting axle (only for trailer central electronic)	1: Stop, 2: Normal level, 3: Lowering, 4: Lifting, 5: Lift axle
446 156 021 0	Semitrailer without lifting axle	1: Stop, 2: Normal level, 3: Lowering, 4: Lifting
446 156 022 0	Semitrailer with lifting axle	1: Stop, 2: Normal level, 3: Lowering, 4: Lifting, 5: Lift axle lowering, 6: Lift axle lifting
446 156 023 0	Drawbar trailer	1: Stop, 2: Normal level, 3: Lowering, 4: Lifting, 5: Lowering front axle, 6: Lowering rear axle

## ECAS™ control box - cable

Product number	Length	Application	Cable end
449 603 060 0	L: 6.0 m	Electronic Extension Module (subsystem)	Code C, 8-pin; bayonet socket, 7-pin
449 627 040 0 449 627 060 0	L: 4.0 m L: 6.0 m	TEBS E (subsystem)	Bayonet socket, 7-pin; code C, 8-pin
449 944 217 0	L1: 12.0 m, L2: 4.5 m, L3: 6.0 m, L4: 0.5 m	TEBS E (subsystem)	2x socket HDSCS 8-pin + bayonet socket, 7-pin; code C, 8-pin
449 637 050 0	L: 5.0 m	ECAS	Bayonet socket, 7-pin; open with push-on contacts and PG screw connection, 7-strand, 3x 1.5 mm <sup>2</sup> , 4x 0.5 mm <sup>2</sup>

# SUSPENSION CONTROLS

## ECAS™ remote control unit

■ Temperature	-40 ... +70 °C	
■ Protection class	IP64	
■ Accessories	446 056 010 4	Holder for ECAS RCU -Q
	446 056 052 4	Support
	446 056 053 4	Mounting support



446 056 117 0

Product number	Voltage	Application
446 056 117 0	24 V	semitrailer / drawbar trailer with lift axle
446 056 125 0	12 V	semitrailer without lift axle
446 056 202 0	24 V	semitrailer / drawbar trailer with lift axle (for trailer central electronic)
446 056 250 0	24 V	truck / trailer
446 056 251 0	24 V	truck / trailer
446 056 254 0	24 V	truck / trailer
446 056 401 0	12 V	truck / trailer



446 056 250 0

## ECAS™ remote control unit - cable

Product number	Length	Application	Cable end
449 602 060 0	L: 6.0 m	Electronic suspension module (subsystem)	Code C, 8-pin; Socket, remote control unit
449 628 050 0	L: 5.0 m	TEBS E (subsystem)	Socket remote control unit; code C, 8-pin
449 632 015 0	L: 1.5 m	ECAS	open with push-on contacts and PG screw connection, 4-strand, 4x 0.5 mm <sup>2</sup> ; socket remote control unit
449 632 050 0	L: 5.0 m		
449 632 080 0	L: 8.0 m		
449 632 100 0	L: 10.0 m		
449 912 234 0	L1: 7.0 m, L2: 5.0 m		
449 926 234 0	L1: 5.0 m, L2: 7.0 m, L3: 1.0 m	Electronic suspension module (subsystem)	Bayonet socket, 7-pin + remote control unit socket; code C, 8-pin

## SmartBoard

- A convenient option for ECAS control is the use of an existing trailer-mounted SmartBoard.
- Designed to control and monitor a wide range of trailer functionality, the SmartBoard can access all ECAS functions. You can find more information in chapter "Retrofit solutions".



## Trailer remote control

- Holder and connecting cable included
- **Operation:** Traction help, Forced lowering, Manoeuvring assistance (OptiTurn™), Load reduction (OptiLoad™), Driving level I / II, ECAS lifting /lowering, Unloading level

Product number	Voltage	Temperature	Protection class
446 122 080 0	10 ... 30 V	-40 ... +85 °C	IP42



## eTASC

- **Temperature** -40 ... +65 °C
- **Working pressure** 10 bar
- **Protection class** IP6K/9K
- **Port 3** Exhaust



Product number	Locking in		Port			
	lifting	lowering	1	22	24	26
463 090 500 0	–	✓	Ø 12x1.5	Ø 12x1.5	Ø 12x1.5	test connection
463 090 501 0	–	✓	Ø 8x1	Ø 8x1	Ø 8x1	test connection
463 090 502 0	–	✓	M16x1.5	M16x1.5	M16x1.5	–
463 090 503 0	✓	✓	M16x1.5	M16x1.5	M16x1.5	test connection
463 090 504 0	–	✓	Ø 8x1	Ø 12x1.5	Ø 12x1.5	test connection
463 090 505 0	–	✓	M16x1.5	blind plug	M16x1.5	test connection
463 090 510 0	–	–	M16x1.5	M16x1.5	M16x1.5	–

## Repair solutions

Product number	Repair kit	Content	Product number	Repair kit	Content
■ 463 090 500 0	463 090 922 2	Hand grip	■ 463 090 504 0	463 090 922 2	Hand grip
■ 463 090 501 0	463 090 922 2	Hand grip	■ 463 090 505 0	463 090 922 2	Hand grip
■ 463 090 502 0	463 090 922 2	Hand grip	■ 463 090 510 0	463 090 922 2	Hand grip
■ 463 090 503 0	463 090 922 2	Hand grip			










## eTASC - cable

Product number	Length	Application	Cable end
449 445 010 0 449 445 030 0 449 445 050 0 449 445 060 0	L: 1.0 m L: 3.0 m L: 5.0 m L: 6.0 m	TEBS E (GIO)	Bayonet socket, ISO 15170-B1-3.1-Sn/K1, 4-pin; code B, 4-pin

















# Intelligent Trailer Program

## It's What's Inside That Counts

### ADVANCED SAFETY






-  Anti-Lock Braking Function
-  Rollover Stability Support
-  TiltAlert
-  Emergency Brake Alert
-  Router & Repeater
-  SafeStart
-  Electronic Park Brake
-  Bounce Control
-  TailGUARD™

### OPERATIONAL EFFICIENCY







-  OptiLevel™
-  Return-to-Load Level
-  Memory Level
-  OptiLink™
-  TX-TRAILERGUARD™
-  TX-TRAILERPULSE™
-  Optilock™
-  Immobilizer
-  Operating Data Recorder
-  Notebook Memory
-  OptiTurn™
-  Trailer Extension Control
-  Battery Control
-  8 - 32 V Advanced Multivoltage
-  Service Mind
-  Brake Pad Wear Indicator










### LOAD OPTIMIZATION

-  Overload Indicator
-  OptiLoad™
-  OptiLevel™ 2-Point
-  Air Bellows Protector
-  Forklift Control

### FUEL & CO<sub>2</sub> REDUCTION

-  Fuel Saving Suspension
-  OptiTire™
-  Lift Axle Control
-  OptiFlow™ SideWings
-  OptiFlow™ Tail
-  OptiFlow™ AutoTail

### DRIVER COMFORT AND EFFECTIVENESS

-  Trailer Remote Control
-  New SmartBoard
-  Return-to-Ride
-  Steering Axle Lock
-  Finisher Brake
-  Traction Help
-  Trailer Length



# Retrofit solutions

## OptiTire™ - tire pressure monitoring system

OptiTire is a tire pressure monitoring system. It helps to:

- prevent downtime related to tire defects
- reduce the frequency and costs of tire replacement
- prevent increased fuel consumption due to underinflation

### OptiTire™ electronic control unit (ECU)

■ <b>Description</b>	receives the sensor signals and recognises all changes from programmed nominal tire pressure values.	
■ <b>Temperature</b>	-40 ... +85 °C	
■ <b>Mounting</b>	2x Ø 11.0 mm	
■ <b>Distance between holes</b>	182 mm	
■ <b>Accessory</b>	446 220 000 4	Fixing bracket (supports mounting of the ECU)
■ <b>Diagnostics</b>	Diagnostic software OptiTire	
■ <b>Training</b>	E-learning: OptiTire 200 300 011 0	



Product number	Application	Electrical connection	Voltage
446 220 110 0	Trailer, trailer train	HDSCS Code A	12 / 24 V

### OptiTire™ cable

Product number	Length (m)	Application	Cable end
449 376 070 0*	L: 7.0	open end	open, 7-strand with push-on contacts and PG screw connection, 7x 0.5 mm <sup>2</sup> ; bayonet socket, 7-pin
449 376 250 0*	L: 25.0		
449 674 273 0*	L1: 6.0; L2: 7.0	Trailer vehicle cable set	Diagnosis socket with blue cap, 7-pin, bayonet socket, 7-pin; open, 3-strand, 3x 0.5 mm <sup>2</sup>
449 674 306 0*	L1: 2.0; L2: 10.0		
449 377 030 0*	L: 3.0	TEBS D	Bayonet socket, 7-pin; X3 IN/OUT 2, 8-pin
449 377 080 0*	L: 8.0		
449 913 050 0*	L: 5.0	TEBS E (subsystem)	Bayonet socket, 7-pin; code C, 8-pin
449 916 182 0*	L1: 0.4; L2: 4.0	TEBS E (subsystem) and SmartBoard	2x bayonet socket, 7-pin; code C, 8-pin
449 916 243 0*	L1: 1.0; L2: 6.0		
449 916 253 0*	L1: 6.0; L2: 6.0		
449 934 330 0	L1: 12.0; L2: 1.0; L3: 4.0; L4: 0.5; L5: 6.0	TEBS E (subsystem), OptiLink and SmartBoard	2x HDSCS, 8-pin; code C, 8-pin + bayonet socket, 7-pin
449 944 217 0	L1: 12.0; L2: 4.5; L3: 6.0; L4: 0.5	TEBS E (subsystem), OptiLink and control box	2x HDSCS, 8-pin + bayonet socket, 7-pin; code C, 8-pin
449 927 050 0	L: 5.0	TEBS E (GIO 5)	Socket HDSCS, 8-pin; code B, 4-pin
449 927 120 0	L: 12.0		
449 925 253 0*	L1: 6.0; L2: 6.0; L3: 0.4	Electronic extension module and SmartBoard	2x bayonet socket, 7-pin; code C, 8-pin
894 600 001 2	L: 0.15	Adapter cable	Socket HDSCS, 8-pin; bayonet plug, 7-pin

\* In addition, adapter cable 894 600 001 2 needed

## OptiTire™ external sensor - wheel module 2 (WM2)

■ <b>Pressure</b>	2 ... 14 bar correspond to the nominal values of pressures from 3 ... 10 bar
■ <b>Temperature</b>	-40 ... +90 °C, 24 h up to 120 °C
■ <b>Protection class</b>	IP 6K6K / 6K7 / 6K9K
■ <b>Transmission interval</b>	With constant pressure: 9 min In dependency to measured values (e.g. pressure loss or speed detection) the transmission interval decreases
■ <b>Counterweight</b>	Required. Twin tires: two external sensors and no counterweight
■ <b>Installation</b>	Fastening by means of standard wheel nuts on the outside of the rim Connected via a PA tube to the valve
■ <b>Start-up</b>	With magnet or WABCO TPMS Manager 300 200 001 0
■ <b>Retrofit</b>	Tires do not need to be removed from the rim
■ <b>Port</b>	1: VG 8 2: Voss 203 Ø 6x1.5



WM2 without bracket



WM2 with B shape bracket



WM2 with T shape bracket

Product number	Application	Bracket shape	Ø Bolt hole	Ø Hole	Angle		
					Port	between holes	Bracket
960 731 001 0	Single pressure sensor without bracket (for own bracket application)	-	-	2x M4	90°	-	-
960 731 003 0	Single pressure sensor without bracket (for own bracket application)	-	-	2x M4	170°	-	-
960 731 011 0	Trailer: independent wheel (no Super-Single)	B	335.00 mm	2x Ø 26 mm	90°	36°	0°
960 731 013 0	Trailer: independent wheel (no Super-Single), 20° for special purposes (e.g. Iveco)	B	335.00 mm	2x Ø 23 mm	170°	36°	0°
960 731 017 0	Trailer: independent wheel (no Super-Single), 23 mm pitch circle diameter	B	335.00 mm	2x Ø 23 mm	90°	36°	0°
960 731 019 0		B	425.00 mm	2x Ø 23 mm	90°	30°	0°
960 731 021 0	Trailer: independent wheel (no Super-Single)	B	335.00 mm	2x Ø 32 mm	90°	36°	0°
960 731 031 0	Twin tires, Super-Single	T	335.00 mm	2x Ø 26 mm	170°	36°	70°
960 731 041 0	Twin tires, Super-Single	T	335.00 mm	2x Ø 32 mm	170°	36°	70°
960 731 071 0	American rims, single tire trailer	B	285.75 mm	2x Ø 26 mm	170°	36°	0°
960 731 073 0	Twin tires, Super-Single	T	285.75 mm	2x Ø 26 mm	170°	36°	70°
960 731 081 0	Twin tires, Super-Single	T	225.00 mm	2x Ø 26 mm	170°	36°	70°
960 731 100 0		-	-	2x M4	90°	-	-
960 731 130 0		T	335.00 mm	2x Ø 26 mm	170°	36°	70°

## Counterweight




- **Description** To prevent the external sensor causing an imbalance on the wheel. Not needed for axles with twin tires.



Product number	Application	Hole, wheel, bolt	Ø Bolt hole	Angle
960 905 820 4	Counterweight independent wheels	2x 26 mm	335 mm	0°
960 905 821 4	Counterweight independent wheels	2x 32 mm	335 mm	0°
960 730 820 4	Counterweight independent wheels	2x 26 mm	335 mm	0°

## Connecting tube

- **Description** Connects the external sensors to the tires

Product number	Product
960 731 800 0	
960 731 801 0	
960 731 802 0	

## OptiTire™ valve-mounted internal sensor (WIS)

- **Pressure** 0 ... 13 bar correspond to the nominal values of pressures from 3 ... 10 bar
- **Temperature** -40 ... +120 °C
- **Transmission interval** With constant pressure: every minute  
In dependency to measured values (e.g. pressure loss or speed detection) the transmission interval decreases
- **Installation** Installation on the rim by means of valve neck
- **Start-up** With WABCO TPMS Manager 300 200 001 0
- **Retrofit** Tires need to be removed from the rim



Product number	Diameter	Mounting	Protection class
960 732 000 0	Ø 540 mm	1x 6.2x10 mm	IP 5K4

## Valve set

- **Content** Valve, nut and locking screw (without internal sensor WIS)



Product number	Application	Surface	Outer contour
960 732 100 0	Standard steel rims 17 ... 22.5"	Brass	ETRTO V0.07.3
960 732 101 0	Standard steel rims 17 ... 22.5", tighter rim crank	Nickel	ETRTO V3.22.1
960 732 102 0	Standard steel rims 17 ... 22.5", additional 5° inclined section	Nickel	ETRTO V3.22.1

# RETROFIT SOLUTIONS

## OptiTire™ strap-mounted internal sensor (SMS)

■ <b>Pressure</b>	0 ... 13 bar correspond to the nominal values of pressures from 3 ... 10 bar
■ <b>Transmission interval</b>	With constant pressure: every minute In dependency to measured values (e.g. pressure loss or speed detection) the transmission interval decreases
■ <b>Installation</b>	Installation on the rim by means of fastening strap
■ <b>Start-up</b>	With WABCO TPMS Manager 300 200 001 0
■ <b>Retrofit</b>	Tires need to be removed from the rim
■ <b>Product number</b>	960 733 000 0 Strap-mounted sensor



## Fastening straps

Product number	Ø Rim	Colour of seam	Adjustable circumference
960 733 117 0	17.5"	red	1200 ... 1350 mm
960 733 119 0	19.5"	blue	1300 ... 1450 mm
960 733 122 0	22.5"	yellow	1535 ... 1685 mm
960 733 124 0	24.5"	green	1725 ... 1875 mm



300 200 001 0



446 223 000 0

## OptiTire™ accessories

Product number	Product	Description
300 200 001 0	TPMS manager	Sensor activation and readout tool to read and activate the external and internal sensors of tire pressure monitoring systems
446 223 000 0	ECU tire pressure indicator	Works as a warning display installed directly on the trailer. It complements the display in the tractor. The WABCO Trailer EBS supplies the required voltage.

# OptiLock™ security solutions

## Mechanical locking system

### Locking variants

- **Keyed different (kd)** 3 keys per lock. The keys can only open one lock.
- **Master keyed different (mkd)** 3 keys per lock + 1 master key per master system. The keys can only open one lock. The master key can open all the locks in the master system.
- **Keyed alike (ka)** 1 key per lock + 1 spare key per ka system. All locks with the same ka closure can be opened with one key.
- **Master keyed alike (mka)** 1 key per lock + 1 spare key per ka system + 1 master key per master system. All locks with the same ka closure can be opened with one key. The master key can open all the locks in the master system.

### Door lock variable - One Way

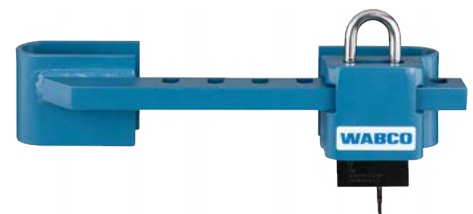
- **Description** single-use keyless locking and sealing system
- **Security level** high
- **Application** for door bar distances from 265 ... 470 mm; container storage, container transport - on road, container transport - shipped overseas



Product number	Product	Locking variant
183 210 160 0	One Way	keyless

### Door lock variable - Basis

- **Description** Padlock operated system
- **Security level** high
- **Application** for door bar distances from 200 ... 450 mm; containers with door bars on the outside, swap bodies with door bars on the outside, trailers with door bars on the outside
- **Spare parts** 183 210 061 2 Basis without padlock  
183 100 001 4 13 mm Mul-T-Lock® padlock kd



Product number	Product	Locking variant
400 608 050 0	Basis	keyed different
400 608 051 0	Basis	keyed alike
400 608 053 0	Basis	master keyed different
400 608 054 0	Basis	master keyed alike

# RETROFIT SOLUTIONS

## Door lock variable - Omega

- **Description** Padlock operated system
- **Security level** very high
- **Application** containers with door bars on the outside, swap bodies with door bars on the outside, trailers with door bars on the outside
- **Certified** VdS M114341 (Germany); only valid with 13 mm Mul-T-Lock® padlock
- **Spare parts** 183 210 080 2 Omega without padlock  
183 100 001 4 13 mm Mul-T-Lock® padlock kd



Product number	Product	Locking variant
400 608 150 0	Omega	keyed different
400 608 151 0	Omega	keyed alike
400 608 153 0	Omega	master keyed different
400 608 154 0	Omega	master keyed alike

## Door lock fixed - TTB & TTB stainless steel

- **Description** Padlock operated system
- **Security level** high
- **Application** locking the right door  
swap bodies, trailers with swing doors
- **Optional & spare parts** 183 210 040 2 TTB without padlock  
183 210 041 2 TTB stainless steel without padlock  
183 100 001 4 13 mm Mul-T-Lock® padlock kd  
183 510 060 4 Locking element (for left door)



TTB



TTB stainless steel

Product number	Product	Locking variant
400 608 100 0	TTB	keyed different
400 608 101 0	TTB	keyed alike
400 608 104 0	TTB	master keyed different
400 608 106 0	TTB	master keyed alike
400 608 102 0	TTB stainless steel	keyed different
400 608 103 0	TTB stainless steel	keyed alike
400 608 105 0	TTB stainless steel	master keyed different
400 608 107 0	TTB stainless steel	master keyed alike

## Door lock fixed - TLB

- **Description** Padlock operated system
- **Security level** very high
- **Application** locking the right & left door  
containers, swap bodies, trailers with swing doors
- **Certified** VdS M118313 (Germany); only valid with 13 mm Mul-T-Lock® padlock
- **Optional & spare parts** 183 410 406 0 TLB without padlock  
183 100 001 4 13 mm Mul-T-Lock® padlock kd



Product number	Product	Locking variant
400 608 200 0	TLB	keyed different
400 608 202 0	TLB	keyed alike
400 608 201 0	TLB	master keyed different
400 608 203 0	TLB	master keyed alike



## Door lock fixed - TSR-2fiXX

■ <b>Description</b>	integrated, patented ABLOY® cylinder with ABLOY® PROTEC keys	
■ <b>Security level</b>	very high	
■ <b>Application</b>	locking the right & left door containers, swap bodies, trailers with swing doors	
■ <b>Mounting type</b>	screwed	
■ <b>Certified</b>	VdS M 106339 (Germany) only valid with ASSA ABLOY® cylinder CL684N; SBSC No. 10-377 (Sweden) only valid with ASSA ABLOY® cylinder CL684N	
■ <b>Optional &amp; spare parts</b>	183 210 006 2	Pin (TSR-2fiXX)
	183 410 007 2	Pin (TSR-2fiXX, 50x20x20 mm)
	183 350 000 4	Stencil (TSR-2fiXX)
	183 210 009 4	Locking element (TSR-2fiXX)
	183 210 000 4	TSR-2fiXX Housing head without cylinder
	183 120 001 4	ABLOY® cylinder CL684 kd



Product number	Product	Locking variant
183 410 006 2	TSR-2fiXX	keyed different
183 410 001 0	TSR-2fiXX	keyed alike
183 410 006 0	TSR-2fiXX	master keyed different

## Door lock fixed - TSR-2fiXX weld

■ <b>Description</b>	integrated, patented ABLOY® cylinder with ABLOY® PROTEC keys	
■ <b>Security level</b>	very high	
■ <b>Application</b>	locking the right & left door containers, swap bodies, trailers with swing doors	
■ <b>Mounting type</b>	welded	
■ <b>Certified</b>	TSR-2fiXX: VdS M 106339 (Germany) only valid with ASSA ABLOY® cylinder CL684N; SBSC No. 10-377 (Sweden) only valid with ASSA ABLOY® cylinder CL684N	
■ <b>Optional &amp; spare parts</b>	183 210 000 4	TSR-2fiXX Housing head without cylinder
	183 120 001 4	ABLOY® cylinder CL684 kd



Product number	Product	Locking variant
183 410 007 2	TSR-2fiXX weld	keyed different
183 410 003 0	TSR-2fiXX weld	keyed alike
183 410 007 0	TSR-2fiXX weld	master keyed different

## Vehicle securing device - King Pin C

■ <b>Description</b>	integrated, patented ABLOY® cylinder with ABLOY® PROTEC keys	
■ <b>Security level</b>	very high	
■ <b>Application</b>	only for 2" (Ø 75 mm) king pins	
■ <b>Spare parts</b>	183 120 001 4	ABLOY® cylinder CL684 (keyed different)



Product number	Product	Locking variant
183 440 100 0	King Pin C	keyed different
183 440 101 0	King Pin C	keyed alike
183 440 103 0	King Pin C	master keyed different

## Vehicle securing device - W45

- **Description** integrated, patented ABLOY® cylinder with ABLOY® PROTEC keys
- **Security level** very high
- **Spare parts**

183 240 020 2	W45 without cylinder
183 120 001 4	ABLOY® cylinder CL684 (keyed different)



Product number	Product	Locking variant
183 440 203 0	W45	keyed different
183 440 204 0	W45	keyed alike
183 440 205 0	W45	master keyed different

## Vehicle securing device - Drawbar C

- **Description** integrated, patented ABLOY® cylinder with ABLOY® PROTEC keys
- **Security level** very high
- **Spare parts** 183 120 020 4 ABLOY® cylinder CL290N (keyed different)



Product number	Product	Locking variant
183 440 000 0	Drawbar C	keyed different
183 440 001 0	Drawbar C	keyed alike

## Electronic door lock system ELB-Lock®

The ELB-Lock is an electronic door lock system that supports a flexible multi-stage security concept. Wireless operation offers an extra measure of protection.

### ELB-Lock® sets

Product number	Product	ELB-Lock set (Product number 400 608 ... )						
		... 714 0	... 715 0 90	... 716 0 Built in	... 717 0 Built up	... 718 0 Built in	... 719 0 Built up	Variant 5
183 510 202 0	Door lock (ELB-Lock)	1x	–	1x	1x	1x	1x	1x
183 510 241 0	Door lock (ELB-Lock 90)	–	1x	–	–	–	–	–
183 510 053 4	Baseplate (ELB-Lock)	1x	–	–	–	–	–	–
183 510 060 4	Locking element (for left door)	1x	–	1x	1x	–	–	–
183 540 000 0	Spiral cable wrap	1x	–	1x	1x	1x	1x	1x
183 550 078 4	Protection cover	2x	–	–	–	–	–	2x
183 550 076 0	Emergency tool	1x	1x	1x	1x	1x	1x	1x
183 530 000 0	Control unit (ICM)	1x	1x	1x	1x	1x	1x	1x
183 530 021 4	Keypad frame without USB cable (ICM)	1x	–	1x	1x	1x	1x	1x
183 521 000 4	USB cable (0.5 m) for keypad	1x	–	1x	1x	1x	1x	1x
183 550 080 2	Waterproof box for keypad (ICM)	–	1x	–	–	–	–	–
183 542 000 4	Door lock panel (AA-frame)	–	–	–	–	–	–	1x
183 542 050 4	Door lock panel (right, built-up)	–	–	–	1x	–	1x	–
183 542 051 4	Door lock panel (right, built-in)	–	–	1x	–	1x	–	–

Product number	Product	ELB-Lock set (Product number 400 608 ... )						
		... 714 0	... 715 0 90	... 716 0 Built in	... 717 0 Built up	... 718 0 Built in	... 719 0 Built up	Variant 5
183 542 052 4	Door lock panel (left, built-up)	–	–	–	–	–	1x	–
183 542 053 4	Door lock panel (left, built-in)	–	–	–	–	–	–	–
183 540 053 4	Distributor box (cube frame)	–	–	1x	1x	1x	1x	1x
183 545 001 4	Adhesive Sikafast 5221 NT	–	–	–	1x	–	1x	2x
183 545 003 4	Mixer	–	–	–	1x	–	1x	2x
183 545 002 4	Cleaner	–	–	–	1x	–	1x	1x
183 542 103 4	Protection plate	–	–	–	–	6x	6x	–
183 540 070 4	Bushing	–	–	–	–	–	–	2x
183 540 071 4	Bushing (el.)	–	–	–	–	–	–	2x

## ELB-Lock® motor

- **Accessories**
  - 183 510 053 4 Baseplate (ELB-Lock)
  - 183 550 076 0 Emergency tool
  - 183 521 100 2 Accessory emergency tool
- **Replacement parts**
  - 183 510 403 4 Frame (ELB-Lock 90)
  - 183 510 404 2 Guide tube with scraper Ø 40 mm (ELB-Lock 90)
  - 183 520 149 4 Scraper Ø 40 mm (ELB-Lock 90)
  - 183 550 071 4 Locking element (ELB-Lock 90)
  - 183 550 073 4 Bolt extension (ELB-Lock 90)



Product number	Product
183 510 202 0	Door lock (ELB-Lock)
183 510 241 0	Door lock (ELB-Lock 90)
183 510 270 0	Door lock (Mini ELB-Lock)
183 510 271 0	Door lock with key (Mini ELB-Lock)

## ELB-Lock® control unit

- **Accessories and repair kits**
  - 183 521 000 4 USB cable (0.5 m) for keypad
  - 183 530 021 4 Keypad frame without USB cable (ICM)
  - 183 530 022 4 Frame (for mounting of ICM in isolated doors)
  - 183 550 080 2 Waterproof box for keypad (ICM)
  - 183 530 000 2 Repair kit control unit (ICM)
  - 183 545 005 4 Contact paste 30 ml



Product number	Product
183 530 000 0	Control unit (ICM)

# RETROFIT SOLUTIONS

## Door lock panel (cube frames & AA-frame)

■ Adhesive (cube frame & AA-frame)	183 545 001 4	Adhesive Sikafast 5221 NT
	183 545 002 4	Cleaner
	183 545 003 4	Mixer
■ Distributor box (cube frame & AA-frame)	183 540 053 4	Distributor box (cube frame)
	183 540 070 4	Bushing
	183 540 071 4	Bushing (el.)
■ Accessories	183 542 103 4	Protection plate
	183 555 003 4	Battery (AA-frame, 6 V)

Product number	Product
–	Door lock panel (AA-frame)
183 542 050 4	Door lock panel (right, built-up)
183 542 051 4	Door lock panel (right, built-in)
183 542 052 4	Door lock panel (left, built-up)
183 542 053 4	Door lock panel (left, built-in)

## ELB-Lock® sensor



183 523 008 2



183 523 010 4



183 523 051 4



183 523 052 4

Product number	Product
183 523 000 4	Sensor 90×20×20 mm for left door & emergency hatch
183 523 008 2	Magnetic sensor
183 523 010 4	Sensor (130×50×20 mm) for right door, middle plate, keypad (ICM)
183 523 051 4	Magnet (13×13×6 mm) for right door, keypad, middle plate, emergency hatch, door handle
183 523 052 4	Magnet (8×8×5 mm) for sensor left door

## ELB-Lock® cable



183 521 001 4



183 521 021 4



183 521 023 4

Product number	Product
183 521 000 4	Cable USB (0.5 m)
183 521 001 4	Cable USB (5.0 m)
183 521 021 4	Cable (4 pol. ext. IMM 5.0 m)
183 521 023 4	Cable (7 pol. ext. IMM 5.0 m)

## ELB-Lock® accessories



183 510 070 4



183 510 060 4



183 520 000 4



183 520 020 4

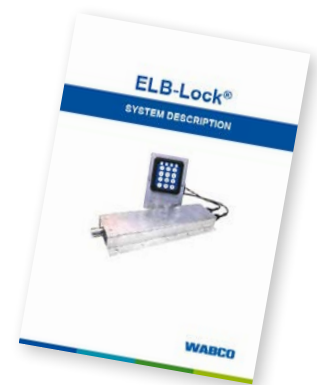


183 540 100 4

Product number	Product
183 510 070 4	Bolt for sidewall without capsule
183 510 087 4	Capsule
183 510 060 4	Locking element (for left door)
183 520 000 4	Siren
183 520 020 4	Flashlight 12/24 V
183 520 040 4	Push-button
183 540 000 0	Spiral cable wrap
183 540 100 4	Cover 205x67x30 mm
183 540 101 4	Cover 205x80x30 mm
183 550 078 4	Protection cover
183 551 003 4	Sticker
183 555 004 0	Battery (power pack)

## ELB-Lock® documentation & software

Product number	Product
200 300 625 0	ELB-Lock documentation & software (1 <sup>st</sup> order)
200 300 627 0	ELB-Lock documentation & software (reorder)



## ELB-Lock® training

Product number	Product
200 1 .. 625 0	OptiLock system training
200 1 .. 626 0	OptiLock installation training

## SmartBoard

- **Description** Multifunctional system that serves as a universal information and control system for implementing efficient trailer operation
- **Voltage** 12 ... 24 V DC
- **Mounting** 4x Ø 9.5 mm
- **Distance between holes** 153x55 mm
- **Accessory** 446 192 650 4 Cover
- **Diagnostics** Diagnostic software SmartBoard

Product number	Product	Comment
446 192 110 0	SmartBoard	
446 192 111 0	SmartBoard ADR	without battery, for ADR (GGVS) vehicles
446 192 210 0	SmartBoard	successor of 446 192 110 0; with HDSCS; adapter 894 600 074 2 needed
446 192 211 0	SmartBoard ADR	successor of 446 192 111 0; with HDSCS; adapter 894 600 074 2 needed; without battery, for ADR (GGVS) vehicles



446 192 110 0



446 192 210 0

## Repair solutions

Product number	Repair kit	Content
■ 446 192 110 0	446 192 920 2	Battery

## SmartBoard cable

Product number	Length (m)	Application	Cable end
449 911 040 0	L: 4.0	TEBS E (subsystem)	Code C, 8-pin; bayonet socket, 7-pin
449 911 060 0	L: 6.0		
449 911 120 0	L: 12.0		
449 916 182 0	L1: 0.4; L2: 4.0	TEBS E (subsystem) and OptiTire	2x bayonet socket, 7-pin; code C, 8-pin
449 916 243 0	L1: 1.0; L2: 6.0		
449 916 253 0	L1: 6.0; L2: 6.0		
449 934 330 0	L1: 12.0; L2: 1.0; L3: 4.0; L4: 0.5; L5: 6.0	TEBS E (subsystem), OptiLink and OptiTire	2x HDSCS, 8-pin; code C, 8-pin + bayonet socket, 7-pin
894 600 074 2	L: 0.15	Adapter cable	Socket HDSCS, 8-pin; bayonet plug, 7-pin



## OptiLink™

OptiLink is a mobile app that allows truck drivers and fleet operators to monitor and control 18 trailer functions wirelessly from an Android or iOS smartphone. It improves safe operation by allowing the driver to control trailer functions from the protection of the cab or from a safe position outside.

### OptiLink™ Electronic Control Unit (ECU)

■ Temperature	−40 ... +85 °C
■ Mounting	2× Ø 11.0 mm
■ Distance between holes	182 mm
■ Accessory	446 220 000 4 Mounting bracket



Product number	Product	Electrical connection	Voltage
446 290 700 0	OptiLink ECU	HDSCS connector 8-pin.	12 / 24 V

### OptiLink™ cable

Product number	Length (m)	Application	Cable end
449 913 050 0*	L: 5.0	TEBS E (subsystem)	Bayonet socket, 7-pin; code C, 8-pin
449 927 050 0	L: 5.0	TEBS E (GIO 5)	Socket HDSCS, 8-pin; code B, 4-pin
449 927 120 0	L: 12.0		
449 916 182 0*	L1: 0.4; L2: 4.0	TEBS E (subsystem) and SmartBoard	2× bayonet socket, 7-pin; code C, 8-pin
449 916 243 0*	L1: 1.0; L2: 6.0		
449 916 253 0*	L1: 6.0; L2: 6.0		
449 925 253 0*	L1: 6.0; L2: 6.0; L3: 0.4	Electronic extension module and SmartBoard	2× bayonet socket, 7-pin; code C, 8-pin
449 934 330 0	L1: 12.0; L2: 1.0; L3: 4.0; L4: 0.5; L5: 6.0	TEBS E (subsystem), OptiLink and SmartBoard	2× HDSCS, 8-pin; code C, 8-pin + bayonet socket, 7-pin
449 944 217 0	L1: 12.0; L2: 4.5; L3: 6.0; L4: 0.5	TEBS E (subsystem), OptiLink and control box	2× HDSCS, 8-pin + bayonet socket, 7-pin; code C, 8-pin
894 600 001 2	L: 0.15	Adapter cable	Socket HDSCS, 8-pin; bayonet plug, 7-pin

\* Adapter cable 894 600 001 2 additional needed for usage with OptiLink ECU.

### OptiLink™ set

Product number	Product	OptiLink set			
		400 607 921 0	400 607 922 0	400 607 923 0	400 607 924 0
446 290 700 0	OptiLink ECU	1x	1x	1x	1x
446 220 000 4	Mounting bracket	1x	1x	1x	1x
449 916 253 0	Y cable, L1: 6 m, L2: 6 m	–	–	–	1x
449 925 253 0	Y cable, L1: 6 m, L2: 6 m	–	–	1x	–
449 927 050 0	Gio 5 cable, L: 5 m	–	1x	–	–
449 927 120 0	Gio 5 cable, L: 12 m	1x	–	–	–
894 600 001 2	Adapter cable, L: 0.15 m	–	–	1x	1x

## OptiFlow™ SideWings

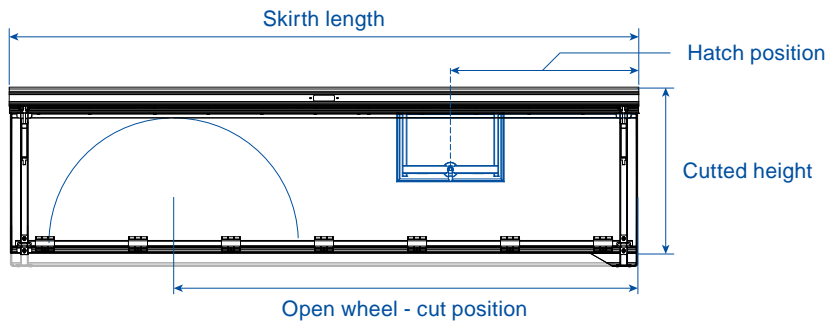
- Contoured to minimize drag by better guiding airflow around the truck
- Will give any trailer a more fuel-efficient aerodynamic shape

### Variants



- **Cut**      Cut at the bottom; higher clearance at the axles >50 mm
- **Jump**      First panel transition for panels with cut
- **Open wheel**      Open wheel MidSkirt for steering axles
- **Latch base**      Latch base at the top front; it is used after a flow conductor rotation
- **Prime**      Primed base layer, uncoloured skirts
- **Hatch**      For easy access to control devices

### MidSkirt dimensions



## OptiFlow™ SideWings - MidSkirt

Product number	Skirt length (mm)	Side of mounting	Comment
181 110 001 0	2700	left	
181 110 001 1	2700	left	prime
181 110 002 0	2700	right	
181 110 002 1	2700	right	prime
181 110 003 0	2700	left	cut
181 110 004 0	2700	right	cut
181 110 005 0	2700	left	jump
181 110 005 1	2700	left	prime; jump
181 110 006 0	2700	right	jump
181 110 006 1	2700	right	prime; jump
181 110 007 0	2600	left	
181 110 008 0	2600	right	
181 110 011 0	2500	left	
181 110 012 0	2500	right	
181 110 015 0	2400	left	
181 110 016 0	2400	right	
181 110 019 0	2400	left	jump
181 110 020 0	2400	right	jump

Product number	Skirt length (mm)	Side of mounting	Comment
181 110 021 0	2300	left	
181 110 021 1	2300	left	prime
181 110 022 0	2300	right	
181 110 022 1	2300	right	prime
181 110 023 0	2300	left	cut
181 110 024 0	2300	right	cut
181 110 025 0	2200	left	
181 110 026 0	2200	right	
181 110 027 0	2200	left	cut
181 110 028 0	2200	right	cut
181 110 029 0	2100	left	
181 110 029 1	2100	left	prime
181 110 030 0	2100	right	
181 110 030 1	2100	right	prime
181 110 031 0	2100	left	cut
181 110 031 1	2100	left	cut; prime
181 110 032 0	2100	right	cut
181 110 032 1	2100	right	cut; prime
181 110 033 0	2000	left	cut
181 110 034 0	2000	right	cut
181 110 035 0	1900	left	cut
181 110 036 0	1900	right	cut
181 110 037 0	1800	left	cut
181 110 038 0	1800	right	cut
181 110 039 0	1700	left	cut
181 110 040 0	1700	right	cut
181 110 043 0	2000	left	
181 110 044 0	2000	right	
181 110 045 0	1900	left	
181 110 045 1	1900	left	prime
181 110 046 0	1900	right	
181 110 046 1	1900	right	prime
181 110 049 0	1700	left	
181 110 050 0	1700	right	
181 110 063 0	1400	left	cut
181 110 064 0	1400	right	cut
181 110 065 0	1400	left	
181 110 066 0	1400	right	
181 110 089 0	2100	left	jump
181 110 090 0	2100	right	jump
181 112 001 0	2700	left	latch base
181 112 002 0	2700	right	latch base
181 112 002 1	2700	right	latch base; prime
181 112 004 0	2600	right	latch base
181 112 006 0	2500	right	latch base
181 112 008 0	2400	right	latch base
181 112 012 0	2200	right	latch base
181 112 014 0	2100	right	latch base
181 112 020 0	1400	right	latch base
181 112 028 0	2000	right	latch base
181 113 001 0	1900	left	hatch; cut
181 113 003 0	2100	left	hatch; cut
181 114 001 0	1450	left	open wheel

# RETROFIT SOLUTIONS

Product number	Skirt length (mm)	Side of mounting	Comment
181 114 002 0	1450	right	open wheel
181 114 011 0	1900	left	open wheel
181 114 014 0	1900	right	open wheel
181 114 015 0	2300	left	open wheel
181 114 017 0	2700	left	open wheel
181 114 026 0	2100	right	open wheel; cut
181 114 027 0	2200	left	open wheel
181 114 030 1	1700	right	open wheel; prime
181 114 031 1	1700	left	open wheel; prime



## OptiFlow™ SideWings - EndSkirt

Product number	Position of backdoor retainer	Side of mounting	Comment
181 120 001 0	basic	left	–
181 120 002 0	basic	right	–
181 120 003 0	basic	left	cut
181 120 004 0	basic	right	cut
181 120 005 0	basic	left	hatch
181 120 006 0	basic	right	hatch
181 120 007 0	basic	left	cut; hatch
181 120 009 0	closer to the front	left	–
181 120 010 0	closer to the front	right	–
181 120 011 0	closer to the front	left	cut
181 120 012 0	closer to the front	right	cut
181 120 013 0	closer to the front	left	hatch
181 120 014 0	closer to the front	right	hatch
181 120 015 0	closer to the front	left	cut; hatch
181 120 017 0	closer to the end	left	–
181 120 018 0	closer to the end	right	–
181 120 019 0	closer to the end	left	cut
181 120 019 1	closer to the end	left	cut; prime
181 120 020 0	closer to the end	right	cut
181 120 020 1	closer to the end	right	cut; prime
181 120 021 0	closer to the end	left	hatch
181 120 023 0	closer to the end	left	cut; hatch
181 120 023 1	closer to the end	left	cut; prime; hatch
181 120 025 0	longer aluminium profile	left	cut
181 120 025 1	longer aluminium profile	left	cut; prime
181 120 026 0	longer aluminium profile	right	cut
181 120 026 1	longer aluminium profile	right	cut; prime



## OptiFlow™ SideWings - flow conductor

Product number	Side of mounting	Comment
181 100 001 0	left	rotating

Product number	Side of mounting	Comment
181 100 002 0	right	rotating
181 100 002 1	right	rotating; primed colour
181 100 003 0	left	hinged
181 100 003 1	left	hinged; primed colour
181 100 004 0	right	hinged
181 100 004 1	right	hinged; primed colour

## OptiFlow™ SideWings - pillar

Product number	Positioning	Comment
181 130 001 0	left	–
181 130 002 0	right	–
181 130 003 0	right / left	flow conductor front
181 130 004 0	right	end
181 130 005 0	left	end
181 130 006 0	right / left	–
181 130 007 0	right / left	flow conductor
181 130 008 0	right / left	hinged
181 130 009 0	left	end
181 130 010 0	right	end
181 130 011 0	right / left	–
181 130 012 0	right / left	flow conductor
181 130 036 0	right / left	hinged
181 130 040 0	right	–
181 130 043 0	left	–
181 130 044 0	right	–

## OptiFlow™ SideWings - further components

Product number	Product
181 010 001 5	Profile EPDM top
181 010 002 5	Profile EPDM hinge
181 020 001 4	Gas spring 400N
181 020 003 0	Gas spring Asm 400N
181 020 004 0	Gas spring Asm 700N
181 020 006 4	Side marker light
181 020 010 2	Lock actuation
181 020 013 4	Knob
181 020 014 4	Shackle base
181 020 015 4	Shackle with knob
181 020 016 2	Door retainer
181 020 033 2	Rotation pin flow conductor
181 030 006 2	Lock, pull L
181 030 007 2	Lock, pull R
181 032 001 4	Bracket
181 033 001 4	Carrier
181 033 003 4	Carrier
181 033 004 4	Carrier
181 040 051 2	Frame
181 001 001 4	Cover end
181 001 002 4	Lock

# RETROFIT SOLUTIONS

## Brake pad wear indicator

Retrofitted to a trailer EBS, the system will alert the driver when brake pad wear reaches a critical point. Warnings are delivered via a dashboard light, the WABCO SmartBoard or, if using OptiLink™, via mobile phone.

### Wear indicator

- **Accessories**      813 000 024 3    EBS sticker truck  
                          813 000 025 3    EBS sticker trailer
- **TDB number**      TDB / Test protocol number



Product number	Application			TDB number
	per brake / axle	Brake	Axle manufacturer	
12 999 755 VT	per axle	WABCO PAN 19-1 PAN 19-1 plus	SAF	SAF 0678, 0749
12 999 792	per axle	Knorr SB6 / SN6 SB7 / SK7 / SN7	BPW SAF	BPW 0562, 0568, 0632, 0787 SAF 0590, 0591, 0605, 0606, 0764, 361-101-03, 361-102-03, 361-103-03
12 999 797	per axle	WABCO PAN 22-1	SAF	SAF 361-094-02, 361-106-02, 361-107-02
640 222 925 2	per brake	WABCO MAXX 22-T		

### Brake pad wear indicator cable

- **Accessory**      441 902 312 2    Blind plug for vehicles with less than three axles

Product number	Length	Application	Cable end
449 816 013 0	L: 1.3 m	TEBS E	Code B, 4-pin; 6x sensor plug 3-pin
449 816 030 0	L: 3.0 m		
449 834 013 0	L: 1.3 m	TEBS D / VCS II	Sensor socket, 3-pin; 6x sensor plug 3-pin
449 720 010 0	L: 1.0 m	Extension cable	Coupling connector, 3-pin; coupling socket, 3-pin
449 720 020 0	L: 2.0 m		
449 720 050 0	L: 5.0 m		
894 590 082 0	L: 0.1 m	Y distributor	Coupling socket, 3-pin; coupling connector, 3-pin

### Brake pad wear indicator set

#### Application TEBS D / VCS II

Product number	Trailer	Axle manufacturer	Brake
480 102 921 2	Drawbar trailer, 2-axle	SAF	WABCO PAN 19-1, PAN 19-1 plus
480 102 922 2	Semitrailer, 1-, 2-, 3-axle	BPW, SAF	Knorr SB6 / SN6, SB7 / SK7 / SN7
480 102 923 2	Drawbar trailer, 2-axle	BPW, SAF	Knorr SB6 / SN6, SB7 / SK7 / SN7
480 102 924 2	Semitrailer, 1-, 2-, 3-axle	SAF	WABCO PAN 22-1
480 102 925 2	Drawbar trailer, 2-axle	SAF	WABCO PAN 22-1

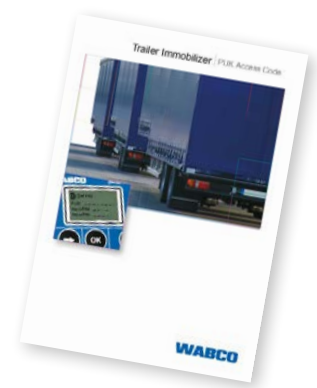


## Content

Product number	Product	Set (Product number 480 102 ... )				
		... 921 2	... 922 2	... 923 2	... 924 2	... 925 2
12 999 755 VT	Wear indicator	2x	–	–	–	–
12 999 792	Wear indicator	–	3x	2x	–	–
12 999 797	Wear indicator	–	–	–	3x	2x
441 902 312 2	Cable bridge	2x	4x	2x	4x	2x
449 720 050 0	Extension cable	2x	–	2x	–	2x
449 834 013 0	Cable with socket	1x	1x	1x	1x	1x
813 000 024 3	EBS sticker truck	1x	1x	1x	1x	1x
813 000 025 3	EBS sticker trailer	1x	1x	1x	1x	1x

## Trailer Immobilizer

- Description** Locks the trailer's spring brake actuators so the trailer can't be moved. Can be activated via SmartBoard or OptiLink with a 4-digit PIN code. Integrated into the WABCO Trailer Electronic Braking System TEBS-E
- Product number** 813 000 049 3 Trailer Immobilizer - PUK access code
- Accessory** 894 450 000 0 Buzzer (can output acoustic warning signals)



### Trailer Immobilizer set

Product number	Description	Trailer Immobilizer set	
		400 604 397 0	400 608 873 0
446 192 110 0	SmartBoard	–	1x
449 445 030 0	Cable for lift axle control valve	1x	–
449 445 050 0	Cable for lift axle control valve	–	1x
449 911 060 0	Cable for SmartBoard	–	1x
463 084 100 0	Lift axle control valve	1x	1x
813 000 048 3	Adhesive label	1x	–
813 000 049 3	Trailer Immobilizer PUK access code	1x	1x

# RETROFIT SOLUTIONS

## TailGUARD™

WABCO TailGUARD is a rear blind spot detection system for commercial vehicles. TailGUARD helps avoid accidents and damage to trailers. Ultrasonic sensors detect if the area behind the trailer is clear, and TailGUARD brakes the vehicle automatically at a pre-set distance between 50...200 cm from objects located in the rear blind spot.

### TailGUARD™ electronic

■ Temperature	-40 ... +65 °C
■ Protection class	IP 6K9K
■ Mounting	4x Ø 8.8 mm
■ Distance between holes	160.6x172.1 mm
■ Accessories	895 310 005 2 Enclosure cover for electronic extension module



Product number	Comments	Version	Voltage
446 122 070 0	Electronic extension module with cover 895 310 005 2	9x GIO	12 / 24 V
446 122 071 0	Electronic control unit (ECU) without cover	4x GIO	12 / 24 V

### Functions

Function	TailGUARD electronic	
	446 122 070 0	446 122 071 0
Compatible with TEBS E Premium (from version E2) and TEBS E Standard from version E5	✓	✓
TailGUARD function incl. buzzer and deactivation button	✓	✓
Supports applications with 2 ... 6 sensors	✓	✓
Connection of side lane keeping lamps and reversing lamp (for activating TailGUARD) ISO 12098	✓	✓
TailGUARD for truck & bus	✓	-
GIO extension	✓	-
Battery charge and battery operation with wake-up button	✓	-
Trailer Remote Control	✓	-
ECAS™ 2-point control	✓	-

### TailGUARD™ cable

■ Accessories	898 020 462 2	Protective cap GIO
	898 020 463 2	Protective cap subsystem
	480 102 931 2	Locking set
	446 122 633 0	Cable box; use as required; 4x M20x1.5 mm 10 flat connector 3.6x0.8 mm

Product number	Length	Type	Application	Cable end
449 303 020 0	2.0 m	Supply cable	Supply	Code E, 8-pin; code C, 8-pin
449 303 025 0	2.5 m			
449 303 050 0	5.0 m			
449 303 100 0	10.0 m			
449 806 060 0	6.0 m	GIO	LIN ultrasonic sensor	Sensor socket, 3-pin; code B, 4-pin
894 600 024 0	0.5 m	GIO	LIN splitter cable	2x sensor socket, 3-pin; sensor plug, 3-pin
449 747 060 0	6.0 m	GIO	LIN extension cable	2x sensor socket, 3-pin; sensor plug, 3-pin
449 908 060 0	6.0 m	GIO	Universal cable	Open, 8-strand, 3x 1.0 mm <sup>2</sup> , 3x 0.5 mm <sup>2</sup> , 2x 0.35 mm <sup>2</sup> ; code C, 8-pin
449 908 100 0	10.0 m			

Product number	Length	Type	Application	Cable end
449 535 010 0 449 535 060 0 449 535 100 0 449 535 150 0	1.0 m 6.0 m 10.0 m 15.0 m	GIO	Universal cable	Open, 4-strand, 4x 1.5 mm <sup>2</sup> ; code B, 4-pin
449 443 008 0 449 443 010 0 449 443 020 0 449 443 040 0 449 443 060 0 449 443 100 0	0.8 m 1.0 m 2.0 m 4.0 m 6.0 m 10.0 m	GIO	Buzzer 894 450 000 0	Bayonet socket, ISO 15170-B1-2.1-Sn/K1, 4-pin; code B, 4-pin

## TailGUARD™ sensor

- Temperature: -40 ... +80 °C
- Electrical connection: 3-Pole Plug
- System: LIN



446 122 40 . 0

446 122 450 0

Product number	Cable length	Inclination	Operational range	Rated current	Side of mounting	Mounting	Distance between bolts	Protection class
446 122 401 0*	3.0 m	0°	0.25 ... 4.5 m	0.040 A		2x M6	63 mm	IP 6K4
446 122 402 0*	3.0 m	15°	0.25 ... 4.5 m	0.040 A	Right (Default)	2x M6	63 mm	IP 6K4
446 122 403 0*	0.3 m	15°	0.25 ... 4.5 m	0.040 A		2x M6	63 mm	IP 6K4
446 122 404 0*	3.0 m	15°	0.25 ... 4.5 m	0.040 A	Left (Default)	2x M6	63 mm	IP 6K4
446 122 450 0	2.5 m	10°	0.30 ... 4.5 m	0.015 A		2x M5	62 mm	IP 6K9K

\* for repairs only (for new retrofits use 446 122 450 0)



446 122 080 0



894 450 000 0

## TailGUARD™ accessories

Product number	Product	Description
446 122 080 0	Trailer Remote Control (TRC)	Holder and connecting cable included; each bar represents a distance of 50 cm. In close proximity (red LEDs) the following also applies: each LED has 2 states, constant and flashing. This indicates the distance with a precision of 25 cm.
894 450 000 0	Buzzer	Can output acoustic warning signals in addition to Trailer Remote Control

# OptiTire™



## OptiTire™ Benefits

- + Up to 2 % fuel saving
- + Reduced CO2 emissions
- + Lower fleet running costs
- + Helps to maximize tire life
- + Improved fleet safety
- + Less risk of blowouts
- + Reduced breakdowns and downtime
- + Improved maintenance predictability
- + Trusted and approved by leading OEMs

## OptiTire™ Features

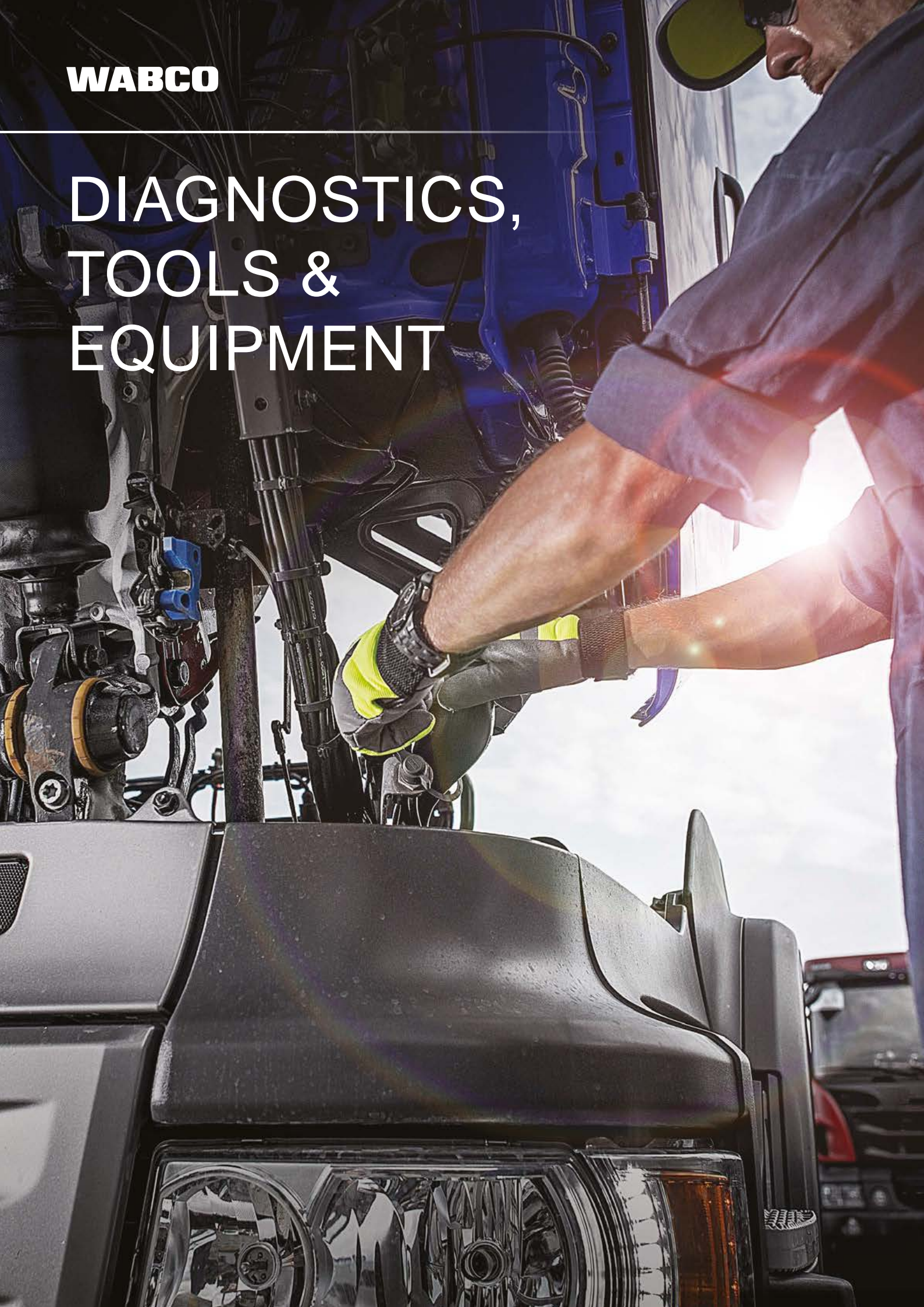
- + Full Truck-Trailer solution
- + Early pressure and temperature deviation warnings
- + Long-life batteries (up to 10 years)
- + ECU backwards compatible with IVTM™
- + Compatibility with WABCO SmartBoard, OptiLink™ and WABCO Trailer Electronic Braking System
- + Compatibility with major Truck OEM dashboards
- + Integrates with TX-TRAILERGUARD™ and TX-TRAILERPULSE™ telematics

**WABCO**



**WABCO**

# DIAGNOSTICS, TOOLS & EQUIPMENT



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# Diagnostics

## Hardware

### Laptop

- **Description** Suitable for the workshop: shock-resistant and dirt-resistant; on request, it can be supplied with the diagnostic software pre-installed

Product number	Product
446 301 999 0	WABCO laptop "Toughbook" (Model Panasonic CF-54)



### Diagnostic Interface

#### Diagnostic Interface 2

- **Description** WABCO Diagnostic Interface set is required to start a diagnosis of the electronic control unit

Product number	Content
446 301 030 0	Diagnostic Interface 2 USB connecting cable to PC/notebook



#### Diagnostic Interface 3

- **Description** WABCO Diagnostic Interface Set, equipped with Bluetooth and Wi-Fi®, is required to start a diagnostic of the electronic control unit

Product number	Content
300 400 103 0	Diagnostic Interface 3 USB connecting cable to PC/notebook



### ABS/EBS Code Reader

- **Description** Easy to use device, for the diagnosis of WABCO braking systems in trailers, towing vehicles and buses

Product number	Product
300 200 002 0	ABS/EBS Code Reader



# DIAGNOSTICS

## Test plug ABS

- Description** For testing the function of the ISO 7638 port on the towing vehicle (24 V); only vehicles with hitching mechanism

Product number	Product
446 007 316 0	Test plug ABS



## Flashing code connector

- Description** For VARIO Compact ABS with external diagnostic socket (flashing code read-out without diagnostic controller)

Product number	Product
446 300 334 0	Flashing code connector



## Diagnostic cable case - truck

- Description** For diagnostics of WABCO components in trucks; does not contain Diagnostic Interface
- Product number** 446 301 025 0 Diagnostic cable case truck (with content)  
 446 301 019 0 Diagnostic cable case truck (without content)

Product number	Content
446 300 003 0	OBd multi-switch cable
446 300 327 0	Connection adapter EPS 35-pin
446 300 340 0	Diagnostic cable Mercedes
446 300 344 0	Diagnostic cable EBS Euro (for Neoplan)
446 300 345 0	Diagnostic cable (for MAN)
446 300 349 0	Diagnostic cable EBS (for IVECO)
446 300 404 0	Diagnostic cable ABS-D
446 300 453 0	Diagnostic cable EBS (for DAF)
446 300 456 0	Connecting cable ECAS
894 604 303 2	Diagnostic cable ABS D/E (ISO 9141)



## Diagnostic cable case - bus

- Description** For diagnostics of WABCO components in buses
- Product number** 446 301 026 0 Diagnostic cable case bus (with content)  
 446 301 019 0 Diagnostic cable case bus (without content)

Product number	Content
446 300 003 0	OBd multi-switch cable
446 300 340 0	Diagnostic cable for Mercedes, EvoBus
446 300 344 0	Diagnostic cable EBS Euro (for Neoplan)
446 300 345 0	Diagnostic cable MAN
446 300 363 0	Diagnostic cable ATC + MTS CAN X204
446 300 368 0	Diagnostic cable MTS Y
446 300 369 0	Diagnostic cable MTS (for MAN)
446 300 460 0	Diagnostic cable OBd-15-pin (for DAF, Scania, MAN)
446 301 030 0	Diagnostic Interface Set 2 (USB)



## Diagnostic cable case - trailer

- **Description** For all common trailer system diagnostics
- **Product number** 446 301 023 0 Diagnostic cable case trailer (with content)  
446 301 024 0 Diagnostic cable case trailer (without content)

Product number	Content
446 300 329 2	Diagnostic cable blue diagnostic socket K-line
446 300 348 0	Diagnostic cable yellow diagnostic socket CAN 5 V
446 300 360 0	Diagnostic cable ISO 7638 (CAN 24 V)
446 300 361 0	Connecting cable CAN adapter ISO 7638
446 301 030 0	Diagnostic Interface Set 2 (USB)
449 612 010 0	Diagnostic cable VCS I with connection socket OE
449 615 010 0	Diagnostic cable VCS II with connection socket OE
449 672 030 0	Diagnostic cable TEBS with connection socket OE



## Diagnostic software

- An annual subscription for WABCO-PC diagnostic software can be configured to include tools for every supported WABCO system, or be configured specifically for truck, bus or trailer systems.
- During the subscription period, you have full access to the latest software, the most recent updates and any newly-translated language versions.
- If you have completed the necessary training, you can request your PIN in the WABCO Customer Centre.

## Diagnostic software - full package

- **Product number** 246 301 900 0

### Content

ABS C	EBS 1C Asia	Gateway	OptiTire (IVTM)
ABS D Hydraulic	EBS 3	HBS AddOn-E	SmartBoard
ABS D+	EBS BUS Standard	HVAC	TCE
ABS E+	EBS CBU MAN	Modular AMT	TEBS-D
ABS HPB	EBS EPB Bus	MTS	TEBS-E
ABS SAE	EBS EPB MB Truck	MTS2	TECAS
AMT for Daimler (MB)	EBS Euro	ODR-Tracker	Trailer CAN Router-Repeater (TRR)
APS-EAPU	ECAS 4x2 S2000	OnGuardPlus	TrailerGUARD Telematics
ATC CAN Standard	ECAS Bus A	OnLane LDW	VCS
ATC Coach	ECAS Bus Citaro	OnLane2	VCS II
ATC KWP Citaro Travego	ECAS CAN2	OptiDrive (Fast Gear)	ZBR2
CAN-Viewer	ECAS ENR MB Truck		
CDC	ECAS Truck and Bus		
	ECAS Truck JED		
	ECAS Truck KWP K		

# DIAGNOSTICS

## Diagnostic software - bus package

■ Product number 246 301 902 0

### Content

ABS C	ATC CAN Standard	EBS EPB Bus	HVAC
ABS D Hydraulic	ATC Coach	EBS Euro	MTS
ABS D+	ATC KWP Citaro Travego	ECAS 4x2 S2000	MTS2
ABS E+	CAN-Viewer	ECAS Bus A	OnGuardPlus
ABS HPB	CDC	ECAS Bus Citaro	OnLane LDW
ABS SAE	EBS 3	ECAS CAN2	OnLane2
AMT for Daimler (MB)	EBS BUS Standard	ECAS Truck and Bus	OptiTire (IVTM)
APS-EAPU	EBS CBU MAN	ECAS Truck JED	ZBR2
		ECAS Truck KWP K	
		Gateway	

## Diagnostic software - truck package

■ Product number 246 301 904 0

### Content

ABS C	CAN-Viewer	ECAS 4x2 S2000	OnGuardPlus
ABS D Hydraulic	CDC	ECAS CAN2	OnLane LDW
ABS D+	EBS 1C Asia	ECAS ENR MB Truck	OnLane2
ABS E+	EBS 3	ECAS Truck and Bus	OptiTire (IVTM)
ABS HPB	EBS CBU MAN	ECAS Truck JED	ZBR2
ABS SAE	EBS EPB MB Truck	ECAS Truck KWP K	
AMT for Daimler (MB)	EBS Euro	Gateway	
APS-EAPU		HBS AddOn-E	

## Diagnostic software - trailer package

■ Product number 246 301 901 0

### Content

CAN-Viewer	SmartBoard	TECAS	VCS
ODR-Tracker	TCE	Trailer CAN Router-Repeater (TRR)	VCS II
OptiTire (IVTM)	TEBS-D	TrailerGUARD Telematics	
	TEBS-E		

## Diagnostic software - multi-brand diagnostics

■ **W.EASY®** The multi-brand diagnostic solution W.EASY® supplied by WABCOWÜRTH can be ordered via the WABCOWÜRTH distribution network.

■ **Content** Each W.EASY diagnostic solution consists of a basic package, to which individual software/hardware can be added.

For details, please visit [www.wabcowuerth.com](http://www.wabcowuerth.com)



# Tools and equipment

## Air pressure testing

### Test case for air braking systems

- **Description** Fast and precise testing of air braking systems in compliance with guidelines and directives
- **Product number** 435 002 007 0 Test case for air braking systems

Product number	Content	Quantity
435 002 020 2	Test case	1
–	Minigrip mounting kit	1
–	Three-way cock	1
–	Hose coupling	1
452 204 910 0	Quick coupling	1
452 600 003 0	Blue test hose, length: 6.5 m	1
452 600 004 0	White test hose, length: 6.5 m	1
452 600 005 0	Red test hose, length: 6.5 m	3
452 600 006 0	Green test hose, length: 6.5 m	2
452 600 007 0	Yellow test hose, length: 6.5 m	1
452 600 008 0	Purple test hose, length: 6.5 m	1
453 004 007 0	Pressure gauge, Ø 100 mm, max. 16 bar, protection cap	5
453 004 009 0	Pressure gauge, Ø 100 mm, max. 25 bar, protection cap	1
463 703 521 2	Test fitting	2
815 000 040 3	Work instruction	1
893 100 204 4	Double connector M16x1.5 / M16x1.5	1
–	Double connector M16x1.5 / M22x1.5	1
899 709 092 2	Trailer tester	1



### Test case - 'Agriculture' compressed air

- **Description** Testing of compressed-air procurement systems for tractors and air braking systems in agricultural and forestry trailers
- **Product number** 435 002 011 0 'Agriculture' compressed air test kit

Product number	Content	Quantity
–	Test case	1
452 201 010 0	'1 line' coupling head M22x1.5	1
452 600 003 0	Blue test hose	1
452 600 004 0	White test hose	1
453 004 007 0	Pressure Gauge, Ø 100 mm, max. 16 bar, protection cap	2
463 703 115 0	Test connection M22x1.5	2
952 200 021 0	Red coupling head M16x1.5	1
952 200 022 0	Yellow coupling head M16x1.5	1
463 703 120 0	Test connection M16x1.5	2
815 010 083 3	Publication Air Braking Systems	1





## Test case - brake and suspension

- **Description** WABCO mobile test bench for easy repair and testing of individual brake components and easy vehicle tests
- **Product number** 453 197 003 0 Brake and suspension test case

Content	Quantity
Brake and suspension test case	1
Coloured hoses	6



## Pressure gauge

- **Calibrated** yes

Product Number	Type	Pressure	Diameter
453 002 000 0	single, for dashboard, illuminated	max. 10 bar	Ø 60 mm
453 004 005 0	single, protection cap	max. 10 bar	Ø 100 mm
453 004 007 0	single, protection cap	max. 16 bar	Ø 100 mm
453 004 009 0	single, protection cap	max. 25 bar	Ø 100 mm
453 004 012 0	single	max. 16 bar	Ø 100 mm
453 197 000 0	double, for dashboard, illuminated	max. 10 bar	Ø 60 mm
453 197 004 0	double	2x max. 16 bar	Ø 100 mm



- **Calibrated** yes  
with additional calibration certificate

Product Number	Type	Pressure	Diameter
453 004 020 0	single, protection cap	max. 10 bar	Ø 100 mm
453 004 021 0	single, protection cap	max. 16 bar	Ø 100 mm
453 004 022 0	single, protection cap	max. 25 bar	Ø 100 mm
453 004 023 0	single	max. 16 bar	Ø 100 mm
453 197 006 0	double	2x max. 16 bar	Ø 100 mm

## Fabric hose

- **Material** Multilayer (PVC / PA / PVC)
- **Length** 25 m
- **Ø** inner: 4.0 mm, outer: 10.0 mm

Product number	Colour	Max. pressure at temperature			
		-40 °C	20 °C	60 °C	70 °C
828 876 915 6	blue	47 bar	25 bar	10 bar	7 bar





## Tool sets for disc brakes

### Tool set for MAXX™, MAXXUS™ & PAN™ calipers

- **Description** Modular tool set for repairing WABCO calipers and adjusting the return units
- **Product number** 400 608 375 0 WABCO caliper tool set

Product number	Content
300 100 010 2	Tool set 'Basic'
300 100 011 2	Adjuster change
300 100 012 2	Ratchet for return unit
300 100 013 2	Tool set 'Extension'



### Tool set 'Basic'

Product number	Product
300 100 010 2	Tool set 'Basic'



### Tool set 'Extension'

Product number	Product
300 100 013 2	Tool set 'Extension'



### Adjuster change

Product number	Product
300 100 011 2	Adjuster change



### Ratchet for return unit

Product number	Product
300 100 012 2	Ratchet for return unit



## Tools

### Leakage Finder 2.0

- Description** Detects air leakages and indicates the presence and size of a leak using both audible and visual signals
- Product number** 300 400 001 0 Basic case  
 300 400 002 0 Advanced case

Product number	Content
300 400 001 2	Carrying aid for WABCO Leakage Finder 2.0
–	Headphones*
–	External loudspeaker
300 400 005 0	WABCO Leakage Finder 2.0 incl. 2 batteries
300 400 006 0	Ultrasonic sensor incl. 3 batteries**
300 400 007 0	Structure-borne sound probe**
300 400 008 0	Airborne sound probes**
300 400 010 0	Protection sleeve for ultrasonic sensor**
300 400 011 4	Connecting cable for headphones
300 400 014 0	Headphones incl. 2 batteries**
300 400 015 0	Flexible airborne sound probe
815 980 255 3	Operating instructions

\* in Basic case 300 400 001 0 only

\*\* in Advanced case 300 400 002 0 only



### Test case - power supply

- Description** Mobile, intelligent test kit for lighting and signalling checks for trucks and trailers
- Product number** 300 100 001 0 WABCO Power supply test case

Features
Examination of the light control signals of the truck (24 V) and lighting test of 24 V trailers
Lighting test (also for 12 V trailers)
Light test for LED lighting
PIN control with 24 V or 0 V possible, e.g. to activate the lift axle
LCD display showing all essential information
Built-in measurement instruments: volt / ampere



### TPMS manager

- Description** Sensor activation and readout tool to read and activate the external and internal sensors of tire pressure monitoring systems
- Product number** 300 200 001 0 TPMS manager

Content
TPMS manager
Charger
International power adapters
USB 2.0 cable
QuickStart guide



## Cleaning

### Bio-cleaning system set

- **Description** Fast-cleaning of used vehicle parts and workshop tools
- **Product number** 300 100 007 0 WABCO Bio-cleaning system set

Product number	Content	Quantity
–	Compact bio-bleaning machine	1
300 100 009 4	Bio-cleaning liquid (20 l canister)	5
300 100 010 4	Bio-cleaning intensive CB100 (500 ml spray bottle)	2



## Chemical liquid parts

### WABCOTHYL™

- **Description** Most reliable anti-freeze and de-icing liquid

Product number	Packaging	Content
830 702 087 4	Bottle	1 l
830 702 088 4	Canister	10 l
830 702 089 4	Canister	30 l
830 702 090 4	Barrel	200 l



### WABCONTROL™

- **Description** Easy-to-use leakage indicating spray

Product number	Packaging	Content
830 702 126 4	Spray bottle	0.5 l
830 702 127 4	Canister	5.0 l



### WABCOSEAL™

- **Description** Most durable liquid jointing agent for any vehicle couplings and connectors

Product number	Packaging	Content
830 407 084 4	Bottle	50 ml



## WABCO EaseTec™

- Description** Best lubricants to ensure the proper function and extend the lifetime of moving components



Product number	Packaging	Content	Type	Components	Colour	Temperature
830 502 101 4	Grease pack	5 g	L2	Synthetic hydrocarbon oil, special lithium soap	beige	-60 ... +130 °C
830 503 020 4	Grease pack	10 g	M4	Mineral oil, lithium complex soap, special additive combination	green	-30 ... +150 °C
830 503 062 4	Grease pack	5 g	M6	Mineral oil, special calcium soap	grey	-10 ... +140 °C
163 480 000 8	Tube	230 g	M7	Lithium hydroxystearate, mineral oil	light brown	-10 ... +130 °C
163 480 990 8	Can	900 g	M7	Lithium hydroxystearate, mineral oil	light brown	-10 ... +130 °C
830 502 076 4	Grease pack	5 g	P1	Lithium soap polyalphaolefins, special additives	light brown	-50 ... +140 °C
830 503 065 4	Can	1000 g	P1	Lithium soap polyalphaolefins, special additives	light brown	-50 ... +140 °C
830 502 087 4	Grease pack	5 g	S6	Silicone oil, special lithium soap	white	-50 ... +180 °C

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181 112 004 0 . . . . .	<b>325</b>	181 130 009 0 . . . . .	<b>327</b>	183 521 100 2 . . . . .	<b>319</b>	300 400 002 0 . . . . .	<b>342</b>
181 112 006 0 . . . . .	<b>325</b>	181 130 010 0 . . . . .	<b>327</b>	183 523 000 4 . . . . .	<b>320</b>	300 400 005 0 . . . . .	<b>342</b>
181 112 008 0 . . . . .	<b>325</b>	181 130 011 0 . . . . .	<b>327</b>	183 523 008 2 . . . . .	<b>320</b>	300 400 006 0 . . . . .	<b>342</b>
181 112 012 0 . . . . .	<b>325</b>	181 130 012 0 . . . . .	<b>327</b>	183 523 010 4 . . . . .	<b>320</b>	300 400 007 0 . . . . .	<b>342</b>
181 112 014 0 . . . . .	<b>325</b>	181 130 036 0 . . . . .	<b>327</b>	183 523 051 4 . . . . .	<b>320</b>	300 400 008 0 . . . . .	<b>342</b>
181 112 020 0 . . . . .	<b>325</b>	181 130 040 0 . . . . .	<b>327</b>	183 523 052 4 . . . . .	<b>320</b>	300 400 010 0 . . . . .	<b>342</b>
181 112 028 0 . . . . .	<b>325</b>	181 130 043 0 . . . . .	<b>327</b>	183 530 000 0 . . . . .	<b>318, 319</b>	300 400 011 4 . . . . .	<b>342</b>
181 113 001 0 . . . . .	<b>325</b>	181 130 044 0 . . . . .	<b>327</b>	183 530 000 2 . . . . .	<b>319</b>	300 400 014 0 . . . . .	<b>342</b>
181 113 003 0 . . . . .	<b>325</b>	183 100 001 4 . . . . .	<b>315, 316</b>	183 530 021 4 . . . . .	<b>318, 319</b>	300 400 015 0 . . . . .	<b>342</b>
181 114 001 0 . . . . .	<b>325</b>	183 120 001 4 . . . . .	<b>317, 318</b>	183 530 022 4 . . . . .	<b>319</b>	300 400 103 0 . . . . .	<b>335</b>
181 114 002 0 . . . . .	<b>326</b>	183 120 020 4 . . . . .	<b>318</b>	183 540 000 0 . . . . .	<b>318, 321</b>	346 291 000 0 . . . . .	<b>19</b>
181 114 011 0 . . . . .	<b>326</b>	183 210 000 4 . . . . .	<b>317</b>	183 540 053 4 . . . . .	<b>319, 320</b>	346 292 000 0 . . . . .	<b>19</b>
181 114 014 0 . . . . .	<b>326</b>	183 210 006 2 . . . . .	<b>317</b>	183 540 070 4 . . . . .	<b>319, 320</b>	346 297 000 4 . . . . .	<b>19</b>
181 114 015 0 . . . . .	<b>326</b>	183 210 009 4 . . . . .	<b>317</b>	183 540 071 4 . . . . .	<b>319, 320</b>	372 060 022 0 . . . . .	<b>231</b>
181 114 017 0 . . . . .	<b>326</b>	183 210 040 2 . . . . .	<b>316</b>	183 540 100 4 . . . . .	<b>321</b>	372 060 062 0 . . . . .	<b>231</b>
181 114 026 0 . . . . .	<b>326</b>	183 210 041 2 . . . . .	<b>316</b>	183 540 101 4 . . . . .	<b>321</b>	400 500 070 0 . . . . .	<b>275</b>
181 114 027 0 . . . . .	<b>326</b>	183 210 061 2 . . . . .	<b>315</b>	183 542 000 4 . . . . .	<b>318</b>	400 500 081 0 . . . . .	<b>274, 275</b>
181 114 030 1 . . . . .	<b>326</b>	183 210 080 2 . . . . .	<b>316</b>	183 542 050 4 . . . . .	<b>318, 320</b>	400 500 082 0 . . . . .	<b>275</b>
181 114 031 1 . . . . .	<b>326</b>	183 210 160 0 . . . . .	<b>315</b>	183 542 051 4 . . . . .	<b>318, 320</b>	400 500 083 0 . . . . .	<b>275</b>
181 120 001 0 . . . . .	<b>326</b>	183 240 020 2 . . . . .	<b>318</b>	183 542 052 4 . . . . .	<b>319, 320</b>	400 500 086 0 . . . . .	<b>275</b>
181 120 002 0 . . . . .	<b>326</b>	183 350 000 4 . . . . .	<b>317</b>	183 542 053 4 . . . . .	<b>319, 320</b>	400 500 087 0 . . . . .	<b>276</b>
181 120 003 0 . . . . .	<b>326</b>	183 410 001 0 . . . . .	<b>317</b>	183 542 103 4 . . . . .	<b>319, 320</b>	400 500 088 0 . . . . .	<b>276</b>
181 120 004 0 . . . . .	<b>326</b>	183 410 003 0 . . . . .	<b>317</b>	183 545 001 4 . . . . .	<b>319, 320</b>	400 500 101 0 . . . . .	<b>276</b>
181 120 005 0 . . . . .	<b>326</b>	183 410 006 0 . . . . .	<b>317</b>	183 545 002 4 . . . . .	<b>319, 320</b>	400 500 102 0 . . . . .	<b>276</b>
181 120 006 0 . . . . .	<b>326</b>	183 410 006 2 . . . . .	<b>317</b>	183 545 003 4 . . . . .	<b>319, 320</b>	400 500 103 0 . . . . .	<b>276</b>
181 120 007 0 . . . . .	<b>326</b>	183 410 007 0 . . . . .	<b>317</b>	183 545 005 4 . . . . .	<b>319</b>	400 500 105 0 . . . . .	<b>276</b>
181 120 009 0 . . . . .	<b>326</b>	183 410 007 2 . . . . .	<b>317</b>	183 550 071 4 . . . . .	<b>319</b>	400 608 050 0 . . . . .	<b>315</b>
181 120 010 0 . . . . .	<b>326</b>	183 410 406 0 . . . . .	<b>316</b>	183 550 073 4 . . . . .	<b>319</b>	400 608 051 0 . . . . .	<b>315</b>
181 120 011 0 . . . . .	<b>326</b>	183 440 000 0 . . . . .	<b>318</b>	183 550 076 0 . . . . .	<b>318, 319</b>	400 608 053 0 . . . . .	<b>315</b>
181 120 012 0 . . . . .	<b>326</b>	183 440 001 0 . . . . .	<b>318</b>	183 550 078 4 . . . . .	<b>318, 321</b>	400 608 054 0 . . . . .	<b>315</b>
181 120 013 0 . . . . .	<b>326</b>	183 440 100 0 . . . . .	<b>317</b>	183 550 080 2 . . . . .	<b>318, 319</b>	400 608 100 0 . . . . .	<b>316</b>
181 120 014 0 . . . . .	<b>326</b>	183 440 101 0 . . . . .	<b>317</b>	183 551 003 4 . . . . .	<b>321</b>	400 608 101 0 . . . . .	<b>316</b>
181 120 015 0 . . . . .	<b>326</b>	183 440 103 0 . . . . .	<b>317</b>	183 555 003 4 . . . . .	<b>320</b>	400 608 102 0 . . . . .	<b>316</b>
181 120 017 0 . . . . .	<b>326</b>	183 440 203 0 . . . . .	<b>318</b>	183 555 004 0 . . . . .	<b>321</b>	400 608 103 0 . . . . .	<b>316</b>
181 120 018 0 . . . . .	<b>326</b>	183 440 204 0 . . . . .	<b>318</b>	200 300 117 0 . . . . .	<b>15</b>	400 608 104 0 . . . . .	<b>316</b>
181 120 019 0 . . . . .	<b>326</b>	183 440 205 0 . . . . .	<b>318</b>	200 300 127 0 . . . . .	<b>19</b>	400 608 105 0 . . . . .	<b>316</b>
181 120 019 1 . . . . .	<b>326</b>	183 510 053 4 . . . . .	<b>318, 319</b>	200 300 625 0 . . . . .	<b>321</b>	400 608 106 0 . . . . .	<b>316</b>
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181 130 001 0 . . . . .	<b>327</b>	183 520 000 4 . . . . .	<b>321</b>	300 100 010 4 . . . . .	<b>343</b>	400 608 375 0	<b>167, 289, 341</b>



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400 608 715 0 . . . . .	<b>318</b>	412 442 001 0 . . . . .	<b>28</b>	421 355 936 2 . . . . .	<b>209</b>	421 410 059 0 . . . . .	<b>101</b>
400 608 716 0 . . . . .	<b>318</b>	412 704 008 0 . . . . .	<b>28</b>	421 355 943 2 . . . . .	<b>209</b>	421 410 060 0 . . . . .	<b>101</b>
400 608 717 0 . . . . .	<b>318</b>	412 704 008 R . . . . .	<b>28</b>	421 355 944 2 . . . . .	<b>209</b>	421 410 066 0 . . . . .	<b>101</b>
400 608 718 0 . . . . .	<b>318</b>	412 704 009 0 . . . . .	<b>28</b>	421 355 945 2 . . . . .	<b>209</b>	421 410 072 0 . . . . .	<b>101</b>
400 608 719 0 . . . . .	<b>318</b>	412 704 013 0 . . . . .	<b>28</b>	421 355 946 2 . . . . .	<b>209</b>	421 410 075 0 . . . . .	<b>101</b>
411 141 000 0 . . . . .	<b>23</b>	412 704 013 R . . . . .	<b>28</b>	421 355 947 2 . . . . .	<b>210</b>	421 410 078 0 . . . . .	<b>101</b>
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411 141 001 0 . . . . .	<b>23</b>	412 704 019 0 . . . . .	<b>28</b>	421 355 949 2 . . . . .	<b>210</b>	421 411 021 0 . . . . .	<b>102</b>
411 141 002 0 . . . . .	<b>23</b>	412 704 024 0 . . . . .	<b>28</b>	421 355 950 2 . . . . .	<b>210</b>	421 411 031 0 . . . . .	<b>102</b>
411 141 002 R . . . . .	<b>23</b>	412 704 024 R . . . . .	<b>28</b>	421 355 950 R . . . . .	<b>210</b>	421 411 035 0 . . . . .	<b>102</b>
411 141 008 0 . . . . .	<b>23</b>	412 704 027 0 . . . . .	<b>28</b>	421 355 951 2 . . . . .	<b>210</b>	421 411 065 0 . . . . .	<b>102</b>
411 141 008 R . . . . .	<b>23</b>	412 704 027 R . . . . .	<b>28</b>	421 355 954 2 . . . . .	<b>210</b>	421 411 070 0 . . . . .	<b>102</b>
411 141 103 0 . . . . .	<b>23</b>	415 404 001 0 . . . . .	<b>31</b>	421 365 920 2 . . . . .	<b>211</b>	421 411 094 0 . . . . .	<b>102</b>
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411 141 503 0 . . . . .	<b>23</b>	421 305 147 0 . . . . .	<b>148</b>	421 365 922 2 . . . . .	<b>211</b>	421 411 301 0 . . . . .	<b>102</b>
411 141 507 0 . . . . .	<b>23</b>	421 322 005 0 . . . . .	<b>207</b>	421 365 923 2 . . . . .	<b>211</b>	421 411 302 0 . . . . .	<b>102</b>
411 141 551 0 . . . . .	<b>23</b>	421 350 001 0 . . . . .	<b>207</b>	421 365 924 2 . . . . .	<b>211</b>	421 411 304 0 . . . . .	<b>102</b>
411 141 640 0 . . . . .	<b>23</b>	421 350 006 2 . . . . .	<b>207</b>	421 365 925 2 . . . . .	<b>211</b>	421 411 305 0 . . . . .	<b>102</b>
411 141 703 0 . . . . .	<b>23</b>	421 350 061 0 . . . . .	<b>207</b>	421 365 926 2 . . . . .	<b>211</b>	421 411 306 0 . . . . .	<b>102</b>
411 142 681 0 . . . . .	<b>23</b>	421 350 072 0 . . . . .	<b>207</b>	421 365 927 2 . . . . .	<b>211</b>	421 411 311 0 . . . . .	<b>102</b>
411 143 805 0 . . . . .	<b>23</b>	421 350 087 0 . . . . .	<b>208</b>	421 365 928 2 . . . . .	<b>211</b>	421 411 314 0 . . . . .	<b>102</b>
411 144 003 0 . . . . .	<b>24</b>	421 350 088 0 . . . . .	<b>208</b>	421 365 929 2 . . . . .	<b>211</b>	421 411 315 0 . . . . .	<b>102</b>
411 145 057 0 . . . . .	<b>24</b>	421 350 920 2 . . . . .	<b>207</b>	421 365 932 2 . . . . .	<b>211</b>	421 411 316 0 . . . . .	<b>102</b>
411 145 507 0 . . . . .	<b>24</b>	421 350 922 2 . . . . .	<b>207</b>	421 365 933 2 . . . . .	<b>211</b>	421 411 500 0 . . . . .	<b>102</b>
411 146 003 0 . . . . .	<b>24</b>	421 350 923 2 . . . . .	<b>207</b>	421 365 934 2 . . . . .	<b>211</b>	421 411 501 0 . . . . .	<b>102</b>
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411 151 004 0 . . . . .	<b>24</b>	421 350 931 2 . . . . .	<b>208</b>	421 367 900 2 . . . . .	<b>211</b>	421 427 003 0 . . . . .	<b>103</b>
411 151 004 R . . . . .	<b>24</b>	421 350 932 2 . . . . .	<b>208</b>	421 367 921 2 . . . . .	<b>211</b>	421 429 002 0 . . . . .	<b>103</b>
411 151 009 0 . . . . .	<b>25</b>	421 350 934 2 . . . . .	<b>208</b>	421 367 922 2 . . . . .	<b>211</b>	421 429 003 0 . . . . .	<b>103</b>
411 151 012 1 . . . . .	<b>25</b>	421 350 935 2 . . . . .	<b>208</b>	421 367 924 2 . . . . .	<b>211</b>	421 429 006 0 . . . . .	<b>103</b>
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422 812 000 0 . . . . .	<b>232</b>	423 105 111 0 . . . . .	<b>155</b>	423 514 001 0 . . . . .	<b>151</b>	432 410 022 0 . . . . .	<b>45</b>
422 812 002 0 . . . . .	<b>232</b>	423 105 408 0 . . . . .	<b>155</b>	423 514 002 0 . . . . .	<b>151</b>	432 410 023 0 . . . . .	<b>45</b>
422 814 003 0 . . . . .	<b>232</b>	423 105 409 0 . . . . .	<b>155</b>	425 326 051 7 . . . . .	<b>165</b>	432 410 026 0 . . . . .	<b>45</b>
423 007 019 0 . . . . .	<b>282</b>	423 105 414 0 . . . . .	<b>155</b>	425 327 052 0 . . . . .	<b>165</b>	432 410 027 0 . . . . .	<b>45</b>
423 008 919 0 . . . . .	<b>157, 282</b>	423 105 700 0 . . . . .	<b>152</b>	425 327 064 0 . . . . .	<b>165</b>	432 410 028 0 . . . . .	<b>45</b>
423 020 000 0 . . . . .	<b>282</b>	423 105 704 0 . . . . .	<b>155</b>	425 331 003 0 . . . . .	<b>165</b>	432 410 031 0 . . . . .	<b>45</b>
423 044 103 0 . . . . .	<b>158</b>	423 105 705 0 . . . . .	<b>155</b>	425 331 902 0 . . . . .	<b>165</b>	432 410 033 0 . . . . .	<b>45</b>
423 045 000 0 . . . . .	<b>158</b>	423 105 900 0 . . . . .	<b>155, 282</b>	425 331 904 0 . . . . .	<b>165</b>	432 410 034 0 . . . . .	<b>45</b>
423 045 001 0 . . . . .	<b>158</b>	423 106 088 0 . . . . .	<b>156</b>	425 333 002 0 . . . . .	<b>165</b>	432 410 035 0 . . . . .	<b>45</b>
423 046 000 0 . . . . .	<b>158</b>	423 106 106 0 . . . . .	<b>156, 282</b>	425 333 100 0 . . . . .	<b>165</b>	432 410 036 0 . . . . .	<b>45</b>
423 046 001 0 . . . . .	<b>158</b>	423 106 115 0 . . . . .	<b>156</b>	425 333 101 0 . . . . .	<b>165</b>	432 410 041 0 . . . . .	<b>45</b>
423 054 000 0 . . . . .	<b>147</b>	423 106 201 0 . . . . .	<b>156</b>	425 333 102 0 . . . . .	<b>165</b>	432 410 042 0 . . . . .	<b>45</b>
423 054 001 0 . . . . .	<b>147</b>	423 106 202 0 . . . . .	<b>156</b>	425 333 200 0 . . . . .	<b>165</b>	432 410 064 0 . . . . .	<b>51</b>
423 055 000 0 . . . . .	<b>147</b>	423 106 292 0 . . . . .	<b>156</b>	425 333 201 0 . . . . .	<b>165</b>	432 410 066 0 . . . . .	<b>45</b>
423 055 001 0 . . . . .	<b>147</b>	423 106 900 0 . . . . .	<b>156, 282</b>	425 333 202 0 . . . . .	<b>165</b>	432 410 067 0 . . . . .	<b>45</b>
423 055 006 0 . . . . .	<b>147</b>	423 106 926 0 . . . . .	<b>156</b>	425 333 212 0 . . . . .	<b>165</b>	432 410 069 0 . . . . .	<b>45</b>
423 055 008 0 . . . . .	<b>147</b>	423 107 406 0 . . . . .	<b>157</b>	425 426 201 0 . . . . .	<b>165</b>	432 410 073 0 . . . . .	<b>45</b>
423 055 050 0 . . . . .	<b>147</b>	423 107 407 0 . . . . .	<b>157</b>	425 428 900 0 . . . . .	<b>165</b>	432 410 074 0 . . . . .	<b>45</b>
423 055 100 0 . . . . .	<b>147</b>	423 107 408 0 . . . . .	<b>157</b>	425 429 901 0 . . . . .	<b>165</b>	432 410 075 0 . . . . .	<b>46</b>
423 056 000 0 . . . . .	<b>147</b>	423 107 410 0 . . . . .	<b>157</b>	425 450 080 0 . . . . .	<b>165</b>	432 410 076 0 . . . . .	<b>46</b>
423 056 001 0 . . . . .	<b>148</b>	423 107 411 0 . . . . .	<b>157</b>	425 450 081 0 . . . . .	<b>165</b>	432 410 079 0 . . . . .	<b>46</b>
423 056 004 0 . . . . .	<b>148</b>	423 107 900 0 . . . . .	<b>157, 282</b>	425 451 010 0 . . . . .	<b>165</b>	432 410 080 0 . . . . .	<b>46</b>
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446 070 525 0 . . . . .	<b>245</b>	446 130 018 0 . . . . .	<b>123</b>	446 170 229 0 . . . . .	<b>200</b>	446 300 345 0 . . . . .	<b>336</b>
446 070 900 0 . . . . .	<b>245</b>	446 130 019 0 . . . . .	<b>123</b>	446 170 230 0 . . . . .	<b>200</b>	446 300 348 0 . . . . .	<b>337</b>
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446 070 920 0 . . . . .	<b>245</b>	446 130 023 0 . . . . .	<b>123</b>	446 170 232 0 . . . . .	<b>200</b>	446 300 360 0 . . . . .	<b>337</b>
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446 091 002 0 . . . . .	<b>236</b>	446 130 030 0 . . . . .	<b>123</b>	446 190 001 0 . . . . .	<b>231</b>	446 300 368 0 . . . . .	<b>336</b>
446 091 004 0 . . . . .	<b>236</b>	446 130 031 0 . . . . .	<b>123</b>	446 190 005 0 . . . . .	<b>231</b>	446 300 369 0 . . . . .	<b>336</b>
446 091 030 0 . . . . .	<b>236</b>	446 130 053 0 . . . . .	<b>123</b>	446 190 006 0 . . . . .	<b>231</b>	446 300 404 0 . . . . .	<b>336</b>
446 091 031 0 . . . . .	<b>236</b>	446 130 062 0 . . . . .	<b>123</b>	446 190 011 0 . . . . .	<b>231</b>	446 300 453 0 . . . . .	<b>336</b>
446 091 032 0 . . . . .	<b>236</b>	446 130 067 0 . . . . .	<b>123</b>	446 190 012 0 . . . . .	<b>231</b>	446 300 456 0 . . . . .	<b>336</b>
446 091 200 0 . . . . .	<b>236</b>	446 130 208 0 . . . . .	<b>123</b>	446 190 013 0 . . . . .	<b>231</b>	446 300 460 0 . . . . .	<b>336</b>
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828 251 106 6. ....	<b>253</b>	830 503 065 4 . ....	<b>344</b>	893 129 191 2. ....	<b>257</b>	894 590 082 0 . ....	<b>328</b>
828 251 108 6. ....	<b>253</b>	830 702 087 4 . ....	<b>343</b>	893 129 192 2. ....	<b>257</b>	894 590 151 2. ....	<b>32</b>
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828 251 112 6. ....	<b>253</b>	830 702 089 4 . ....	<b>343</b>	893 400 862 4 . ....	<b>256</b>	894 600 024 0 . . . .	<b>242, 330</b>
828 251 114 6. ....	<b>253</b>	830 702 090 4 . ....	<b>343</b>	893 400 864 4 . ....	<b>256</b>	894 600 074 2 . ....	<b>322</b>
828 251 115 6. ....	<b>253</b>	830 702 126 4 . ....	<b>343</b>	893 400 867 4 . ....	<b>256</b>	894 600 451 2 . ....	<b>32</b>
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828 251 118 6. ....	<b>254</b>	884 057 811 0. ....	<b>87</b>	893 401 797 4 . ....	<b>257</b>	894 601 134 2 . . . .	<b>203, 304</b>
828 251 121 6. ....	<b>253</b>	884 057 812 0. ....	<b>87</b>	893 401 818 4. ....	<b>257</b>	894 601 161 2 . . . .	<b>203, 304</b>
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925 480 010 0 . . . . .	<b>160</b>	925 488 015 0 . . . . .	<b>159</b>	932 500 030 0 . . . . .	<b>32</b>	934 300 006 0 . . . . .	<b>66, 265</b>
925 480 011 0 . . . . .	<b>160</b>	925 490 102 0 . . . . .	<b>162</b>	932 500 035 0 . . . . .	<b>33</b>	934 300 007 0 . . . . .	<b>66, 265</b>
925 480 120 0 . . . . .	<b>160</b>	925 490 901 0 . . . . .	<b>162</b>	932 500 039 0 . . . . .	<b>33</b>	934 300 009 0 . . . . .	<b>66, 265</b>
925 480 121 0 . . . . .	<b>160</b>	925 490 905 0 . . . . .	<b>162</b>	932 500 040 0 . . . . .	<b>33</b>	934 300 016 0 . . . . .	<b>66, 265</b>
925 481 000 0 . . . . .	<b>160</b>	925 490 906 0 . . . . .	<b>162</b>	932 500 044 0 . . . . .	<b>33</b>	934 300 023 0 . . . . .	<b>66, 265</b>
925 481 001 0 . . . . .	<b>160</b>	925 490 925 0 . . . . .	<b>162</b>	932 500 047 0 . . . . .	<b>33</b>	934 300 024 0 . . . . .	<b>66, 265</b>
925 481 012 0 . . . . .	<b>160</b>	925 491 104 0 . . . . .	<b>163</b>	932 500 052 0 . . . . .	<b>33</b>	934 300 025 0 . . . . .	<b>66, 265</b>
925 481 013 0 . . . . .	<b>160</b>	925 491 105 0 . . . . .	<b>163</b>	932 500 054 0 . . . . .	<b>33</b>	934 300 038 0 . . . . .	<b>66, 265</b>
925 481 020 0 . . . . .	<b>160</b>	925 491 106 0 . . . . .	<b>163</b>	932 500 055 0 . . . . .	<b>33</b>	934 300 041 0 . . . . .	<b>66, 265</b>
925 481 021 0 . . . . .	<b>160</b>	925 491 107 0 . . . . .	<b>163</b>	932 500 056 0 . . . . .	<b>33</b>	934 300 042 0 . . . . .	<b>66, 265</b>
925 481 032 0 . . . . .	<b>160</b>	925 491 113 0 . . . . .	<b>163</b>	932 500 057 0 . . . . .	<b>33</b>	934 301 000 0 . . . . .	<b>66, 265</b>
925 481 050 0 . . . . .	<b>160</b>	925 491 121 0 . . . . .	<b>163</b>	932 500 060 0 . . . . .	<b>33</b>	934 301 003 0 . . . . .	<b>66, 265</b>
925 481 051 0 . . . . .	<b>160</b>	925 491 141 0 . . . . .	<b>163</b>	932 500 061 0 . . . . .	<b>33</b>	934 301 005 0 . . . . .	<b>66, 265</b>
925 481 060 0 . . . . .	<b>161</b>	925 491 143 0 . . . . .	<b>163</b>	932 500 062 0 . . . . .	<b>33</b>	934 602 001 0 . . . . .	<b>45</b>
925 481 070 0 . . . . .	<b>160</b>	925 491 440 0 . . . . .	<b>163</b>	932 500 063 0 . . . . .	<b>33</b>	934 602 150 0 . . . . .	<b>45</b>
925 481 100 0 . . . . .	<b>160</b>	925 491 441 0 . . . . .	<b>163</b>	932 500 064 0 . . . . .	<b>33</b>	934 700 040 0 . . . . .	<b>40</b>
925 481 102 0 . . . . .	<b>160</b>	925 491 900 0 . . . . .	<b>163</b>	932 500 068 0 . . . . .	<b>33</b>	934 701 000 0 . . . . .	<b>40</b>
925 481 103 0 . . . . .	<b>160</b>	925 491 901 0 . . . . .	<b>163</b>	932 500 080 0 . . . . .	<b>33</b>	934 701 001 0 . . . . .	<b>40</b>
925 481 120 0 . . . . .	<b>160</b>	925 492 001 0 . . . . .	<b>163</b>	932 500 081 0 . . . . .	<b>33</b>	934 701 005 0 . . . . .	<b>40</b>
925 481 121 0 . . . . .	<b>160</b>	925 492 100 0 . . . . .	<b>163</b>	932 500 082 0 . . . . .	<b>33</b>	934 701 040 0 . . . . .	<b>40</b>
925 481 150 0 . . . . .	<b>160</b>	925 492 102 0 . . . . .	<b>164</b>	932 500 087 0 . . . . .	<b>33</b>	934 701 041 0 . . . . .	<b>40</b>
925 481 151 0 . . . . .	<b>160</b>	925 492 200 0 . . . . .	<b>164</b>	932 500 089 0 . . . . .	<b>34</b>	934 701 110 0 . . . . .	<b>40</b>
925 481 156 0 . . . . .	<b>160</b>	925 492 201 0 . . . . .	<b>163</b>	932 500 098 0 . . . . .	<b>34</b>	934 702 000 0 . . . . .	<b>42</b>
925 481 170 0 . . . . .	<b>160</b>	925 492 203 0 . . . . .	<b>164</b>	932 500 099 0 . . . . .	<b>34</b>	934 702 002 0 . . . . .	<b>42</b>
925 481 201 0 . . . . .	<b>160, 286</b>	925 492 208 0 . . . . .	<b>164</b>	932 500 101 0 . . . . .	<b>34</b>	934 702 005 0 . . . . .	<b>42</b>
925 481 230 0 . . . . .	<b>160</b>	925 492 209 0 . . . . .	<b>164</b>	932 500 102 0 . . . . .	<b>34</b>	934 702 040 0 . . . . .	<b>42</b>
925 481 231 0 . . . . .	<b>160</b>	925 492 213 0 . . . . .	<b>164</b>	932 500 103 0 . . . . .	<b>34</b>	934 702 041 0 . . . . .	<b>42</b>
925 481 260 0 . . . . .	<b>160</b>	925 492 221 0 . . . . .	<b>164</b>	932 500 104 0 . . . . .	<b>34</b>	934 702 042 0 . . . . .	<b>42</b>
925 481 270 0 . . . . .	<b>160</b>	925 492 300 0 . . . . .	<b>164</b>	932 500 105 0 . . . . .	<b>34</b>	934 702 045 0 . . . . .	<b>42</b>
925 481 271 0 . . . . .	<b>160</b>	925 492 902 0 . . . . .	<b>164</b>	932 500 107 0 . . . . .	<b>34</b>	934 702 047 0 . . . . .	<b>42</b>
925 481 272 0 . . . . .	<b>160</b>	925 492 903 0 . . . . .	<b>164</b>	932 500 109 0 . . . . .	<b>34</b>	934 702 073 0 . . . . .	<b>40</b>
925 481 312 0 . . . . .	<b>161</b>	925 494 041 0 . . . . .	<b>162</b>	932 500 110 0 . . . . .	<b>34</b>	934 702 082 0 . . . . .	<b>42</b>
925 481 313 0 . . . . .	<b>161</b>	925 494 106 0 . . . . .	<b>162</b>	932 500 111 0 . . . . .	<b>34</b>	934 702 100 0 . . . . .	<b>42</b>
925 481 314 0 . . . . .	<b>161</b>	925 494 910 0 . . . . .	<b>162</b>	932 500 112 0 . . . . .	<b>34</b>	934 702 101 0 . . . . .	<b>42</b>

934 702 110 0 . . . . .	<b>42</b>	934 714 016 0 . . . . .	<b>43</b>	950 105 001 0 . . . . .	<b>63, 262</b>	950 960 002 0 . . . . .	<b>65, 263</b>
934 702 120 0 . . . . .	<b>42</b>	934 714 019 0 . . . . .	<b>43</b>	950 108 002 0 . . . . .	<b>63, 262</b>	950 960 900 0 . . . . .	<b>263</b>
934 702 122 0 . . . . .	<b>42</b>	934 714 030 0 . . . . .	<b>43</b>	950 110 002 0 . . . . .	<b>63, 262</b>	951 002 133 0 . . . . .	<b>65, 263</b>
934 702 191 0 . . . . .	<b>42</b>	934 714 109 0 . . . . .	<b>43</b>	950 310 001 0 . . . . .	<b>63, 262</b>	951 002 157 0 . . . . .	<b>65, 263</b>
934 702 192 0 . . . . .	<b>42</b>	934 714 110 0 . . . . .	<b>43</b>	950 405 001 0 . . . . .	<b>63, 262</b>	951 002 158 0 . . . . .	<b>65, 263</b>
934 702 210 0 . . . . .	<b>42</b>	934 714 111 0 . . . . .	<b>43</b>	950 405 351 2 . . . . .	<b>65, 264</b>	951 005 010 0 . . . . .	<b>65, 263</b>
934 702 220 0 . . . . .	<b>42</b>	934 714 119 0 . . . . .	<b>43</b>	950 406 001 0 . . . . .	<b>64, 262</b>	951 811 002 0 . . . . .	<b>194</b>
934 702 221 0 . . . . .	<b>42</b>	934 714 123 0 . . . . .	<b>43</b>	950 410 004 0 . . . . .	<b>64, 262</b>	951 811 003 0 . . . . .	<b>300</b>
934 702 223 0 . . . . .	<b>42</b>	934 714 124 0 . . . . .	<b>43</b>	950 410 902 0 . . . . .	<b>64, 262</b>	951 811 004 0 . . . . .	<b>194</b>
934 702 240 0 . . . . .	<b>42</b>	934 714 125 0 . . . . .	<b>43</b>	950 415 005 0 . . . . .	<b>64, 262</b>	951 811 005 0 . . . . .	<b>194</b>
934 702 250 0 . . . . .	<b>42</b>	934 714 126 0 . . . . .	<b>43</b>	950 420 003 0 . . . . .	<b>64, 262</b>	951 811 006 0 . . . . .	<b>194</b>
934 702 251 0 . . . . .	<b>42</b>	934 714 137 0 . . . . .	<b>43</b>	950 430 001 0 . . . . .	<b>64, 262</b>	951 811 007 0 . . . . .	<b>194</b>
934 702 252 0 . . . . .	<b>42</b>	934 714 145 0 . . . . .	<b>43</b>	950 430 002 0 . . . . .	<b>262</b>	951 811 008 0 . . . . .	<b>194</b>
934 702 260 0 . . . . .	<b>42</b>	934 714 151 0 . . . . .	<b>41</b>	950 515 000 0 . . . . .	<b>262</b>	951 811 010 0 . . . . .	<b>194</b>
934 702 261 0 . . . . .	<b>42</b>	934 714 152 0 . . . . .	<b>41</b>	950 515 003 0 . . . . .	<b>64, 262</b>	951 811 011 0 . . . . .	<b>194</b>
934 702 270 0 . . . . .	<b>42</b>	934 714 160 0 . . . . .	<b>41</b>	950 515 351 2 . . . . .	<b>65, 264</b>	951 811 012 0 . . . . .	<b>194</b>
934 702 271 0 . . . . .	<b>42</b>	934 714 211 0 . . . . .	<b>43</b>	950 516 004 0 . . . . .	<b>64, 262</b>	951 811 013 0 . . . . .	<b>194</b>
934 702 300 0 . . . . .	<b>42</b>	934 714 302 0 . . . . .	<b>43</b>	950 520 003 0 . . . . .	<b>64, 262</b>	951 811 014 0 . . . . .	<b>194</b>
934 702 302 0 . . . . .	<b>42</b>	934 714 320 0 . . . . .	<b>43</b>	950 520 900 0 . . . . .	<b>262</b>	951 811 106 0 . . . . .	<b>300</b>
934 702 304 0 . . . . .	<b>42</b>	934 714 400 0 . . . . .	<b>43</b>	950 525 001 0 . . . . .	<b>64, 262</b>	951 811 111 0 . . . . .	<b>194, 300</b>
934 702 320 0 . . . . .	<b>42</b>	934 714 401 0 . . . . .	<b>43</b>	950 527 005 0 . . . . .	<b>64, 262</b>	951 811 702 0 . . . . .	<b>300</b>
934 702 322 0 . . . . .	<b>42</b>	934 714 403 0 . . . . .	<b>43</b>	950 530 002 0 . . . . .	<b>64, 262</b>	951 811 703 0 . . . . .	<b>300</b>
934 702 323 0 . . . . .	<b>42</b>	934 714 404 0 . . . . .	<b>43</b>	950 530 900 0 . . . . .	<b>262</b>	951 811 705 0 . . . . .	<b>300</b>
934 702 324 0 . . . . .	<b>42</b>	934 714 730 0 . . . . .	<b>43</b>	950 530 903 0 . . . . .	<b>64, 262</b>	951 811 750 0 . . . . .	<b>300</b>
934 702 330 0 . . . . .	<b>42</b>	934 714 732 0 . . . . .	<b>43</b>	950 537 001 0 . . . . .	<b>262</b>	951 811 752 0 . . . . .	<b>300</b>
934 702 340 0 . . . . .	<b>42</b>	934 714 740 0 . . . . .	<b>43</b>	950 540 001 0 . . . . .	<b>64, 262</b>	951 811 763 0 . . . . .	<b>300</b>
934 702 342 0 . . . . .	<b>42</b>	950 000 900 0 . . . . .	<b>261</b>	950 560 002 0 . . . . .	<b>64, 262</b>	951 811 764 0 . . . . .	<b>300</b>
934 702 380 0 . . . . .	<b>42</b>	950 001 003 0 . . . . .	<b>63</b>	950 620 005 0 . . . . .	<b>64, 262</b>	951 811 772 0 . . . . .	<b>300</b>
934 702 381 0 . . . . .	<b>42</b>	950 001 351 2 . . . . .	<b>65, 264</b>	950 620 006 0 . . . . .	<b>64, 262</b>	951 811 773 0 . . . . .	<b>300</b>
934 702 387 0 . . . . .	<b>42</b>	950 020 000 0 . . . . .	<b>63, 261</b>	950 620 007 0 . . . . .	<b>262</b>	951 811 781 0 . . . . .	<b>300</b>
934 702 388 0 . . . . .	<b>43</b>	950 020 001 0 . . . . .	<b>63, 261</b>	950 628 001 0 . . . . .	<b>263</b>	951 811 799 0 . . . . .	<b>300</b>
934 702 390 0 . . . . .	<b>43</b>	950 020 002 0 . . . . .	<b>63, 261</b>	950 630 001 0 . . . . .	<b>263</b>	951 811 801 0 . . . . .	<b>300</b>
934 702 391 0 . . . . .	<b>43</b>	950 020 003 0 . . . . .	<b>261</b>	950 630 002 0 . . . . .	<b>64, 263</b>	951 812 425 0 . . . . .	<b>300</b>
934 705 002 0 . . . . .	<b>41</b>	950 020 004 0 . . . . .	<b>63, 261</b>	950 630 005 0 . . . . .	<b>64, 263</b>	951 812 701 0 . . . . .	<b>300</b>
934 705 003 0 . . . . .	<b>41</b>	950 020 005 0 . . . . .	<b>63, 261</b>	950 630 006 0 . . . . .	<b>64, 263</b>	951 812 702 0 . . . . .	<b>300</b>
934 705 004 0 . . . . .	<b>41</b>	950 020 006 0 . . . . .	<b>63, 261</b>	950 720 005 0 . . . . .	<b>64, 263</b>	951 812 703 0 . . . . .	<b>300</b>
934 705 005 0 . . . . .	<b>41</b>	950 020 007 0 . . . . .	<b>63, 261</b>	950 720 351 2 . . . . .	<b>65, 264</b>	951 812 706 0 . . . . .	<b>300</b>
934 705 008 0 . . . . .	<b>41</b>	950 020 008 0 . . . . .	<b>63, 261</b>	950 722 002 0 . . . . .	<b>64, 263</b>	951 812 711 0 . . . . .	<b>194</b>
934 705 009 0 . . . . .	<b>41</b>	950 020 009 0 . . . . .	<b>261</b>	950 730 006 0 . . . . .	<b>64, 263</b>	951 812 712 0 . . . . .	<b>194</b>
934 705 010 0 . . . . .	<b>41</b>	950 020 010 0 . . . . .	<b>63, 261</b>	950 730 007 0 . . . . .	<b>64, 263</b>	951 812 721 0 . . . . .	<b>300</b>
934 705 011 0 . . . . .	<b>41</b>	950 020 011 0 . . . . .	<b>63, 261</b>	950 740 000 0 . . . . .	<b>263</b>	951 812 739 0 . . . . .	<b>300</b>
934 705 013 0 . . . . .	<b>41</b>	950 020 012 0 . . . . .	<b>63, 261</b>	950 740 002 0 . . . . .	<b>64, 263</b>	951 812 740 0 . . . . .	<b>300</b>
934 705 014 0 . . . . .	<b>41</b>	950 020 013 0 . . . . .	<b>63, 261</b>	950 740 900 0 . . . . .	<b>263</b>	951 812 749 0 . . . . .	<b>300</b>
934 705 015 0 . . . . .	<b>41</b>	950 060 000 0 . . . . .	<b>261</b>	950 740 904 0 . . . . .	<b>64, 263</b>	951 812 762 0 . . . . .	<b>194</b>
934 705 021 0 . . . . .	<b>41</b>	950 060 003 0 . . . . .	<b>63, 261</b>	950 740 906 0 . . . . .	<b>64, 263</b>	951 812 771 0 . . . . .	<b>300</b>
934 707 010 0 . . . . .	<b>41</b>	950 060 004 0 . . . . .	<b>63, 261</b>	950 760 002 0 . . . . .	<b>64, 263</b>	951 813 150 0 . . . . .	<b>194, 300</b>
934 707 011 0 . . . . .	<b>41</b>	950 060 009 0 . . . . .	<b>261</b>	950 820 001 0 . . . . .	<b>64, 263</b>	951 813 711 0 . . . . .	<b>194</b>
934 714 001 0 . . . . .	<b>43</b>	950 060 900 0 . . . . .	<b>261</b>	950 830 004 0 . . . . .	<b>64, 263</b>	951 813 714 0 . . . . .	<b>194</b>
934 714 003 0 . . . . .	<b>43</b>	950 060 904 0 . . . . .	<b>261</b>	950 836 001 0 . . . . .	<b>64, 263</b>	951 813 726 0 . . . . .	<b>300</b>
934 714 004 0 . . . . .	<b>43</b>	950 080 000 0 . . . . .	<b>261</b>	950 845 001 0 . . . . .	<b>65, 263</b>	951 813 732 0 . . . . .	<b>300</b>
934 714 006 0 . . . . .	<b>43</b>	950 080 002 0 . . . . .	<b>63, 262</b>	950 845 002 0 . . . . .	<b>65, 263</b>	951 814 700 0 . . . . .	<b>300</b>
934 714 010 0 . . . . .	<b>43</b>	950 080 900 0 . . . . .	<b>261</b>	950 860 004 0 . . . . .	<b>65, 263</b>	951 814 701 0 . . . . .	<b>300</b>
934 714 011 0 . . . . .	<b>43</b>	950 080 903 0 . . . . .	<b>262</b>	950 949 351 2 . . . . .	<b>65, 264</b>	951 814 705 0 . . . . .	<b>194</b>
934 714 014 0 . . . . .	<b>43</b>	950 100 002 0 . . . . .	<b>63, 262</b>	950 960 001 0 . . . . .	<b>263</b>	951 814 706 0 . . . . .	<b>300</b>



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951 814 716 0 . . . . .	<b>300</b>	952 201 018 0 . . . . .	<b>250</b>	960 905 823 4 . . . . .	<b>239</b>	961 722 265 0 . . . . .	<b>136</b>
951 814 721 0 . . . . .	<b>300</b>	952 201 019 0 . . . . .	<b>250</b>	961 317 000 0 . . . . .	<b>70</b>	961 722 266 0 . . . . .	<b>138</b>
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951 814 753 0 . . . . .	<b>194</b>	960 731 017 0 . . . . .	<b>312</b>	961 702 030 0 . . . . .	<b>138</b>	961 722 302 0 . . . . .	<b>138</b>
951 814 756 0 . . . . .	<b>300</b>	960 731 019 0 . . . . .	<b>238, 312</b>	961 702 031 0 . . . . .	<b>138</b>	961 722 305 0 . . . . .	<b>138</b>
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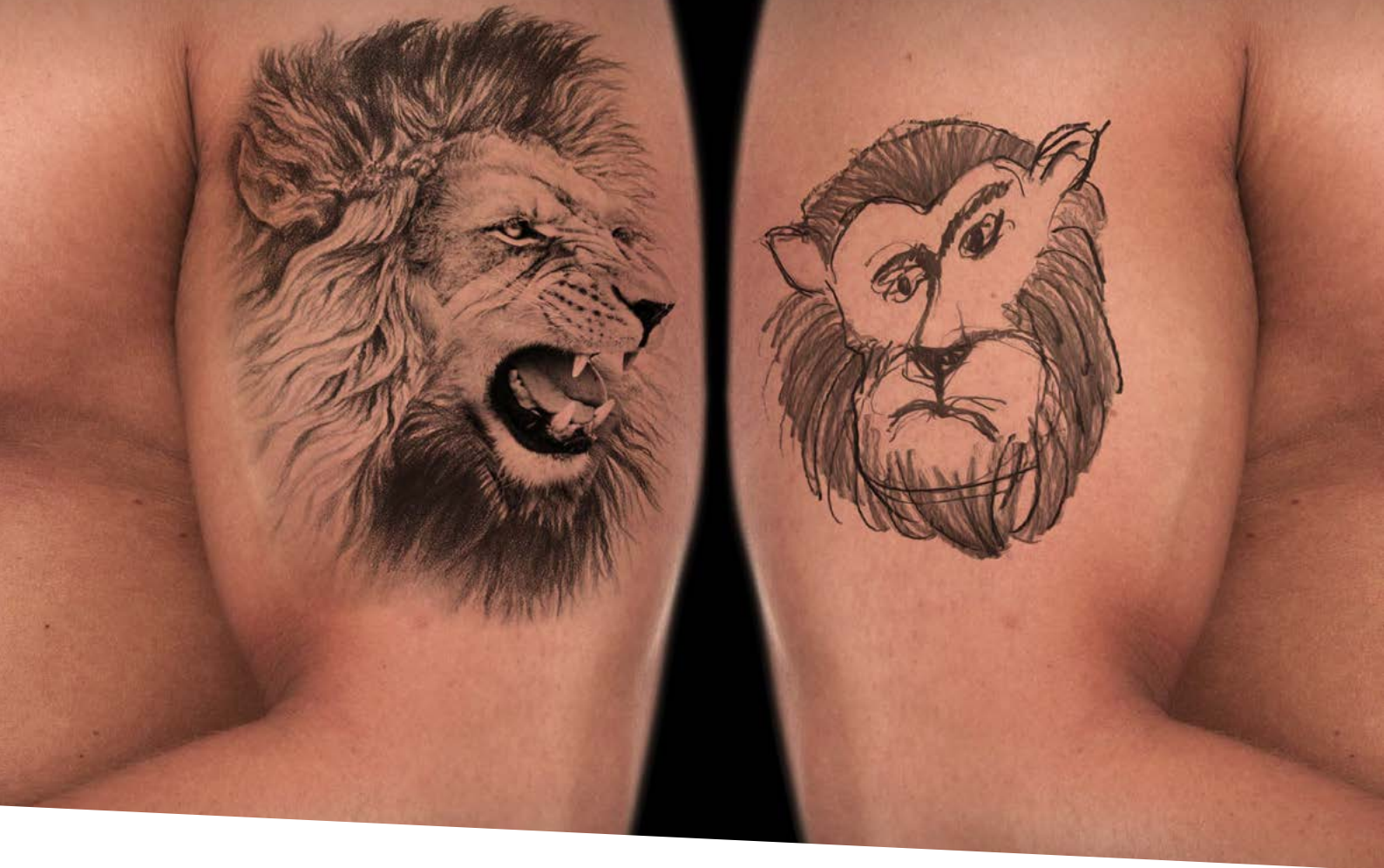
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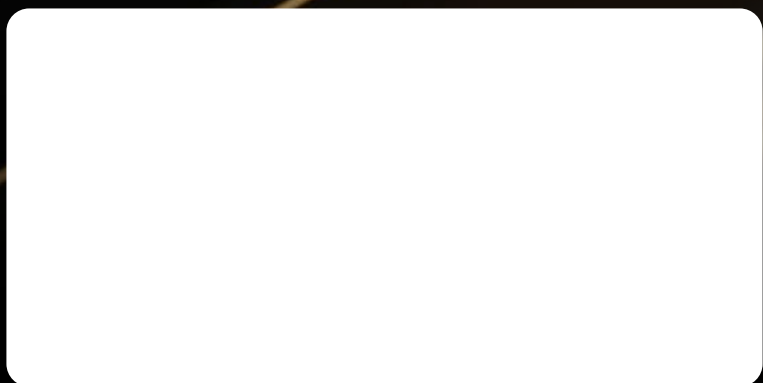
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