JSK SL

EN  Installation and operating instructions
# Table of contents

1 **Explanation of symbols** ........................................... 3

2 **Safety information** .................................................. 4
   2.1 Safety information for operation ............................. 4
   2.2 Safety information for installation ....................... 4
   2.3 Safety information for maintenance .................... 5

3 **Intended use** ............................................................ 6
   3.1 Use ....................................................................... 6
   3.2 Unintended use ................................................... 6
   3.3 Design of the slider unit ......................................... 7

4 **Operation** .................................................................. 8
   4.1 Change the fifth wheel position (manual activation)... 8
   4.2 Change the fifth wheel position (pneumatic activation) .......................................................... 10

5 **Installation** ............................................................. 12
   5.1 Attaching the slider unit ........................................ 12
   5.2 Fitting the pneumatic connection ......................... 13
   5.3 Compressed air quality ......................................... 14
   5.4 Frame widths ..................................................... 14
   5.5 Fastening options ............................................... 15
   5.6 Tightening torque ............................................... 16
   5.7 Fastening hole matrix .......................................... 16
   5.8 Additional information on the XXL slider ............ 17

6 **Maintenance** ............................................................ 18
   6.1 Cleaning ............................................................. 18
   6.2 Maintenance work ............................................... 18
   6.3 Lubricants .......................................................... 18
   6.4 Disposal instructions ........................................... 18
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.
The JSL type slider unit is a vehicle coupling part which requires component type approval and must meet stringent safety criteria. Changes or modifications of any kind invalidate any warranty claims and will lead to the component type approval being forfeited. The slider unit is not an independent, functioning device. It is intended to be attached to a tractor unit. It should not be used until the user is certain that the tractor unit to which the slider unit is attached complies with national road traffic regulations.

ATTENTION!
The safety information is compiled in one section. Where the user of the slider unit is in danger, the safety instructions are repeated in the individual sections and highlighted with the danger warning sign.

The relevant safety regulations in your country (for example Health & Safety at Work in Germany) apply to working with slider units, fifth wheel couplings, tractor units and semi-trailers. The appropriate safety information in the operating manual for the tractor unit and the semi-trailer are applicable and must be followed. The following safety information applies to the operating, servicing and installation work. Safety information directly linked to the activity is listed again individually.

ATTENTION!
Safety information in the following sections is highlighted with the warning symbol shown. You must comply with this safety information without fail.

### 2.1 Safety information for operation
- The slider unit may only be used by authorised persons.
- The slider unit should only be used if it is in good technical order and condition.
- The slider unit should only be actuated if nobody is the danger zone. The relevant Health & Safety at Work regulations must be complied with.
- Slide the slider unit when coupled up.

### 2.2 Safety information for installation
- Attach the slider unit to the tractor unit in accordance with the instructions set out in chapter 5, "Installation".
- JOST slider units must be installed by trained personnel in suitable workshops. The slider unit must be attached to the vehicle in accordance with the requirements of Appendix 7 to Regulation ECE R55. It may also be necessary to comply with the licensing regulations of the appropriate country.
- If the slider unit is not installed correctly, all warranty claims against the manufacturer and the supplier of the slider unit will be rendered void.
2 Safety information

2.3 Safety information for maintenance

- Only use the specified lubricants for maintenance work.
- The maintenance / cleaning work must be carried out by suitably qualified personnel.
3 Intended use

3.1 Use
The JOST slider unit is designed for sliding the coupled fifth wheel coupling and allows you to adjust the fifth wheel position. It must only be used as a coupling device between the vehicle chassis (e.g. vehicle subframe) and the fifth wheel coupling. The slider unit is designed for operation on asphalted or paved roads and for the transport conditions generally found in Central Europe.

ADVICE!
Technical modifications reserved. You can find the latest information 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 Intended use

3.3 Design of the slider unit

The definition of the permitted types and classes for connecting equipment and the maximum values for the imposed load "U" and drawing bar value "D" are provided by the manufacturer of the tractor unit (designed on the basis of Regulation ECE-R55 Annex 7).

The D value is calculated as follows:

\[
D = \text{Drawbar value} \ [\text{kN}] \\
g = \text{Gravity} \ 9.81 \ \text{m/s}^2 \\
R = \text{Maximum total weight of the semi-trailer} \ [\text{t}] \\
T = \text{Maximum gross weight of the towing vehicle, including U} \ [\text{t}] \\
U = \text{Maximum imposed load} \ [\text{t}] \\
\]

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

Sample calculation:

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

\[
D = 9.81 \times \frac{0.6 \times 17 \times 33}{17 + 33 - 10.5} = 83.6 \ \text{kN}
\]

The maximum load data for the slider unit can be found on the factory plate or on the relevant pages of the JOST catalogue. They apply to intended use pursuant to Regulation ECE R55. The JOST type JSL slider unit is built in accordance with regulation ECE R55 Class J and must be used in conjunction with Class H50 king pins and an integrated approved JOST fifth wheel coupling.
The operation of the slider unit is described in the following chapter. The relevant safety information must be observed.

4.1 Change the fifth wheel position (manual activation)

**ADVICE!**
Carry out the sliding operation on the fifth wheel coupling when it is coupled up.

- Pull the handle (1) outwards and attach it to the engaging judge (2).

**ATTENTION!**
There is a risk of crushing injury if fingers are placed between the carriage and the slider frame and/or the handle during the sliding process.

- Secure the brake of the semi-trailer.
- Move the tractor into the required direction of the fifth wheel position.

- Figure A: Detached the handle (1) from the engaging edge (2) and push it inwards against the spring force.
Figure B: If there is an alternative handle (1), swing the handle (1) in the direction indicated by the arrow and also secure it with a lock or carabiner hook.

Move the tractor forwards or backwards as necessary until the teeth on the lock close (see Figure C).

ATTENTION!
Before each journey, the locking status must be checked, in other words the blocking piece (2) must engage in the toothed strip (1), as shown in the figure above. Driving operations must only be carried out with the lock in a correctly closed position.
4 Operation

**ATTENTION!**
Even if there is a sensor-supported lock indicator on the carriage, a visual inspection of the slider must still be carried out before every journey. The descriptions of the vehicle manufacturer apply to the display on the instrument panel.

### 4.2 Change the fifth wheel position (pneumatic activation)

- Move the actuator valve to the "UNLOCK" position.

**ATTENTION!**
There is a risk of crushing injury if fingers are placed between the carriage and the slider frame during the sliding process.

- Secure the brake of the semi-trailer.
- Move the tractor into the required direction of the fifth wheel position.

- Move the actuator valve to the "LOCK" position.
- Move the tractor forwards or backwards as necessary until the teeth on the lock close.

**ADVICE!**
Carry out the sliding operation on the fifth wheel coupling when it is coupled up.
ATTENTION!
Before each journey, the locking status must be checked, in other words the blocking piece (2) must engage in the toothed strip (1), as shown in the figure above. Driving operations must only be carried out with the lock in a correctly closed position.
5 Installation

Depending on the frame width and the auxiliary frame structure, one of the drawing examples below must be followed during installation (see chapters 5.5 and 5.6). The installation area defined by the tractor unit manufacturer must not be modified. The instructions of the manufacturer of the tractor unit / fifth wheel coupling with regard to fastening type, fifth wheel position, fifth wheel height, axle load and clearance must be complied with without exception.

5.1 Attaching the slider unit

- Place the slider unit on the vehicle auxiliary frame.
- Align the slider unit according to the manufacturer’s instructions in the centre of the vehicle auxiliary frame.
- Transfer the fastening hole pattern from the vehicle auxiliary frame to the slider unit and drill fastening holes (see chapter 5.8).

**ADVICE!**
Slider units with fastening hole pattern. Mark the fastening hole pattern on the vehicle auxiliary frame and drill the fastening holes.

**ATTENTION!**
To achieve an adequate friction contact, the thickness of the paint on the auxiliary frame must be no more than 170 μm per component in the area of the fastening points.

- Screw the slider unit onto the vehicle auxiliary frame with hexagon screws (see chapter 5.6 for details of quantity and design).
- Weld the thrust plate (1) as shown in the picture below in front of and behind the slider unit.

**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.
5 Installation

- Check all screw connections again to ensure they are tight.
- Lubricate all moving parts.
- Check the function of the slider unit with manual activation (see chapter 4.1).
- Slider unit with pneumatic activation (see chapter 5.2 and 5.3).

5.2 Fitting the pneumatic connection

ADVICE!
The pneumatic line to the pneumatic cylinder (1) must be designed so that the slider unit can be adjusted easily along the entire adjusting range.

ATTENTION!
The connection of the compressed air supply must be carried out while the equipment is not pressurised.

- Install the actuator valve (5) at least 1.5 m away from the slider unit for safety reasons.
- Protect the actuator valve (5) from dirt, accidental operation and actuation by third parties.
- Install the pneumatic lines so that they cannot be crushed or chafed.
- Establish the compressed air connection (7) in accordance with the vehicle manufacturer's instructions.
- Check the compressed air lines for leaks.
- Actuate the slider unit pneumatically, check its function (see chapter 4.2).

1 Pneumatic cylinder
2 Straight screw-in connection 1/4" NPT
3 Compressed air hose L6
4 Straight screw-in connection R 1/8"
5 Actuator valve (3/2-way valve R 1/8")
6 Straight screw-in connection M22 x 1.5
7 Compressed air connection
5 Installation

5.3 Compressed air quality

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

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

Compressed air quality acc. to (ISO 8573-1[S2:4])

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

ATTENTION!
Remove the filter (on the front) from the air cylinder before painting.

5.4 Frame widths

Depending on the frame width, one of the drawing examples listed below must be followed. The quantity and design of the screw connections, as well as the specified tightening torque, are set out in chapter 5.6.

ADVICE!
If the gap X > 2 mm, a sheet metal strip must be placed underneath.

1 Hexagon screw
2 Hexagon nut

SL/10
5.5 Fastening options

Depending on the fastening option used, one of the drawing examples listed below must be followed. The quantity and design of the screw connections, as well as the specified tightening torque, are set out in chapter 5.6.

1 Hexagon screw
2 Hexagon nut
3 Cross bracing

ATTENTION!
For frame widths over 850 mm, cross bracings must be installed.

ATTENTION!
Where there are additional substructures to raise the fifth wheel height, cross braces must be installed.
5.6 Tightening torque

Hexagon screws compliant with DIN EN 28676 must be used to secure the slider unit. Depending on the condition of the vehicle auxiliary frame, hexagon screws of sizes M12 to M20 can be used.

<table>
<thead>
<tr>
<th>Length</th>
<th>Quantity x dimensions</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>1386 mm</td>
<td>At least 10 x M12 x 1.5 - 10.9</td>
<td>120 Nm</td>
</tr>
<tr>
<td></td>
<td>At least 9 x M14 x 1.5 - 8.8</td>
<td>135 Nm</td>
</tr>
<tr>
<td></td>
<td>At least 8 x M16 x 1.5 - 8.8</td>
<td>205 Nm</td>
</tr>
<tr>
<td></td>
<td>At least 7 x M18 x 1.5 - 8.8</td>
<td>310 Nm</td>
</tr>
<tr>
<td></td>
<td>At least 7 x M20 x 1.5 - 8.8</td>
<td>430 Nm</td>
</tr>
</tbody>
</table>

**ADVICE!**
The quantity of hexagon screws given always applies to the fastening on each side of the slider frame.

5.7 Fastening hole matrix

Fastening holes must be made with as even a distribution as possible within the areas marked in grey. The areas shown in Figure SL/22 on the following page must be omitted from this work.
5.8 Additional information on the XXL slider

The fastening holes must be evenly distributed within the area marked in grey. At least 14 hexagon screws which comply with DIN EN 28676 dimension M16 x 1.5 – 8.8 tightening torque 205 Nm must be used on each side. Other connections with equivalent strength may also be used.

**ATTENTION!**
No holes may be drilled in an area marked with an *. Please note that on the standard version, only two areas are created, each at the transition between the toothed strip elements.
The cleaning and maintenance of the slider unit is described in the following chapters. The cleaning and maintenance of the fifth wheel coupling are described in the separate installation and operating manual.

### 6.1 Cleaning

The slider unit is cleaned in the context of vehicle care and maintenance. No special cleaning is required. The slider unit must be cleaned before undergoing maintenance.

### 6.2 Maintenance work

Maintenance is required at short intervals, by no later than every 50,000 km. The following work must be carried out to ensure correct maintenance:

- Clean the slider unit.
- Check the screw connections are tight.
- Check the pneumatic system for leaks if necessary.
- Check the slider unit for visible cracks, deformities or other damage.
- Lubricate moving parts.
- Check the function.

**ADVICE!**

Adequate lubrication of the running surfaces and locking parts before commissioning and after each clean is crucial for the slider unit's safe function and service life.

### 6.3 Lubricants

JOST high-performance lubricant (Art. No. SKE 013 440 000) must be used to lubricate the moving parts.

### 6.4 Disposal instructions

#### Lubricant

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

#### Slider unit

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.