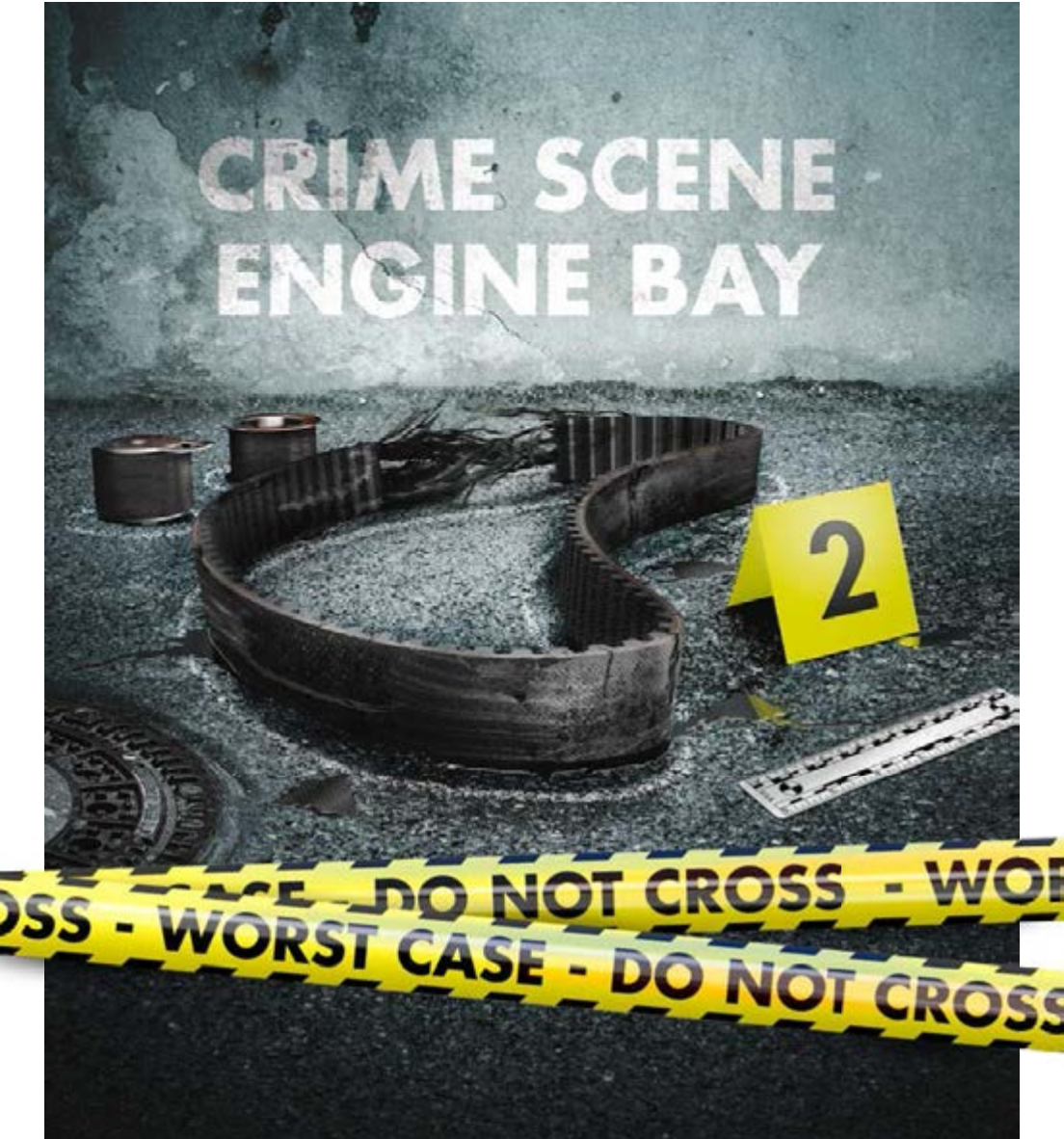


EDITION 1/2015

AUTOMOTIVE BRAND NEWS



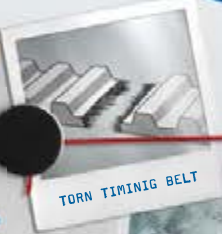
**CRIME SCENE
ENGINE BAY**



WEAR IS A SERIAL OFFENDER

VICTIM

OFFENDER?



TORN TIMING BELT

Causes:
 A Foreign object in the drive
 B Foreign object effect
 C Too tightly tensioned
 D Kinking of the belt before or during assembly

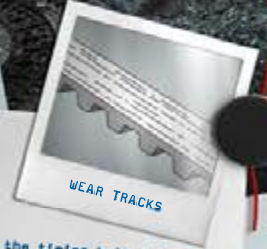
Remedy:
 For A Remove foreign object, change the belt
 For B Change the belt, ensure cover is correctly positioned
 For C Change belt, ensure correct tension
 For D Change belt, ensure correct assembly



CRACKS ON THE BACK

Causes:
 A Surrounding temperature too high/low
 B Foreign object effect
 C Back bend idler rough running
 D Belt is wearing out

Remedy:
 For A Find the cause (e.g. cooling system) and remedy it, change the belt
 For B Change the belt, ensure cover is correctly positioned
 For C Change the back bend idler, replace the belt
 For D Change the belt



WEAR TRACKS

Causes:
 A Foreign object in the timing belt drive
 B Defects on teeth of the timing belt pulley due to foreign objects, or from tools during assembly
 C Timing belt damaged before/during installation

Remedy:
 For A Remove foreign objects, change the belt, ensure cover is correctly positioned
 For B Change timing belt pulleys, remove and professionally mount timing belt
 For C Change belt and mount professionally



TOOTH FLANKS WORN, BASE CRACKING/TOOTH SHEARING-OFF

Cause:
 A Tension set too high
 B Worn timing belt pulley

Remedy:
 For A Change the belt, correctly tension
 For B Change the timing belt pulley and belt



TOOTH & FABRIC DETACHMENT

Causes:
 A Leak in the engine or in the engine bay (e.g. leakage of oil, antifreeze etc.)

Remedy:
 For A Stop the leak, change the belt



DEFECTIVE SYSTEM COMPONENTS

Causes:
 A Lack of adjustment of the nominal position of the tension pulley
 B Incorrect tightening torque for mounting of the rollers

Remedy:
 For A Proper adjustment of the nominal position of the tension pulley
 For B Correct tightening torque when mounting the rollers



EDGE WEAR

Cause:
 A Not axially parallel; belt rubs along flanged pulley
 B Pulleys are axially offset
 C Flanged pulley has defects, component bearing play
 D Component bearing play

Remedy:
 For A Check the drive, align pulleys or replace, change the belt
 For B Refer to remedy A
 For C Change tension/guide idler pulleys
 For D Refer to remedy C

OPTIBELT ADVISES: THE KIT FOR EVERY CASE

From the beginning, the logical response to the "Serial Offender Wear" has been: no compromises when changing a timing belt! We recommend the complete replacement of the belt and associated tension and guide idler pulleys in a single operation. This saves you the laborious search of clues for the correct parts!



optibelt KIT CAR POWER

OPTIBELT Repair Kits for cars consist of perfectly matched components of the highest quality. Quickly and safely replaced in one operation.

- Vehicle specific **optibelt ZRK** timing belts
- Matching tension and guide idler pulleys
- Related components
- Available with or without water pump
- For all standard cars and vans



THE PROTOTYPE FOR PRECISE MAINTENANCE CHECKS

AN AHA! MOMENT IN THE AFTERMARKET

SECURE SCC

Performs. For the customer and in business.

- OEM QUALITY
- SIMPLE VISUAL INSPECTION OF THE BELT WITHOUT TOOLS
- PRECISE AND SAFE
- PREDICTABLE SERVICE INTERVALS AND COSTS
- IDEAL FOR FLEET OPERATIONS
- SHOWS PREMATURE WEAR IN POOR ENVIRONMENTAL CONDITIONS (DUST, DIRT, HUMIDITY ETC.)

FIND OUT MORE
DURING 2015
TRADE FAIRS
AT OUR
OPTIBELT BOOTH!



OPTIBELT celebrates a world premiere: With **optibelt SECURED** we exclusively present the first drive belt with integrated wear indicator! From now on, no tools are required to securely test the life cycle of the belt. Thanks to the integrated **SECURED Change Control** the wear shows automatically: At the end of the life cycle a red colour marking is visible on the inside of the belt. Only then should a belt change be recommended to the vehicle owner.

SECURED Change Control premium technology is a world exclusive from OPTIBELT. It optimises service intervals and makes a significant contribution to more efficient use of cycles. To ensure the exact function of the "Change Control System" precise mixtures of materials had to be developed and tested, according to Nina Kenneweg, Product Manager at OPTIBELT: "Without giving away trade secrets: the technology behind the colour marking is really impressive. An innovation that pays for itself and which brings the customer tangible benefits!" In fact, there has been no way to safely control the actual wear of a ribbed V-belt without tools. With **SECURED Change Control** OPTIBELT will once more play their role as one of the world's leading premium drive belt specialists.

PRACTICAL REPAIR SHOP KNOWLEDGE

PARTNER, POWER, PERSPECTIVES

REPAIR SHOP PROFILE



Last name: Vogler
 First name: Maik
 Repair shop Manager
 Age: 46

Name of the repair shop: Fred Kose, Autowerkstatt
 Location: Am Tönniesberg 2,
 30453 Hanover
 On the market since: 1970
 OPTIBELT customer since: 1990

»» ONLY OEM QUALITY
 SPARE PARTS ARE
 USED IN MY REPAIR
 SHOP, FOR EXAMPLE
 FROM OPTIBELT. ««

An over the shoulder look with professionals – OPTIBELT is regularly present in professional repair shops and in the aftermarket. The first stop we made was in the Hanoverian repair shop of Fred Kose with manager Maik Vogler.

01. MY FIRST QUESTION: HOW DID YOU COME TO OWN THIS REPAIR SHOP?

I've worked since 1990 in this auto repair shop. When in 2008 my boss at that time approached me and offered me to take over, I did not need to think twice. I have had my master's papers in my pocket since 1995 and so I have been my own boss since 2008.

02. FREE REPAIR SHOP OR CONTRACT REPAIR SHOP?

Free repair shop – this always means greater diversity in the workplace. You can see when you look at a contract-based repair shop that many processes have been "automated".

03. IF YOU HAD TO DESCRIBE YOUR REPAIR SHOP IN THREE WORDS WHICH WOULD YOU CHOOSE?

First Innovative: We see the need for further training in order to constantly prove that vehicles of all makes are expertly repaired. Secondly Uncomplicated: Many problems can often be solved quickly and easily. Thirdly Flexible: With us there's no need for so-called "waiting customers".

04. WHAT IS THE SIGNIFICANCE OF THE AFTERMARKET FOR THE BUSINESS?

Very great. I think we assemble 85–90% of the spare parts from the aftermarket. We therefore also have more scope to determine prices for customers and produce a fair offer for the repair of a vehicle. At the same time customers trust our opinion. Often there are so-called Spare Parts Kits, with all the components for repair included when replacing a timing belt. With OPTIBELT that even includes a water pump.

05. ARE ORIGINAL SPARE PARTS ALSO REQUIRED?

There are also customers who want to have original parts installed. But through specific advice to the customers we can often convince them to use parts from the aftermarket. Because even the well-known brands do not construct brake discs or ribbed V.belts themselves, but have them made by their suppliers.

06. IS IT ALL A MATTER OF PRICE?

For a while the "thrifty is good" mentality prevailed and everything was "on the Internet but cheaper". This is basically already over. Customers appreciate it when they are well advised and pay a reasonable price for the highest quality. Many have previously fallen for cheap replacement parts and bought in effect "twice". In my repair shop only original spare parts such as from OPTIBELT are installed.

07. DO YOU EVER STOCK SPARE PARTS?

I always have a small supply of continuous runners (oil filters, light bulbs etc.), but otherwise the delivery of spare parts works perfectly. I get up to four deliveries a day with spare parts supplies from wholesalers.

08. WHAT IS THE MOST FUN AT WORK?

That you have satisfied and grateful customers – especially when you can help them at low cost and they can then drive their vehicle away again.

09. THANK YOU FOR THE INTERVIEW! FINALLY A QUESTION WE HAVE TO ASK: WHAT'S YOUR DREAM CAR?

Without a doubt: the new Porsche 991 GT3 RS!

FROM



AROUND THE WORLD

Strong tradition and lived innovation: In over 140 years OPTIBELT has transformed from a medium-sized business from the Westphalian Höxter into a company with global expertise.

FROM MEDIUM-SIZED BUSINESS TO GLOBAL INDUSTRY BRAND

OPTIBELT is a privately held company. This allows us the luxury to pursue long-term and sophisticated strategies. And to invest a great deal in research. Free of short-term quarterly thinking or group policy. This is how to create sophisticated innovations that are in high demand worldwide. Thanks to this peak performance OPTIBELT has never lost drive, even in times of global economic crises. The OPTIBELT standard assortment consists of approximately 10,000 products. Most have arisen simply because we have not ceased to seek the best solution for the customer. And not in order to sell our best solution.

VISION IS A TRADITION

In 1962 OPTIBELT founded the first international sales office in Zurich. From the mid-1960s, we progressed step by step to Eastern Europe. In the US, OPTIBELT has been represented since 1975 with distribution companies in the United States and Canada, more sales offices in Eastern Europe and the Far East Asia then followed. In 2014 new sales and service locations were also established in Turkey, Colombia, China and Brazil. We are now represented by over 1,800 employees throughout the world.



SENSIBLY EXTENDING SKILLS

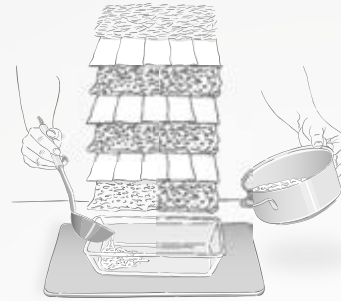
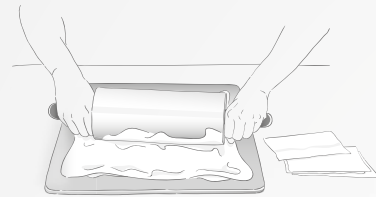
Whoever plays on the world market should not rigidly adhere to the "tried and true" but always learn from it. In 2015 we are extending our core competencies in designing sophisticated drive solutions: In 2014 the company OPTIBELT WALK BV was established in Holland. The product range includes OPTIBELT WALK components and gears, (special) timing belt pulleys and toothed racks, chains and gears as well as standard drive components. Complex 3D structures can be realized thanks to our own CAD workstations. OPTIBELT can now offer complete solutions from design to complete transmission assembly production.

ONE WORLD – ONE DRIVE

The world is in motion – and we are in driving seat. OPTIBELT guarantees the highest quality standards at every production site worldwide. Regardless of whether a drive solution is produced in Asia, the United States or at the parent plant in Höxter. Therefore OPTIBELT offer drive solutions with the best performance and tremendous efficiency advantages. All over the world.

SECRET RECIPIES. HIGH-PERFORMING PLANT.

WE'LL BAKE THAT CAKE



INGREDIENTS:

The best raw materials provide a solid basis for the distinctive OPTIBELT quality. The mixture of these basic ingredients is already determined early in the production process on the basis of properties of the later products. Before a belt becomes an "OPTIBELT belt", it requires further complex manufacturing steps. Please take a seat while we prepare to bake.

TO GET STARTED:

- Rubber polymers
- Curing agents (sulphur, peroxides, metal oxides)
- Fillers (carbon black, silica, fibres)
- Plasticizer (mineral oil and synthetic)
- Anti-aging agent

STEP 1:

Mix well ...

STEP 2:

Roll out and shape ...

STEP 3:

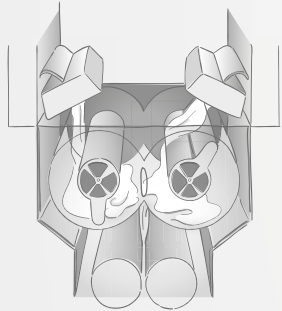
Layer by layer ...

STEP 4:

Bake in a mould ...

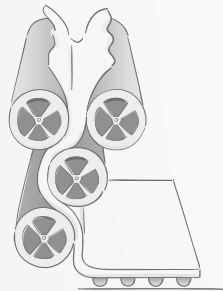
STEP 5:

As good as ready!



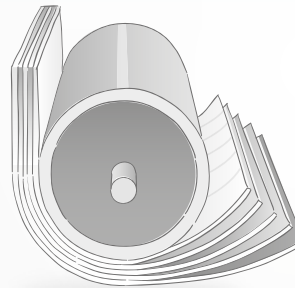
Mixing

In the first step, the various ingredients, such as rubbers and mineral oils are processed into a homogeneous mixture – 90 tons of rubber per week alone is needed in the parent plant at Höxter. Additives, such as carbon black or fibres are automatically fed and precisely dosed. OPTIBELT has mastered over 60 different "base mixes" – the mixing parameters must be accurately maintained in order to ensure the desired material properties in the later end product.



Calendering

The material is rolled and cooled by rolling in the friction calender. The length and intensity of the rolling times are crucial for the material properties. Before further processing there is a thorough quality inspection and the resulting rubber sheet is placed wrinkle-free.



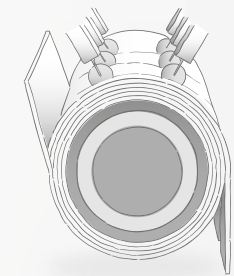
Manufacturing

In the next step, the various components are combined (manufactured). Here, the semi-finished products such as the embedding material, the fabric, the special tension cord, the core material and any additional fabric is applied in a predetermined sequence of installation on a drum and thus the next production steps prepared (moulding and vulcanisation).



Moulding and vulcanising

The basic belt is almost completed and will be vulcanised by means of high temperature and pressure to form a unit. It already stands out (depending on type) due to the previous steps with exactly defined material properties. Through the vulcanisation of the belt it gets its characteristic shape and profile (rib expression or tooth shape). By the way: Approximately 750,000 belts per year leave the OPTIBELT factory and are used worldwide.



Cutting

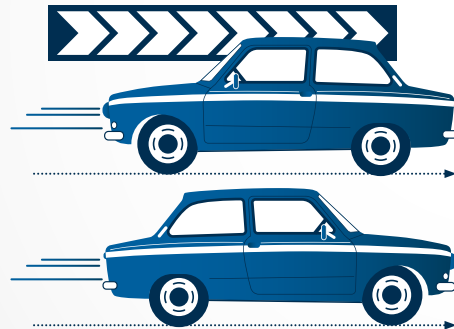
In the last production step customisation is required. Depending on the production order, or request of the customer the desired belt with individual number, ribbed V-belt, or special number of ribs is cut out from the vulcanised belt sleeve using precision tools. Last but not least they undergo intensive quality control because OPTIBELT customers only place perfect products on the table.

ANY QUESTIONS?

Do you want to know more about OPTIBELT?
We can provide rapid answers to all questions about our company or our drive solutions. Just send us an e-mail – we appreciate your interest.
marketing@optibelt.com

DID YOU KNOW THAT

... THE DAF 55
CAN TRAVEL IN **REVERSE**
AS FAST AS IT CAN
FORWARDS?



THAT'S HOW THEY ARE DRIVEN IN SPECIAL
REVERSE RACES.



... WINDSCREEN WIPERS

EXISTED BEFORE **CARS** WERE MADE
IN **MASS PRODUCTION?**

MARY ANDERSON INVENTED
THE WIPER IN **1903.**

THE FIRST CARS CAME ON THE MARKET IN **1908.**

... THE SMALLEST BELT PRODUCED BY US
IS NO LARGER THAN A
WEDDING RING
AND IS USED IN
SURVEILLANCE CAMERAS?



BY THE WAY: THE
LONGEST, PRODUCED TRANSPORT
BELT WAS **25 METRES** LONG.



(It is therefore as long as the longest lowfloor bus in the world – the double-articulated AGG 300 at 24.78 m)

... THE FIRST ELECTRIC CARS
HAVE BEEN PRODUCED SINCE
THE **1970'S?**

THE **LUNAR ROVING VEHICLE**
WAS DRIVEN DURING
APOLLO MISSIONS
15, 16 AND 17 ON THE
MOON.



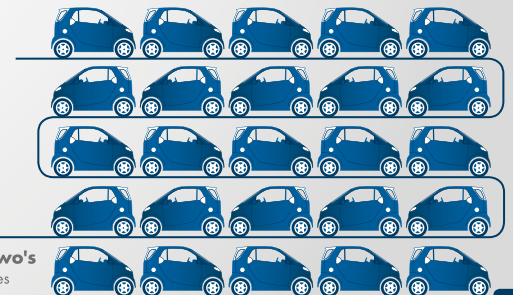
... IN THE CANADIAN TOWN OF JASPER GATES DRIVING A CAR FASTER THAN A HORSE OR A CARRIAGE IS FORBIDDEN?



... IN A MODERN, WELL-EQUIPPED CAR BETWEEN 1,000 – 3,000 METRES OF CABLE ARE LOCATED?

THEY SUPPLY **SENSORS, COMPUTERS, LIGHTS MOTORS WITH POWER.**

1,111 Smart Fortwo's
lined up = 3,000 Metres



COOL

OPTIBELT BRINGS COOL TO THE STREETS

Always stay cool! Mobile cooling units provide frosty conditions in trucks and commercial vehicles. Of course that applies to milk and cheese, but also to medicines or medical samples which must always arrive fresh to their destination.

Chilled goods transport is a hot business. Tight, just-in-time logistics, uninterrupted cold chain for perishable goods in transit and strict environmental regulations leave little room for failure or technical problems. Therefore, the cooling units in modern trucks usually include multiple drive belts, for example, the **optibelt TRUCK POWER KBX** kraftbands, the **optibelt TRUCK POWER MARATHON 2 M=S** V-belt, and the **optibelt TRUCK POWER RBK** ribbed V-belt. They provide high reliability and low maintenance.

By the way: Whether a truck is moving or stationary plays no major role for cooling units. The cooling must continue to run at full speed even with prescribed stops at the service area. Therefore the performance of the drive belt in this case is not measured as usual as "Km performance", but recorded in "hours of operation". Unlike normal powertrains, the belt in the refrigeration unit must provide nonstop performance.



optibelt TRUCK POWER MARATHON 2 M=S

- Used in sets
- Strengthened composition
- High operational security
- Low maintenance operation and plannable maintenance intervals
- High wear resistance

optibelt TRUCK POWER KBX

- Low maintenance operation
- Smooth running
- No twisting of the belts
- Low vibration
- High wear resistance

optibelt TRUCK POWER RBK

- Large transmission ratios
- High power transmission
- Minimum slip
- High temperature resistance
- Low vibration and noise

SUPPLIER OF THE BEST

OEM QUALITY FROM OPTIBELT



The Great rely on OPTIBELT. The world's leading car manufacturers pay particular attention to top quality with original equipment. Our development expertise is famous, our precision tools and machines are custom-made, our test series unique. Engineers at OPTIBELT have the right solution for every drive and so ensure our quality advantage. That is why we are always the OEM on the pole position. As a reliable partner to the international automotive industry, we are proud of our increasing number of references.

SKODA



WATCH AND LEARN



OPTIBELT GmbH SUBSCRIBE



SECURED CHANGE CONTROL

The time is ripe for a worldwide first from OPTIBELT: The first drive belt with a replace indicator.

OPTIBELT has for decades been a proven partner in the industry, delivering superior products with tremendous performance. This also pays off in the aftermarket and with the end customer. However, to inspire customers to choose OEM quality we need to grab their attention. And so short spots bring the benefits of OPTIBELT innovation humorously to the point.



HEAL THE WORLD THANKS TO OPTIBELT

How fast is a picturesque, early summer Sunday morning in natural idyll ruined.



PAPA'S SOUND

An appeal to parental responsibility. Our youngest spot of the "NASSSCHLUPFOPTIMIERT" campaign.



WHAT IS NASSSCHLUPF-OPTIMIERT?

A good question! For no concept brings the benefits of **optibelt RBK** better to the point.



FULL WASH

Moving images help explain things: Thanks to "Nassschlupfoptimierung" (wet slip optimisation) the new RBK drive belt really cannot be harmed by being wet.

More about OPTIBELT on YouTube:
www.youtube.com/user/optibeltGmbH

DRIVING FORCES

OEMs have relied on OPTIBELT for decades. And also in the spare parts business and in professional repair shops OPTIBELT are driving solutions in the fast lane. Jump on board!

OPTIBELT CAR POWER

- OEM QUALITY FOR THE AFTERMARKET
- PROFESSIONAL COMMUNICATION SUPPORT
- ATTRACTIVE POSITIONING AT END CUSTOMERS

OPTIBELT TRUCK POWER

- DRIVE IN OEM QUALITY
- GLOBAL SERVICE
- ENSURES HIGH PERFORMANCE AND ECONOMY

HERE YOU CAN FIND MORE INFORMATION ABOUT SALES STANDS:
WWW.OPTIBELT.COM/AUTOMOTIVE/EN/PERFECTLY-EQUIPPED



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