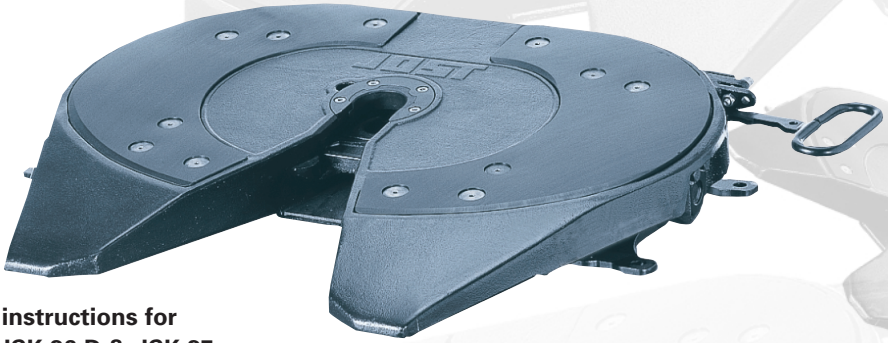
JOST -*Montage- und Betriebsanleitung*

JOST
SATTELKUPPLUNG JSK 36 D & JSK 37



GB Installation and operating instructions for
FIFTH WHEEL COUPLING JSK 36 D & JSK 37

F Instructions de montage et de d'utilisation pour
SELLETTE D'ATTELAGE JSK 36 D & JSK 37

I Istruzioni per il montaggio e l'uso del
RALLA A PERNO JSK 36 D & JSK 37

E Instrucciones de montaje y functionamiento para el
QUINTA RUEDA JSK 36 D & JSK 37

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English

The safety information is compiled in one section. Where the user of the fifth wheel coupling is in danger, the safety information is repeated in the various sections and marked with the danger symbol shown here on the left.

The relevant safety regulations in your country (for example Health & Safety at Work) apply for working with fifth wheel couplings, tractor units and semi-trailers. The appropriate safety information in the owner's handbook for the tractor unit and the semi-trailer are valid and must be followed. The following safety information applies to operation, servicing and installation. Safety information that is directly linked to the activity is listed again individually.

1.1 Safety information for operation

- The fifth wheel coupling may only be used by authorised persons.
- Only use the fifth wheel coupling and skid plate on the semi-trailer if they are in perfect technical condition
- The skid plate must be larger than the support area of the fifth wheel coupling
- The front of the skid plate must not be sharp, otherwise it may damage the fifth wheel coupling or the top plate liner
- Comply with the relevant safety regulations when connecting a semi-trailer, for example the Health and Safety at Work Regulations. Only connect a semi-trailer on firm, flat ground
- The skid plate must ideally be at the same height as or no more than 50 mm lower than the coupling plate on the fifth wheel coupling. Pressure losses in the air suspension may change the height of the semi-trailer
- Check the locking mechanism before starting your journey to ensure that it is properly locked. Only drive the vehicle with the locking mechanism locked and secured, even when driving without a semitrailer (solo mode).

1.2 Safety information for servicing

- Only use the specific lubricants for the servicing work
- The servicing work should only be completed by trained personnel

1.3 Safety information for installation

- Do not change the installation area defined by the manufacturer of the tractor unit
- The installation work may only be completed by authorised specialists
- Refer to the instructions issued by the vehicle manufacturer, for example the type of fastening, fifth wheel position, fifth wheel height, axle load, cavity, mounting plate, slider, etc.
- Follow the installation instructions supplied by the mounting plate and slider manufacturers

The fifth wheel coupling must be mounted on the vehicle in compliance with the requirements of Appendix VII of Directive 94/20/EC (see Appendix No. I, No. 5.10 of this Directive). It may also be necessary to comply with the licensing regulations of the appropriate country.
§§ 19, 20 and 21 of the Road Traffic Act apply in Germany. In addition, your attention is drawn to the requirements of § 27 of the Road Traffic Act relating to the data in the vehicle documents in terms of the maximum trailer load.

2.1 Application

Fifth wheel couplings provide the link between the tractor unit and the semi-trailer. They are designed for mounting on a tractor unit.

The fifth wheel coupling and mounting plate are connecting parts that must comply with very high safety requirements and must also undergo design approval tests.
Modifications of any kind will render both the warranty and the design approval void and therefore also cancel the vehicle's operating licence.

JOST fifth wheel couplings, e.g. type JSK 37, are specified to comply with Directive 94/20/EC Class G50 and are to be used together with king pins of class H50 and class J mounting plates or with comparable licensed equipment.

2.2 Design

The fifth wheel coupling is specified with the vehicle by the vehicle manufacturer (the design must comply with Directive 94/20/EC, Appendix VII).
In addition to the fifth wheel coupling the D value is a criterion for the load capacity of fifth wheel couplings and mounting plates.

It can be calculated using the following formula:

D = Drawbar value [kN]

g = 9.81 m/s^2

R = Maximum gross weight of the semi-trailer [t]

T = Maximum gross weight of the tractor unit including U [t]

U = Maximum imposed load [t]

$$D = g \cdot \frac{0.6 \cdot T \cdot R}{T+R-U} \text{ [kN]}$$

Specimen calculation:

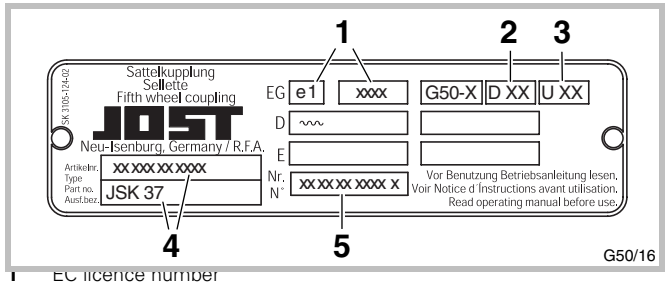
T = 17 t

R = 33 t

U = 10.5 t

$$D = 9.81 \cdot \frac{0.6 \cdot 17 \cdot 33}{17+33-10.5} = 83.6 \text{ kN}$$

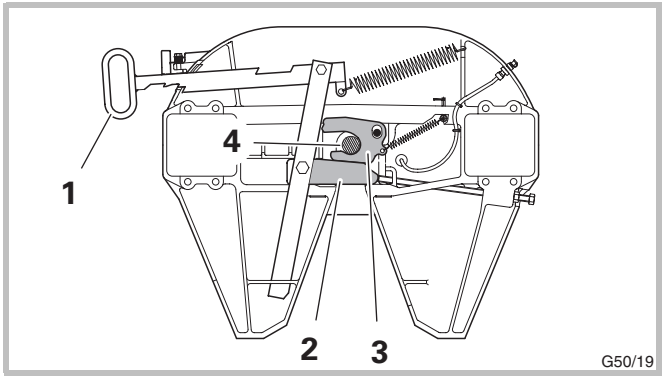
The maximum load data for JOST fifth wheel couplings are set out on the type plate and the appropriate JOST catalogue sheets. They are applicable for proper usage pursuant to Directive 94/20/EC. If they are subject to additional dynamic forces, for example if they are used on uneven road surfaces or on construction sites, do not use the complete imposed load and D value or use a stronger fifth wheel coupling or consult JOST.



1 EC licence number
2 Maximum D value in kN
3 Maximum imposed load U in t
4 Article no. and type
5 Serial no.

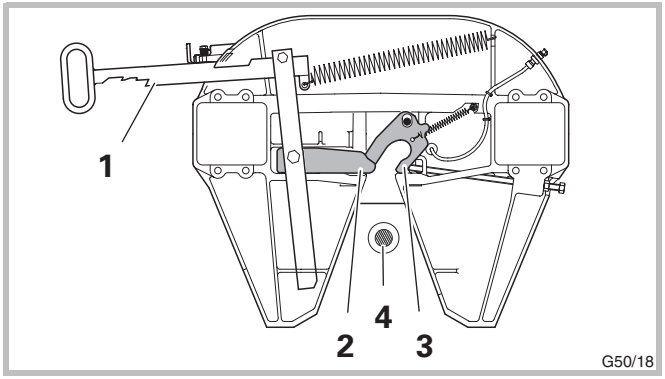
Each fifth wheel coupling has a serial number, which is embossed on the factory plate and also on the edge of the plate. This is designed to give the coupling a unique identity.

3.1 Fifth wheel coupling closed and locked



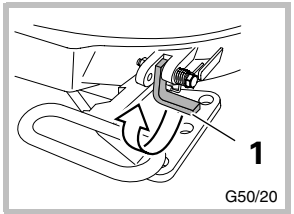
1 Handle
2 Locking bar
3 Lock jaw
4 King pin

3.2 Fifth wheel coupling ready for engagement

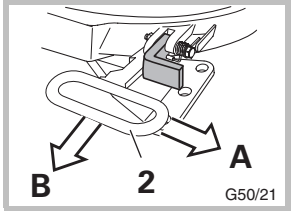


1 Handle
2 Locking bar
3 Lock jaw
4 King pin

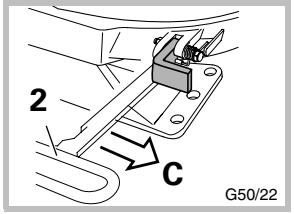
3.3 To open the fifth wheel coupling



- Lift the catch (1).



- Swing the handle (2) towards the front into position **A** to release the lock
- Pull out the handle (2) as far as possible into position **B**



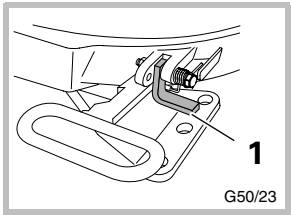
- With the handle (2) pulled out, swing it forwards into position **C** and engage it on the edge of the plate

3.4 To connect a semi-trailer

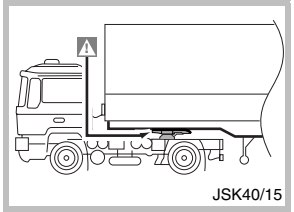
- Secure the semi-trailer to prevent its rolling away.
- The fifth wheel coupling must be ready to engage (see section 3.2). Otherwise open the fifth wheel coupling (see section 3.3)
- Check the height of the semi-trailer. The skid plate must ideally be at the same height as or no more than 50 mm lower than the coupling plate on the fifth wheel coupling
- Drive the tractor unit under the semi-trailer
- The locking mechanism will close automatically
- Conduct an initial driving test in a low gear
- Check the locking mechanism (see section 3.5)
- Connect the supply lines
- Retract the landing gear as described in the operating manual
- Release the parking brake and remove the chocks

Check the locking mechanism status before starting any journey (see section 3.5).

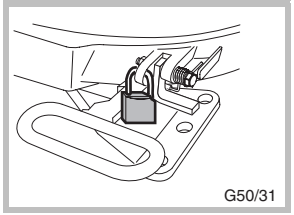
3.5 To check the locking mechanism



- The catch (1) must be down as shown



The skid plate must rest on the fifth wheel coupling without a gap.



Note
To prevent the fifth wheel coupling being opened without authorisation, a security device (for example a padlock) can be inserted into the hole in the handle as shown.

English

3 Operation

3.6 To disconnect a semi-trailer

- Park the vehicle on flat, firm ground
- Secure the semi-trailer to prevent its rolling away
- Extend the landing gear as described in the operating manual until the fifth wheel coupling has almost no strain on it
- Disconnect the supply lines
- Open the fifth wheel coupling (see section 3.3)
- Drive the tractor unit out from under the semi-trailer
- The fifth wheel coupling is automatically ready for engagement again

4 Servicing and testing

4.1 Servicing instructions

The skid plate on the semi-trailer that engages with the fifth wheel coupling must meet the following conditions to provide a long service life and trouble-free function:

- Max. 2 mm unevenness
- Adequate reinforcement must be assured
- Smooth and groove-free surface if possible, without weld bumps (smooth existing groove burr)
- Rounded or chamfered front and side edges
- Complete coverage of the fifth wheel coupling support area

Effective lubrication of the top of the fifth wheel plate (apart from on the W version), the locking mechanism, the pivot bearing (only the A and D versions) and the king pin (before using for the first time and after cleaning) is essential to ensure their long service life. In the W version, we recommend applying a thin coat of grease to the skid plate.

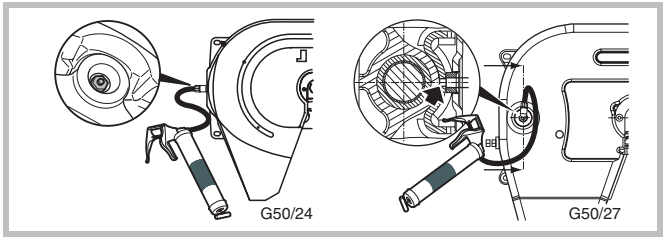
Note
When you clean the fifth wheel coupling you may produce waste products that contains pollutant substances. We would like to point out that you must comply with the various national waste regulations for the disposal of these waste products.

4.1.1 Fifth wheel coupling with manual lubrication

At short intervals, at the latest every 5,000 km:

- Disconnect the semi-trailer
- Clean the fifth wheel coupling and the skid plate
- Grease the fifth wheel plate, locking parts and king pin
- Grease specification: Extreme pressure grease (EP) with MoS_2 or graphite additive (e.g. Collgranit A3 paste)
- Grease the pivot bearing on the A version at the grease nipple (see figure G50/24) or on the D version at the holes on the top of the plate (see figure G/27)

Note
The pivot bearings on the C and E versions require no servicing.
The grease nipples on the edge of the fifth wheel coupling plate are only designed for additional greasing of the locking mechanism between service intervals.



- Grease the pivot bearing on both sides

4.1.2 Fifth wheel coupling with central lubrication connection (Z version)

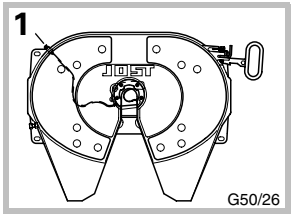
Depending on the conditions in which it is used, the grease specification and metering used, at the latest every 50,000 km or every six months:
- Disconnect the semi-trailer
- Clean the fifth wheel coupling and the skid plate
- Check the function of the central lubrication system as described in the manufacturer's instructions
- Grease the fifth wheel plate, the locking mechanism parts and the king pin using a grease recommended in section 4.1.1
- Grease the pivot bearing on the D version (see figure G50/27)
- Grease specification: According to the instructions issued by the manufacturer of the central lubrication system

Note
The pivot bearings on the C and E versions require no servicing.

4.1.3 Low maintenance fifth wheel coupling with top plate liners (W version)

At the latest every 50,000 km or every six months, in harsh conditions every 25,000 km:
- Disconnect the semi-trailer
- Clean the skid plate and the king pin
- Grease the king pin and lock jaw
- Check the top plate liners for signs of wear and damage (see section 4.5)
- Grease specification: Extreme pressure grease (EP) with MoS_2 or graphite additive (e.g. Collgranit A3 paste) or Turmogeargrease B2 supplied by Lubcon, www.lubcon.com

Note
The pivot bearings on the C and E versions require no servicing.



- In addition, every 10,000 km grease the locking mechanism – **with a trailer attached –** using the grease nipple (1) on the edge of the fifth wheel coupling plate

You can also install automatic lubricant dispensers. To prevent corrosion on the skid plate, we recommend that the skid plate is greased lightly during the above service intervals.

English

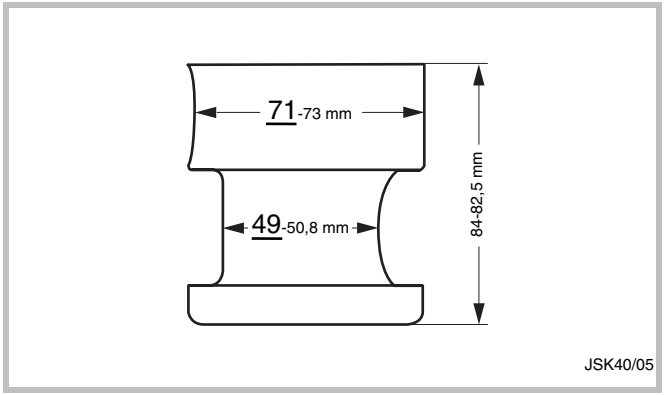
4.2 Test instructions

Depending on the conditions in which it is used, but at the latest every 50,000 km or every six months, the fifth wheel coupling, the mounting plate or slider, the king pin and their securing elements are to be checked to ensure that they are in good working condition, not suffering from wear, corrosion, damage or cracks and to be repaired if necessary (see appropriate JOST repair manual for fifth wheel couplings JSK37 on www.jost-world.com).
The securing elements are to be checked to ensure that they are tightened to the correct torque.

4.3 Wear test

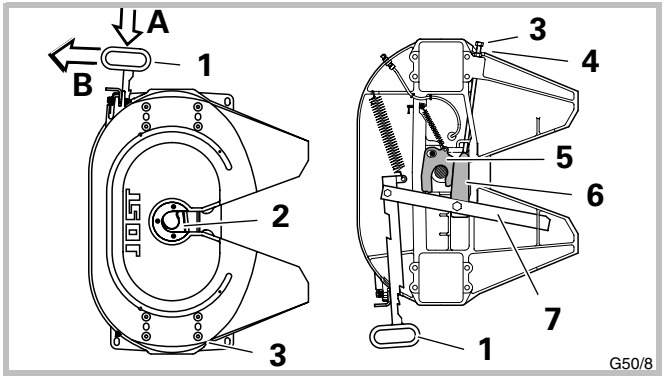
Fifth wheel couplings and king pins are subject to more or less wear depending on the conditions in which they are used, and this wear is noticeable by play towards the front of the vehicle.
Excessive play causes shocks and may lead to instability on the road and damage to the fifth wheel coupling, mounting plate, sliders and vehicle chassis.
JOST fifth wheel couplings have a manual infinite adjustment facility for the locking mechanism to extend their service lives.

The wear on the king pin must not be compensated by the adjustment facility.



When the wear limit on the king pin has been reached, it must be replaced. After replacing the king pin, the locking mechanism must be adjusted again. Play caused by wear on the king pin should either be accepted if within the permitted wear limit for the king pin (see figure JSK 40/05) or should be rectified by fitting a new king pin.

4.4 To adjust the locking mechanism



1 Handle
2 Locking mechanism
3 Adjusting screw
4 Lock nut
5 Lock jaw
6 Locking bar
7 Lever

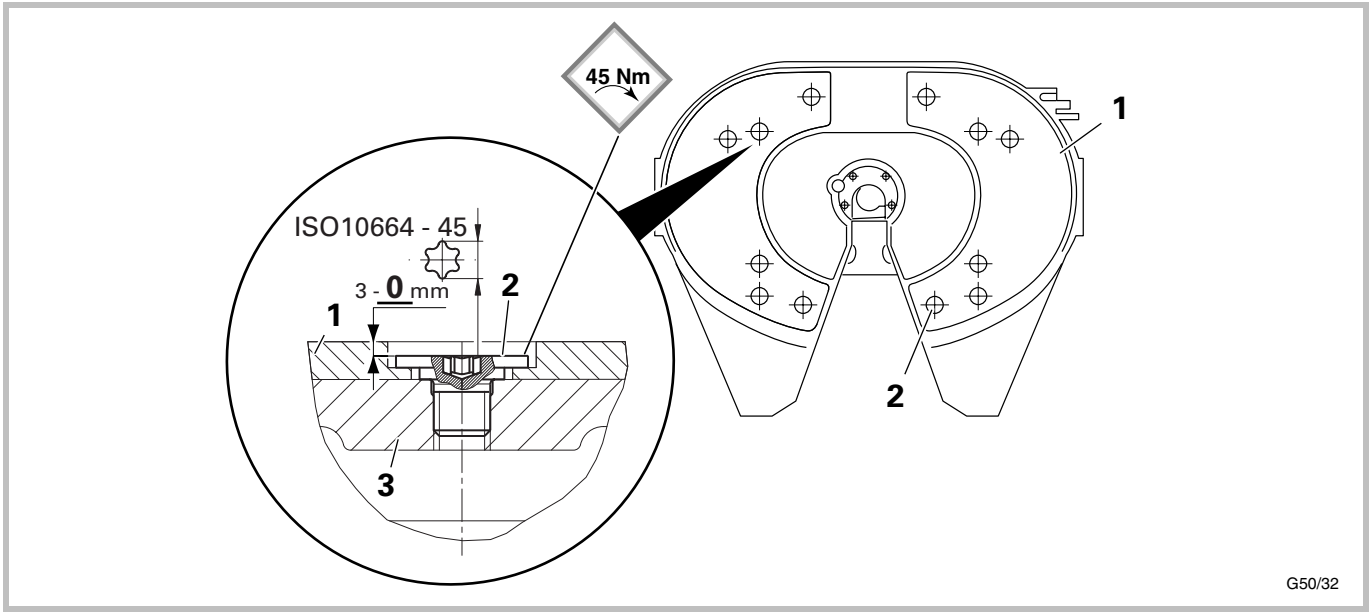
The locking mechanism must be adjusted using a semi-trailer without forced steering with an unworn king pin as described below:

- Park the vehicle on flat, firm ground and uncouple the trailer
- Undo the lock nut (4)
- Unscrew the adjusting screw (3) by approx. 15 turns
- Connect the semi-trailer, if necessary lightly tapping the handle (1) in the closing direction **A** to bring the locking bar into its limit position
- Unlock the handle, swing it into position **B** and hold it there (get an assistant to hold it)
- Tighten the adjusting screw (3) again until the handle (1) starts to move (have your assistant check this)
- To adjust the recommended basic play of 0.3 mm, tighten the adjusting screw (3) by a further 1 1/2 turns and secure it with the lock nut (4)
- Apply the semi-trailer brake
- Move off with the tractor and check the maximum play in the locking mechanism

Note
If the play is still excessive, replace the wearing ring and the lock jaw as described in the repair manual.

English

4.5 Wear limit – top plate liners



1 Top plate liner **2** Securing bolt **3** Coupling plate

The top plate liners (1) must be checked for signs of wear and damage at regular intervals that depend on usage, but at least every 50,000 km or every six months.
The top plate liners (1) must be replaced when they have worn to the top of the securing bolts (2).

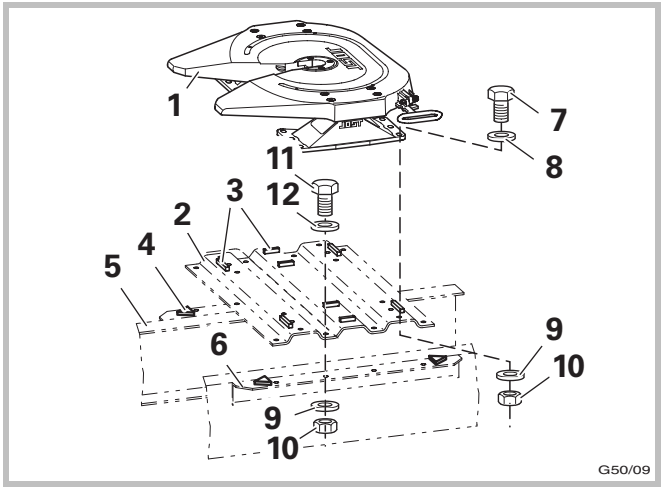
5.1 General installation instructions

To secure the JOST fifth wheel coupling (pursuant to Directive 94/20/EC and ISO 3842 / DIN 74081) on the mounting plate or on the flitch, **at least** eight M16 bolts, ideally M16 x 1.5 of strength class 8.8 must be used. These must be positioned in a symmetrical pattern to the longitudinal and lateral axes of the fifth wheel coupling.
If the coupling is used in harsh conditions (for example on construction sites), with trailers with forced steering or with trailers that use the full D value and/or imposed load, we recommend that you use all 12 bolts.
Fifth wheel couplings with a design height of over 250 mm and a D value of over 133 kN must be secured with 12 bolts.
We recommend that you use JOST mounting kits (see JOST catalogue for order numbers).

We recommend securing the pedestals in the longitudinal and lateral directions and the mounting plates in the longitudinal direction by pre-welded thrust plates. Use the welding methods set out by the manufacturers of the vehicle and mounting plate for this purpose.
There is no need to use thrust plates, however, if it can be ensured that the correct tightening torque for the bolts and therefore the perfect friction contact can be generated and maintained at all times. The bolt connections are therefore to be designed so that the prescribed tightening torque values or prestressing forces can be applied permanently. The general rule is that the coating thickness of the paintwork around the securing area of the bolts must be no more than 170 µm per component. The bolt connections are to be secured using state of the art methods to prevent them coming loose. Appropriate reinforcement must be made in accordance with the application.

The fifth wheel coupling must be able to move freely and must not be in contact with either the mounting plate or parts of the chassis or flitch when the vehicle is being driven.
If you use a different installation method (for example chassis installed), follow the instructions supplied by the vehicle manufacturer.

5.2 To install the fifth wheel coupling



1 Fifth wheel coupling
2 Mounting plate
3 Thrust plate to secure the pedestals
4 Thrust plate to secure the mounting plate
5 Vehicle chassis
6 Flitch
7 Hexagonal bolt DIN EN 28765/28676 (DIN 960/961) M16 x 1.5-8.8
8 Washer 17 DIN 7349 6 thick (min. HB150)
9 Optional washer (min. HB150) or disc spring
10 Hexagonal nut DIN 980 M16 x 1.5-8.8 or M20 x 1.5-8.8
11 Hexagonal bolt DIN EN 28765/28676 (DIN 960/961) M16 x 1.5-8.8 or M20 x 1.5-8.8
12 Optional washer/disc spring

Tightening torque, see section 5.3

5.3 Fastening material and tightening torque values

Fastening material		Strength class 8.8	Strength class 10.9
Hexagonal bolt DIN EN 24014/24017 (DIN 931/933) standard thread	M16 M20	210 Nm 410 Nm	260 Nm 500 Nm
Hexagonal bolt DIN EN 28765/28676 (DIN 960/961) fine thread	M16 x 1.5 M20 x 1.5	225 Nm 460 Nm	280 Nm 500 Nm
Countersunk bolt DIN 7991	M16 or M16 x 1.5 M20 or M20 x 1.5	170 Nm 330 Nm	250 Nm 400 Nm
Washer DIN 7349		min. 150 Nm	min. 250 Nm

Note
The values shown above are guide values for a coefficient of friction $\mu_{tot.} = 0.14$. Further information is available in VDI 2230.

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