SKS

DE Montage- und Betriebsanleitung
EN Installation and operating instruction
FR Instructions de montage et d’utilisation
IT Istruzioni per il montaggio e l’uso
ES Instrucciones de montaje y funcionamiento
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The JOST "SKS remote-controlled" sensor coupling system (hereinafter referred to as the JOST SKS) is a full system for connecting vehicles which meets the requirements of Regulation ECE R55-01. Modifications of any kind may affect the safety of this product. Furthermore, modifications will rule out all warranty claims and result in the vehicle operating licence being voided.

It should not be used until the user is certain that the tractor unit to which the JOST SKS is attached complies with national road traffic regulations.

The safety information is set out in one section. Where the user of the JOST SKS could be in danger, the safety information is repeated in the individual sections and marked with the danger symbol shown here on the left.

Refer to the installation and operating manual for the JSK 42 fifth wheel coupling.

Please note that before the JOST SKS is commissioned, pneumatic and electrical connections must be made on the vehicle. These connections must be made in accordance with the guidelines provided by the tractor unit manufacturer which may mean that parts are required from its accessory range. Please also note that if the product is painted, various masking work is required.

CAUTION! The masking tape must be removed after painting.
DANGER OF ACCIDENT!
For further information see section 5.1.5.

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1 Safety information

The relevant safety regulations in your country (for example Health & Safety at Work) apply for working with fifth wheel couplings, tractor units, semi-trailers and the JOST SKS.

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 the operating, servicing and installation work for the JOST SKS. Safety information directly linked to the activity is listed again individually.

Safety information in the following sections is shown with the warning triangle symbol. You must comply with this safety information.

1.1 Safety information for assembly

- The JOST SKS must be installed on the tractor unit as described in section 5.
- The JOST SKS must be installed by trained personnel in suitable workshops. Follow the installation directive supplied by the vehicle manufacturer, the requirements of Annex 7 of Regulation ECE R55-01 and, if applicable, §§ 19, 20 and 21 of the Road Traffic Act and the installation instructions.
- If the equipment is not installed correctly, all warranty claims against the manufacturer and the supplier of the JOST SKS will be rendered void.
- Existing warning signs must not be covered or removed by the installation of the JOST SKS.
- The electrical connection (terminals 15 and 30) must be made to a separate fuse in the tractor unit’s fuse box.
- The electrical connection of the handbrake signal should be made as specified by the tractor unit manufacturer. The supplied signal must not be a digital signal. The JOST SKS is able to distinguish between the following states: Earth (0 V), on-board voltage (24 V), open (no connection).
- The electrical connection (terminal 31) must be made to an earth point provided by the manufacturer of the tractor unit.
- Only the electrical cables and compressed air lines supplied in the kit may be used.

Note

For installing on a tractor unit used for dangerous goods under ADR regulations, the technical features for ADR vehicles must be retained. The JOST SKS must be supplied in full through the battery isolation switch and thus does not meet the “permanently supplied circuits” technical features under ADR regulations.

Please note the following for installing the electrical cables and compressed air lines

- The electrical cables and compressed air lines must be of adequate length to ensure that the fifth wheel coupling remains mobile.
- The electrical cables must be routed so that they do not prevent the driver’s cab being tipped.
- The electrical cables and compressed air lines must not be secured to brake cables.
- The electrical cables and compressed air lines must be installed at an adequate distance from heat sources (for example the engine, exhaust, etc.) and moving parts of the vehicle. If necessary the cables must be fitted with a heat protection corrugated tube or a chafing guard.
- The electrical cables and compressed air lines must be installed without kinks and without chafe points.
- The electrical cables and compressed air lines must be secured using cable ties (for example to the vehicle wiring harness).
- All work on the pneumatic system must be carried out when it is depressurised.
- The JOST SKS may only be installed on tractor units whose generators have an integral voltage limiting system.
Please note the following before carrying out any work to the electrical system.

- Read the error memory in the tractor unit.
- Disconnect the negative pole on the vehicle battery.
- Do not reconnect the vehicle battery until the installation work has been completed.

1.2 Safety information for operation

- The JOST SKS must not be operated when the vehicle is moving.
- The JOST SKS may only be used by authorised persons.
- The driver must also monitor the traffic when operating the JOST SKS, particularly if he is completing work outside the tractor unit.
- Only use the JOST SKS if it is in good technical order and condition.
- There must be nobody in the danger zone, for example under the semi-trailer, between the semi-trailer and tractor unit or near the landing legs when coupling and uncoupling.
- Only connect a semi-trailer on firm, flat ground.

⚠️ The JOST SKS does not release the driver from his duty under the Road Traffic Act to inspect the vehicle before setting off.
- The driver must therefore check the condition of the mechanical connection of the tractor unit and semi-trailer as normal before setting off.

1.3 Safety information for maintenance

- Only use the specified lubricants for maintenance work.
- The maintenance/cleaning work and repair work must be carried out by trained personnel (workshop). For further information, refer to the JOST SKS repair manual.
2 Correct use

The JOST SKS is designed to help the driver couple and uncouple semi-trailers.

As usual, the fifth wheel coupling and the king pin produce an automatic connection between the tractor unit and trailer. This can be opened by remote control using the JOST SKS.

The fifth wheel coupling, the extension cable and the remote control are designed for installation on the tractor unit.

The JOST JSK 42 fifth wheel coupling used, complies with Regulation ECE R55-01 Class 50 and may only be used with Class H50 king pins.

3 General information

3.1 General

The JOST SKS is designed to open the fifth wheel coupling by remote control. The system also enhances Road safety since the condition of the fifth wheel coupling is monitored and the driver is notified by optical or acoustic means if the connection is not correct.

The JOST SKS has a redundant design and features a number of safety functions.

In the development of the JOST SKS, a great deal of importance was attached to ensuring that the components used for it met the high standards that are expected from JOST in terms of their mechanical properties and reliability.

All the mechanical functions and the control of the various components have been retained. Details of this, as usual, are provided in the appropriate JOST information brochures (internet: www.jost-world.com).

3.2 System requirements, properties

The following tractor units are suitable for use with the JOST SKS:

- The system may only be installed in tractor units with a 24 V electrical system and a negative vehicle earth.
- The generator on the tractor unit must have an integral voltage limiting system.
- The JOST SKS can also be installed in ADR tractor units.
- The tractor unit must supply an analogue handbrake signal. This must change between earth (0 V), open and on-board voltage (24 V).
4.1  System components on tractor unit

4.1.1  Fifth wheel coupling

The JOST SKS is used with the JSK 42 fifth wheel coupling. Information on its installation, operation, maintenance and repair is provided in the JSK 40, JSK 42 installation and operating manual. These manuals can also be downloaded from the Internet at www.jost-world.com.

The JSK 42 fifth wheel coupling features the following additional components:

1. Lock sensor with switch magnet
2. King pin sensor
3. Trailer sensor
4. Pneumatic opener cylinder with valve block
5. Electrical connection
6. Electronic control system

4.1.2  Remote control

The front panel is divided into the following sections: Display panel and keypad.

The display panel shows all the JOST SKS system indicators. The JOST SKS is controlled using the various keys on the keypad. It is controlled exclusively using the keypad.
4 List of components

4.1.3 Connection cable

1 Connection cable  
2 Remote control connection plug  
3 Fifth wheel coupling connection plug  
4 Relay

The connection cable makes the electrical connection between the remote control, the fifth wheel coupling and the electrical system on the tractor unit.

5 Installation SKS

The following tools are required for installing the JOST SKS

► Set of open-ended and ring spanners, ratchet set
► Torque wrench (for fifth wheel coupling, king pin and landing leg)
► Set of cable ties
► Set of screwdrivers
► Set of Torx wrenches (for dashboard)
► Wire stripping knife (it is important that you do not damage the installation on the wires)

The following tools are recommended for installing the JOST SKS

► Multimeter with continuity tester
► Set of shrink hoses with internal heat adhesive
► Hot air blower
► Set of pliers
► Spare fuses
► Set of crimp connectors
► Pneumatic hose 6x1, 8x1
► Pneumatic adapter 6 to 8 mm
► Pneumatic connector T pieces 6 mm, 8 mm

5.1 Tractor unit

Note
JOST recommends that the extension cable is connected to the coupling before it is installed on the tractor unit.
5.1.1 Fifth wheel coupling

Install the fifth wheel coupling as described in the JOST JSK 40, JSK 42 installation and operating manual.

⚠️ When you raise the fifth wheel coupling ensure that none of the components on its underside are damaged.

Note

When installed, 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 auxiliary frame when the vehicle is being driven. Under the statutory requirements, the tipping angle between the tractor unit and semi-trailer must be at least 6° to the front and at least 7° to the rear. The installer is responsible for complying with the statutory regulations.

5.1.2 Route and connect connection cable

⚠️ The safety information set out in section 1.1 must be observed to prevent damaging the vehicle's electrical system.

In general you must observe the guidelines provided by the manufacturer (for example installation instructions) during preparations and installation work. This particularly applies to the pick-up for the power supply.

Depending on the vehicle type, it may be impossible to install the relay socket in the driver's cab as a result of its space requirement. For this reason the contacts can be pressed out of the relay socket for installation. Use a small flat screwdriver to compress the contact detents shown here in red and remove the cable with the contact. If necessary, then carefully bend back the detent to ensure that it will lock securely in the relay socket.

The contact assignment for assembly is shown in Figure SKS/28.

Install the connection cable as follows:

- Insert the relay into the relay socket on the connection cable and secure the relay at a suitable position in the fuse box.
- Route the connection cable from the fuse box in the driver's cab to the fifth wheel coupling.
- Connect the plug to the fifth wheel coupling.
- Connect the connection cable in the fuse box and to the earth point.

⚠️ When you raise the fifth wheel coupling ensure that none of the components on its underside are damaged.

⚠️ The safety information set out in section 1.1 must be observed to prevent damaging the vehicle's electrical system.
The handbrake signal is vital to operate the SKS. For this purpose the manufacturer of the tractor unit must supply a signal which changes between
- Low / 0 V
- High / 24 V
when the handbrake is engaged or released (see section entitled Commissioning).
The appropriate connection can be made using a standard 24 V commercial vehicle relay.

⚠️ The handbrake signal may only be connected by authorised, trained personnel at a truck / commercial vehicle workshop.

5.1.3 Remote control

Install the remote control using the supplied fastening elements within the view of the driver.

If you use the adhesive pad to install it, the surface must be clean, free of grease and dry.

⚠️ The all-round view of the driver must not be adversely affected by installing the remote control.

Route the cable for the remote control below the dashboard without kinking or chafing it and connect it with the plug (see section 5.1.2, Item 1).

![Diagram of the SKS installation](SKS/03)
5.1.4 Route and connect compressed air line

The safety information set out in section 1.1 must be observed to ensure that the compressed air supply operates safely.

In general you must observe the guidelines provided by the manufacturer (for example installation instructions) during preparations and installation work. This particularly applies to the pick-up for the compressed air supply.

- Make the compressed air connection as specified by the vehicle manufacturer.
- Test the compressed air lines to ensure they are not leaking.

Note
The pneumatic connection is generally connected in the form of a hose with an external diameter of 6 mm and a wall thickness of 1 mm to the secondary consumer circuit, depending on the vehicle design additional components such as an overflow valve may be required. More details of this are provided in the installation instructions supplied by the tractor unit manufacturer.

On the coupling the compressed air supply must be connected to the open inlet on the pneumatic opener cylinder with a valve block (see section 4.1.1, Item 4).

JOST recommends that a small pressure vessel is installed in the supply line to maintain the function of the JOST SKS even if the vessel pressure falls below the safety pressure.

5.1.5 Paintwork

If the SKS coupling plate is painted, the areas shown here in red must be masked. You must ensure that this masking is removed before commissioning.

DANGER OF ACCIDENT!
Ensure that the masking tape is removed after the painting.
5.1.6 Quality of compressed air

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

5.2 Checks before commissioning

The following checks are to be conducted before commissioning the JOST SKS.

5.2.1 Tractor unit

- Check that the fifth wheel coupling is secure and has been tightened using the correct torque values.
- Check that the electrical cables and compressed air lines are secure.
- Check the compressed air line for leaks.
- Ensure that all electrical cables and compressed air lines have no kinks or chafing points.
- Check the electrical connections to ensure they are connected correctly and have the correct fuses. In particular, check that the supplied relay is inserted in the relay socket on the connection cable and the contacts have not been pushed out of the socket to the rear.

5.2.2 Commissioning

The system must be taught the handbrake signal during the commissioning process.

Start the teaching process as follows:

- Press the left, bottom key (3) and hold it.
- Switch on the ignition.

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### Compressed air quality to (PNEUROP 6611) quality classes

<table>
<thead>
<tr>
<th>Solids (particle size/ density)</th>
<th>Water (dewpoint)</th>
<th>Oil (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 &lt; 5 .40µm</td>
<td>- 40 °C</td>
<td>≤ 1 .0 mg/m³</td>
</tr>
<tr>
<td>4 &lt; 5 .1 .0 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

---

English
Note:
Depending on whether the initialisation process has already been completed at the factory or not, it may be that the display will automatically go to the teaching process. This process must be carried out during the commissioning procedure however. The teaching process for the handbrake signal may be repeated if necessary.

Note:
If the system does not recognised the "OK" key, the handbrake signal is generally not sufficiently stable; This probably means that the signal is an unsuitable data bus signal.

- JOST will flash yellow.
- Release the key (3).
- Engage the handbrake.
- Press the "OK" key (C) until a signal tone sounds.
- Release the "OK" key (C).

The system now knows the "Handbrake engaged" state and changes to normal operating mode.
6 Operation SKS

6.1 Display mode

6.1.1 Operating indicators

System check at "Ignition on":

- The display panel and keypad will flash.
- The current operating status will then be displayed.

Coupled:

- After the elapse of approximately 30 seconds the display panel will go dark.

Uncoupled:

- After the elapse of approximately 10 seconds the display panel will be switched off.

Switched off:

- The display panel and keypad are off (identical to uncoupled status).

⚠ If the vehicle electrical system is switched off in a non-emergency using a main battery switch, the ignition must be switched off first. Otherwise the SKS electronic system may suffer damage.
6.2 Automatic mode

During the coupling process the driver is guided through the process on the remote control's display.

Note

The JOST SKS is connected to the secondary consumer system on the tractor unit. This means that the JOST SKS can only be operated if this system is up to operating pressure. JOST therefore recommends that the JOST SKS only used when the tractor unit has built up full pressure in the brake system.

- Permanent indicators show the actions to be carried out or those currently being carried out by the system.
- Flashing keys mean confirmation is required from the driver by pressing the flashing key. This starts the next action by the system and confirms the previous action. When you press the key a signal tone will also sound. If a flashing key is not pressed during the function, a signal tone will sound after a certain length of time.

6.2.1 Uncoupling

Before starting the automatic uncoupling process, the driver must ensure that there is nobody in the danger zone and that the uncoupling process can be carried out on a load-bearing, flat surface.

JOST recommends that the trailer is first secured, then the landing legs are lowered and the spiral electric cables disconnected. After getting back into the cab the system should be started as follows:

1. The "Fifth wheel coupling closed" display is lit. The fifth wheel coupling is closed.
2. After releasing and re-engaging the handbrake, the "ON" key will be late as long as the handbrake is engaged, but no longer than 30 seconds. The uncoupling process can be started during this period.
3. Press "ON/OFF" key. The "uncoupling" process is started.
4. The "OPEN" key flashes.
5. The process to open the fifth wheel coupling can be started by pressing the "OPEN" key.
Note
It is not possible to recouple the trailer whilst the "OPEN" key is lit. Before recoupling, the uncoupling process must be completed in full; the tractor unit must be completely driven away. The tractor unit can only be driven away whilst the "OPEN" key is lit. In the worst-case scenario, if the fifth wheel coupling will not release the king pin, the driver must re-couple and then uncouple the trailer. He should ensure that after opening the fifth wheel coupling, he drives the tractor unit out quickly in other words within the 5 seconds. We recommend that the handbrake is not released until the fifth wheel coupling has opened.

The "Fifth wheel coupling open" display is still lit. The fifth wheel coupling is open. It has been correctly uncoupled.

Note
The display panel and keep had will go out approximately 10 seconds after the fifth wheel coupling plate has lost contact with the trailer plate.
6.2.2 Coupling

Before coupling check that the semi-trailer is correctly secured. Also check whether the fifth wheel coupling is open. Before the coupling process the driver must ensure that there is nobody in the danger zone.

Status is uncoupled. The tractor unit has no contact with the semi-trailer.

1. Drive the tractor unit under the semi-trailer.
2. Raise the fifth wheel using the air suspension until the fifth wheel coupling plate contacts the semi-trailer plate.
   The display of the remote control will switch on automatically.

Note
Some semi-trailers do not have a single steel plate from the front of this semi-trailer to the king pin. This means that it is possible that the semi-trailer sensor will not detect the semi-trailer or that the display will not activate until shortly before the fifth wheel coupling closes.

Raise the air suspension until the landing legs feet are clear of the ground. JOST recommends that the semi-trailer is raised as high as possible.

Ensure there is adequate space above the semi-trailer (for example passageways, building ceilings, etc.).
6 Operation SKS

3. Reverse the tractor unit until the fifth wheel coupling closes.
   Engage the handbrake.
   The green "Fifth wheel coupling closed" display is lit.
   The fifth wheel coupling is correctly closed.

Note
If the handbrake is not engaged after the coupling process, the system will interpret this as an error of the handbrake signal after 2 minutes. This error can be reset by switching the ignition off and then on again.

4. The "Coupling" action is now complete.

Note
After the elapse of approximately 30 seconds the display panel will go dark.

JOST recommends that the electrical cables and compressed air lines are now connected, the landing legs cranked upwards and the trailer lock released. Then conduct the required inspections (for example checks before driving away).

6.2.3 Fault indicators

During the coupling process the fifth wheel coupling was locked but the king pin was not detected:
   the driver must get out and check the state of the coupling.
   If it is not close correctly, the fifth wheel coupling must be opened manually and recoupled.

Note
If a visual inspection shows that the coupling process has been completed properly, you should go to a workshop as soon as possible and have the setting and function of the king pin sensor checked.

During the coupling process the king pin was detected but the fifth wheel coupling was not locked:
   the driver must get out and check whether the fifth wheel coupling has been correctly closed and locked. If this is not the case, the driver must uncouple the semi-trailer and check the fifth wheel coupling for mechanical damage and foreign bodies.
The tractor unit has been uncoupled, but a non-existent king pin or semi-trailer has been detected:

- Clean the grease which contains metal from the contact surface of the king pin sensor or semi-trailer sensor with a cloth.

**Note**
If it is not possible to rectify the error by this action, go to a workshop.

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### 6.3 Manual operation

The fifth wheel coupling can generally be operated manually.

#### 6.3.1 Fifth wheel coupling

Open the fifth wheel coupling by hand as follows (for further information refer to the JSK 40, JSK 42 installation and operating manual):

- Pull the handle until the locking edge is clear.
- Swing the handle forwards.
- Then pull out the handle as far as it will go.
- Attach the handle to the edge of the plate.

---

### 6.4 Theft and incorrect use guard on fifth wheel coupling

As on the JSK 42, the JSK 42 SKS can also be locked with a padlock (see installation and operating manual for JSK 42).

**Note**
If the user initiates the opening of the fifth wheel coupling using the JOST SKS remote control without removing the lock, he must switch off the ignition of the tractor unit. This disables the remote control and the driver can remove the lock safely. The driver can restart the coupling process by turning on the ignition again.

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**Danger of accident!**
7 Maintenance SKS

7.1 Fifth wheel coupling

The appropriate specifications from the JOST installation and operating manual for JSK 40, JSK 42 apply to the fifth wheel coupling.

To ensure that the sensors are operating correctly, the locking sensor may have to be realigned with the switch magnet if the fifth wheel coupling is badly worn.

A correctly set locking sensor must satisfy the following conditions when the fifth wheel coupling is closed:

- The distance \( a \) between the locking sensor and the switch magnet must be parallel.
- The distance \( a \) should be 7-10 mm.
- The side offset \( b \) between the locking sensor and the switch magnet must be less than 9 mm.

If necessary, adjust the locking sensor as follows:

- Undo the securing bolts for the sensor holding plate.
- Align the locking sensor and switch magnet as described above.
- Tighten the securing bolts for the sensor holding plate.
- Check the function of the sensors and indicator in the remote control display by coupling and uncoupling.

7.2 Wear limit

The wear limits of the wearing parts must not be exceeded to ensure that the sensor system operates reliably. When the wear limit is reached, the appropriate wearing part must be replaced. Instructions for replacing the parts can be found in repair manual JSK37 or JSK 40/42. See the JOST catalogue for repair kits.

![Diagram of fifth wheel coupling showing wear sensor, switch magnet, securing bolts, and sensor holding plate.](image)

- 1 Wear sensor
- 2 Switch magnet
- 3 Securing bolts
- 4 Sensor holding plate

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- The distance \( a \) should be 7-10 mm.
- The side offset \( b \) between the locking sensor and the switch magnet must be less than 9 mm.

![Wear sensor diagram showing 19-20,5 mm measurement.](image)
8 Troubleshooting SKS

### 8.1 Remote control

The following only contains remedial work which can be completed using normal workshop equipment. This particularly applies to the electrical system.

<table>
<thead>
<tr>
<th>Fault</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The remote control does not work after starting (ignition &quot;ON&quot;).</td>
<td>Incorrect connection of the JOST SKS. Blade type fuses are defective.</td>
<td>Check electrical connections and plug connectors (see section 5 &quot;Installation&quot;). Check the blade type fuses in the driver’ cab and replace if necessary.</td>
</tr>
<tr>
<td>2. The remote control shows the fifth wheel coupling is open after the coupling process (LED red).</td>
<td>The fifth wheel coupling has not been locked correctly.</td>
<td>Open the fifth wheel coupling manually, drive out the tractor unit and recouple it.</td>
</tr>
<tr>
<td>3. The remote control shows the fifth wheel coupling is closed (LED red).</td>
<td>The fifth wheel coupling has been closed manually, for example for maintenance purposes.</td>
<td>Open the fifth wheel coupling manually.</td>
</tr>
<tr>
<td>4. The remote control shows the fifth wheel coupling is unlocked although it has been completely uncoupled.</td>
<td>The king pin sensor or semi-trailer sensor is badly soiled with metallic grease residues.</td>
<td>Remove the grease residues from the king pin sensor and semi-trailer sensor.</td>
</tr>
<tr>
<td>5. The remote control will not start.</td>
<td>The safety time to open the fifth wheel coupling has elapsed. The connection cable has been incorrectly connected.</td>
<td>Release the brake and engage it again. Check electrical connections and plug connectors —&gt; Terminal 15 (ignition) and brake connection (see section 5 &quot;Installation&quot;).</td>
</tr>
<tr>
<td>6. Remote control only shows JOST symbol (after ignition &quot;ON&quot;).</td>
<td>Connection cable to the fifth wheel coupling is not connected or defective.</td>
<td>Connect the connection cable or replace it if necessary.</td>
</tr>
</tbody>
</table>
## 8 Troubleshooting SKS

### 8.2 Fifth wheel coupling

<table>
<thead>
<tr>
<th>Fault</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Fifth wheel coupling does not open automatically.</td>
<td>Compressed air supply not at full level.</td>
<td>Fill the compressed air vessel on the tractor unit and restart the process.</td>
</tr>
<tr>
<td></td>
<td>Compressed air line defective.</td>
<td>Check the compressed air line to the JOST SKS and replace it if necessary.</td>
</tr>
<tr>
<td></td>
<td>The tractor unit and trailer combination is tensioned.</td>
<td>Release the handbrake and move the tractor unit back slightly if necessary.</td>
</tr>
<tr>
<td></td>
<td>The mechanism is jammed.</td>
<td>C maintenance and repair manual for JSK 40, JSK 42.</td>
</tr>
<tr>
<td></td>
<td>The coupling process was not completed using the remote control.</td>
<td>See Section 6 &quot;Operation&quot;.</td>
</tr>
</tbody>
</table>
8 Troubleshooting SKS

8.3 System fault

Use only JOST genuine parts for repair and replacement work.

Repair work must be carried out by qualified trained personnel.

Depending on the conditions of use, but after no more than 50,000 km or every six months, the fifth wheel coupling its fastening elements must be checked to ensure they are functioning properly and are free from wear, corrosion, damage or cracks and repaired if necessary. Please refer to JOST repair manuals for fifth wheel couplings for more precise information on this.

Check that the fastening elements are secure and have been tightened using the specified torque values.

Clean all grease off the functional surfaces of the sensors.

All information and repairs to the fifth wheel coupling are described separately in the JOST repair manual for fifth wheel coupling type JSK 40, JSK 42 (internet: www.jost-world.com).

The errors can be evaluated using the right-hand display and keypad (shown here with a yellow box).

"System fault":

The display panel and keypad will flash.

Go to a workshop.
The following our troubleshooting tables to enable you to interpret a system error correctly.

### General

- An error will always cause the JOST SKS to shut down safely.
- A distinction is made between serious errors (with a grey background) and minor errors (with a white background).
- A serious error has priority over a minor error.

### Reset minor errors using the ignition

An error can be reset by switching the ignition off and on again. The error will only be displayed if it is detected again after the ignition has been switched on.

### Reset serious errors using key combination only

An error can only be reset using the defined key combination at the workshop. If the error has not been reset at the workshop, it will be displayed again each time the ignition is switched on, regardless of whether the cause of the error still exists or not. The error will be saved when it is reset.

### Display panels 1, 3, 4

1. On: Error recognised by display –> Table 1.
2. Off: Error recognised by control unit –> Table 2.
3. On: Switch to next error.
4. On: Switch to previous error.

Other errors –> Table 3
## Table 1: Error recognised by display

<table>
<thead>
<tr>
<th>No.</th>
<th>Error description</th>
<th>Instructions for rectification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Handbrake permanently not engaged</td>
<td>Handbrake signal from tractor unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Handbrake not engaged within 120 seconds after coupling</td>
</tr>
<tr>
<td>2</td>
<td>Handbrake permanently engaged</td>
<td>Handbrake signal from tractor unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coupling closed manually whilst the ignition was on and handbrake engaged (for example with test king pin)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Handbrake signal incorrectly learned (see section entitled Commissioning)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Handle moves with difficulty, closes too slowly. Clean and grease handle.</td>
</tr>
<tr>
<td>3</td>
<td>Handbrake signal level changes permanently.</td>
<td>Handbrake signal from tractor unit defective</td>
</tr>
<tr>
<td>4</td>
<td>Error power outside limit value $U_{\text{min}}$, $U_{\text{max}}$</td>
<td>Relay defective or missing or connecting socket: Contacts pressed out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 A fuse defective or missing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness defective</td>
</tr>
<tr>
<td>5</td>
<td>Error SKS analogue signal after ignition on $\geq 2$ mA</td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Powerful electromagnetic field or cable-based interference</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Display defective</td>
</tr>
<tr>
<td>6</td>
<td>Error SKS analogue signal $5$ mA</td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Powerful electromagnetic field or cable-based interference</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Display defective</td>
</tr>
<tr>
<td>7</td>
<td>Error CAN alive message not received</td>
<td>Display defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Powerful electromagnetic field</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical system voltage to low/collapsed</td>
</tr>
<tr>
<td>8</td>
<td>Error CAN remote message incorrect</td>
<td>Display defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Powerful electromagnetic field</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical system voltage to low/collapsed</td>
</tr>
<tr>
<td>9</td>
<td>Error CAN data message not received</td>
<td>Display defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Powerful electromagnetic field</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical system voltage to low/collapsed</td>
</tr>
<tr>
<td>10</td>
<td>Error CAN remote message not received</td>
<td>Display defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness, faulty contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Powerful electromagnetic field</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical system voltage to low/collapsed</td>
</tr>
<tr>
<td>11</td>
<td>Error SKS taking excessive current $&gt; 100$ mA</td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Display defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness defective</td>
</tr>
<tr>
<td>12</td>
<td>Error power after safety relay outside (above) tolerance</td>
<td>Relay defective or missing or connecting socket: Contacts pressed out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 A fuse defective or missing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension cable defective</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wiring harness defective</td>
</tr>
</tbody>
</table>

### Troubleshooting SKS
## Table 2: Error recognised by control unit

<table>
<thead>
<tr>
<th>No.</th>
<th>Error description</th>
<th>Instructions for rectification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Error in the sequential control (unexpected software error)</td>
<td>Display defective</td>
</tr>
<tr>
<td>1</td>
<td>Error king pin sensor</td>
<td>King pin sensor defective&lt;br&gt;Wiring harness, faulty contact&lt;br&gt;Control unit: Plug defective</td>
</tr>
<tr>
<td>2</td>
<td>Error locking sensor</td>
<td>Position of magnet to censor not OK (for example due to 5th wheel coupling lock adjustment without adjustment of locking sensor, see section entitled Maintenance of fifth wheel coupling)&lt;br&gt;Locking sensor defective&lt;br&gt;Wiring harness, faulty contact&lt;br&gt;Control unit: Plug defective</td>
</tr>
<tr>
<td>3</td>
<td>Error valve 1 opener cylinder</td>
<td>Valve defective&lt;br&gt;Wiring harness defective or plug faulty contact&lt;br&gt;Control unit defective&lt;br&gt;Truck electrical voltage too low/too high</td>
</tr>
<tr>
<td>4</td>
<td>Error semi-trailer sensor</td>
<td>Semi-trailer sensor defective&lt;br&gt;Wiring harness, faulty contact&lt;br&gt;Control unit: Plug defective</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Error valve 2 opener cylinder</td>
<td>Valve defective&lt;br&gt;Wiring harness defective or plug faulty contact&lt;br&gt;Control unit defective&lt;br&gt;Truck electrical voltage too low/too high</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Error system (EEPROM, electrical supply, no Ue, voltage difference)</td>
<td>Error in extension cable – plug faulty contact&lt;br&gt;Display defective – pin 6 display plug at ignition on 24 V? -&gt; Display OK&lt;br&gt;Control unit defective&lt;br&gt;Truck electrical voltage too low/too high&lt;br&gt;Temperature &lt; –50°C, &gt;100°C</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Error CAN (alive, remote, data, send messages)</td>
<td>Display defective&lt;br&gt;Extension cable defective, faulty contact&lt;br&gt;Wiring harness, faulty contact&lt;br&gt;Control unit defective&lt;br&gt;Powerful electromagnetic field&lt;br&gt;Electrical system voltage to low/collapsed</td>
</tr>
<tr>
<td>13</td>
<td>Error in the AD conversion</td>
<td>Control unit defective</td>
</tr>
<tr>
<td>14</td>
<td>Error +UB detected not required</td>
<td>Relay defective or missing or connecting socket: Contacts pressed out&lt;br&gt;30 A fuse defective or missing&lt;br&gt;Extension cable defective&lt;br&gt;Wiring harness defective</td>
</tr>
<tr>
<td>15</td>
<td>Error valve check (1 second per valve)</td>
<td>Valve opener cylinder defective&lt;br&gt;The opener cylinder was manually raised during the self-check&lt;br&gt;Magnet maladjusted to sensor</td>
</tr>
</tbody>
</table>
### 8 Troubleshooting SKS

<table>
<thead>
<tr>
<th>Other errors</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td><strong>Table 3</strong></td>
</tr>
<tr>
<td>Display: JOST yellow, everything else dark</td>
<td>Plug connection to 5th wheel coupling disconnected</td>
</tr>
<tr>
<td>No communication between display and control unit</td>
<td>Extension cable defective</td>
</tr>
<tr>
<td></td>
<td>Wiring harness defective</td>
</tr>
<tr>
<td></td>
<td>Control unit defective</td>
</tr>
<tr>
<td></td>
<td>Display defective</td>
</tr>
<tr>
<td>After uncoupling pressure remains permanently on</td>
<td>King pin sensor dirty, clean</td>
</tr>
<tr>
<td>opener cylinder</td>
<td>Semi-trailer sensor dirty, clean</td>
</tr>
<tr>
<td>OR When decoupled, the decision play begins to</td>
<td>King pin sensor defective</td>
</tr>
<tr>
<td>peep and shows a semi-trailer which is not there</td>
<td>Semi-trailer sensor defective</td>
</tr>
<tr>
<td>Display shows &quot;SK not closed&quot; although fifth wheel</td>
<td>Fifth wheel coupling lock adjusted without adjusting</td>
</tr>
<tr>
<td>coupling has been correctly closed and secured</td>
<td>locking sensor (see section entitled Maintenance of 5th wheel coupling)</td>
</tr>
</tbody>
</table>