JSK DH

EN  Installation and operating instructions
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1 Explanation of symbols

WARNING!
Means that death, serious physical injury or significant material damage can occur if the relevant safety instructions are not followed.

ATTENTION!
Means that slight physical injury or material damage can occur if the relevant safety instructions are not followed.

ADVICE!
Contains additional important information.
ATTENTION!
The safety information is compiled in one section. Where the user of the lifting device is in danger, the safety information is repeated in the various sections and marked with the danger symbol shown adjacent here.

The relevant safety regulations of the country in question (for example Health & Safety at Work) apply for working with lifting equipment, 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. Safety information directly linked to the activity is listed again individually.

2.1 Safety information for operation

- The lifting device may only be used by authorised persons.
- The lifting device should only be used if it is in good technical order and condition.
- The lifting device should only be actuated if nobody is the danger zone. The relevant Health & Safety at Work regulations must be complied with.
- Only operate the lifting device in an uncoupled (unladen) state.
- Only connect a semi-trailer on firm, flat ground.

2.2 Safety information for maintenance

- Only use the specified lubricants for maintenance work.
- The maintenance and cleaning work should only be completed by trained personnel.

2.3 Safety information for installation

- Attach the lifting device to the tractor unit in accordance with the instructions set out in the section entitled "Installation".
- JOST lifting devices must be installed by trained personnel in suitable workshops.
- If installed incorrectly, all warranty claims against the manufacturer and the supplier of the lifting device will be rendered void.

It is a basic principle that bolt connections must be tightened to the specified tightening torque as the setting for the torque wrench acc. to DIN ISO 6789 in classes A or B.

The lifting device must be attached to the vehicle in accordance with the requirements of Appendix 7 to Regulation ECE R55-01. It may also be necessary to comply with the type approval regulations of the country in question.
3 Proper usage

3.1 Application

JOST lifting devices are mechanical connecting devices and estab-
lish a connection between the tractor and the semi-trailer. They
are designed for mounting on a tractor unit.

The lifting device is used to raise and lower the attached fifth wheel
coupling.

It allows the operation of a low-deck tractor with conventional
trailers and mega-trailers.

The lifting device is designed for operation on asphalted or paved
roads and for the transport conditions generally found in Central
Europe.

If the conditions in which the device is used differ from these, if
there are additional dynamic stresses, if the product is used with
tank, silo and tipper semi-trailers or is used with any other semi-
trailer with a high centre of gravity, please consult JOST.

**ADVICE!**
Use in building site traffic is generally prohibited.

JOST lifting devices are suitable for use with power steering sys-
tems.

Fifth wheel couplings, mounting plates and kingpins are vehi-
cle-connecting parts that must comply with very high safety
requirements and must also undergo design approval tests. Mod-
ifications of any kind will render both the warranty and the design
approval void and therefore also cancel the vehicle's operating
licence.

JOST lifting devices are built in accordance with Regulation ECE
R55-01 Class J and are designated as height-adjustable mounting
plates.

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**ATTENTION!**
Technical modifications reserved. The latest informa-
tion can be found at www.jost-world.com.
3.2 Unintended use

The following will be deemed to be unintended use:

- Use of king pins which do not comply with the ISO 337 or DIN 74080 standards
- Use of defective king pins. Defects may include, for example, damage to the king pin, Incorrect dimensions and installation on uneven or damaged skid plates
- Use with plastic discs mounted on the semi-trailer
- Use with an imposed load or D value above the maximum values
- Use off-road
- Use in site traffic
- Incorrect towing procedures which adversely affect the perfect function of the fifth wheel coupling
- Attachment or fastening of lifting equipment
- Other applications which do not comply with the manufacturer’s recommendations

ADVICE!

Unmetalled roads and any surfaces which do not comply with the standards for the public road network in Central Europe in terms of evenness, gradients and corner radii, shall be regarded as off-road in the sense of this manual.

3.3 Design

The design of the lifting device in combination with the vehicle is specified by the vehicle manufacturer (in accordance with regulation ECE R55-01, Appendix 7).

In addition to the fifth wheel load, the D value is a criterion for the load capacity of fifth wheel couplings and mounting plates.

It is calculated using the following formula:

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

Sample calculation:

$$R = 33 \text{ t}$$
$$T = 17 \text{ t}$$
$$U = 10.5 \text{ t}$$

$$D = 9.81 \times \frac{0.6 \times 17 \times 33}{17 + 33 - 10.5} = 83.6 \text{ kN}$$
The permissible load data for JOST lifting devices can be found in the factory plate and the table. This data is also listed on the relevant pages of the JOST catalogue and imprinted on the factory plate. This load data is applicable for proper usage pursuant to regulation ECE R55-01.
The operation of the lifting device is described in the following chapter. The relevant safety information must be observed. The operation of the fifth wheel coupling is described separately in an enclosed set of installation and operating instructions. The safety information set out there must be complied with.

**WARNING!**
The fifth wheel height must only be adjusted in an uncoupled state. During the adjustment process, there is a risk of crushing between the fifth wheel coupling and the lifting device.

### 4.1 Coupling up

**ATTENTION!** Check the locking mechanism status before starting any journey (see Installation and Operating Instructions JOST fifth wheel coupling).

- Secure the semi-trailer to prevent it from rolling away.
- The fifth wheel coupling must be ready to engage. If it is not, open the fifth wheel coupling (see Installation and Operating Instructions JOST fifth wheel coupling).

ATTENTION! The lifting device must not be used as a ramp. This can cause damage to the lifting device. For this reason, when coupling with a lifting device, the front edge of the semi-trailer must be at the same height as the contact surface of the fifth wheel coupling.

1. Contact surface for coupling
2. Front edge of the semi-trailer

If necessary, the coupling height must be corrected.

- Drive the tractor unit under the semi-trailer.
- The locking mechanism will close automatically.
- Perform a moving-off test in a low gear.
- Check the locking mechanism (see Installation and Operating Instructions JOST fifth wheel coupling).
- Connect the supply lines.
- Retract the landing gear as described in the operating manual.
- Release the parking brake and remove the chocks.
4.2 Uncoupling

- Park the vehicle on flat, firm ground.
- Secure the semi-trailer to prevent it from 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 (Installation and Operating Instructions JOST fifth wheel coupling).
- Drive the tractor unit out from under the semi-trailer.
- The fifth wheel coupling is automatically ready for engagement again.

4.3 Adjust the coupling height - to the upper position

- Open the fifth wheel coupling (see MuB JOST fifth wheel coupling).
- Push the lever (1) on the control device (3) in the direction of the arrow and keep it in this position. Take care, since the locking lever (4) extends beyond the outer edge of the lifting device.
- Push the lever (2) on the control device (3) in the direction of the arrow until the lifting device has moved to the upper position.
- Lock the lifting device (see section 4.5).
4.4 Adjust the coupling height - to the lower position

- The fifth wheel coupling must be ready to engage. If it is not, open the fifth wheel coupling (see MuB JOST fifth wheel coupling).
- Push the lever (1) on the control device (3) in the direction of the arrow and keep it in this position. Take care, since the locking lever (4) extends beyond the outer edge of the lifting device.
- Push the lever (2) on the control device (3) in the direction of the arrow until the lifting device has moved to the lower position.
- Lock the lifting device (see section 4.5).

4.5 Locking the lifting device

- Release the lever (2) on the control device (3) and push the lever (1) in the direction of the arrow until the lifting device is locked.
- Check the locking status (see note).
- If the lifting device is locked, let go of the lever. Both levers must be in their starting position (zero position).

**WARNING!**

The locking status must be checked before every trip. Driving operations must only be carried out with the lock in a correctly closed and secured position.
ADVICE!
The lifting device is correctly locked if the pin (5) on the locking lever (6) is positioned directly above the marking point (4) on the base plate.

4.6 Commissioning of LubeTronic 1Point

The lifting device is equipped with a lubricating unit (LubeTronic 1Point). This continuously lubricates the lifting device’s pivot bearing (1) once the LubeTronic 1Point has been activated.

1. Protective cap
2. Lubricant dispenser
3. Push button
4. Sticker

- Pull the protective cap (1) upwards in the direction of the arrow off the lubricant dispenser (2) and firmly press the push button (3) on the lubricating dispenser (2).
- Write the start date on the sticker (4).
- Write the start date on the enclosed second label and stick it on in a clearly-visible place.

ADVICE!
As confirmation that the lubricant dispenser (2) has been activated, the LED in the push button (3) lights up for at least 15 seconds. The lubricant dispenser (2) can only be activated once. An activated lubricant dispenser cannot be deactivated. Further information can be found in the separate installation and operating instructions for the LubeTronic 1Point.
ADVICE!
If the fifth wheel coupling and lifting device with LubeTronic 1Point is subsequently painted and a paint drying machine is used or if the parts are dried in a drying chamber, care must be taken to ensure that the LubeTronic 1Point is not exposed to direct heat radiation.

ATTENTION!
Permanent heating of the LubeTronic 1Point above 70°C should be avoided.

4.7 Replacing the lubrication cartridges for LubeTronic 1Point

ATTENTION!
On ADR vehicles, the earth strap (5) must be attached between the lubricant dispenser (1) and the base plate (6). The ADR report can be viewed at www.jost-world.com.

ADVICE!
Ensure that the groove of the fastening clip (2) lies in the recess on the lubricant dispenser (1).

- Insert the lubricant dispenser (1) into the fastening clip (2) and close the fastening clip (2).
- Comply with the tightening torque!

1. Lubricant dispenser
2. Fastening clamp
3. M5 x 10 mm Allen screw
4. Toothed ring
5. Earth strap
6. Base plate for LubeTronic 1Point
The maintenance and cleaning of the lifting device are described in the following chapter. The maintenance and cleaning of the fifth wheel coupling are described in the separate installation and operating instructions.

5.1 Cleaning

The lifting device must be cleaned before undergoing maintenance.

Do not direct a high-pressure cleaner directly at the bearings and lubricating nipples.

5.2 Maintenance instructions

Maintenance is to be completed at short intervals, at the latest every 10,000 km.

The following work is required for a complete service:

- Clean the lifting device.
- Check the screw tightening torques at the upper and lower position.
- Check the securing rings to ensure they are secure and free from damage.
- Check the pneumatic system for leaks.
- Check the lifting device in the upper and lower position as shown in Figure DH/050a for visible cracks, deformities or other damage and repair if necessary as per the repair instructions.
- Move the lifting device to its highest position.
- Lubricate the lifting device as shown in the lubrication instructions (see Section 5.5).
- Check the lifting device’s function.

5.3 Grease specification

To lubricate moving parts, a high-pressure grease (EP), e.g. JOST high-performance lubricant (Art. No. SKE 013 440 000) must be used.

5.4 Disposal instructions

Lubricant
The disposal instructions for the lubricants used are provided by the lubricants' manufacturers.

Lifting device
The mounted parts are valuable raw materials that can be recycled. They can be split into plastics, rubber and metallic materials. Plastic and rubber are labelled in accordance with VDA recommendation 260. Before disposal, parts may need to be cleaned of any residual oil or grease.
5.5 Lubrication instructions

Lubricate all bearings as described in the maintenance schedule.

- Lubricate all moving parts (1).
- Lubricate the raceway surfaces (2) on the stay arm.
- Lubricate the bearing sleeve (3) and bearing seat.
- Lubricate the bearing pins (4) when they are unlocked.
- Lubricate all grease nipples (5) using a grease gun.

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**ATTENTION!**

Risk of injury

Use a brush to lubricate the components and surfaces.
6.1 All versions

Available versions:
There are different fifth wheel positions between the lower and upper position:

- DH 200: H = 365 mm and V = 45 mm
- DH 150: H = 315 mm and V = 27 mm

6.2 Only versions: Mercedes-Benz*, Iveco, Scania, DAF

* Narrow track 860 mm (for MP1-MP3 and some MP4 versions)
6.3 Only versions: Mercedes-Benz*, Volvo and Renault

* Wide track 949 mm (for MP4)

6.4 Only version: MAN
6.5 Only version: Volvo
Do not change the assembly area defined by the tractor unit's manufacturer. The vehicle manufacturer's instructions regarding the type of fastening, fifth wheel height, axle load, clearance, connection to the pneumatic system and so on must be observed.

**ATTENTION!**
Due to the fifth wheel height modification V (see Section 6.1) between the upper and lower position, a fifth wheel point calculation must be carried out for both positions. This ensures that the lifting devices does not overload either the rear axle in the lower position or the front axle in the upper position.

### 7.1 Scope of delivery

**M16 fastening set**

<table>
<thead>
<tr>
<th>Designation</th>
<th>Tightening torque</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hexagon screw M16 x 1.5 x 70 - 10.9</td>
<td>280 Nm</td>
<td>10</td>
</tr>
<tr>
<td>2 Double shim</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>3 Shim DIN 7349 - 17 - min. 295 HV</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>4 Hexagon nut ISO 10513 - M16 x 1.5 - 10</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>5 Hexagon screw M16 x 1.5 x 90 - 10.9</td>
<td>280 Nm</td>
<td>4</td>
</tr>
</tbody>
</table>

**ADVICE!**
The values shown above for the tightening torque are guide values for a coefficient of friction $\mu$ tot. = 0.14. Further information is available in VDI Directive 2230.
## Installation

### M20 fastening set

<table>
<thead>
<tr>
<th>Designation</th>
<th>Tightening torque</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hexagon screw M20 x 1.5 x 80 - 10.9</td>
<td>500 Nm</td>
<td>10</td>
</tr>
<tr>
<td>2 Shim DIN 7349 - 21 - HB 250</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>3 Shim DIN 7349 - 21 - min. 295 HV</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>4 Hexagon nut ISO 10513 - M20 x 1.5 - 10</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>5 Hexagon screw M20 x 1.5 x 100 - 10.9</td>
<td>500 Nm</td>
<td>4</td>
</tr>
</tbody>
</table>

**ADVICE!**
The values shown above for the tightening torque are guide values for a coefficient of friction $\mu_{\text{tot.}} = 0.14$. Further information is available in VDI Directive 2230.

### Pneumatics

<table>
<thead>
<tr>
<th>Designation</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Control device</td>
<td>1</td>
</tr>
<tr>
<td>2 L6 T-plug connector</td>
<td>2</td>
</tr>
<tr>
<td>3 Air hose</td>
<td>15 m</td>
</tr>
</tbody>
</table>
To ensure problem-free function, it must be ensured prior to installing the lifting device that the lifting device's base plate lies flat on the auxiliary brackets. If there is a deviation of more than 0.5 mm, the gap must be filled between the base plate and the auxiliary brackets using compensating panels.

⚠️ **WARNING!**
Lift the lifting device using suitable lifting equipment onto the tractor unit.

- Set the lifting device down on the auxiliary brackets.
- Align the lifting device so it is centred on the auxiliary brackets, in line with the fifth wheel height, in accordance with the vehicle manufacturer's instructions.
- Transfer the fastening hole matrix to the auxiliary brackets and drill the fastening holes.
Screw the lifting device at the 14 fastening points using the enclosed hexagonal screws, shims and hexagonal nuts.

**ATTENTION!**
The screw connections specified must be adhered to!
ATTENTION!
To achieve an adequate friction contact, the thickness of the paint on the auxiliary brackets must be no more than 120 µm in the area of the fastening points. Use the supplied screw connections to secure the lifting device.

ATTENTION!
There is no need to use thrust plates (1) if it can be ensured that the correct tightening torque for the bolt connections and therefore the positive connection can be generated and maintained at all times. The screw connections must therefore be designed so that the prescribed tightening torque or pre-loading forces can be permanently applied. The screw connections must be secured against loosening using state-of-the-art technology.

1 Thrust plates
Secure the lifting device with the play-free welding of thrust plates (1). The welding methods specified by the vehicle manufacturer must be complied with.
7.3 Fitting the pneumatic connection

- Install the control device (5) at least 1.5 m away from the lifting device for safety reasons.
- Protect the control device (5) from dirt, unintentional operation and actuation by others.
- Install the pneumatic lines so that they cannot be crushed or chafed.
- Establish the compressed air connection (6) in accordance with the vehicle manufacturer's instructions.

**ATTENTION!**
The connection of the compressed air supply must be carried out while the equipment is not pressurised. During this time, there must be nobody in the device's lifting zone.

**WARNING!**
During the adjustment process, there is a risk of crushing between the fifth wheel coupling and the lifting device.

- Check all screw connections to ensure they are tight.
- Open the fifth wheel coupling and move it to the ready position (see fifth wheel coupling installation and operating instructions).
- Check the compressed air lines for leaks.
- Lubricate all moving parts (see fifth wheel coupling installation and operating instructions).
- Check the lifting device's function.

**ADVICE!**
Already pre-fitted on the Volvo version.
## 7.4 Compressed air quality

<table>
<thead>
<tr>
<th>Works supply: (main air)</th>
<th>maximal</th>
<th>10 bar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minimum</td>
<td>7 bar</td>
</tr>
</tbody>
</table>

### Compressed air quality acc. to (ISO 8573-1[5:2:4])

<table>
<thead>
<tr>
<th>Quality classes</th>
<th>Solids (Particle size/density)</th>
<th>5</th>
<th>≤ 5µm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water (Condensation point)</td>
<td>2</td>
<td>≤ -40°C</td>
</tr>
<tr>
<td></td>
<td>Oil (mg/m³)</td>
<td>4</td>
<td>≤ 5 mg/m³</td>
</tr>
</tbody>
</table>

To avoid functional problems, the quality of the compressed air supply must at least match the specifications given.

**ATTENTION!**
Remove the filter (on the front) from the air cylinder before painting.
Member of JOST World

JOST, Germany, Tel. +49 6102 295-0, tkd-technik@jost-world.com, www.jost-world.com

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