

triscan•news

TRISCAN NEWS VOLUME 5 . 2017

BE AWARE OF OXYGEN SENSOR ERROR MESSAGES
- ESPECIALLY WITH WIDEBAND SENSORS

NEW EXTENSIVE PROGRAMME
- EGR VALVES WITH GASKETS

NEW:
SMARTREP.INFO
- WE MAKE IT EASY
TO GET IT RIGHT!

NEW CEO AT TRISCAN

THE FIGHT FOR FREE DATA ACCESS
AND FREE COMPETITION

NEW: Oil drain plug and tool for VAG models with plastic oil pan • Do you have track control arms for some of the most popular car models • Be cautious when replacing ball joints on track control arms • Triscan protects the environment through joint ownership of PartsLife • Triscan's sensor programme for engine and brake system • Triscan now extends the warranty and guarantee... • and much more ...



Who are we - and what can we do?

Triscan is a 100% Danish company who has gained a strong position in the Scandinavian market and achieved heavily increasing sales in the rest of Europe. This position has been reached through creation of concepts, marketing and distribution of automotive spare parts for the professional free aftermarket.

- Fast delivery of the right parts
- Spare parts for 52 car makes
- 50,000 references
- 25 product groups
- Complete delivery
- Online catalogue

When you buy spare parts from Triscan you will not only get a product of high and uniform quality but also a complete product supplied with all the necessary mounting parts in a user-friendly packaging with mounting instructions, reference number, application guide etc.

“Improved sales and earnings, increased efficiency, higher delivery rate, reduced stock value and greater customer satisfaction”

Every day goods are delivered from Triscan’s 4 distribution centers in Brabrand, Glostrup as well as Iserlohn and Saarbrücken in Germany - to 35 markets in Europe.



Brabrand, DK



Glostrup, DK



Iserlohn, D



Saarbrücken, D

4



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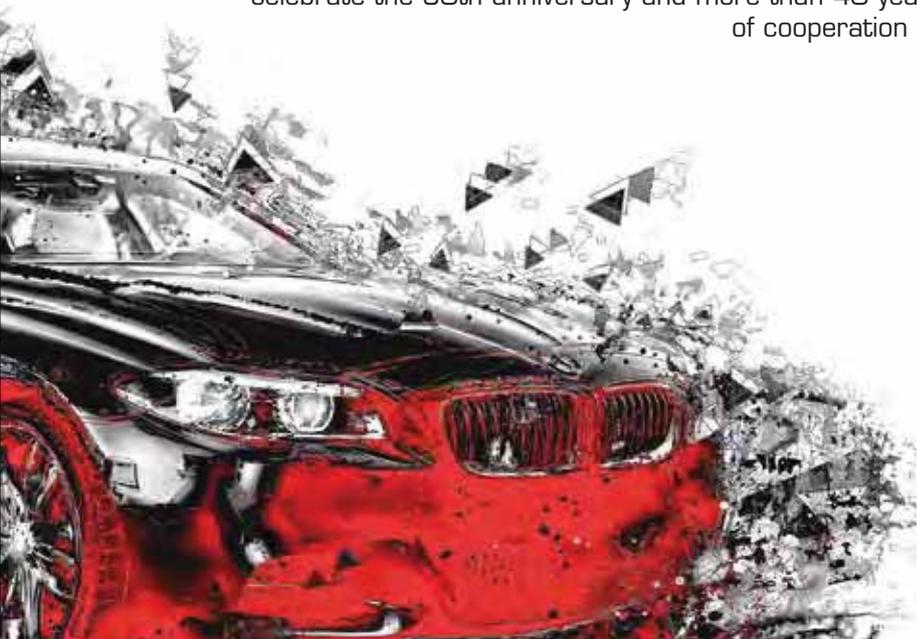
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“ I’m driven and motivated by growth and Triscan has a very healthy platform with an ongoing large growth potential. This in conjunction with the possibility of ownership, has been decisive for my change ”

NEW CEO AT TRISCAN

Michael Juul Hansen - former CEO of FTZ Autodele og Værktøj A/S (part of the Hella Group in Lippstat, Germany) – has replaced John Iversen as CEO of Triscan.



Michael Juul Hansen has replaced John Iversen as CEO of Triscan a/s

After a long and very successful time at FTZ, where being the CEO for the past 3 years, Michael Juul Hansen faces new challenges as he from May 1st has replaced John Iversen as CEO and has become co-owner of Triscan. John Iversen is still the main shareholder. The other shareholders, Bente Jørgensen, Morten Hallum, Steen Ray Pedersen and Jørgen Grand retain their shares.

“We are delighted that Mr. Juul Hansen has taken responsibility for Triscan and has great expectations for further development, with a doubling of storage capacities in Germany being the most recent of a series of projects in the European area,” reports John Iversen. “Mr. Juul Hansen’s successful career and solid experience in the spare parts market, will have great impact on Triscan’s future development. Mr. Juul Hansen has a broad industry knowledge and is familiar with Triscan’s most

important customers,” continues John Iversen.

As of May 1st, John Iversen replaced Bente Jørgensen as Chairman of the Board, whereas Bente Jørgensen

continues as a Member of the Board. “Alongside the board’s work I get the opportunity to step up work on small entrepreneurial businesses,” concludes John Iversen.

The change comes after John Iversen for some time has had the desire to find a successor of the leadership of a strong and solid company with great international potential. “I have very much been looking forward to the new challenges at Triscan, where I have the opportunity to work on a wider, international basis in the industry. Triscan is part of a very competitive industry. The Triscan team is extremely competent and I have been looking forward to being a part of developing the company further in Denmark as well as in Europe. I’m driven and motivated by growth and Triscan has a very solid foundation with an ongoing large growth potential. This in conjunction with the possibility of ownership, has been decisive for my change,” says Michael Juul Hansen.

Michael Juul Hansen originally came from the financial sector, where he graduated from Jyske Bank. After 10 years in the bank with a focus on investment advice, Mr. Juul Hansen gained extensive knowledge of the car sector in the years 1995 – 2000 at Woodchester Credit Lyonnais/GE Capital, who at that time was the market leader in car financing by car dealers and importers in Denmark. Michael Juul Hansen finished his career at GE as department head, responsible for financial cooperation with the car import companies under the Nic. Christiansen Group in Kolding. There he continued his career for 3 ½ years as Sales Manager at Hyundai Auto Import. In 2003 cars were replaced with spare parts for the Aftermarket, when Mr. Juul Hansen took the position as Director of the workshop chain AutoMester (part of the FTZ). In 2006, he became part of the FTZ Executive Board, where he first

“I have very much been looking forward to the new challenges at Triscan, where I have the opportunity to work on a wider, international basis in the industry. Triscan is part of a very competitive industry” - CEO Michael Juul Hansen

served as Vice President and for 3 years as CEO.

SMARTREP.INFO

- WE MAKE IT EASY TO GET IT RIGHT



This label indicates that the installing of this spare part needs extra attention

To imagine avoiding all complaints is probably wishful thinking. But would it not be nice if there was a way you could reduce the number significantly? At Triscan we know that it is possible! With our experience from our efforts to ensure proper timing belt replacement in the luggage, we are now ready to launch our new concept - smartrep.info.

Attract attention

Our efforts to ensure correct installation of the timing belt have made one thing clear, steering attention to the pitfalls



of the assembly process can make the problems all but disappear. Going forward, we want to create awareness for the potential pitfalls of all product groups, where this is relevant, just like we did for the problematic timing belt kits. With smartrep.info we will make it easy to get it right.

This is how we do it

Parts that require special attention during assembly, will be provided with a clear label on the packaging. The label is in addition to a warning triangle also provided with a website address - www.smartrep.info - and a QR code that when scanned goes directly to the website. On the website's home page, enter the item number from the product's bar code label. If special tools are required, this will be clearly noted on the label on the

All parts where the cause of the complaint can be attributed to mounting errors will now be provided with a clear label on the packaging

packaging as well as in the assembly instructions.

A huge advantage for all parties

The benefits of smartrep.info are clear.

- Fitters are being given valuable information
- The number of complaints are reduced
- The relationship between the car owner-> garage-> wholesaler> Triscan is not burdened unnecessarily
- More satisfied customers

With smartrep.info Triscan has created an opportunity to stand out amongst competitors. We look forward to exploit the full potential of this together with our customers - for the benefit of car owners, workshops, wholesalers and ourselves of course.

Background

It is relatively few - and mostly the same parts in a product group - which account for the vast majority of complaints. The causes typically fall into three categories - one that is difficult to control - and two that can be influenced.

The first category, which is difficult to do anything about, are parts that are poorly designed by the original car manufacturers. As Triscan supplies spare parts in OE quality, parts that fall into this category often have the same weaknesses as the vehicle manufacturers' own aftermarket parts. Those are typically well known amongst workshops. Exceptions are parts where it is possible to make improvements without changing the part's basic design. Examples of parts improved by Triscan are, for example, water pumps where gaskets and bearings have been revived or track control arms where the rubber bearings have been improved.

The next category, which, unlike the one above, is easy to influence, is the quality. That is exactly why quality assurance work has always been a priority here at Triscan. The result of these efforts can clearly be seen in the development of the percentage of complaints, which, despite having always been at a low level, is steadily declining.

The third and last category, which is also relatively easy to influence (but unfortunately accounts for the vast majority of causes for complaints), are parts for which the assembly requires special attention and in some cases, special tools. But in a joint effort - between mechanics, wholesalers and Triscan - we can effectively influence this category, and exactly that is the aim of smartrep.info.



Download a free app to scan QR codes with your smartphone, tablet or PC and you're going



This is how the website looks like. Here you simply enter the item number as shown on the barcode label of the packaging



NEW!
EGR AND GASKETS



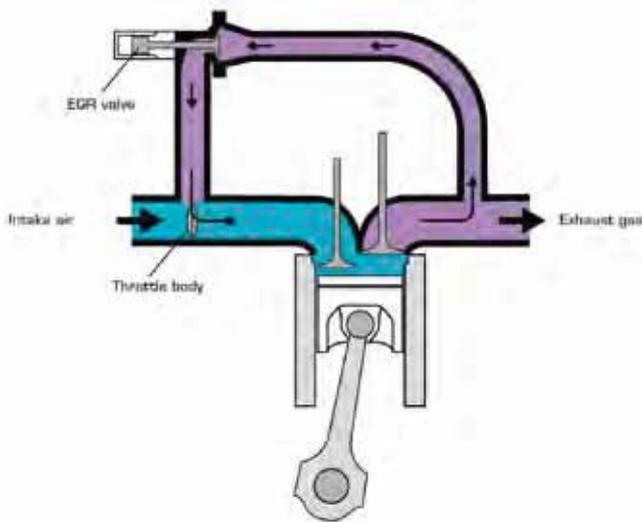
“The market’s most comprehensive programme of sensors leads to increased sales and earnings, with less inventory costs and reduced manpower for programme maintenance and purchasing”

NEW: EGR VALVES ARE NOW A PART OF TRISCAN'S EXTENSIVE SENSOR PROGRAMME

Triscan has once again expanded its already comprehensive sensor programme, which now also includes more than 190 references in the EGR valves in OE quality. The market's most comprehensive programme of sensors leads to increased sales and earnings, with less inventory costs and reduced manpower for programme maintenance and purchasing.

The EGR valve is a critical part of the system in the engine, which ensures that the vehicle's NOx pollution is reduced. The EGR valve operates by sending a portion of the vehicle's exhaust gas back to the combustion chambers, which lowers the combustion temperature significantly and thus reduces the amount of harmful NOx gases in vehicle exhaust.

System design - EGR valve



System design and function

The first EGR valves were simple devices that led exhaust gas back into the intake as soon as the engine was running. These early valves resulted, however, in several challenges, including ignition problems, poor fuel economy, rough idling and weakened performance. Automakers re-designed, therefore, the EGR valve to be vacuum controlled and to use the manifolds vacuum to close the valve when the engine is started, and open the valve once the engine reached a certain temperature. Thus showing a reduced effect on the pollution under almost all driving conditions, however, most significantly at part load.

Since then, in addition to the vacuum controlled EGR valves also been developed electrically controlled EGR valves. These valves perform the same function as the vacuum valves, but instead is electronically controlled by the engine control unit.



Product Coordinator Lars Berthelsen with the latest sensor product: EGR valve

Triscan's programme of EGR valves contains both vacuum and electronically controlled valves.

OE quality and functionality test

"Triscan's production process of EGR valves is subject to the strict quality control standards within the automobile industry: TS 16949, all sensors are subject to a 100% functionality test," says Product Coordinator Lars Berthelsen.

If you want to read more about our EGR valves - Find links in the article at triscan.dk/en/press-archive.

NEW!
Every sensor
undergoes a 100%
functionally test

NEW TO TRISCAN'S STRONG RANGE OF SPRINGS



Parabolic spring of fiberglass strengthened composite for Mercedes Sprinter 1995-2006

As one of the only suppliers in the market, Triscan now offers the original parabolic spring for Mercedes Sprinter 1995-2006 made from fiberglass strengthened composite.

One of the main advantages of using a composite spring rather than a conventional steel spring is to achieve a weight saving of not less than 19 kg.

As well as being resistant to corrosion, the flexibility of a composite spring is, compared to a steel spring, significantly better.

The flexibility is maintained throughout the whole lifetime of the spring. Moreover, the composite material is heavily vibration damping. This provides an extremely comfortable suspension and improved handling.

The parabolic spring can be ordered through Triscan's TriWeb - Triscan reference 8765 23023 (Mercedes OE-reference 903 320 05 01 and 904 320 06 01).

SPECIAL WATER PUMPS: TRISCAN EXPANDS THE PROGRAMME

Triscan expands the programme within special water pumps – two new references are added:

- **8600 29057H** (OE no. 06H 121 026 AF, 06H 121 026 BA, 06H 121 026 CF, 06H 121 026 CQ, 06H 121 026 DD)
- **8600 29062** (OE no. 03C 121 004 C, 03C 121 004 D, 03C 121 004 E, 03C 121 004 G, 03C 121 004 J, 03C 121 004 L)



8600 29057H is our existing ref. no. 8600 29057 + housing, thermostat and thermostat flange, which fit VAG cars with 1.8/2.0 TSi/TFSi-engines.

The housing for 8600 29057 is originally made of plastic and rather often it breaks when replacing the water pump (which is made of aluminium) – and it can therefore not be re-used. The combination of aluminium and plastic is problematic.

The housing and the thermostat flange are not sold separately, but Triscan has chosen also to offer ref. no. 8600 29057H. So, per your need, you can now choose between ref. no. 8600 29057 without housing, thermostat and thermostat flange or 8600 29057H with housing, thermostat and thermostat flange.

When you order 8600 29057H, the housing, thermostat and thermostat flange are included



The water pump with ref. no. 8600 29062 for VAG cars with 103-135kW 1.4 TSi/TFSi-engines has also been added to the programme within water pumps. The water pump is electrically controlled to achieve an optimal "flow", and to live up to the new emission standards. The pump also fits car models with EcoFuel-engines.

This water pump is i.e. used in cars from the VAG-group: Audi A1, Seat Alhambra, Seat Ibiza, Skoda Fabia, VW Beetle, VW CC, VW EOS, VW Golf, VW Jetta, VW Passat, VW Polo, VW Scirocco, VW Tiguan and VW Touran.

8600 29062 is the newest addition to Triscan's programme of electrically controlled water pumps

NEW CENTRAL WAREHOUSE IN GERMANY: TRISCAN TAKES THE NEXT STEP TOWARDS THE EXPANSION ON THE GERMAN MARKET



Triscan needed more space! And therefore our stock in Hagen moved to larger facilities in Iserlohn

Triscan has increased its market share in Germany significantly in the last few years. Nothing suggests that the growth rate decreases, and it has therefore been imperative to look at whether it would be possible to adjust the former set-up to handle the increasing demand. The German market is at very high priority at Triscan and we want – as until - to offer the same high level of service to both our existing and new customers. But we decided that this was not possible with our former set-up, which was established in 2005, and therefore, we decided to move to new facilities.

The new warehouse is located in Iserlohn in Germany, just 18 km from our former location and with E45 as a neighbor. The warehouse is 3200m², which more than doubled our storage capacity. In addition to this comes administrative and office facilities.

The new warehouse was taken into use on October 4th 2016.

NEW BOLT KIT FOR THE POPULAR VAG TRACK CONTROL ARM (REAR, TRISCAN REF. 8500 295029)



Triscan now keep a bolt kit for a VAG track control arm (rear) in stock. The bolt kit contains all special bolts- and washers for a complete replacement of the VAG track control arm (Triscan ref. 8500 295029). The bolt kit is – of course – in OE quality.

The bolt kit can be used on a wide range of VAG's car models, among others: Audi A3, Q3 et al. - Seat Altea, Leon et al. - Skoda Octavia, Superb et al. - VW Passat, Golf V, Golf VI et al.

*Triscan reference 8500
298001 – bolt kit for VAG
track control arm (rear) –
Triscan ref. 8500 295029)*



The bolt kit has the reference 8500 298001, and can be ordered via Triscan's TriWeb.

TRISCAN EXPANDS TO THE BENEFIT OF OUR CUSTOMERS

As a consequence of our ambitious objective in relation to data quality, programme development and delivery capacity, our administration in Brabrand (DK) has been expanded. With the expansion, we have created the necessary room for the recent and future staff increase. But we have also taken the opportunity to make a reorganisation in order to optimize workflows and gather our test facilities in one place.

The product management, the purchasing department and the call center is now located door-by-door, with its own meeting facilities, and nearby our test facilities, stock of samples and our warehouse. In the arrangement of the new premises, the emphasis has been to create "openness" and thus the opportunity to have visual contact between the departments.

The sales department's support and price management employees are now gathered under one umbrella. The aim is to promote interaction, knowledge sharing and the possibility of mutual support between colleagues, but also to create better space.

**“ With the expansion, we have created the necessary room
for the recent and future staff increases ”**



Customer center in new premises



Product dept. - with view to Purchase dept.



Product department - test facilities



Purchase dept. - with view to Product dept.

THE FIGHT FOR FREE DATA ACCESS AND FREE COMPETITION

Connected cars and extended vehicle service are key concepts in the latest technological developments in the automotive industry. The technology that leads to increased digitalization is based on data collection in real time and it is no longer uncommon for a modern car to generate 5 GB of data per hour.



Frank R. Hansen, CEO of AUTIG

These data can be used for developing and selling services to car owners. But the legislation on ownership and access to the data is not yet in place, which is crucial since only legislation can ultimately ensure free competition in the aftermarket - and at the same time ensure car owners a free choice in workshop - EU legislation (EU No. 461/2010).

A small contract of great importance

When a car with connected car technology is sold, the buyer - in addition to the purchase agreement itself - is often presented with a so-called telematics agreement. This agreement allows the car manufacturer to collect data and communicate with the vehicle. However, the agreement also allows the car manufacturer to communicate with the driver through installed apps and the vehicle info screen. As there is no alternative, the car manufacturer has ensured exclusive rights in order to offer services based on analysis of vehicle data. If the telematics agreement is not signed, no real-time data is collected on the vehicle, and the car owner can not avail of the benefits contained therein.

Data monopoly - no thanks!

Operators in the free automotive aftermarket - including Triscan - are convinced that the computer monopoly currently being

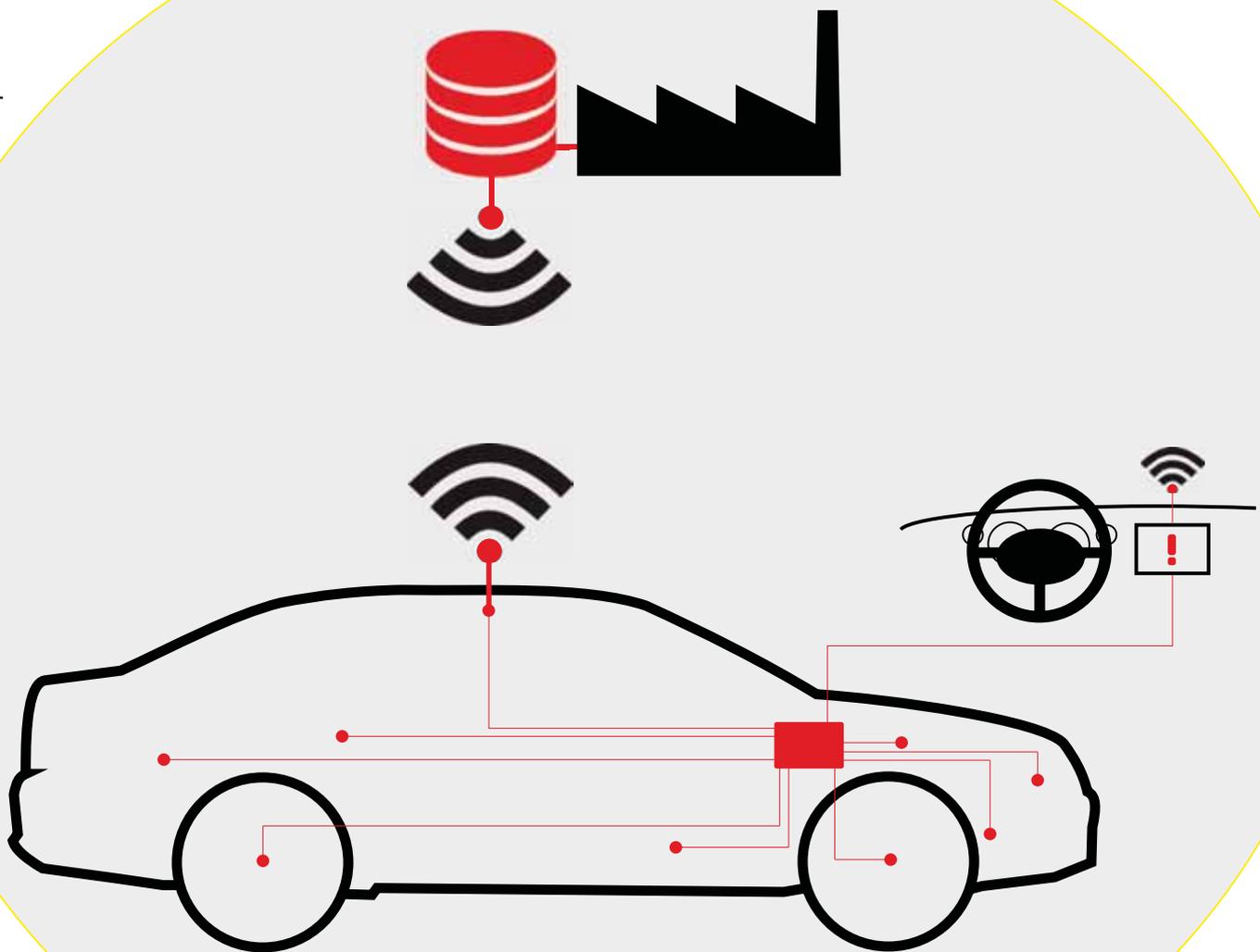
AN AGREEMENT WITH GREAT IMPORTANCE AND VALUE

New cars today are mobile computers on 4 wheels. And particular the computers in modern cars are the source to new opportunities. But at the same time they also give rise to great concern in the free part of the automotive industry.

As it is now, car manufacturers have - by means of a telematic agreement - secured exclusive rights in comparison to providing services based on analysis of vehicle data. Cars with connected car technology collects a lot of data and useful information. But all the collected data and knowledge - who does it really belong to?

Triscan and other players in the free aftermarket are in no doubt and support the fight for free data access and, not least, free competition.





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created by automakers does not benefit car owners or the free aftermarket sector. It is therefore important for the EU to act. The market for spare parts, services and repair of cars in the EU is estimated to be 200 billion euros (measured on sales price for spare parts plus labour). The free aftermarket sector consists of more than 500,000 companies in the EU and approx. 3.5 million employees have so far guaranteed to secure the 285 million car owners in the EU a competitive and economically advantageous alternative. It should not be overlooked! For this reason, it is important to ensure the following:

- 1 Direct and unattended access for independent suppliers to real-time data generated in cars;
- 2 Opportunity for independent suppliers to achieve two-way communication with cars and add their own apps, features and know-how;
- 3 Data must be accessible through a standardized interface.

Triscan supports the fight for free data access and free competition

As a member of AUTIG (Automotive Trade and Industry Association in Denmark), Triscan supports this fight. AUTIG has a strong focus on competitive conditions, and works

"There is no precedent of technological development that can have as far-reaching consequences for the aftermarket, as it does with connected cars"

- CEO of AUTIG, Frank R. Hansen

intensively to ensure the enforcement of data access legislation that allows for the development of new business models in the free aftermarket sector.

The trade organisation expects the EU Commission to carry out a draft for a legislative package later this year, after which negotiations on a final solution will begin.

AUTIG represents the interests of both manufacturers and traders - both nationally and internationally. The international work, includes the maintenance of a network in the Commission and the European Parliament, conducted daily by CLEPA (The European Association of Automotive Suppliers) and FIGIEFA (The International Federation of Automotive Aftermarket Distributors) and AUTIG is at the management level, directly involved in the prioritization and organization of the political work in these organizations.

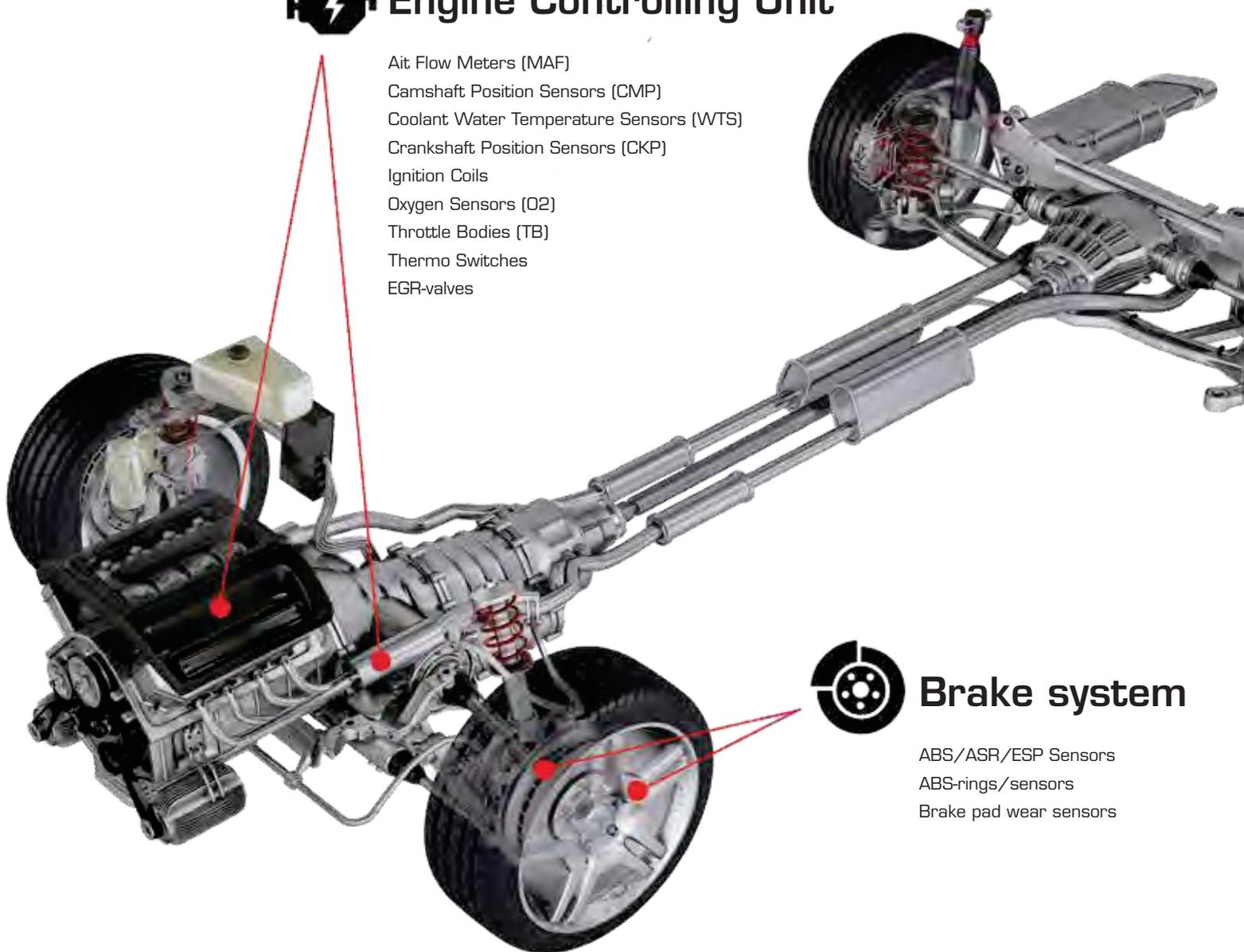
TRISCAN'S SENSOR PROGRAMME FOR ENGINE AND BRAKE SYSTEM

Triscan's sensor programme includes sensors for engine and brake management for the entire European car parc, including Asian car makes. The programme contains more than 4,400 references, and can with it live up to Triscan's goal of delivering the market's broadest programme.



Engine Controlling Unit

- Air Flow Meters (MAF)
- Camshaft Position Sensors (CMP)
- Coolant Water Temperature Sensors (WTS)
- Crankshaft Position Sensors (CKP)
- Ignition Coils
- Oxygen Sensors (O2)
- Throttle Bodies (TB)
- Thermo Switches
- EGR-valves



Brake system

- ABS/ASR/ESP Sensors
- ABS-rings/sensors
- Brake pad wear sensors

Today the free aftermarket for sensors is characterized by a large number of suppliers with narrow product ranges, which are either based on rather few car makes, or just a few of the sensors which are part of the car's engine and braking control. Triscan is going to change this! Experience shows that offering a comprehensive programme to wholesalers, distributors and garages in the free aftermarket leads to increased sales and more profits.

Premium quality is a must - Unfortunately, oxygen sensors of poor quality find their way to the free aftermarket on a regular basis. Especially in the field of sensors for engine management, the consequences of poor quality are very costly, time consuming and bad for the relationship between the car owner, the garage and the wholesaler. "We have as always been very attentive to the quality and have made sure that it meets our very high standards," says Product Director Jørgen Grand from Triscan and continues, "All sensors are manufactured according to OE specifications and the automotive industry standard TS 16 949. One example is that a 100% functional test of every oxygen sensor and ABS sensor is performed as part of the manufacturing process."

**FUNCTION
TESTED**



Air flow meters



**Camshaft and crankshaft
position sensors**



**Water temperature
sensors**



Ignition coils



Thermo switches



Throttle bodies



Oxygen sensors



EGR valves



Brake pad wear sensors



ABS-sensors



ABS-rings

**The programme
contains
more than 4,400
references**

NEW - OIL DRAIN PLUG AND TOOL FOR VAG MODELS WITH PLASTIC OIL PAN

We are constantly expanding our program of oil drain plugs - and, as something new, we can now also offer the following oil drain plug and tool for VAG with TFSI and TSI engines:

- Ref. 95-0929 VAG plastic oil drain plug, sold in pack of 5 pcs.
- Ref. 95-1029 Tool (bit) for VAG plastic oil drain plug, sold in pack of 1 piece.
(Bit fits 10 mm top)

The reference numbers above are ready for delivery - can be ordered through TriWeb, TecCom or at your local retailer.



For correct and safe mounting, tool ref. 95-1029 should always be used



Oil drain plug and tool



DID YOU KNOW...

- That Triscan supplies two assortments with oil drain plugs. Each assortment contains 13 different oil drain plugs with matching gaskets
- Assortment 1: ref. 95-0501
- Assortment 2: ref. 95-0502
- The assortments cover most cars
- The development of the program is ongoing – you can always find the latest references in TriWeb
- In TriWeb you will also find separate gaskets and oil drain plugs for refilling the assortment boxes

TRISCAN NOW EXTENDS THE WARRANTY AND GUARANTEE FROM 2 TO 3 YEARS

Good service and well executed repairs lead to happy and satisfied car owners - and it starts with Triscan!

Our goal is to provide our customers and end users with the best products, service and not least experience when buying one of our products. And to emphasize this, we have chosen to expand both our warranty AND guarantee from the current 2 years to now 3 years.

Guarantee and warranty are two words that are often used interchangeably and are subject to misunderstanding. Many are even of the opinion that they are one and the same thing – but they are not.

WARRANTY - statutory

Transfers that are made between companies are exclusively covered by a specific warranty (immediate-complaint). This means that the buyer immediately and without delay must complain if he wishes to assert a defect.

In transactions between businesses and consumers on the other hand - for example, a workshop and a car owner - the matter is quite different. Here, the buyer has a legal right to complain about defects in a product within the first 2 years after purchase. This 2-year warranty applies to all products - new and used.

Triscan offers its customers a 3-year warranty – thus, as a customer of Triscan you have excellent warranty conditions compared to what is required by law.



By choosing Triscan you not only choose a quality product - you also get an extended warranty and guarantee as an added security

GUARANTEE - voluntarily

When it comes to guarantees, the rule for companies and individuals the same. Offering your customers a guarantee is entirely/completely voluntary. A guarantee is therefore “something extra” and acts as a supplement to your statutory rights. As a customer, you can therefore not demand a guarantee, as is often mistakenly believed.

Is it fair? Not quite, we believe – and therefore it has always been common for us to offer our customers a guarantee. We have now decided to expand our previous 2-year guarantee to 3 years.

In short: By choosing Triscan you not only choose a quality product - you also get an extended warranty and guarantee as an added security.

TRISCAN
smartparts



**NOW MORE THAN 6,900 REFERENCES
IN THE STEERING PART PROGRAMME...**



“ Depending on the make and model, Triscan offers both complete track control arms and separate ball joints and bushings – for both cast and steel sheet track control arms ”

BE CAUTIOUS WHEN REPLACING BALL JOINTS ON TRACK CONTROL ARMS



Here is an example of a loose ball joint, where replacement of a complete track control arm is required



Depending on car brand and model, the replacement of worn/defective ball joints can be a costly affair. The repair costs depend on, amongst other things, whether a complete replacement of the track control arm must be done or if replacing the ball joint and possibly the bushes is sufficient. Although ball joints often are available separately, it is not always sufficient to only replace the ball joint. In the following paragraphs, you will find out why this is – and what you should be aware of.

Cast vs. Sheet steel track control arm

In the case of a ball joint mounted on a cast track control arm you can often settle for only replacing the ball joint if the bushings of the track control arms do not show signs of wear and tear. If, however, the bushings of the track control arms do show signs of wear and tear, you should consider replacing the track control arm as a whole.

In the case of a sheet steel track control arm where the ball joint is pressed into the track control arm, it is not always sufficient to replace the ball joint - even if the bushes are in order. Since the contact surface between the ball joint and the track control arm is quite limited for this type of arm, there are two details that must ALWAYS be considered when replacing a ball joint. Firstly, make sure that there are no indications of cracks around the track control arms/holes where the ball joint is located. Secondly, ensure that the holes are circular and have not gotten expanded due to general wear and tear or previous replacements. Even though this type of ball joint is often secured with a locking ring, this does NOT guarantee that the ball joint stays in place in all situations.

The replacement of a ball joint which is pressed into the track control arm, in most cases requires a removal of the track control arm. You should therefore consider replacing the complete track control arm.



Here is an example of a damaged ball joint boot. In some cases, a replacement of the boot or ball joint will be sufficient



Here is an example of a worn bushing. In some cases, a replacement of the bushing will be sufficient

DID YOU KNOW...?

- Depending on the make and model, Triscan offers both complete track control arms and separate ball joints and bushings – for both cast and steel sheet track control arms.
- With more than 6,900 references, Triscan's steering program is Europe's largest.

CAUTION DURING INSTALLATION/REMOVAL:

- ✓ As a rule, never use air tools!
- ✓ Never use a hammer during assembly/disassembly of parts, but a hydraulic press or a suitable puller
- ✓ Never reuse nuts and bolts - mount only new ones
- ✓ Check the car's tracking after replacing ball joints, bushes or complete track control arms

THE GOAL IS THE INDUSTRY'S BEST DATA QUALITY!

Data quality is a complex character and at the same time a prerequisite for fast, efficient and accurate ordering. Particularly for this reason, data quality is to be taken very seriously. Triscan's data quality has always been good, but the ultimate and ambitious goal for Triscan is to be proud owner of the best data quality.

To choose the correct spare part is not necessarily a simple action. It is probably very few mechanics and wholesalers who have not tried to be in a situation having to choose between several variants of e.g. a set of brake pads, and this despite the fact that the registration number is used for identification. In a hectic day, the solution to the problem is often a safe bet - that is an order of all alternatives. In the industry it is reported that more than 15% of all ordered items belong to this category.

It does not require much imagination to envisage how many resources that are unnecessarily spent on ordering, picking, shipping, returns, repackaging, etc. Is it really true that there is no solution to this problem? Unfortunately, the answer is YES, but fortunately there is very much that can be done to minimize the problem - and it all starts with the data quality.



Car model and OE database

One of the prerequisites for obtaining a high quality of data is correct and updated OE information. In 2010, Triscan implemented a new PDM system (Product Data Management) with access to the car manufacturers' OE catalogues. By this Triscan is secured up-to-date and detailed knowledge of the entire European car parc with correct OE-data and associated criteria on both brand new and changes in old car models. On the basis of this information between 2,000-3,000 new part numbers are created annually and added to the product programme.



Filter function in TriWeb

In situations where it is necessary to distinguish between several alternatives, it is usually one criterion that is the decisive factor. Although the criteria are normally specified in the product line of a specific product in most electronic catalogues, it can be rather difficult to get an overview when listing several different items. For this reason, Triscan's e-commerce system, TriWeb, has a special built-in "Filter" function, which helps to create an overview. When the "Filter" function is activated, a pop-up dialogue box where all the criteria are displayed is shown. After having checked the relevant criteria, only the specific alternative is shown.



Cross references

Another major factor is valid cross-references from the OE/own part numbers to alternative aftermarket suppliers. In 2011 Triscan's IT department launched an internal project aimed to develop a system that as far as possible could automate this work. In 2014 the system was first put into use, and the results have been impressive. They succeeded in increasing both the number and quality of cross references considerably, while 70% of the work is now carried out automatically.

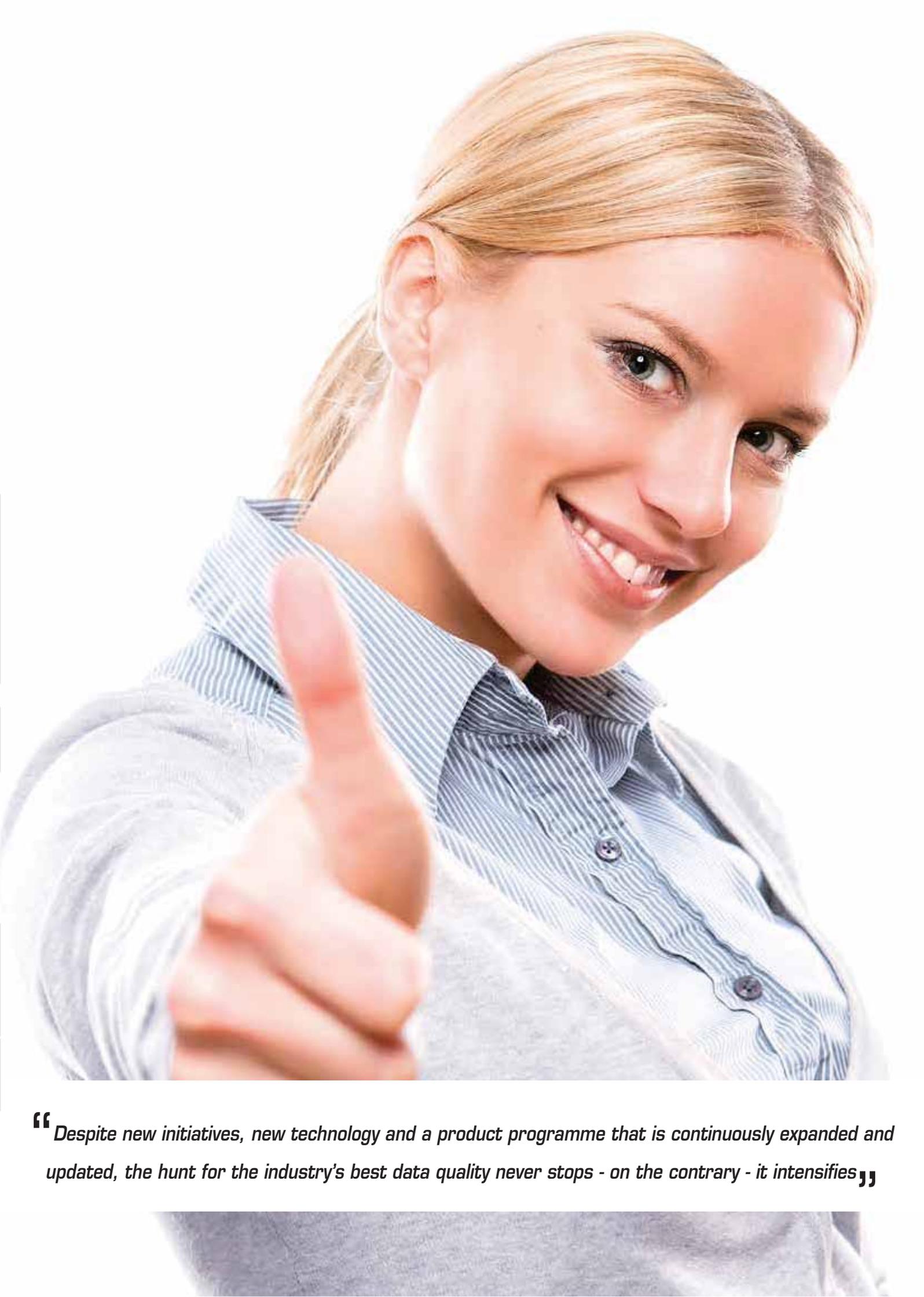


Photos

In some cases, a picture also helps to determine which of the offered alternatives is right. This applies, for example, for sensors, where the design of a connector can be decisive. Therefore pictures are attached of both the sensor and close up pictures of the connectors for Triscan's sensors.

The efforts have paid off, but does not stop here

In a combination of more resources in the product and IT departments, streamlining workflows and heavy investment in IT we have managed to improve data quality. A visible proof of this is TecDoc's continued appointment of Triscan as TecDoc Certified Data Supplier. The outcome is cost-reducing improvements to benefit the environment, vehicle owners, workshops, wholesalers and Triscan. But the work does not stop here. Despite new initiatives, new technology and a product programme that is continuously expanded and updated, the hunt for the industry's best data quality never stops - on the contrary - it intensifies.



“ Despite new initiatives, new technology and a product programme that is continuously expanded and updated, the hunt for the industry’s best data quality never stops - on the contrary - it intensifies ”

CONVENIENT AND TIME-SAVING - MICRO-V BELT KIT WITH WATER PUMP

The water pump is the heart of the engines cooling system - so to prevent failure, it is always a good idea to check the water pump when the belt drive system is checked.

Parts included in the belt drive system, such as the water pump, are becoming increasingly complex. So any component failure will have a major impact on the rest of the vehicle's function and performance. Avoid mistakes and breakdown on the belt drive - and not least unnecessary additional costs: so

replace the Micro-V belt and all related components in the drive at the same time.

In order to save you time and not least the trouble finding the different parts required, Triscan now offers - as something new - the Micro-V belt Kit with water pump. A product with all the necessary parts - it doesn't get any easier.

BENEFITS:

- Order only one reference number to get all the necessary parts - convenient and time-saving
- All products are of OE quality
- Increased service to the driver - only one workshop visit and one workshop bill

With the Micro-V belt kit from Triscan you'll get all the necessary parts at once

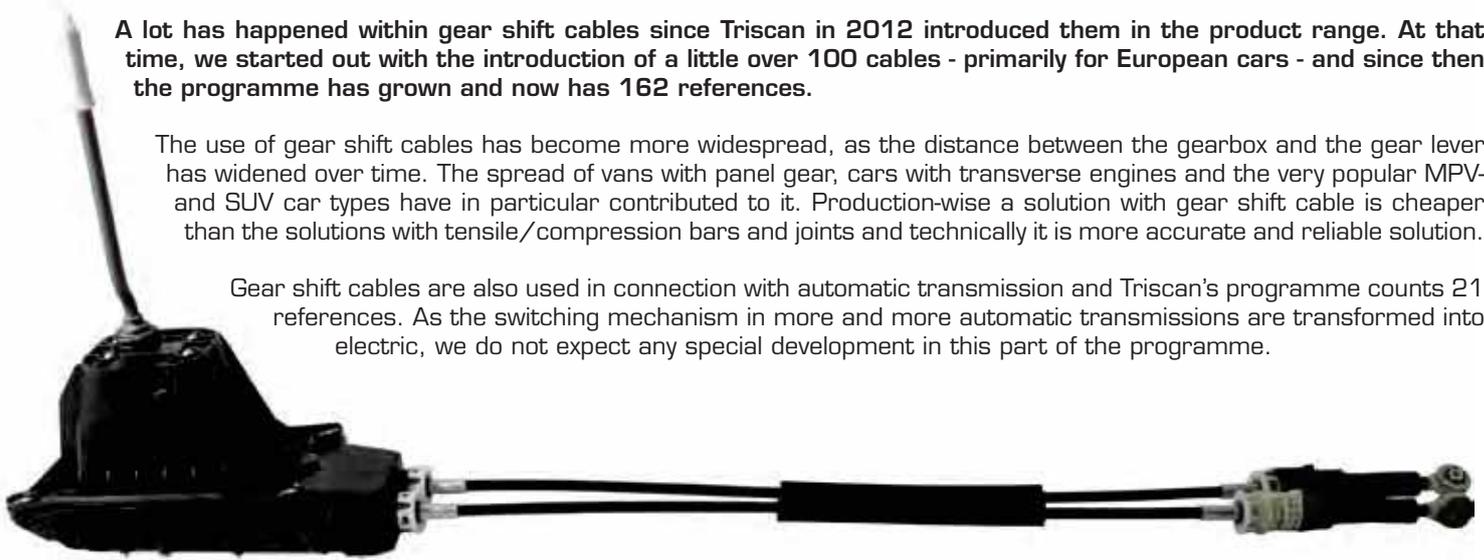


EVEN MORE GEAR SHIFT CABLES IN THE PROGRAMME

A lot has happened within gear shift cables since Triscan in 2012 introduced them in the product range. At that time, we started out with the introduction of a little over 100 cables - primarily for European cars - and since then the programme has grown and now has 162 references.

The use of gear shift cables has become more widespread, as the distance between the gearbox and the gear lever has widened over time. The spread of vans with panel gear, cars with transverse engines and the very popular MPV- and SUV car types have in particular contributed to it. Production-wise a solution with gear shift cable is cheaper than the solutions with tensile/compression bars and joints and technically it is more accurate and reliable solution.

Gear shift cables are also used in connection with automatic transmission and Triscan's programme counts 21 references. As the switching mechanism in more and more automatic transmissions are transformed into electric, we do not expect any special development in this part of the programme.



Gear shift cable – manual gear shift: now 162 references in the programme



Gear shift cable – automatic gear shift: 21 references in the programme

VOLVO WATER PUMP WITH A SPECIAL PULLEY

On certain types of water pumps, Volvo has chosen to make a different type of pulley than usual. This pulley has fewer teeth and protects the timing belt in the belt drive.

In the aftermarket, you may find the same type of water pump in another variant with the usual pulley and a pulley with fewer teeth - both variants can be used and installed without problems.

Should you as a mechanic receive a Volvo water pump with another type of pulley than the one already mounted on the car, then it is not a mistake. You can safely continue the replacement of the water pump.

Remember, as always, when replacing the water pump to clean the cooling system and refill new coolant and deionized water according to the car manufacturer's instructions.

See article on how to clean the cooling system - on page 41.



Waterpump with an usual pulley – with equal spacing between the teeth



Volvo waterpump with fewer teeth on the pulley



Cold Hawaii



CUSTOMER VIS



In the northwestern part of Denmark and with only a few kilometers to some of the best beaches of the west coast and not least Klitmøller - among surfers abroad better known as Cold Hawaii - lies Han Herreds Reservedelslager (Han Herreds Spare Parts Warehouse) in the town of Fjerritslev.

Han Herreds Reservedelslager - which has been a customer of Triscan since 1976 - was established in the city's old railway station building after the railroad stopped in 1969. Right from the start, the company has been engaged in wholesale of automotive spare parts, tools and consumables for workshops and car dealerships, but also Machine stations, primarily in Thy, Jammerbugt and Vesthimmerland.

As early as 1974, the facilities had become too small and new buildings were built further down the railway line on a plot with the possibility of further expansion. It was the first time needed in 1984 - where it was expanded with garage/cold storage - and again in 1995 where the main warehouse was expanded. Today, the company has almost 1400 m2 of administration, warehouse and garage.

Besides taking care of its customers, the management also takes good care of their employees. A clear proof of this was when shop

assistant Jacob Ranum received the royal reward medal for 44 years of employment at Han Herreds Reservedelslager in December 2014. At Han Herreds Reservedelslager, most of Triscan's 25 product groups are sold and marketed. "We are well



SIT AT HAN HERREDS RESERVEDELSLAGER



At Han Herreds Reservedelslager the programme has recently been expanded with Triscan sensors - and the wide sensor programme and fast delivery have meant an increase in this product group.

pleased with the cooperation, but also know each other really well after all those years. Triscan is a reliable and stable supplier of quality parts," explains CEO and owner Steen Glerup Nielsen. In 2015, Han Herreds Reservedelslager was one of Triscan's first customers, who decided to extend the cooperation to include the fairly new product line of sensors. "It has been a great advantage for us to be able to reduce a great number of suppliers of sensors to very few. Previously, we spent too much time finding suppliers and often gave up. Doing so, we unfortunately missed orders, but luckily, this is no longer the case," continues Steen Glerup Nielsen, adding: "We stock the most widely used sensors and get more special sensors delivered at short notice, which works really well. Triscan sensors have been well received by

our customers and we have achieved an increase in sales in this product group."

The cooperation with Han Herreds Reservedelslager is also very much appreciated by Triscan. "We are very pleased with the longstanding cooperation and the close relationships we have between companies," says Steen Ray Pedersen, Sales and Marketing Director at Triscan. "We have always been good at finding solutions and giving feedback and inspiration to each other for improvement and development. The cooperation is characterized by openness and honesty, and we both believe this is the fundamental basis for achieving mutual satisfaction," concludes Steen Ray Pedersen.



- Han Herreds Reservedelslager was founded by Erling Glerup Nielsen in 1970
- From the outset, the company has been involved in the wholesale of automotive spare parts, tools and consumables for workshops in the local area in and around Fjerritslev in northwestern Jutland
- During 2008, son Steen Glerup Nielsen took over management and ownership
- Han Herreds Reservedelslager employs a total of 10 employees

FIRST MOVER WITHIN STEERING PARTS



**MORE THAN
600 NEW
REFERENCES
WITHIN
STEERING
PARTS**

Triscan has Europe's best coverage of the car parc and steering parts for almost 98% of the car parc

At Triscan we work diligently to lead the field and the title of European champion in offering the widest steering part programme. The task is challenging and not as simple and straightforward as many might think - and it is not uncommon that we at Triscan even initiate development and production of steering parts.

Detailed knowledge of the car parc

The development of steering part programme is based on detailed knowledge of the car parc's development, composition and OE information. At Triscan the source of this type of information comes from a PDM system (Product Data Management), which was introduced in 2010. The PDM system contains updated and detailed knowledge of the entire European car parc." In our system, we are secured access to updated OE data on new models and changes in the existing car parc. Thus we have a very good starting point to update and develop our various product groups, "says Asger Thybo Geertsen, Product Team Manager at Triscan and

continues: "Because the development of new cars are often platform-based and some brands therefore share the same technology - and because it simultaneously is not uncommon that new cars make use of a already known technology - we often see that the parts we already have in our programmes also apply to new models."

Development and production

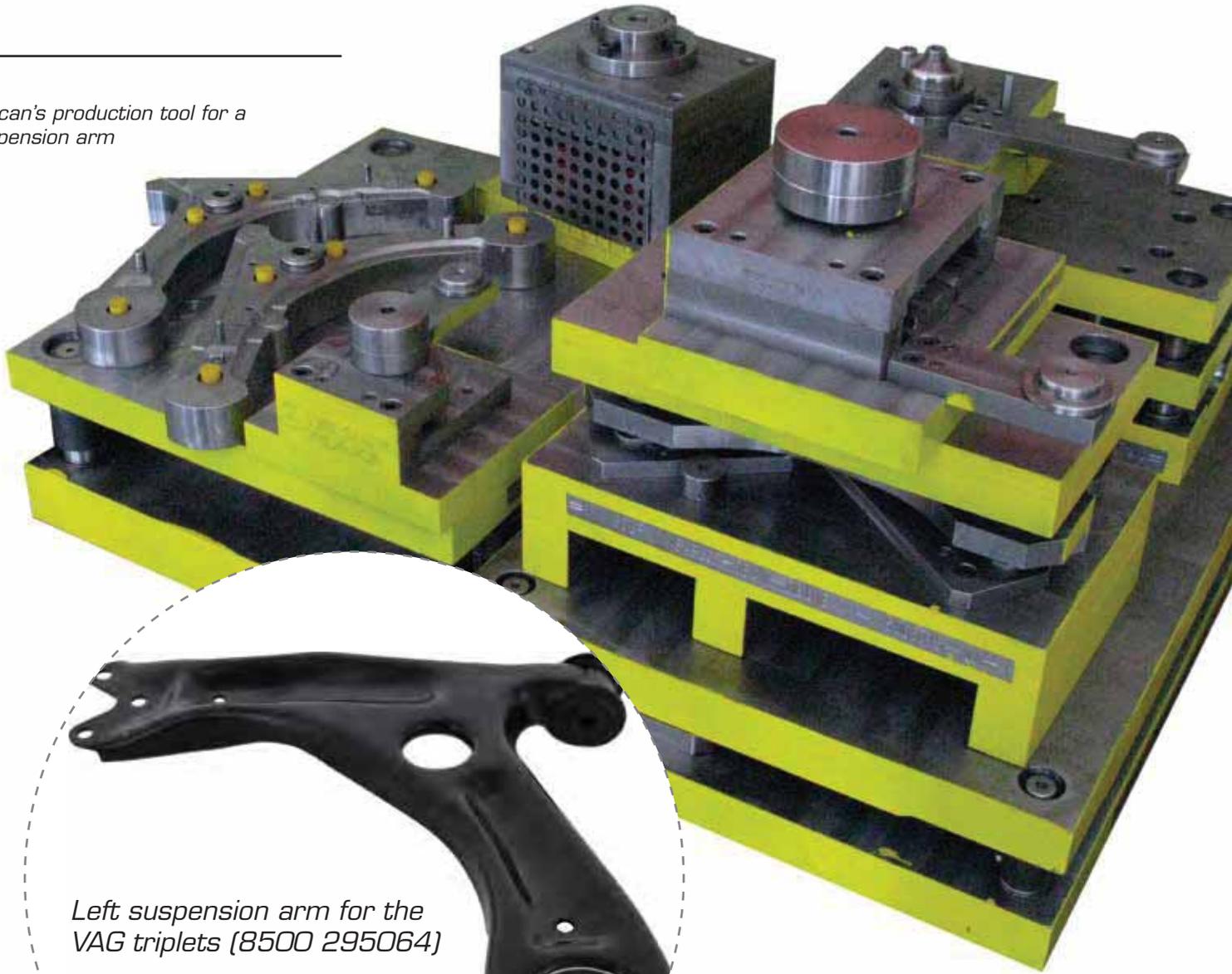
When the "gaps" in a product programme are identified, it is Triscans many years of experience in getting manufactured parts that makes a significant

difference. Triscan produces steering parts in more than 30 factories, and in the cases where a steering part is not yet available on the free aftermarket, it is often among one of those that Triscan initiates a development project. "We often choose to start the development and manufacturing of production tools for our producers ourselves," says Troels Madsen, Product Coordinator at Triscan.

An example

At Triscan, who sells spare parts on the free aftermarket in more than 35 countries, there are numerous examples. Most often it is the European car parc composition which is the basis for the selection of steering parts to be developed. The VAG's triplets UP, Citigo and Mii have, since the start of production in

Triscan's production tool for a suspension arm



Left suspension arm for the VAG triplets (8500 295064)



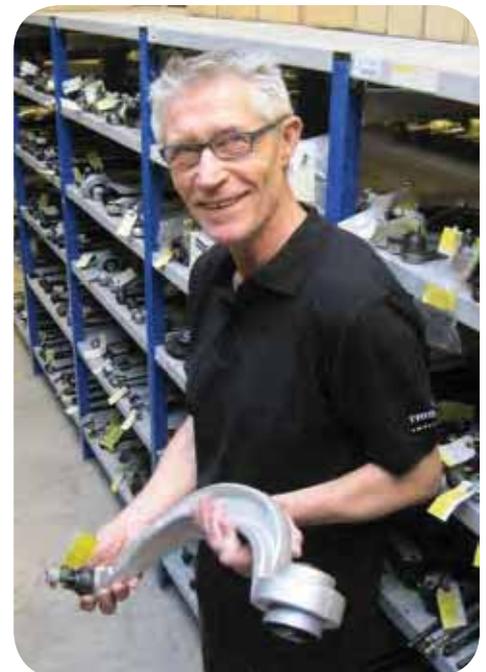
2011 and until the end of 2015, been produced in more than 700,000 copies for the European market. "The popularity of the VAG triplets is an example of a model series, where we already in the second half of 2013, decided to initiate the development and manufacturing of production tools to suspension arms ourselves," says Troels Madsen.

guaranteed OE parts in a high and uniform quality," says Sales and Marketing Director Steen Ray Pedersen, adding: "In both our own catalogue and ordering system TriWeb as well as in TecDoc/ TecCom, it is easy to find all relevant information on the products and not least ordering them."

A programme with many benefits for both the wholesaler and garage

There are many benefits associated with selecting Triscan's programme within the steering parts. "With more than 6000 references and an almost 98% coverage of the European vehicle parc, you can with just one supplier handle virtually any queries. In addition, you are

Troels Madsen in Triscan's stock of samples of steering parts



DO YOU HAVE TRACK CONTROL ARMS FOR SOME OF THE MOST POPULAR CAR MODELS?

Triscan has developed tools for producing some of the most common track control arms. We experience, that there is a steady demand for track control arms for these popular car models - and at Triscan we are ready to deliver them to you!

Triscan can among others offer track control arms for the following car models:

Reference 8500 105003

TCA for Ford Focus II/C-Max/Mazda 3 BK, BL/Volvo S40 II, V50 (rear)

Reference 8500 295063

TCA for VW Up/Seat Mii/Skoda Citigo (front, right)

Reference 8500 295064

TCA for VW Up/Seat Mii/Skoda Citigo (front, left)

Reference 8500 50553

TCA for Mazda 3 BL (front, right)

Reference 8500 50554

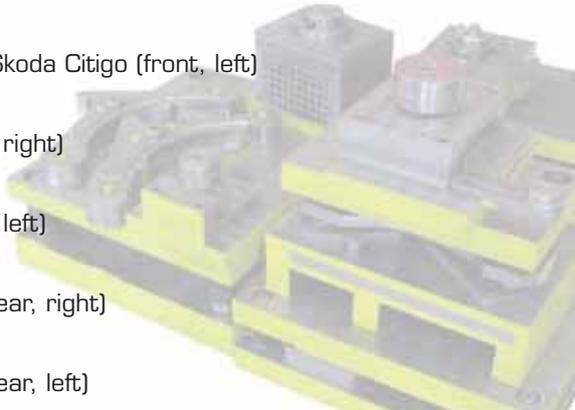
TCA for Mazda 3 BL (front, left)

Reference 8500 50555

TCA for Mazda 6 GG, GY (rear, right)

Reference 8500 50556

TCA for Mazda 6 GG, GY (rear, left)



Bolt kit ref. 8500 50816



Ref. 8500 50816
Bolt kit TCA for Mazda 6 GG, GY

TCA ref. 8500 105003



TCA ref. 8500 50555



TCA ref. 8500 295063



TCA ref. 8500 50553





“ We experience, that there is a steady demand for track control arms for these popular car models - and at Triscan we are ready to deliver them to you! ”

BE AWARE OF OXYGEN SENSOR ERROR MESSAGE

All too often it is not the oxygen sensor, which is responsible for the error messages, that generally point in that direction. This especially applies in the case where wideband sensors are used instead of conventional O2 sensors. This is also why, it is very important to pay extra attention in the troubleshooting process with this kind of sensor. Learn more about the system design and source of errors in this article.



CEO of Elektro Partner, Frank Donslund

Frank Donslund, owner and CEO of Elektro Partner, providing hotline and technical solutions for car workshops in Denmark, Norway and Sweden (Autodata, TEXA, Delphi and Nextech) states: "In our hotline, we daily experience answering questions related to oxygen sensors. To many oxygen sensors are replaced solely on the basis of error codes and for no reason. It is especially the very delicate wideband type that often causes problems for the workshops."

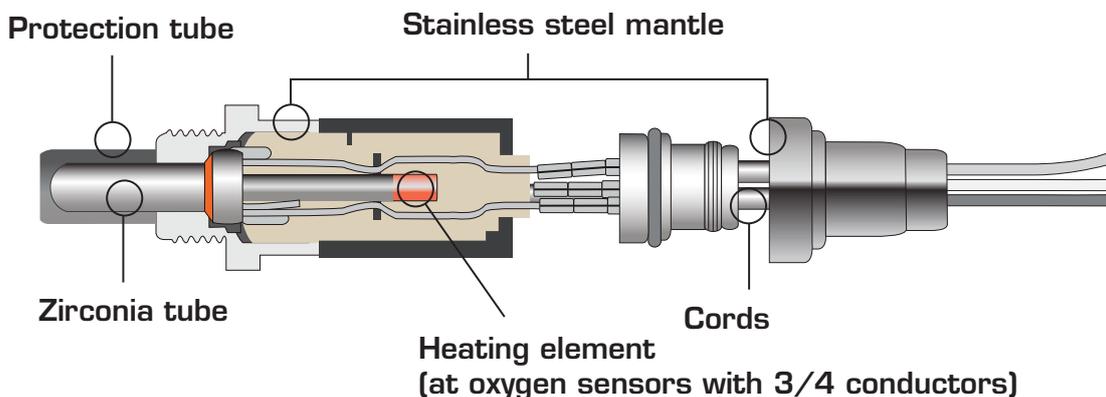
Purpose, function and difference

The purpose of the oxygen sensor is to ensure, that the engine control unit (ECU) ensures the correct mixture of fuel and oxygen in any given situation. This is done by performing a continuous measurement of the exhaust gas composition. A conventional O2 sensor is only able to measure the amount of oxygen (O2) in the exhaust gas and switch between two signals - one for rich and one for lean mixture. A wideband sensor is on the other hand, able to provide a much more detailed and varied image of the composition of oxygen and fuel within a broader range.

Both types of sensor-measurements are based on measurement of changes in voltage. However, for the mechanic it is important to know that the difference between wideband sensors and conventional O2 sensors is, that the voltage rises (does not go down) when the fuel mixture becomes lean. Another difference is that the voltage signal comes from the vehicles ECU and not from the sensor itself. Therefore, you cannot read the output voltage of a wideband sensor directly with a digital oscilloscope (DSO), like you do with conventional O2 sensors.

Another thing that the mechanic also should be aware of is, that the value read for a wideband sensor on a tester can be misleading. Many testers with "generic" OBD II software automatically convert the motor control's wideband sensor voltage output to a 0 to 1 volt scale, just like a conventional O2 sensor. This leads to that voltage does not change as much as you would expect when you running in lean or rich mixture, and you may wrongly conclude that the wideband sensor is malfunctioning. The most accurate way to test a wideband sensor is with a factory tester that shows the actual voltage reading of the engine control - or an aftermarket tester that is capable of doing so.

CONSTRUCTION



S - ESPECIALLY WITH WIDEBAND SENSORS



Contamination

A soiled sensor cannot convey an accurate reading of the air/fuel mixture. In this sense, wideband sensors and O₂ sensors are equally sensitive. There are many sources of contamination:

- ➡ Cooling water from leaks in the cooling system (leaky cylinder head gasket or cracks in the cylinder head)
- ➡ Phosphorus from engine oil that has found its way to the combustion chambers (worn valve guides and seals, worn piston rings or cylinders)
- ➡ RTV sealers with a high content of silicone
- ➡ Certain petrol additives

A lightly soiled oxygen sensor reacts slowly to sudden changes in the air/fuel mixture. If the oxygen sensor is highly soiled, it does not react at all.

Leaks and malfunction

Besides contamination, compression leaks or malfunctions can confuse the oxygen sensor, which leads to incomplete combustion causing high levels of oxygen in the exhaust system. This is also the case with a leaking exhaust manifold.

Wideband sensor heater circuit

Another source of oxygen sensor error codes can be the heater of the wideband. A wideband sensor requires a higher operating temperature (650° C) than a conventional O₂ sensor (350-400° C). If the heater or the wiring circuitry does not work optimally, the sensor cannot achieve the correct operating temperature.

A too low temperature will normally - but not always - cause an error code. In any case, ALWAYS check the wiring circuitry for malfunctions - including supply voltage and ground - before deciding whether the sensor itself is malfunctioning.

On V6 and V8 engines, where two wideband sensors are used (one for each cylinder row), the heaters are usually controlled by a relay. The power consumption of the heater circuit is controlled by the ECU. In case of a cold engine, the power consumption is high to ensure that the wideband sensors achieve operating temperature as quick as possible. The ECU monitors the performance of the heaters and sets an

error code if an error occurs. At the same time, the power to the heaters is switched off.

What other possible sources of error are there?

A engine running on a rich or lean mixture often triggers a PO172 or PO175 at a rich mixture and a PO171 or PO174 at a lean mixture. But where do you start your troubleshooting? You can assume that there is a malfunctioning wideband sensor, but there are many other possible sources of error. Lean codes are triggered when the measured LTFT - Long Term Fuel Trim (mixture measured over a long time) is too lean. Connect a tester and check if the engine has a lean mixture condition by looking at the LTFT value. The normal range is typically between +5 to -5. If the reading is 8 to 10 or higher, the ECU needs to add additional fuel to compensate for a reading indicating a lean mixture. The same goes for a rich mixture, but here the LTFT number is in minus.

Vacuum leakage or EGR valve

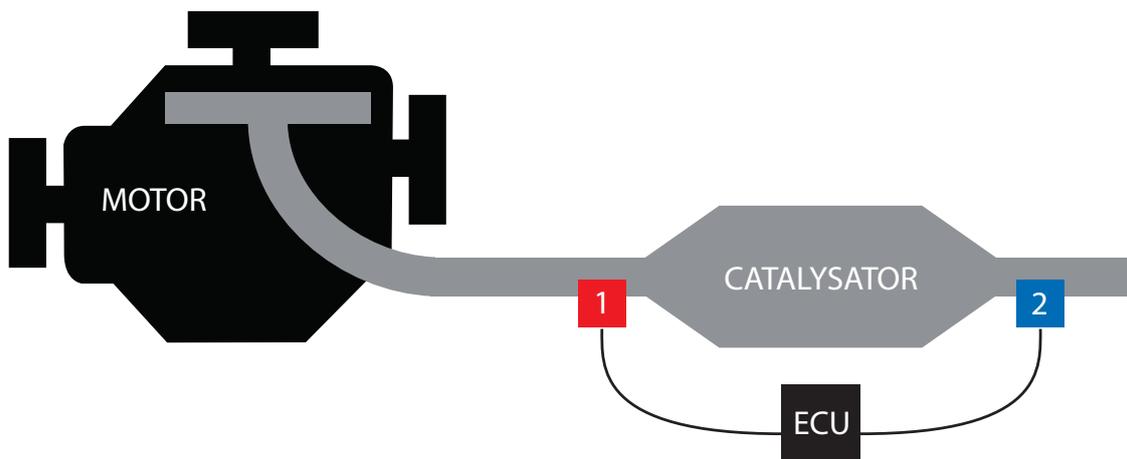
This may be due to a vacuum leakage in the intake manifold, a loose vacuum hose or an EGR valve that does not close.

Fuel pump, fuel filter, pressure regulator or injection nozzles

If none of the aforementioned sources of error can be identified, the fuel supply should be checked. A too low fuel pressure - for example due to a worn fuel pump, a blocked fuel filter or a leaky fuel pressure regulator - may also be the cause of a lean mixture. Soiled injection nozzles are another possible source of error.



SYSTEM DESIGN



Airflow meter

If the fuel system does not show any signs of error, the calculated load value should be checked using a tester. Watch out for changes in the specified airflow as you speed up the engine. If the sensor in the airflow meter is soiled, it may cause a too low value for the airflow to be passed to the ECU (which leads to a lean mixture).

Cooling water temperature sensor

If the airflow meter appears to work properly, check the function of the cooling temperature sensor for proper reading. By cold engine, the cooling water temperature reading is compared with the temperature reading from the intake air of your tester. Both measurements should be identical. A difference of more than a few degrees indicates a problem.

Soiled or malfunctioning wideband sensor

If everything is all right, the problem may be a soiled or malfunctioning wideband sensor(s) that does not measure accurately. On Toyotas, a factory tester can perform an "Active Test A/F Controls". The function is located under the menu Diagnosis, Enhanced OBD II, Active Test, A/F Control. The test changes the mixture - while the engine is idling - in order to test the response of the wideband sensor.

Typical OBD II error codes for wideband sensors

Generic OBD II codes, that indicates an error in the wideband sensors heater, include: P0036, P0037, P0038, P0042, P0043, P0044, P0050, P0051, P0052, P0056, P0057, P0058, P0062, P0063 and P0064. Codes that indicate a possible error in the actual wideband sensor, are codes from P0130 to P0167. There may be additional OEM P1-codes, that vary depending on the vehicle's brand, year and model. For example, it is very common, that on Honda's the wideband sensor codes include P1166 and P1167. Keep in mind, that the error can be found in both the sensor or the sensor wires.

Identification of wideband sensors

Wideband sensor codes also identifies the location of the sensor, such as sensor 1 or 2, cylinder row 1 or 2. Sensor 1 represents the primary/regulating wideband sensor at the exhaust manifold. Sensor 2 is the secondary/controlling sensor behind the catalytic converter. Sensor 2 are conventional O2 sensors, not wideband sensors. Cylinder row 1 is the bank, that contains cylinder number one in the engine's ignition order.

"In our hotline, we daily experience answering questions related to oxygen sensors. To many oxygen sensors are replaced solely on the basis of error codes and for no reason. It is especially the very delicate wideband type that often causes problems for the workshops"

- Frank Donslund, Elektro Partner



TRISCAN OFFERS TOOLS FOR MOUNTING TIMING CHAINS

Triscan offers 21 special tool kits for mounting of timing chains



Many cars are fitted with a timing chain instead of a timing belt. The chain has the same function as a timing belt: to make knots and crankshaft in the engine to rotate in tandem.

No maintenance and a lifespan that lasts forever - this is the dream scenario for cars with timing chains. But the reality is sadly different. As a car owner, it is important to first and foremost comply with the prescribed maintenance and replacement intervals for the timing chain. If such does not exist, it is important that the car owner is aware of the symptoms that can reveal problems with the chain: uneven engine running or persistent noise from the timing chain.

If, by accident a timing chain breaks or if the chain just needs to be replaced, Triscan is the place to go. We have 60 references (and more than 20 on its way) within the programme of timing chains, and in addition we also offer something new, a special tool kit for mounting the timing chains. Triscan has 21 special tool kits – see a list of the kits and which car models they fit at www.triscan.dk/en/news/triscan-timing-chain-kit-premium-quality



As a car owner, it is important to first and foremost comply with the prescribed maintenance and replacement intervals for the timing chain. If such does not exist, it is important that the car owner is aware of the symptoms that can reveal problems with the chain: uneven engine running or persistent noise from the timing chain.





“ With Triscan as a supplier, it is possible at the same time to increase your delivery service and reduce inventory value ”

HIGH PROGRAMME COVERAGE AND DELIVERY PERFORMANCE FOR THE BENEFIT OF YOUR BUSINESS AND CUSTOMER SATISFACTION

Our objective to maintain a 97% programme coverage and delivery performance has not only created valuable and measurable results for our customers, but has also created value for the garages and car owners. With Triscan as a supplier, it is possible to increase sales, reduce inventory value and avoid backorders and even – in worst cases – lost sales. It requires both skilled employees, advanced IT and not least continuity, in order for us at Triscan to be able to achieve and subsequently maintain such a high objective in regard to our programme coverage and delivery performance. Would you like to get to know how we do at Triscan, then please read along.

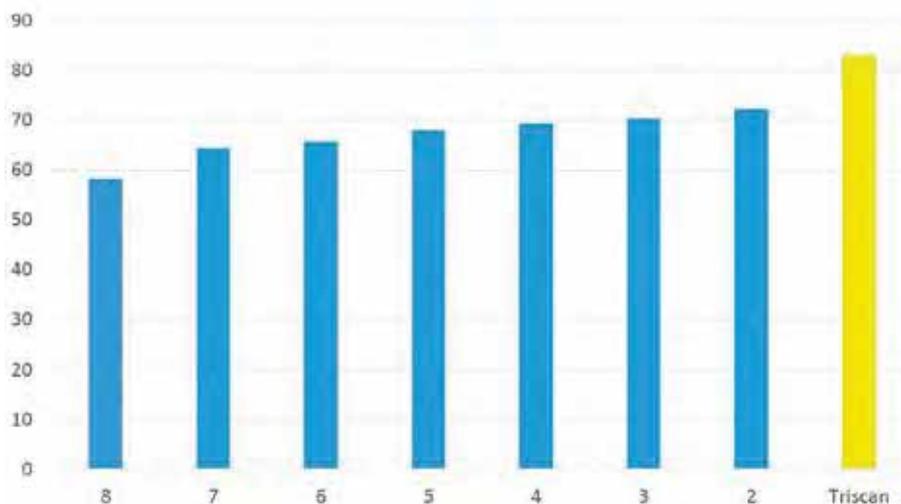
Competences

The sum of experience and expertise in both our product, purchasing, IT and logistics departments is a crucial factor in our efforts to ensure a high programme coverage and delivery



below coverage analysis of ABS sensors measured against the German car parc and 7 competitors.

The prerequisite for achieving a high delivery performance is intelligent procurement compared to the demand. With more than 50,000 references it can be a bit of a challenge, but our colleagues in the purchasing department also here make use of IT. Based on qualified estimates and sales statistics, the stock disposal system Slim Stock helps to solve the task in the best way.



ABS sensors measured up against the German fleet and 7 competitors

performance. In Triscan, the product department employees together have more than 100 years of experience in product management. Add to this the many years of experience which they each contribute with from previous jobs in the spare parts industry. Anyone can see, that we have a very solid competence foundation.

IT

One of the prerequisites for achieving a high programme coverage is updated OE information. Our product department is guaranteed access to vehicle manufacturers' OE catalogues through our PDM system (Product Data Management). This ensures us updated and detailed knowledge of the entire European car parc with correct OE-data and associated criteria on both brand new and replacements in older car models. Based on TecDoc data we continuously have the opportunity to measure our programme coverage up against other competitors in the free aftermarket. An example could be the

The final step in the process, which contributes to a high ability to supply, is the logistics, and here we also use IT. Our WMS (Warehouse Management System) ensures fast and efficient processing of orders, before the shipment is handed over to our business partners in freight forwarding. Our ability to deliver was 98.4% in the third quarter of 2016.

Value as a result of continuous efforts

The result of all efforts is expressed in terms of value for both the car owner, garage, wholesaler and Triscan. But the value-added stops as soon as the reins are relinquished. With new knowledge, new technology, new entrants and existing product programmes which are continually expanded and updated, a high programme coverage and delivery performance are ensured solely by continued focus and continuity.

THE KEYWORDS ARE COOPERATION, TRUST AND PARTNERSHIP

With 16 locations and more than 100 employees, Hirsch Autoteile GmbH is an important player on the German market. Hirsch and Triscan have been cooperating since 2012, and this cooperation has been intensified in the last two years. For Managing Director Mr. Joachim Hirsch, one thing is certain: the customer is the focus. The collaboration with Triscan works, among other things, due to the matching philosophies of the two companies. "We like that the cooperation takes place at eye level, is uncomplicated and is based on a partnership where a deal is a deal." To be able to provide the best service for all customers, you need reliable suppliers that can deliver a wide range of products and make the day-to-day business easier. "Decisions are made flexibly and quickly at Triscan, which makes working together pleasant. The cooperation works well, both with our direct contact partners as well as the backoffice," says Joachim Hirsch.

HIRSCH

The company, founded in 1978 as a sole proprietorship of Joachim Hirsch, has now developed into the Hirsch Group. It consists of two companies: Hirsch Autoteile GmbH, headquartered in Rotenburg, and the Hirsch Kfz-Teile Import + Großhandels GmbH, which has its main location in Hamm/Sieg.

The Hirsch Group has made the width of its product range its largest strength. "We attach great importance to high availability. That is why we have a wide assortment at each of our locations," says Joachim Hirsch.

Together with Triscan, Hirsch now supplies spare parts for all car brands that can be found on German roads.



Hirsch has more than 12,500 Triscan references in stock

Hirsch reports, that launching the Triscan brand was uncomplicated, both for the company as well as its customers: "Our customers know that we want only the best for them – customer satisfaction is very important to us." We visited Hirsch in Hamm/Sieg, where a modern logistics center was just newly built. Florian Bargon from Hirsch, took the time to show us around the large warehouse. Of course, we were particularly excited about seeing part of the more than 12,500 different Triscan references Hirsch has in stock. These items, amongst others, include steering parts, wheel bearings, sensor parts and an assortment of cables.

During our visit, we also met Wolfgang Weber, an automotive master craftsman who has been working for the Hirsch Group for many years and is closely involved with customers in the day-to-day business. "The selection is great. Triscan products are well received and they function immaculately," says Mr. Weber.

The newly built and modern logistics center in Hamm/Sieg has had a nice and welcoming entrance - and Triscan is highly represented



REMEMBER TO CHECK THE CARS' GAS SPRINGS AFTER A COLD WINTER!

Winter time and low temperatures have never been gas springs' best friend. Very low temperatures can cause gas springs to leak gas in the seal between the piston and cylinder. This leads to a pressure drop which causes the gas spring to fully or partially cease to function. The phenomenon is especially prevalent with very cheap gas springs of poor quality.

However, intact gas springs are affected by the cold as well. Declining outside temperature causes the pressure in the gas springs cylinder to drop. This results in decreased performance. This can, for example, be seen by the luggage compartment door or engine bonnet slowly closing, when open. Another sign thereof is having to use more force when opening the luggage compartment door or engine bonnet.

Although gas springs are virtually maintenance-free, we recommend to always keep the gas spring parts free of rust and dirt. This applies particularly to the gas spring piston rod, which in opposite case can lead to damage to the seal on the gas spring, which in turn causes the spring to start leaking and lose its function. Also, avoid bending or straining the gas spring laterally.

Visible signs of defective gas springs:

- Defective/broken fittings which are often made of plastic
- Oil at and around the assembly of the gas spring cylinder and piston

Hidden signs of defective gas springs:

- Inability to maintain the tailgate or the bonnet in the open position
- Increased use of force required for opening the tailgate or bonnet

The effects of Temperature on the gas pressure:

- Temperature fluctuations changes both the pressure in the gas spring and the viscosity of the oil
- +/- 3 degrees = 1% change in pressure
- In winter the pressure typically drops 10-15%, which has effects the gas springs' performance negatively
- The pressure of the gas spring is stated at 20 degrees





“ When replacing the water pump, you avoid complaints by cleaning the cooling system thoroughly with flushing tool and radiator cleaner ”



THAT'S WHY ...

IT HAS BECOME SO IMPORTANT TO CLEAN THE COOLING SYSTEM WHEN THE WATER PUMP IS REPLACED

Cleaning the cooling system when replacing the water pump has recently become a hot topic. The garages do - of course - wonder why this extra workflow suddenly is necessary when it has never before been required? Some car owners will probably also be puzzled by the extra posting on the garage bill, and the garages should therefore be able to provide them with a well-based answer. The explanation is not quite simple, but let us start with the reason why it is necessary: the water pump.



Over the recent years, the design of many water pumps has been characterized by downsizing. In some cases, it has been necessary because the space has become too tight due to a downsizing of the engine size. In other cases, however, it is difficult to understand the reason for using a smaller water pump. Downsizing of the water pump has also led to a reduction of the dimensions of the shaft, bearing, impeller and not least the seal ring. Simultaneously, it has been necessary to increase the pumping speed to achieve the same performance as before - i.e. to pump the required number of liters of coolant around the system per minute. As a rule of thumb, a pump must circulate the cooling system's content 20 times per minute. In a car with a 5-liter coolant, the pump must

therefore circulate up to 100 liters / min. However, in many cases, the water pump also compensates for the downsizing of the engine size, resulting in a reduced area on the surface of the engine, which is used to transfer heat to the coolant. Add to this a higher performance, which applies to many diesel engines causing the increased heat generation, it is not difficult to imagine how hard "the life" as a water pump is. And once again, it is only possible to compensate by increasing the rotation speed. The increased speed, combined with the smaller bearing and packing ring, has made the water pump a more exposed part of the cooling system, which compared to previously is more vulnerable to impurities in the coolant.

The most common error source of impurities in the cooling system is the coolant. Incorrect mixing ratio and the use of common rather than demineralized water is not uncommon among car owners who - in connection with a leak in the cooling system - try to fix the error themselves before the next garage visit. The use of plain water leads to calcification of the cooling system and lime scale is comparable with abrasive in a cooling system, which is certainly not something the water pump gasket likes. But the cooling system components - the cooler, the heater, the engine, the hoses etc. - also pollute the cooling system with deposits over time. This means that by the time of a car's life cycle, where it typically finds its way to a garage on the free aftermarket, the cooling system is often very polluted - and a cleaning is required if the problems should be avoided.

A prerequisite for performing a thorough cleaning of the cooling system is to use both flushing tool and cleaning fluid. There are different flushing tools in different price ranges, and there are several alternatives in terms of cleaning fluids. At Triscan, we do not offer the cleaning fluid, however we do offer two alternatives within flushing tools: Gates Power Flush (no. 8601 91002) and JWL (no. 8601 91001). Please also see our video <https://youtu.be/xhvfLSDnpJs>, which shows the difference between cleaning the cooling system without and with Gates Power Flush flushing tool.



Triscan ref. 8601 91 002



Triscan ref. 8601 91 001



TRISCAN PROTECTS THE ENVIRONMENT THROUGH JOINT OWNERSHIP OF PARTSLIFE



PartsLifes headquarters in Neu-Isenburg, Germany

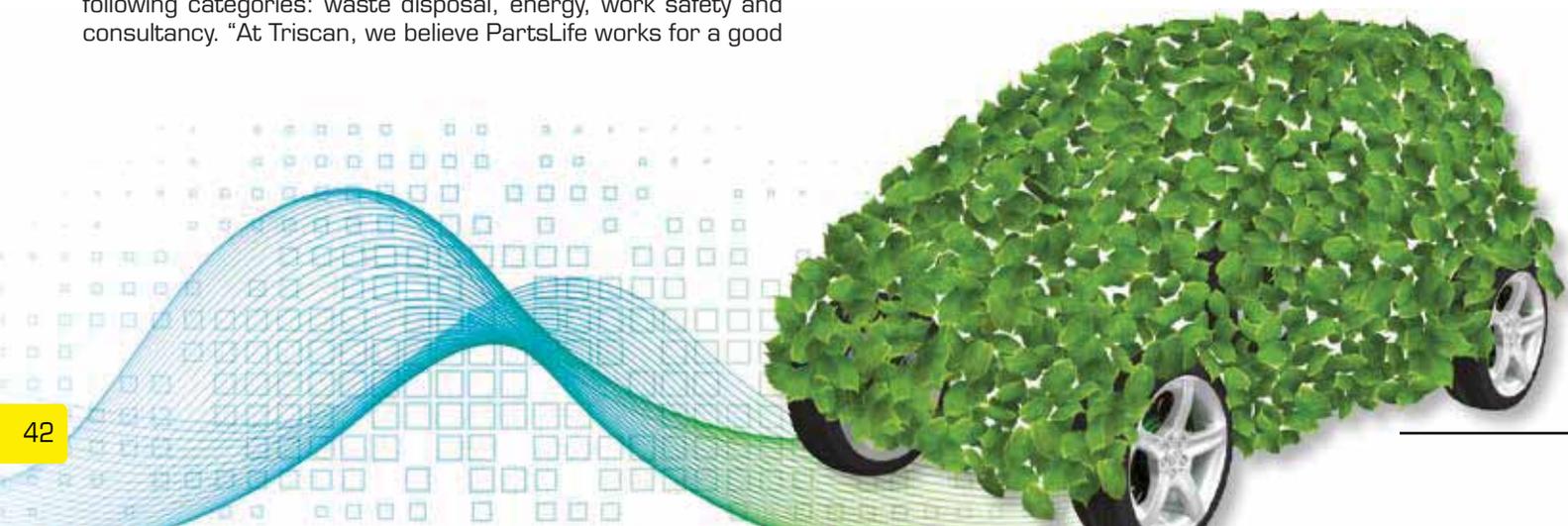


Daniel Grub, Key Account Manager at PartsLife

PartsLife GmbH helps companies in Germany work more environmentally and safely. Since 2012, Triscan and PartsLife have worked

together in a partnership. "While at Triscan they specialize in the delivery of spare parts, PartsLife takes care of disposal, so it's a good match," says Daniel Grub, Key Account Manager at PartsLife. However, PartsLife takes care not only of the legal disposal of waste from workshops, the company - which was established in 1995 - shares its services between the following categories: waste disposal, energy, work safety and consultancy. "At Triscan, we believe PartsLife works for a good

cause, and for that reason we are involved as both a system partner and shareholder," says CEO at Triscan Michael Juul Hansen, and adding: "As a system partner, we collaborate with PartsLife on environmentally friendly solutions regarding our energy consumption, but also on improving working conditions that ensure the protection of our employees. For example, the lighting in our warehouse in Iserlohn is furnished, with the help of PartsLife, in an environmentally friendly way with LED lights. In addition, we have, together with PartsLife, optimized work safety in our German headquarters. We are one of the 31 shareholders that supports PartsLife and the over 10,000 affiliated workshops, in their efforts to protect the environment."



TRISCAN'S WIDE PRODUCT PROGRAMME

All Triscan's products are manufactured in OE quality. Our product programme covers more than 97% of the European car parc. If you choose a product group from Triscan, you can do with just one supplier.

ENGINE

- Air flow meters
- Camshaft position sensors
- Crankshaft position sensors
- Diesel
 - Common rail injectors
 - Common rail pumps
 - Pump and nozzle units
- Engine gaskets
 - Cylinder head gaskets
 - Gasket kits
 - Gasket kits w/o cyl. head gasket
 - Oil-pan gaskets
 - Valve cover gaskets
- Engine parts
 - Camshaft kits
 - Lifters
 - Top bolts
- Exhaust
 - Clamps
 - Flexible connectors
- Fuel hoses
- Ignition coils
- Ignition wire sets
- Micro-V belts, kits
 - Alternator pulleys
 - Belt tensioner units
 - Idlers
 - Micro-V belts
 - Pulleys
 - Stretch fit V-belts
 - V-belts
 - Vibration dampers
- Oil plugs & gaskets
- Oxygen sensors
- Timing belt kits
 - Belt tensioners
 - Idlers
 - Micro-V belts
 - Oil seals
 - Timing belts
 - Vibration dampers
- Timing belts, Water pump kits
- Timing chain kits
- Throttle bodies
- Vacuum hoses
- Waterpumps + Timing belt kits

TRANSMISSION

- Accelerator cables
- Anti-friction spray
- Bolt kits, flywheels
- Bonnet cables
- Boot kits
- Choke cables
- Clutches/clutch kits
 - Clutch cylinders
 - Clutch grease
 - Clutch hoses
 - Clutch release bearings
 - Guide bearings
 - Guide bushings, clutch bearings
 - Hydraulic release bearings
 - Oil seals
- Clutch cables
- Clutches, various
- C.V. joints
- Drive shafts
- Grease
- Oetiker clamps
- Propeller shaft support
- Shift cable
- Speedometer cables
- Trailer cables
- Tripod joints
- Tools
- U-joint
- Universal clamps

BODY

- Gas springs
- Refills for BOSCH flatblade
- Steering dampers
- Universal gas springs
- Universal wiper refills
- Washer pumps
- Wiper refills

COOLING SYSTEM

- ALU-flex duct hoses
- Flushing tools - cooling system
- Heater hoses
- Radiator caps
- Radiator hoses
- Thermostats
- Thermo switches
- Waterpumps
- Water temperature sensors

STEERING & SUSPENSION

- Boots
 - Mounting kits
 - Protection kits
- Bushings
- Coil springs
- Grease
- Leaf springs
- Power steering pumps
- Rack and pinions
- Shock absorbers
- Spheres - suspension
- Stabilizer rods
- Standard bearings
- Steering columns
- Steering parts
- Strut bearing kits
- Strut bearings
- U-bolts
- Wheel bearing kits
- Wheel hubs

BRAKE SYSTEM

- Accessory kits
- ABS-rings
- ABS sensors
- Bleed screws
- Brake cables
- Brake calipers
 - Guide tube kits, brake calipers
 - Pistons
 - Rep. kits
- Brake discs
- Brake drums
- Brake hoses
 - Banjo bolts
 - Clips for brake hoses
- Brake pads
- Brake pipes
 - Idlers
- Brake shoes
- Pressure regulators
- Wear indicators
- Wheel cylinders

MISCELLANEOUS

- Ear clamps
- Flashers
- Hose clamps
- Standard bearings
- Trailer cables
- Universal gas springs

TRISCAN
s m a r t p a r t s

Triscan a/s

Engmarken 11, DK-8220 Brabrand

Tel.: +45 86 22 58 11 Fax: +45 86 22 58 77

E-mail: auto@triscan.dk

www.triscan.com

