



Development and market launch

So that they survive even the roughest roads: extensive functional tests for fifth wheel couplings



Tractors and trailers are connected by fifth wheel couplings and kingpins. Naturally, these products have very high safety requirements. They are allowed to be used only after a design approval has been obtained from the Kraftfahrt-Bundesamt (German Federal Motor Transport Authority).

JOST develops fifth wheel couplings according to the demands of its markets. Here, innovation and quality play an essential part. However, safety is the main concern. We perform extensive safety tests on a coupling before presenting it to the Technical Inspection Authority (TÜV), which carries out the last inspections needed to receive the design approval.

The numerical check via modern calculation methods, such as FEM, is the first stage in the development process. With this, a general comprehension of the component sturdiness is gained before the first prototype is even built.

Next, the developed design has to be tried at the test facility. Among others, the following tests are generally performed:

More than 2 million stresses and strains

A very unpleasant, but imaginable and notorious crash scenario is an overturned trailer. This scenario is simulated by the topple-pull test. For this, a force equal to 2.5 times the allowed imposed load is created using a kingpin. The connection between the fifth wheel coupling and the kingpin must not fail during this simulation. Thus, a 20 ton coupling is loaded with a force of 490 kN = 50 tons.

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Editorial

Dear JOST World News Readers,

We are all going through turbulent times. The entire automobile industry is suffering from a crisis in a way that was beyond belief until now. There is no business that will emerge from this crisis the way it entered it.

However, it is safe to say that firms who were set up from the get-go to capably deal with future changes will weather this crisis best. These businesses are now using this opportunity to prepare intensely for the coming challenges.

To this effect, we are sure to be heading in the right direction with JOST. Regardless of what is happening around us, we are able to confidently look to the future thanks to our innovative, competitive range of products, our utmost demands for quality, our global structures, our high capacity logistical concepts and the latest techniques of production. Last but not least, thanks to our sustainable vision of the future and our staff.

In this edition of JOST-World News, we would like to present to you some proof of this matter. In addition, I would be glad if we could contribute to safer traffic on our roads with the help of our free training videos that can be requested on our website.

Enjoy reading!

Yours



Lars Brorsen - CEO

About Us

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Development and market launch



and pushing, which continually affect the fifth wheel coupling while driving. In the process, alternating forces of acceleration and braking in the direction of motion are applied, as well as pushing forces that match the imposed load. The fifth wheel coupling has to endure 2 million stresses and strains without being damaged!

At the test facility, the fifth wheel coupling is continuously coupled and decoupled 15,000 times. No component may fail and there can be no dysfunction due to erosion.

The hardest test: The field test

If all assessments were successful at the test facility, the field test begins. Within these tests, 20 transport companies utilise over 80 fifth wheel couplings on an ongoing basis in nine different countries. The couplings face a vast variety of challenges. High and low temperatures, alternating road conditions, different loads, and much more influence operability and erosion. Therefore, these tests are critical for developing new components and also for examining the existing production

The KBA has the last word

After the successful completion of all tests, an internal JOST-release is issued. An additional design approval is needed for fifth wheel couplings and kingpins. For this, the TÜV compiles a test report using the outcomes of the assessments. This report is sent to the Kraftfahrt-Bundesamt (KBA) including the detailed product documentation. The design approval is granted by the Kraftfahrt-Bundesamt in Germany or by corresponding authorities in other countries of the European Union..

The strength of the steering wedge is simulated with the flank-bending test. The test steering wedge pushes sideways against the wall of the drive-in slit in this test. The test-force is calculated from the D value and for a 152 kN fifth wheel coupling it amounts to 228 kN = 23 tons.

Needless to say, the fifth wheel coupling has to meet the demands of daily operations. Therefore, two sets of tests are performed at the test facility to check if the coupling can uphold.

The flexural fatigue test simulates constant strains: shaking, jiggling, pulling

E-coating (KTL) – Custom coating

E-Coating (KTL) with a System

**For almost 10 years now parts are being e-coated (KTL) at JOST.
Wage work can also be done in the high capacity plant.**

E-coated metal parts are protected from corrosion. The cathodic painting guarantees a perfect quality of the surface, so that weather, chemicals, falling rocks or any other external influences cannot cause any damage. The evenly thin and flexible finish penetrates deeply into hollows and even a coated thread remains movable. Furthermore, KTL is an especially eco-friendly way of coating surfaces. Finally, the e-coating is well suited as an undercoat for further finishing.

Thus, the fact that tractor and trailer producers protect their premium parts this way is no surprise. A modern and effective e-coating (KTL) plant has been operated by JOST in Neu-Isenburg since 2000. Here, various parts are pro-

cessed, such as those for fifth wheel couplings.

Our OEMs and other truck suppliers have been using our coating logistics for about just as long. This means that we accept orders to coat external parts, aside from our own, and upon request we will send them directly to the production line in the selected specification. For years now, JOST has been carrying out projects for the commercial vehicle sector in a large scale. Their customers consist of metal processing businesses such as DAF, MAN, Mercedes-Benz, Isuzu, Iveco, Volvo, Kögel, Krone, Schmitz, Wabco and many more.

With this, JOST can also rely on a broad range of experiences in processing and supplementary services such as mechanical handling, mounting, and packaging. The certified production logistic guarantees short processing times (max. 48h) and great flexibility. All stamped, bended and welded parts are adequate for the KTL-coating. Pipes as well as small parts made out of bare or galvanized steel and aluminium can be coated too, however. Further details about KTL and our direct labour can be found at: www.jost-world.com/ctl

Maintenance will increase product life

Maintaining JSK 42 correctly

A well maintained coupling does not only last longer – it is also safer.

Fifth wheel couplings and king pins are both subject to a certain amount of erosion, depending on their operating conditions. This erosion can be discovered when backlash towards the

direction of motion is noticeable. Too much backlash can lead to thrusts and a threat to safety, as well as damage to the fifth wheel coupling, the mounting plates, and the chassis. Therefore, the fifth wheel coupling should be inspected regularly.

Fifth wheel couplings from JOST have a manual, stageless adjustment option, to increase their life span. The wear limit of the lock is reached when no more room exists between the lever and the coupling plate. In this case, a further adjustment of the lock is no longer possible and the wearing ring as well as the lock jaw needs to be replaced.

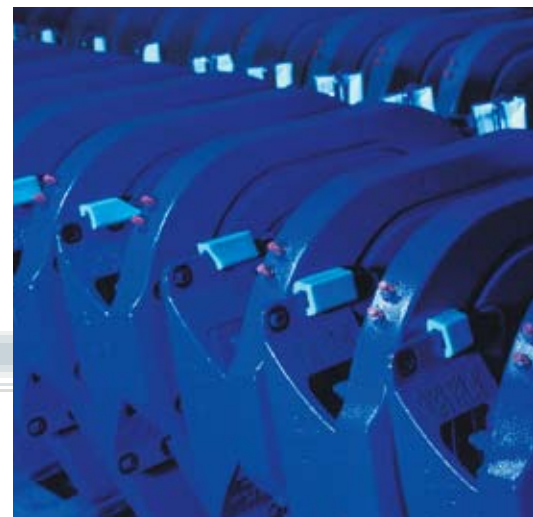
Likewise, the king pin needs to be replaced once its wear limit has been reached. The exact measurements can be found in the mounting and operating manual. The top plate liner and its fixing screws need to be inspected according to their operational demands, as well.

At the latest every 50,000 km or every half year, these parts need to undergo such an inspection to look for tight fit, erosion, and damage. The top plate liners are to be exchanged if they are worn down to the top side of the fixing screws.

A regular greasing of the fifth wheel coupling is also important, because this increases the life span even when the operating conditions are rough. At that, the greasing of the joint and the top plate parts should not be neglected.

It is critical during the maintenance to only use original JOST replacements. The necessary quality and safety can only then be assured. All wearing parts for JOST and ROCKINGER couplings are available in a practical repair-set. More information is available at:

www.jost-world.com



Technology for the roads of tomorrow

Exhibition



The world-wide leading exhibition for agricultural engineering, called the Agritechnica, will take place in Hannover from November 10th to 14th. Nearly 2000 truck, agricultural machine, and agricultural equipment manufacturers from all over the world are expected to exhibit. And JOST will be one of them. The range of ROCKINGER towing hitches, TRIDEC steering systems, and axle suspensions as well as other products designed for agriculture and forestry can be found in Hall 9, Stand G07.



Ensuring Safety with the Wear Limit Gauge

A well maintained coupling does not only last longer – it is also safer. An important part of the maintenance process should be the inspection of the wear limits. For a fast and easy check on the wear limits of ROCKINGER towing hitches, we have developed a handy wear limit gauge, which you can order from us free of charge. Please send an email to: jost-sales@jost-werke.de By the way: Elaborate details on how to maintain and take care of couplings can be found in the respective mounting and operation manuals, which you can easily download or view on our website. www.jost-world.com



JOST India

JOST fifth wheel couplings on Tata World-Trucks

Positive signs for the future are coming from India. With the background of a constantly improving infrastructure and the growing economic power of the subcontinent, India's biggest automobile manufacturer, Tata Motors, has launched their World Trucks.

Ratan Tata, chairman of Tata Motors in Mumbai presented a completely new line of commercial vehicles called "World Truck" at the end of May. Tata announced that its goal with this line is to produce utility vehicles with European quality. The fleet is for the most part produced for the Indian market, however, vehicles are intended to be exported to South-Korea, South-Africa, the Middle East, Russia and Turkey.

The tractors of World-Truck are equipped with JOST fifth wheel couplings.

The JSK38DV50 is a commonly used coupling made of steel and sheet metal that was redesigned to fit Tata's demands. To provide supply of the couplings, JOST - India Auto Component (a 100 percent JOST-subsi-dary) built a state-of-the-art factory in immediate proximity to Tata's manufacturing plant. The production meets the high industry standards not only in terms of quality but also of working safety and eco-friendliness. Here, more than 100 domestic workers produce up to 50,000 fifth wheel couplings a year.



Technology for the roads of tomorrow

Stay safe with JOST

Free safety checks for fifth wheel couplings

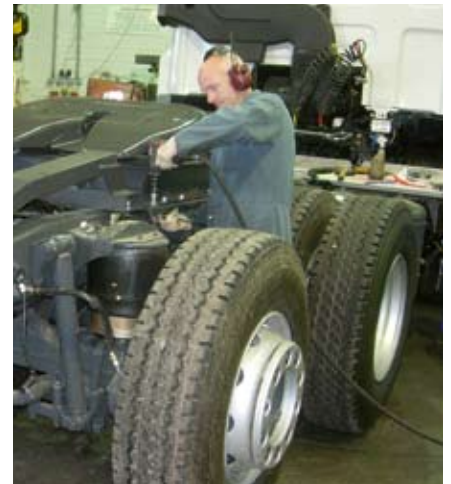
Because the safety of our clients carries a special importance to us, JOST Great Britain has begun a special initiative. Themed "Stay safe with JOST", users of JOST fifth wheel couplings can now get a free check up at JOST-GB.

During the check up, ten different areas of the fifth wheel coupling are examined. Afterwards, the client receives a clear notice as to whether or not, for example, the handle, the lock, or the latch of the respective coupling still meets the safety requirements. Dave Deri, Technical Director at JOST-GB Ltd, says, "We have introduced the safety check because we realised over the years that most of the problems with

fifth wheel couplings are simply due to a lack of maintenance. The users usually assume that once a fifth wheel coupling is installed, no further attention is required. This is clearly not the case. A well maintained coupling will serve for many years." In the meantime, JOST-GB has an extensive Dealer network and collaborates closely with outlets Nationwide. Two of these Key partners Artic Trailer Services and Tanker & General Ltd have also been integrated into the programme to provide the same complimentary service. With this, the inspections will not only be done at the JOST headquarters in Heywood,

www.jostgb.co.uk

Lancashire but also at Artic Trailer Services in Scotland and at Tanker & General Ltd in Essex.



Further education

ROCKINGER Training Video

How do you choose the right towing hitch for the various operational areas? Which maintenance measures need to be performed? And how are wearing parts exchanged or repairs conducted?

Answers to these questions and many more can be found in the new ROCKINGER training video. The DVD spans 25 informative minutes covering the coupling product range, accessories, as well as maintenance work. All of the required steps are shown in a simple and easy to understand way. The movie is suitable as training material for drivers and garage staff. This

material completes the JOST training video series. Available are, hence, three DVDs, which cover the topics of fifth wheel couplings, telescopic landing gear and towing hitches. All DVDs in this series have each been produced in three languages (German, English, and French). They can be ordered at our website free of charge.

www.jost-world.com/videos



ROCKINGER "Best Brand"

On a roll

For the fifth time in a row, readers of the German trade journals *trans aktuell*, *lastauto omnibus* and *Fernfahrer* have chosen ROCKINGER as the "best brand" for towing hitches.

Having chosen ROCKINGER once more, readers have again confirmed the top-level results produced by ROCKINGER in the previous years. Lars Brorsen, CEO of JOST-Werke GmbH, was thrilled by the renewed success, "This unanimous vote from the readers is an accolade for the quality, service

and variety of products that ROCKINGER offers

its customers. At the same time, having been chosen will drive us to continue going above and beyond in meeting our customers' high demands."



Fulfilment of a dream

At the very top



The firm Gümas Otomotiv A.S. is the exclusive agent for JOST in Turkey. Their president, Sinan Gümüşlügil, fulfilled a dream of his by climbing Kibo. Located at the summit of Kilimanjaro, and with a height of 5,895m, Kibo is the highest mountain in Africa. It is one of three dormant volcanoes whose highest peak is called Uhuru Peak. In Swahili, Uhuru means Freedom – which is what Mr. Gümüşlügil must certainly have felt when he stood at the summit.

Safely transporting heavy loads

ROCKINGER RO 56 completes 500 ton job

For heavy loads or when road conditions are poor, the RO 56 is the right choice. In India, our heavy duty hitch manages exceptionally challenging tasks. Here, gigantic gas turbines are being produced. The trailers, which tow the heavy giants that can weigh as

much as 540 tons to the harbour, have up to 18 axles. The vehicles in charge are used not only for pulling but also for pushing and are, therefore, equipped with an RO 56 in the front and the back. And also sometimes with lucky garlands...



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