



# Bremspunkt



THE CUSTOMER MAGAZINE FROM KNORR-BREMSE  
COMMERCIAL VEHICLE SYSTEMS  
ISSUE 2 | SEPTEMBER 2014

**KNORR-BREMSE AT TRADE FAIRS**  
Major presence at IAA and Automechanika

**BEST BRAND 2014**  
Readers choose Knorr-Bremse again

**EVERYTHING TO HAND**  
ad-AUTOTEILE-CARGO GMBH & CO. KG

**KNORR-BREMSE**



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**Hinrich J. Woebcken,**  
Executive Board Member, Knorr-Bremse AG

## EDITORIAL

Dear Reader,

You are receiving this issue of "Braking Point" in the run-up to the two most important trade fairs in the commercial vehicle calendar – Automechanika in Frankfurt and the 65th IAA Commercial Vehicles in Hanover. So you will not be surprised to find our customer magazine focusing on all the latest innovations and services that Knorr-Bremse will be showcasing at both events.

Automechanika opens its doors on September 16 in Frankfurt. Everyone of any importance in the commercial vehicle sector will be attending this major event – and we, too, will be presenting our product and service portfolio on booth E91 in Hall 3.0.

The 65th IAA Commercial Vehicles in Hanover will take place immediately after Automechanika from September 25 to October 2. Knorr-Bremse will be showcasing a broad range of innovative system solutions in Hall 17, Booth A30. A stylized model of a truck and trailer will visualize how dynamic safety systems intervene in the braking process. We will also be displaying a broad spectrum of products ranging from wheel brakes and electronic brake control to powertrain and driver assistance systems. Electronic air treatment technology and innovative transmission control systems round off the list of exhibits.

In addition to trade fair news, this issue of "Braking Point" also describes a new tool that workshops can use to check actuator interfaces simply and rapidly during brake servicing. And it contains an account of the ad-AUTOTEILE-CARGO workshop system that is part of the CARAT purchasing network, as well as a description of the second Knorr-Bremse Fleet Day.

Kind regards

A handwritten signature in blue ink, appearing to read 'H. J. Woebcken', with a stylized flourish at the end.

Hinrich J. Woebcken

## » NEWS



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### MAIL TRANSPORTED WITH ILVL

Originally set up by 18 German freight companies in 1977 under the name of "DPD Deutscher Paketdienst", DPD is now owned by French company GeoPost and is one of Europe's leading express package courier services, with more than 800 depots in over 40 countries. GeoPost makes considerable demands on its vehicles, and one critical point has always been the question of how to control the suspension during loading. GeoPost UK decided to carry out field testing of the Intelligent Levelling Control System (iLvl), which enables the height of trailers to be easily raised or lowered. An evaluation of the system, which went into operation in September 2013, not only confirmed that it functions flawlessly but also that it is cheaper and simpler to operate than other similar systems. In the first quarter of 2014 GeoPost UK therefore decided to equip a further 140 trailers with iLvl.

## NEW DEPARTURE IN HEDEMÜNDE

In Hedemünden, Lower Saxony, a new logistics center located right next to the A7 autobahn was opened in March by Wessels+Müller AG. The Osnabrück-based company, which is increasingly focusing on the commercial vehicle sector, now has a fully-automated warehouse for small parts and a high-rack area for 40,800 pallets designed to ensure rapid availability of parts for its 110 sales outlets in Germany, Holland and Austria. Wessels+Müller holds a total of more than 175,000 different vehicle parts for cars and trucks – including the full range of products from its long-standing partner Knorr-Bremse.



## STEADY EXPANSION

Wütschner Fahrzeugteile GmbH is steadily expanding its business. In April 2014 the company, which sells a full range of automotive parts for cars, trucks and agricultural vehicles, opened its first branch in south-western Germany – in Heilbronn. Needless to say its stock includes Knorr-Bremse's entire product range. The company has also expanded the four Austrian sites operated by Leitner Kfz Teile, which has been a member of the Wütschner group since February. In Landsberg, between Halle and Leipzig, a new central warehouse has also been created to ensure reliable customer deliveries at a rate of up to three times daily.

## CELEBRATIONS AT STOCKINGER

At the end of June, Stockinger Truck & Trailer Service in Achern, southern Germany, organized an Open Day and exhibition to celebrate three important milestones in the company's history: its 95th birthday, its 25th year at the current site, and the completion of an extension to one of its workshops. Back in 1919 the family-run company was originally set up as a blacksmith and horse-drawn carriage repair business. It expanded over the years, and today the third generation of the family offers a full range of services for trucks. Knorr-Bremse was there with an information booth amongst the many service partners who turned up to offer Stockinger their congratulations.



## BEST BRAND ONCE AGAIN

**FOR THE NINTH TIME IN SUCCESSION**, readers have voted Knorr-Bremse "Best Brand" in the "Brakes" category.

Last spring, publishing house ETM Verlag asked readers to vote for the best commercial vehicles and the best brands in the commercial vehicle segment. Two thirds of the 7,400 or more votes cast in the "Brakes" category went to Knorr-Bremse.

"We are always delighted to win this award – and particularly proud of the fact that the decision is made by industry experts," commented Bernd Spies, Chairman of the Board of Management of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, after the company was presented with the award for the ninth time in succession at a ceremony on June 5.

The award is regarded as a good indicator of quality and recognizes the reliability and safety of the products and services involved. It is also an important benchmark of brand acceptance and image.



*Bernd Spies, Chairman of the Board of Management of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH at the award ceremony with moderator Alexandra Tapprogge.*

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## FLEETTALK

At the start of June, Knorr-Bremse invited experts from the transport industry to Fleet Day 2014, held in the town of Hünfeld. For two days the guests discussed their experiences in the sector and had an opportunity to find out about Knorr-Bremse's trailer product portfolio, the latest innovations in the segment, and recent developments in the company's aftermarket service. Jochen Hahn, three-time European Truck Race champion, was guest speaker in a social program that also left plenty of time for meeting old friends and making new contacts. The response to the event was positive: "These two days were extremely interesting as they offered a glimpse of what the future may hold," commented Martin Lettl of freight company Lettl.





## KNORR-BREMSE AT TRUCK GRAND PRIX

**TRUCK RACE WEEKENDS ARE POPULAR MEETING PLACES FOR VEHICLE ENTHUSIASTS.** Knorr-Bremse supports the sponsored teams and uses the weekends to maintain a dialogue with its customers. The lucky winners of our competition were also at the Eifel Race on the Nürburgring circuit.

Jochen Hahn put on an impressive performance in front of his home crowd – and as usual the current FIA European Champion's truck was equipped with Knorr-Bremse brakes. After the third of the four races Hahn was in pole position, and on the Sunday he once again demonstrated that he is in a class of his own. In races like these, a bit of pushing and shoving is the order of the day while the drivers jockey for position – as Hahn found out when he came up against the talented young driver Benedek Major from the Oxox Racing team. After falling far behind when he was forced off the road onto the gravel verge, Hahn displayed the fighting spirit that has won him the FIA Truck Race Championship no fewer than three times in the past. In a nail-biting pursuit he worked his way up through the field, skillfully steering his 1,000 HP rac-

ing truck round the sharp bends and past his competitors. It was an impressive demonstration of how success depends not just on massive engine power but also on having the right brakes.

Amongst the 170,000-strong crowd the 26 winners of Knorr-Bremse's competition were given an opportunity to inspect the racing trucks for themselves when Knorr-Bremse invited them to a welcoming session with refreshments, followed by a pit tour. One of the main winners, Stefan Weiß was delighted to get so close to the vehicles: "As a mechanic I am fascinated by the technology involved," said Weiß, who had taken part in the competition at the Trostschau trade fair in Stuttgart. The opportunity to collect Jochen Hahn's autograph also went down well with the winners.



*Guests of Knorr-Bremse: Delighted customers from Poland and the Czech Republic with Damian Myszka at the Nürburgring (top) and at the race in Misano, Italy (bottom).*



## SYSTEMATIC PROGRESS

**BRAKING INVOLVES MORE** THAN JUST BRINGING A TRUCK TO A HALT – THE VEHICLE HAS TO BE CONTROLLED IN THREE DIMENSIONS.

Under the motto “KNORR-BREMSE – CREATIVE SYSTEMS – GLOBALLY” the company booth at this year’s IAA Commercial Vehicles will be showing what can be achieved when you look more closely at the braking process.

The model in the central display on this year’s booth provides an overview of the complex control processes in a modern vehicle. Visitors can see what happens if, for example, the trailer starts to skid. How do the ABS and ESP safety functions intervene in the braking process? What has to happen to disengage the compressor in order to save fuel? How do the compressor, brake control system, trailer and transmission control interact? The Knorr-

Bremse model provides the answers to these questions.

Monitors installed in the floor of the model clearly demonstrate processes that are normally over in a fraction of a second. The interplay of all the elements in the system is shown, in line with Knorr-Bremse’s second motto this year: “SYSTEMS: IN EVERY DETAIL”. Visitors are shown how safe and efficient



The Knorr-Bremse booth at IAA Commercial Vehicles.



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operation of the vehicle is only possible if all the networked components are properly controlled. "Only if you understand how things are interlinked can you improve the processes on individual vehicles and make our roads safer," comments Jürgen Knott, Vice President Sales OE at Knorr-Bremse.

### CONTROLLING ALL THREE DIMENSIONS

As well as showing the sheer variety of functions involved and the extent to which they are all interlinked, the model also demonstrates how Knorr-Bremse technology controls the movements of the vehicle in all directions: in the direction of travel using integrated functions such as ABS in EBS, laterally using ESP and cross stabilization, and ver-

tically through the levelling control system. Many driver assistance systems rely on these control options – for example Lane Departure Warning (LDW) or the Advanced Emergency Braking System (AEBS).

### HELPING THE DRIVER

Driver assistance systems are becoming increasingly popular, as they can significantly improve road safety through their intelligent use of the vehicle infrastructure and their ability to react within a split second. Familiar functions such as ABS or ESP are now well established and in some cases are even required by law in Europe. And the number of vehicles equipped with Adaptive Cruise Control (ACC) or Lane Departure Warning (LDWS) is also on the increase. Knorr-Bremse



Jürgen Knott,  
Vice President  
Sales OE.





*iTAP enables the driver to easily control trailer functions remotely.*

has already demonstrated its ability to combine these systems, but the development process is far from over. It is possible to envisage many other assistant systems based on intelligent evaluation of vehicle and traffic data that would make driving more efficient and safer. In this context Knorr-Bremse has already shown that another of its mottos – “RESPONSIBILITY: ASSURED” is being taken seriously.

## **CORNERING SAFELY**

Another example of the intelligent use of existing vehicle technology combined with selected operational data is the “Steer-by-Brake” System. In conjunction with trailer manufacturer Kässbohrer, Knorr-Bremse has developed this technology as a cost-saving alternative to considerably more expensive steerable axles. By partial reduction of engine torque and one-sided application of the brakes on the rear axle the trailer achieves the curve radius required by law without the need for a steerable axle. The entire system operates automatically – whether the vehicle is moving forward or backwards. There is no need for the driver to operate any switches and he can therefore concentrate fully on the driving situation. A demonstration of the system on a Kässbohrer trailer will be given in the outdoor exhibition area.

## **SMARTPHONES AS REMOTE CONTROLS**

The Intelligent Trailer Access Point (iTAP) and related app from Knorr-Bremse enables a smartphone to be used both to control trailer functions and to store data. Basic information such as tire pressure can be accessed and the level of the trailer controlled by the swipe of a finger.

To make intelligent fleet control possible, the operational data can be transmitted to fleet headquarters via iTAP. Together with TIP Trailer Services, Knorr-Bremse is developing Fleet Remote. This stores information on the vehicle’s geographical location and the load on the braking system and sends data packages regularly and at minimal cost via the iTAP module to TIP Trailer Services’ Fleet Remote platform, where the information is processed and made available to the fleet operator. Maintenance schedules can then be adjusted according to the actual condition of the vehicle.

## **GEARING UP FOR SAVINGS**

Knorr-Bremse has scored another world first with its double clutch control unit, which ensures rapid gear changing on trucks without any loss of power transmission. This means greater comfort for the driver and diesel savings for the fleet operator, as the engine can operate for longer at optimum revs, thereby reducing fuel consumption.



## KNORR-BREMSE AT IAA COMMERCIAL VEHICLES

25.9 to 2.10.2014 in Hanover

Hall 17, Booth A30

Outdoor area in front of Hall 17

VDA Innovation Stage

### INTELLIGENT USE OF COMPRESSED AIR

The electro-pneumatic brake (EPB) – which sets new standards of safety and comfort – has already gone into volume production in conjunction with a truck manufacturer. When the vehicle is stationary the brake can either be activated manually – by pressing a button – or automatically to prevent the vehicle from rolling off. Knorr-Bremse offers EPB integrated into the EAC2.5 air supply or as a stand-alone system for retrofitting.

Various different aspects of the EBS7 braking system have undergone improvement. The most striking is the fact that the central control unit has disappeared from the driver's cab in the latest version and is now mounted on the vehicle chassis. This makes it easier to install and shortens the connection to the actuators. At the same time the rotation sensor has been integrated into the control unit.

### REDUCING VIBRATIONS

At the IAA you can also find out more about the latest developments in the field of visco-dampers. Knorr-Bremse's Berlin subsidiary Hasse & Wrede has further reduced noise emissions and damaging vibrations on rotating parts of the engine such as the crankshaft, camshaft or fuel pump.



*The electronic brake with EAC 2.5 enhances comfort and safety.*

### DISTINGUISHED VISITOR

On the weekend of September 27/28, a famous guest will provide a rival attraction to the new products on show. Jochen Hahn, current European Champion and three-time winner of the Truck Race, will be signing autographs at the Knorr-Bremse booth on Saturday at 11:00 and Sunday at 14:00. You can also see him and his vehicle in the Knorr-Bremse outdoor area near Hall 17.

## EMERGENCY BRAKING – INDOORS

**Visitors to the Knorr-Bremse booths at the IAA and Automechanika trade fairs can try out their reactions to dangerous driving situations without endangering life and limb – thanks to the simulation experts from Australian specialist company Sydac.**

You are cruising gently through the suburbs when a cyclist suddenly appears out of a side street. Or you are travelling at speed on the open road when a driver overtakes and cuts in front of you. These are both situations that occur hundreds of times every day and never fail to set

the heart racing. But how would you react? The drive simulator developed by Knorr-Bremse's Australian subsidiary Sydac can help answer this question – without any danger to life and limb. Our colleagues down under are best known for their simulation rigs for train drivers, but now they have developed simulators for truck drivers as well.

**So anyone who wants to try their hand at coping with dangerous situations on the road just needs to call in on Knorr-Bremse at the IAA or Automechanika!**

## LIGHTWEIGHT WITH TWO PISTONS

**IN AUGUST THE NEW ST 7-430 AIR DISC BRAKE FOR TRAILERS** went into volume production and will soon enable trailer payloads to be increased.

### ST 7-430 PROFILE

- Pneumatic disc brake for trailers
- Optimized for 9t axles
- 10t axle with max. brake cylinder size 22"/24" possible
- Total weight approx. 32 kg
- Lightest two-piston brake for 22.5" wheels available, i.e. higher payload or fuel savings
- Workshops with service expertise thanks to high market share
- World-wide spare parts availability

With its two pistons the ST 7-430 trailer disc brake is the lightest of its kind on the market. Design changes introduced by the engineers at Knorr-Bremse have made it ten per cent lighter than its predecessors – saving the operator money by reducing the trailer's unladen weight and cutting fuel consumption.

It is not surprising that trailer manufacturers, headed by Europe's biggest – Schmitz Cargobull – have taken up the new model with enthusiasm, especially as it is part of an extensive family of air disc brake types on offer from Knorr-Bremse. Most of the internal parts are taken from the company's tried-and-tested product range, and it goes without saying that the ST7-430 is compatible with all existing axles, discs and cylinders. The new brake is being manufactured at Knorr-Bremse's state-of-the-art Aldersbach plant.

### SLIMMING DOWN THE CALIPER AND PADS

The ST7-430 saves weight above all thanks to a modified brake caliper and weight-optimized back plate. The design of the brake pads is also new, with partly integrated tappets on the back of the inside pad. The outer pad has an integrated tipping edge which ensures optimized pad wear. Notches in the pads and matching protrusions on the back plate ensure that the pads cannot be incorrectly mounted.

Apart from these modifications the ProTec S® brake pad retaining system, which provided

optimum guidance and improved safety in the case of the SK brake, remains unchanged – as does the entire service concept and the special tools used.

### NO COMPROMISES OVER SAFETY

For disc brakes to function properly, correct matching of brake pads with the caliper and disc is crucial. An extensive testing program ensures that the entire system functions safely. This includes a vibration test, which assesses the fatigue strength of the friction material/back plate connection and of the brake pad hardware such as pad holder springs and pad retainers. To pass the test the entire system must be able to withstand several million load changes. The new disc brake also passed this test – so it will be several thousands of road kilometers before the trailer brake returns to the workshop for maintenance.

At the Knorr-Bremse booths at the IAA and Automechanika you can nevertheless be taken through the entire service concept and inspect the new actuators, back plates, pads and various repair sets for the ST 7-430.



*The modified caliper design and improved back plate on the new ST7-430 air disc brake reduces its overall weight.*



"I am sure that all needs are met in respect of documentation and training."

the new shape means there is no danger of the pads being mounted wrongly – no matter how hard you try – which means a greater degree of safety for the workshop technicians.

**What does Knorr-Bremse offer in the way of support for brake servicing and maintenance?**

As with our other brake types we provide comprehensive documentation for the ST7 as well as special training for service personnel. I am sure that all needs are met in in this respect. And, as always, repair kits are also available at short notice.

**How does one get hold of all this information?**

It's a good idea to make the initial contact via our website. You can find virtually all the required documentation and animations in the download area. But you can also ring up our Service Hotline. And if you want to inspect the new brake for yourself, just come along to one of our exhibition booths at the IAA or Automechanika – whichever is nearest. Our colleagues and I look forward to your visit!

## INTERVIEW

### THREE QUESTIONS. THREE ANSWERS:

Bärbel Hengstler, responsible at Knorr-Bremse for the aftermarket wheel brake portfolio

***The reduction in weight of the ST7-430 obviously benefits trailer manufacturers, but what are the advantages of the technical changes for workshops and dealers?***

For distributors and workshops what is important is what has *not* changed: the entire service concept and the special tools remain the same for ST and also for the previous 22.5-inch versions. The reduction in weight is noticeable when it comes to handling the units in the warehouse and workshop. The main change, though, is the shape of the brake pads. It means the dealer has to use a different order number and create slightly more space in the warehouse. But the advantages, for example in terms of improved wear-resistance, are huge. And



## SERVICE INCLUDED

**WITH THE SIMULTANEOUS LAUNCH OF VOLUME PRODUCTION OF SEVERAL PRODUCTS,** Knorr-Bremse is offering distributors, workshops and fleet operators at Automechanika a host of interesting new ideas. Company truck experts from all over Europe will be in Frankfurt to provide information about our products – but customers from the Americas and Asia will find specialists from their regions on hand as well.

Three of the new exhibits recently went into volume production, so this is an ideal opportunity to examine them and find out about their aftermarket service concepts. A complete package of materials and information – from installation manuals to diagnostic software and details of the training on offer – is available, demonstrating what “THINKING IN SERVICES: LIFETIME EFFICIENCY” actually means for the aftermarket.

### MODULAR MECHATRONICS

The modular service concept for the EAC 2.1 electronically controlled air treatment system is a first for a mechatronic component and means that non-defective parts do not need to be replaced. The result is more than just cost-effective maintenance and repair.



*The Knorr-Bremse booth at Automechanika.*



## KNORR-BREMSE AT AUTOMECHANIKA

16.9. to 20.9.2014 in Frankfurt  
Hall 3.0, Booth E 91

### INTEGRATED AIR SUSPENSION CONTROL

The TEBS G2.2 Premium with integrated trailer air suspension also recently went into volume production. The system makes a number of purely pneumatic components superfluous by covering a wide range of different operations – for example on tipper and mixer trucks. In addition to such a multi-functional capability, the Premium version also includes the Intelligent Leveling Control System (iLvl) – an electronically controlled air suspension system for trailers.

### OTHER INNOVATIONS

A number of new features of products that have been available for some time will be introduced at the trade fair, including the EBS 7 Electronic Control Unit (ECU), which is now mounted on the vehicle chassis rather than in the driver's cab.

Knorr-Bremse's compressor with clutch has also gone into volume production in conjunction with MAN, Scania and Volvo. The main feature in this case is the fact that the compressor switches off when the compressed air reservoir is full – in other words, the drivetrain continues to rotate but the compressor and clutch are disengaged. This not only reduces fuel consumption but also lowers the temperature of the compressed air, thereby improving its quality.

These are just a few examples of how we have put into practice the idea of "THINKING IN RELIABILITY. QUALITY GUARANTEED".

### SHOWCASING THE ENTIRE PORTFOLIO

In addition to the systems on display on the booth, there will be a clearly structured multi-media presentation of our entire product and service portfolio arranged according to target groups. Service personnel will be able to access specific information according to their particular interest. If, for example, a workshop foreman has a question, the Knorr-Bremse adviser will be able to use the touch screen to access technical details including special tools and diagnostic systems – and even call up short video clips on how to maintain the system concerned.

### LIFECYCLE 2.0

Remanufactured components in OE quality are an important issue – and not just for the repair of older systems. They are also becoming increasingly important from the point of view of sustainability: after all, everyone has a duty to make sparing use of resources. Knorr-Bremse has an entire team working on expanding our portfolio of genuine remanufactured products – a demonstration of "RESPONSIBLE THINKING. ASSURED". And this is not just confined to purely mechani-

cal components – as is illustrated by the EBS 2, which is a remanufactured mechatronic Trailer Control Module (TCM). The same quality commitment applies to remanufactured components as to new products – the only difference being the potential length of the product's operating life, which is shorter than in the case of an entirely new one.

For the first time Knorr-Bremse is also showcasing a remanufactured version of the Oil Separator Cartridge (OSC) – making high-end air drying available in a medium price segment.

### MANY DETAILS – A SINGLE OBJECTIVE

The Knorr-Bremse booth will be manned by colleagues from all over the world – all of them waiting to explain the various aspects of our extensive portfolio of new and established products. "In line with this year's motto of "THINKING IN SERVICES: LIFETIME EFFICIENCY" we continue to look at how our aftermarket services can make life easier for distributors, workshops and fleet operators", says Fritz Messerli, responsible for Sales IAM Europe. The results of these efforts can be experienced at Automechanika. Come and see for yourselves!



*Remanufacturing at the Knorr-Bremse site in Aldersbach.*

## PASSING THE MILLION MARK

In June the millionth clutch actuator came off the assembly line in Aldersbach. Since 2001 this electronic component has reliably controlled the pneumatic operation of truck clutches. As an external component the clutch actuator is part of the ZF AS Tronic transmission installed in their trucks by MAN, DAF and IVECO. Knorr-Bremse calculates that aftermarket demand for the actuators will run at some 30,000 per year.

With its clutch actuator and transmission control for ZF – and the double clutch module for Volvo – Knorr-Bremse offers ample proof of its competence in the drive-train segment. The company has both the necessary expertise and the products for optimizing truck engines and transmissions.



*Knorr-Bremse produces some 500 electro-pneumatic clutch actuators per day at its Aldersbach site.*

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### SERVICE AND PRODUCT NEWS

- New Kongsberg Silverline Cables for Volvo applications  
Y178636\_EN\_000
- Rationalised Multi Circuit Protection Valves  
Y186190\_EN\_000
- Rationalised Compressor Service Kits for Volvo Applications  
Y185737\_EN\_000
- Remanufactured EAC1  
Y119461\_EN\_001
- Expansion Knorr-Bremse Brake Disc Portfolio  
Y157252\_EN\_000
- New Standard Cartridge for Scania Applications - K087957  
Y176414\_EN\_000
- New Brake Pad Material for 'Protec S'  
Y116344\_EN\_006
- New Printing on Conventional Cartridges II40100F & II41300F  
Y176413\_EN\_000
- New Guide and Seal Kit  
DY177141\_EN\_000
- Software Update for TEBS G2.2 Standard Brake Module  
Y177693\_EN\_000
- Software Update for TEBS G2.2 Standard Brake Module  
Y177695\_EN\_000

The documents can be downloaded from [www.knorr-bremseCVS.com](http://www.knorr-bremseCVS.com)

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## CHECKING THE ACTUATOR INTERFACE

In a bid to identify further scope for improving our service offer, a Knorr-Bremse team spent some time observing maintenance work on brakes. It emerged that the interface between the brake and the actuator is particularly problematic. So we came up with the idea of developing a tool that would facilitate rapid examination of this interface.

The maintenance gauge, which looks rather like an ordinary ruler, can be used to show whether the thickness of the outer seal and the push-rod height are correct or whether the cylinder needs to be replaced. An animation available as a download on our website shows how easy this tool is to use. The first examples of the new gauge

are available exclusively to visitors to Knorr-Bremse at Automechanika in Frankfurt.



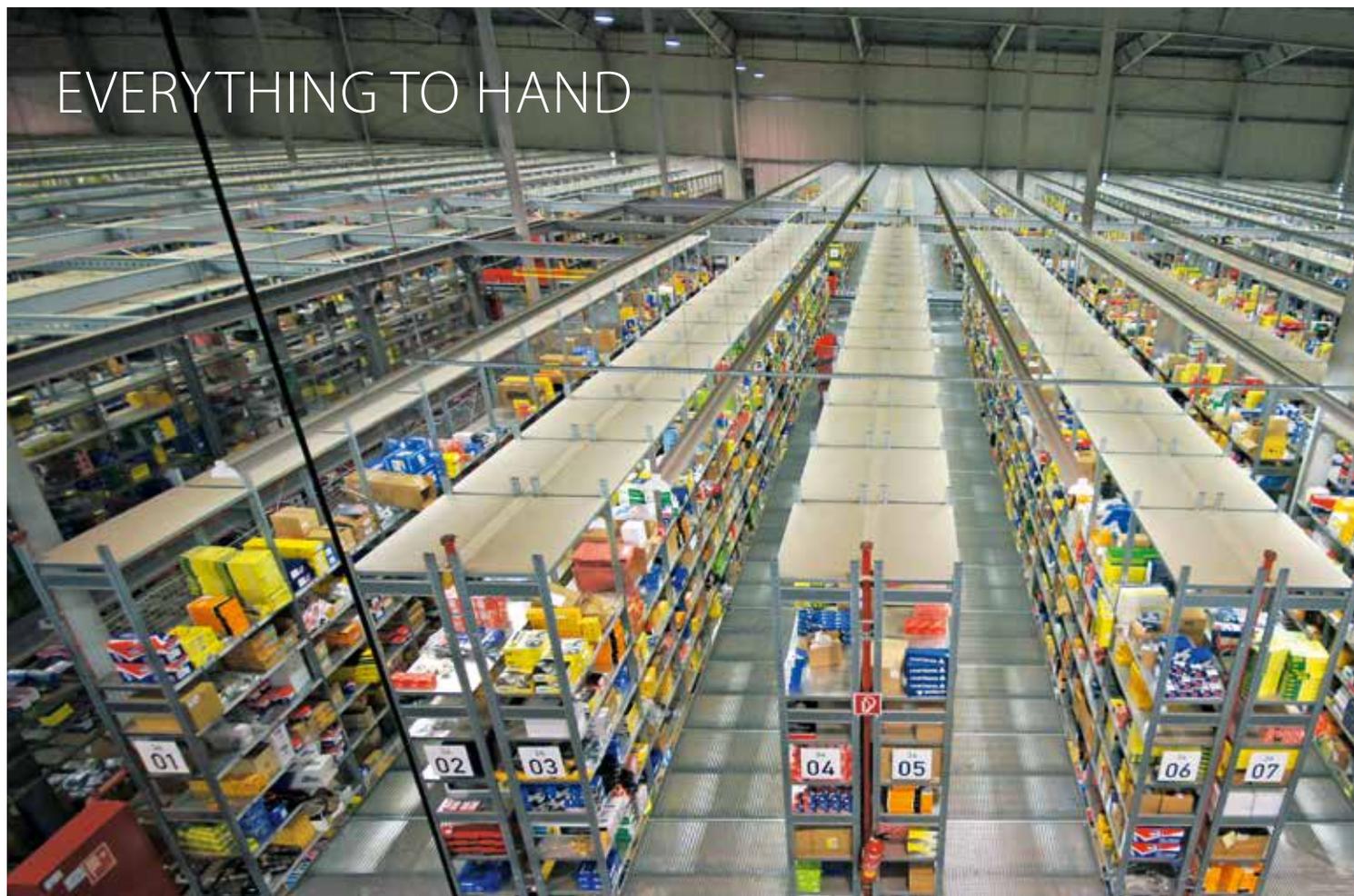
*The new gauge for checking the interface.*

## NEW SYSTEMS – ALL WELL-DOCUMENTED

**KNORR-BREMSE** REGULARLY MAKES NEW AND REVISED DOCUMENTS AVAILABLE as downloads on the company website. Extensive documentation is available, particularly for the new iTAP and iLvl systems.

User manuals, installation guides, functional descriptions, data sheets or even animations – comprehensive information and assistance related to Knorr-Bremse products and systems are always available in the download area of our website, where you can find updated and amended documents in various languages.

New documents now available include data sheets for the iTAP trailer remote control system, iLvl intelligent air suspension and the TEBS G2.2 Standard Plus trailer braking system. Knorr-Bremse has also revised and updated a range of individual documents in the TEBS G2 Product Manual to include iLvl and the TEBS G2.2 modulator series.



## EVERYTHING TO HAND

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**THE CARAT PURCHASING NETWORK OPERATES A SOPHISTICATED LOGISTICS SYSTEM TO ENSURE MEMBERS ARE SUPPLIED RAPIDLY WITH THE PRODUCTS THEY REQUIRE.** Certified Knorr-Bremse dealers also benefit from the system.

Sabine Duffner-Beck is the go-to person for information on pneumatic systems, brakes and axles. As truck product manager at Mannheim-based CARAT Systementwicklung- und Marketing GmbH & Co. KG, she is very familiar with the products and technical data of the various manufacturers. And Ms Duffner-Beck is also much in demand as a contact person for more than two dozen certified Knorr-Bremse dealers when they need products from the Munich-based manufacturer. Their needs are met to perfection, thanks to CARAT's sophisticated logistics system. An important role in the

system is played by ad-AUTOTEILE-CARGO GmbH & Co. KG, which operates a high-tech central warehouse in Castrop-Rauxel, North-Rhine Westphalia.

### **ACCESS TO PRODUCT CATALOGUE**

"In its warehouse ad-CARGO has some 120,000 article references from more than 500 brand suppliers. Our customers can also consult a virtual product catalogue which provides access to products that are not physically in the warehouse," explains

product manager Duffner-Beck. Particularly in the truck segment, ad-CARGO ensures that the shelves in the central warehouse are well stocked. No wonder that CARAT is the market leader in the German spare parts market. "The 40-odd members of the truck center benefit enormously from our ongoing expansion of the range held by ad-CARGO", says Sabine Duffner-Beck.

Knorr-Bremse is also a longstanding brand partner for CARAT, which first included the company's product range in 2011. Knorr-Bremse now supplies ad-CARGO with some



*The central warehouse enables CARAT to cover a wide range of parts for cars, trucks, chassis/paint and workshop equipment.*

1,200 parts for the truck segment, including the company's 300 bestsellers. In practice this means that every CARAT member who is a certified Knorr-Bremse dealer can lodge an order with ad-CARGO. There are currently 26 medium-sized dealers who make use of this logistics option. "When quantities are combined, the dealers benefit from economies of scale. They can also use the same system to order up parts from other manufacturers, saving shipping costs and minimizing the work involved," explains Sabine Duffner-Beck.

"Some dealers were initially worried that ordering their products via ad-CARGO might make them lose contact with Knorr-Bremse, but this concern has long since evaporated. We have competent contact people who can answer dealer's enquiries simply and rapidly. And Knorr-Bremse staff are still present in local dealerships", says Duffner-Beck. Product managers at CARAT are also



in almost daily touch with Knorr-Bremse to ensure optimum data quality. This ongoing exchange also means that processes and delivery performance are constantly being improved. "The partnership between CARAT and Knorr-Bremse is a real success story," is how Sabine Duffner-Beck sums up the situation.

## "OUR MEMBERS HAVE RAPID AND EASY ACCESS TO THE KNORR-BREMSE PORTFOLIO"



*Sabine Duffner-Beck,  
Product Manager at  
CARAT.*

### **DESIGNED FOR GROWTH**

CARAT is one of Germany's leading trade networks for automotive parts, paint accessories and workshop equipment and is part of ad-International (Auto Distribution International). Founded in 1997 by the cooperatives TS Union in Eschborn and Augros in Leinfelden-Echterdingen, the company now has its headquarters in Mannheim. At the heart of CARAT is the central warehouse in Castrop-Rauxel, which opened in 2009. Covering a floor area of 25,000 square meters, it supplies spare parts to more than 550 different locations and over 2,000 workshops in Germany. This makes the CARAT Group the only joint purchasing organization with its own central warehouse. And its logistics structures are designed for further growth.



# The reward for hard work...



## NINE YEARS DOWN THE LINE, PROUD TO BE BEST BRAND AGAIN!

More than 7,400 readers of three trade journals selected Knorr-Bremse as "Best Brand in the Commercial Vehicle Sector" in the "Brakes" category in 2014 – for the ninth year running! We would like to say a big "thank you" to our customers for the faith they have shown in us. It inspires us to continue to respond to the challenges of the market with high-quality, innovative and competitively priced products and services.

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