



## Operating Instructions Radio remote control SRC

**Note**

These operating instructions were originally written in German and have been translated into English. Store in a safe place for future reference.

We reserve the right to make technical changes. No responsibility is taken for printing or other types of errors.

**Published by**


© J. Schmalz GmbH, 05.2020

This document is protected by copyright. J. Schmalz GmbH retains the rights established thereby. Reproduction of the contents, in full or in part, is only permitted within the limits of the legal provisions of copyright law. Any modifications to or abridgments of the document are prohibited without explicit written agreement from J. Schmalz GmbH.

**Contact**

J. Schmalz GmbH  
Aacher Strasse 29  
D-72293 Glatten

Tel. +49 (0) 7443 2403-0  
Fax +49 (0) 7443 2403-259  
schmalz@schmalz.de  
www.schmalz.com

Contact information for Schmalz companies and trade partners worldwide can be found at  
 [www.schmalz.com/salesnetwork](http://www.schmalz.com/salesnetwork)

1	Safety Instructions.....	5
1.1	Classification of safety instructions .....	5
1.2	Warnings .....	6
1.3	Mandatory symbols .....	6
1.4	General Safety Instructions .....	7
1.5	Intended Use .....	8
1.6	Requirements and Instructions for Installation, Maintenance and Operating Staff .....	9
1.7	Installation Location/Workplace Requirements .....	10
1.8	Workplace Requirements .....	10
1.9	Definition of the danger zone .....	11
1.10	Emissions .....	11
1.11	The radio remote control emits radio waves. ....	11
1.12	Personal Protective Equipment .....	11
2	Product Description .....	12
2.1	Radio remote control <b>SRC</b> Jumbo Ergo (JU-E) components.....	12
2.1.1	With blower SBM / SBL .....	12
2.1.2	With blower SBV.....	13
2.2	Radio remote control <b>SRC</b> Jumbo Sprint (JU-S) components.....	14
2.2.1	With blower SBM / SBL .....	14
2.2.2	With blower SBV.....	14
2.3	Radio remote control <b>SRC</b> Jumbo Flex (JU-F) components.....	15
2.4	Accessories .....	15
3	Technical data .....	16
3.1	Receiver .....	16
3.2	Transmitter with induction generator .....	16
3.3	Transmitter with solar .....	17
4	Delivery, Packaging and Transport .....	18
4.1	Delivery.....	18
4.1.1	Items included in delivery .....	18
4.1.2	Check for completeness.....	18
4.1.3	Report damage.....	18
4.2	Packaging.....	18
4.3	Removal of the radio remote control <b>SRC</b> from transportation packaging .....	18
5	Installation .....	19
5.1	List of tools .....	19
5.2	General safety instructions for installation .....	19
5.3	Receiver installation .....	20
5.4	Checking the direction of rotation for the vacuum generator .....	20
5.5	Transmitter installation for new device .....	20
5.6	Transmitter installation when retrofitting (JU-E) .....	20
5.7	Teaching in a new transmitter .....	21
5.8	Mounting Accessories .....	23
5.8.1	Signal lamp.....	23
5.8.2	Mechanical locking device.....	23
5.9	Functional test for radio remote control <b>SRC</b> .....	23

<b>6</b>	<b>Operation .....</b>	<b>24</b>
6.1	General Safety Instructions Regarding Operation .....	24
6.2	What to do in an emergency .....	24
6.3	Starting the vacuum generator .....	25
6.4	Regulating the vacuum generator .....	25
6.4.1	Transmitter JU-E solar with control .....	25
6.4.2	Transmitter JU-S and JU-E induction.....	26
6.5	Switching off the vacuum generator .....	26
<b>7</b>	<b>Troubleshooting .....</b>	<b>27</b>
7.1	Radio remote control with unregulated vacuum generator (SB-M/L / EVE) .....	27
7.2	Radio remote control with frequency-controlled vac. generator (SB-V) .....	28
7.3	Installation of replacement transmitter (JU-E Induction) .....	30
7.4	Installation of replacement transmitter (JU-E Solar) .....	31
7.5	Installation of replacement transmitter (JU-S).....	32
7.6	Installation of replacement transmitter (JU-F 20/35) .....	33
7.7	Installation of replacement transmitter (JU-F 27/50).....	34
<b>8</b>	<b>Maintenance.....</b>	<b>35</b>
8.1	General notes .....	35
8.2	Cleaning .....	35
8.3	Changing batteries for JU-E solar type transmitters .....	36
<b>9</b>	<b>Decommissioning and disposal.....</b>	<b>37</b>
9.1	Decommissioning .....	37
9.2	Disposal.....	37

# 1 Safety Instructions

## 1.1 Classification of safety instructions

### Danger

This warning informs the user of a risk that will result in death or serious injury if it is not avoided.

 <b>DANGER</b>	
	<b>Type and source of danger</b>
	Consequence
	► Remedial action


### Warning

This warning informs the user of a risk that could result in death or serious injury if it is not avoided.

 <b>WARNING</b>	
	<b>Type and source of danger</b>
	Consequence
	► Remedial action

### Caution

This warning informs the user of a risk that could result in injury if it is not avoided.

 <b>CAUTION</b>	
	<b>Type and source of danger</b>
	Consequence
	► Remedial action









### Caution

This warning informs the user of a risk that could result in damage to property if it is not avoided.

<b>CAUTION</b>	
	<b>Type and source of danger</b>
	Consequence
	► Remedial action




## 1.2 Warnings

Explanation of the warning symbols used in the operating instructions.




Warning symbol	Description	Warning symbol	Description
	General warning symbol		Explosive atmosphere
	Electrical voltage		Flying debris
	Hand injury		Crushing injury warning
	Suspended load		Falling parts

## 1.3 Mandatory symbols

Explanation of the mandatory symbols used in the operating instructions.

Mandatory symbols	Description	Mandatory symbols	Description
	Adhere to the operating instructions		Wear protective work shoes
	Disconnect mains plug		

## 1.4 General Safety Instructions

 <b>WARNING</b>	
 	<p><b>Ignoring the general safety guidelines</b> Personal injury / damage to plants / systems</p> <ul style="list-style-type: none"> <li>▶ The operating instructions contain important information on using the system. Each user must have read and understood the operating instructions, and retain them for later reference.</li> <li>▶ These operating instructions are specific to the items included in delivery from Schmalz. They do not take into account any modifications to the system made by the customer, which are strictly prohibited.</li> <li>▶ The system may only be connected and operations started once the operating instructions have been read and understood.</li> <li>▶ Use only the connections, mounting holes and attachment materials that have been provided.</li> <li>▶ Carry out assembly or disassembly work only when the device is disconnected from power supply.</li> <li>▶ Only qualified specialist personnel, mechanics and electricians may perform the installation. Qualified specialist personnel are persons who have received technical training and have the knowledge and experience – including knowledge of applicable regulations – necessary to enable them to recognize possible dangers and implement the appropriate safety measures while performing task. The same applies to maintenance!</li> <li>▶ General safety regulations, European standards and VDE guidelines must be observed and complied with.</li> <li>▶ Personnel and animals are not permitted to sit or stand in the danger zone area.</li> <li>▶ You are responsible for third parties in the working area of the system. In view of this, responsibilities for the various tasks to be carried out on the system must be clearly specified and adhered to. Responsibilities must be clear.</li> <li>▶ Protect the components from damage of any kind.</li> </ul>



**All applicable laws and regulations must be adhered to at all times.**

When using the vacuum tube lifter Jumbo, the statutory regulations, safety regulations, standards and guidelines applicable at the location of use must be adhered to.

Check with the competent authorities for more information.

The safety instructions in these operating instructions do not replace these laws and regulations, but are to be regarded as a supplement to them.

## 1.5 Intended Use

The radio remote control SRC is used to control the vacuum generator of a vacuum tube lifter **JUMBO**. Use for any other purpose is prohibited, as safe operation can only be ensured in combination with a vacuum tube lifter **JUMBO**.



The radio remote control SRC is state of the art and operationally reliable provided full compliance with these instructions is assured. Incorrect use of the radio remote control can cause serious risks.



### CAUTION



#### Risk of injury due to lowering of the vacuum tube lifter

Unauthorized modifications and changes to the radio remote control **SRC** can lead to the functionality of the vacuum generator controller no longer being guaranteed. The vacuum generator will fail.

There is a risk that the load or tube lifter may be lowered and crush body parts.

- ▶ Do not make any on-site modifications to the system.
- ▶ Use only the original connections, attachment holes and attachment materials that have been provided.



### WARNING



#### Risk of injury due to electric shock after changes to construction

Unauthorized modifications and changes to the radio remote control **SRC** can lead to death or serious injury from electric shock and fire.

- ▶ Do not make any on-site modifications to the system.
- ▶ Use only the original connections that have been provided.



## 1.6 Requirements and Instructions for Installation, Maintenance and Operating Staff

The radio remote control must only be installed and maintained by qualified specialist personnel and electricians. Work on electronic equipment must be carried out by qualified electrical specialists only.

**Qualified personnel is defined** as: an employee who has received technical training and has the knowledge and experience – including knowledge of corresponding regulations – necessary to enable him or her to recognize possible dangers and implement the appropriate safety measures while performing tasks. Qualified personnel must observe the relevant industry-specific rules and regulations.



The user's company must ensure by means of internal measures that all persons commissioned with the task of setting up, starting up, operating, maintaining and repairing the radio remote control at the company only employ insured persons who:

- Are at least 18 years of age and are mentally and physically fit for the task
- Have been trained in operating and maintaining the tube lifter
- Have read and understood the operating instructions
- Who can be expected to reliably perform the tasks assigned to them.

The operating instructions must be accessible at all times.

The operator is obligated to perform a risk analysis based on the ambient conditions at the installation location.



### DANGER



#### Electric shock resulting from incorrectly connected components

This can result in death or serious injury from electric shock and fire.

▶ All work on electrical equipment must be carried out by qualified electrical specialists only.

▶ Suitable fire extinguishing equipment must be on hand!



### WARNING



#### Risk of injury due to misuse or non-observance of warning and safety notices

Persons could be harmed

▶ The equipment must be used by trained personnel only.

▶ Prevent unauthorized persons from switching the radio remote control on with a padlock on the main or motor-protection switch.

### CAUTION



#### Improper handling of the system

Damage to the system during work on circuit boards

▶ Observe ESD protective measures

## 1.7 Installation Location/Workplace Requirements

The radio remote control SRC may not be operated in rooms where there is a risk of explosion.

 <b>DANGER</b>	
	<b>Non explosion-proof switching components</b>
	<p>Risk of fire and explosion</p> <p>► Product must not be used in potentially explosive atmospheres.</p>

The radio remote control must not be used in areas with acidic or alkaline materials or in contaminated atmospheres.

The radio remote control can be operated in rooms with an ambient temperature of between +0°C and +40°C.

For the version with solar cell (see Technical Data), adequate lighting of at least 300 lux should be ensured to guarantee optimum performance of the solar cell.

Provide internal instructions and conduct checks to ensure that the area of the workplace is always clean and tidy.



<b>CAUTION</b>	
	<b>Damage to the radio remote control due to use outside of the permitted temperature range</b>
	<p>If the radio remote control is used outside of the permitted temperature range, it will become damaged and fail.</p> <p>► Only use the radio remote control at the permitted ambient temperature.</p> <p>► Before operating outside of the permitted temperature range, outside of closed rooms or in an environment with an aggressive atmosphere, consult with the manufacturer.</p>

## 1.8 Workplace Requirements

See the operating instructions for the tube lifter **Jumbo**.

## 1.9 Definition of the danger zone

The danger range indicator of the radio remote control SRC is identical to that of the device it is installed in.

 <b>WARNING</b>	
	<p><b>Risk of injury from falling objects when the system is switched off unexpectedly.</b></p> <p>There is a risk that people in the vicinity could be hit, causing death or serious injury!</p> <ul style="list-style-type: none"> <li>▶ No person may sit or stand in the danger zone of the system.</li> <li>▶ Only work when you have a good view of the entire working area.</li> <li>▶ Pay attention to other people in the working area.</li> <li>▶ Never transport the load above people.</li> <li>▶ Only actuate the SRC transmitter deliberately!</li> <li>▶ Never release the control handle of the tube lifter while lifting a load.</li> <li>▶ The working area must be secured by the operator. The persons/equipment necessary to secure this area must be present during the lifting/transportation process.</li> </ul>

## 1.10 Emissions

### 1.11 The radio remote control emits radio waves.

The transmitting power is listed in the Technical Data.

### 1.12 Personal Protective Equipment




- See operating instructions **Jumbo**
- Use ESD protective equipment during maintenance work
- Other protective equipment as required by the situation or prescribed by national regulations.

## 2 Product Description


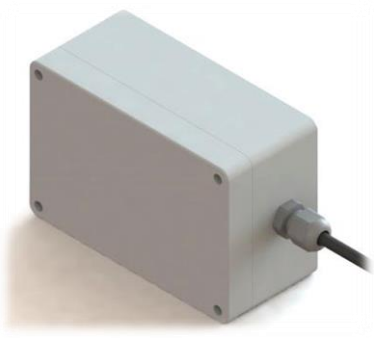



### 2.1 Radio remote control **SRC** Jumbo Ergo (JU-E) components

The radio remote control **SRC** consists primarily of one of the following components each:

#### 2.1.1 With blower SBM / SBL

Transmitter	Receiver
 <p><b>Transmitter JU-E induction</b> Switches the blower on/off</p>	 <p><b>Receiver SB-M/L</b></p>
 <p><b>Transmitter JU-E solar</b> Switches the blower on/off</p>	



## 2.1.2 With blower SBV

Transmitter	Receiver
 <p><b>Transmitter JU-E solar with control</b> Switches the power on/off and used for controlling the blower's frequency</p>	 <p><b>Receiver SB-V</b></p>
 <p><b>Transmitter JU-E induction</b> Switches the blower on/off</p>	 <p><b>Receiver SB-V with option of controlling the blower's frequency</b></p>
 <p><b>Transmitter JU-E solar</b> Switches the blower on/off</p>	



## 2.2 Radio remote control **SRC** Jumbo Sprint (JU-S) components

The radio remote control **SRC** consists primarily of one of the following components each:

### 2.2.1 With blower SBM / SBL



Transmitter	Receiver
 <p><b>Transmitter JU-S</b> Switches the blower on/off</p>	 <p><b>Receiver SB-M/L</b></p>

### 2.2.2 With blower SBV

Transmitter	Receiver
 <p><b>Transmitter JU-S</b> Switches the blower on/off</p>	 <p><b>Receiver SB-V with option of controlling the blower's frequency</b></p>

## 2.3 Radio remote control **SRC** Jumbo Flex (JU-F) components

The radio remote control **SRC** consists primarily of the following components:

Transmitter	Receiver
 <p><b>Transmitter JU-F</b> Switches the pump on/off.</p>	 <p><b>Receiver EVE</b></p>

## 2.4 Accessories

### Signal lamp ON/OFF

For vacuum generators EVE, SB-M, SB-L and SB-V.

The lamp indicates if the vacuum generator is active or is just starting.



### Mechanical locking device

With the mechanical locking device, the motor protection switch or main switch can be secured using up to three padlocks to prevent unauthorized use or when it is necessary to carry out maintenance work on the vacuum tube lifter.



Only explicitly stated components of the system may be opened within the warranty period. All other components of the system may not be opened or modified for the entire warranty period. Opening the components, or making modifications or mechanical changes to the components, voids the warranty.

## 3 Technical data

### 3.1 Receiver

	SB-M/L / EVE	SB-V	SB-V with controlling option
Receiving frequency	868.3 MHz		
Sensitivity	-95 dBm		
Data rate / modulation type	125 kbps / ASK		
Frequency control	-	Via radio	Via potentiometer
Supply voltage	230 / 400 / 460 VAC	24 VDC	
Grid frequency	50 / 60 Hz	-	
Switching output power (max.)	230 VAC3 / 2.5 kW 400 VAC3 / 4.0 kW 460 VAC3 / 5.5 kW	24 VDC / 24 W	
Status light outputs	1		
Power per light output (max.)	24 VDC / 12 W		
Dimensions	302 x 160 x 209 mm	143 x 80 x 55 mm	143 x 89 x 55 mm
Ambient temperature	+0 - +40°C		
Operational environment	Dry, indoors		
Protection class	IP 54	IP 65	Dust and water spray protected

### 3.2 Transmitter with induction generator

	JU- F	JU- S	JU-E
Transmission frequency	868.3 MHz		
Range (max.) <sup>1</sup>	25 m		
Transmitting power (max.)	10 mW		
Modulation type	ASK		
Supply voltage	Induction generator		
Number of command buttons	1		
Wireless frequency control	No	No	No
Command button functions	ON / OFF		
Ambient temperature	+0 - +40°C		
Operational environment	Dry, indoors		
Protection class	Dust protected	Dust and water spray protected	



### 3.3 Transmitter with solar

	JU-E	JU-E with control
<b>Transmission frequency</b>	868.3 MHz	
<b>Range (max.)<sup>1</sup></b>	30 m	
<b>Transmitting power (max.)</b>	10 mW	
<b>Modulation type</b>	ASK	
<b>Supply voltage</b>	Solar cell and backup battery	
<b>Number of command buttons</b>	1	3
<b>Wireless frequency control</b>	No	Yes
<b>Command button functions</b>	ON / OFF	ON / OFF Frequency control
<b>Ambient temperature</b>	+0 - +40°C	
<b>Operational environment</b>	Dry, indoors	
<b>Protection class</b>	Dust and water spray protected	

<sup>1</sup> Very dependent on the structural conditions and the electrical devices in the vicinity. Reinforced concrete, wireless networks or devices that emit high levels of electromagnetic radiation, e.g. frequency inverters or large electric motors, considerably reduce the range. Under certain circumstances, it can result in a complete failure.

## 4 Delivery, Packaging and Transport

### 4.1 Delivery

#### 4.1.1 Items included in delivery

Refer to the order confirmation for specific details about what is included in delivery.



The operating instructions are an integral part of the radio remote control **SRC** and must accompany the device whenever it moves to a new location.

#### 4.1.2 Check for completeness

Check the entire delivery against the supplied delivery notes to make sure nothing is missing.

#### 4.1.3 Report damage

Following delivery of the shipment, damage caused by defective packaging or in transit must be reported immediately to the carrier and J. Schmalz GmbH.

### 4.2 Packaging

The radio remote control **SRC** is transported in a cardboard or wooden box together with the vacuum tube lifter **JUMBO**.



The packaging material must be disposed of in accordance with country-specific laws and guidelines. Labeled transport aids and safety mechanisms must be removed.

### 4.3 Removal of the radio remote control **SRC** from transportation packaging

The transportation packaging must be opened carefully!

If using knives or blades to open the packaging, take care not to damage any of the components. First open the cover to allow you to clearly see the position of the radio remote control **SRC**. Now carefully remove the individual components.

#### CAUTION

##### Improper removal of system from the transportation packaging

System damage

- ▶ Do not apply force
- ▶ Observe ESD protective measures

# 5 Installation



Please read section 1.6 (Requirements & instructions for installation, maintenance and operating staff) before starting installation.






High radio traffic within the used radio frequency, such as in areas with generally high radio traffic, can disrupt the radio link. The range can thus be severely restricted.

## 5.1 List of tools

- 1x Phillips head PH2
- 1x flat screwdriver
- 1x wire cutter
- 1x cable stripper
- 1x Allen key SW4 (needed only for retrofitting and maintenance of transmitter JU-E)
- 1x Allen key SW2 (needed only for replacing spare parts of transmitter JU-F 20/35)
- 1x Phillips head SW2 (needed only for replacing spare parts of transmitter JU-F 50)
- 1x Torx wrench T15 (needed only for maintenance of JU-E with solar)

## 5.2 General safety instructions for installation

 <b>DANGER</b>	
 	<p><b>Electric shock resulting from incorrectly connected components</b></p> <p>This can result in death or serious injury from electric shock and fire.</p> <p>▶ All work on electrical equipment must be carried out by qualified electrical specialists only</p> <p>▶ Wear personal protective clothing and use appropriate tools.</p> <p>▶ Suitable fire extinguishing equipment must be on hand!</p>

## 5.3 Receiver installation

- ⇒ Ensure easy access to the receiver.
- ⇒ The different receivers can be mounted on the wall or on the crane column, as available
- ⇒ The mounting must be sufficiently stable
- ⇒ The receiver must be protected against mechanical damage.
- ⇒ For electrical connection, note the corresponding circuit diagram attached.

<b>CAUTION</b>	
	<b>Improper handling of the system</b>
	System damage ► Observe ESD protective measures

## 5.4 Checking the direction of rotation for the vacuum generator

Before the start of operations, check that the blower rotation direction corresponds with that in the separate manual.

## 5.5 Transmitter installation for new device

If you have ordered the radio remote control **SRC** with a new device, the right transmitter will have already been mounted to your vacuum tube lifter **JUMBO**.

## 5.6 Transmitter installation when retrofitting (JU-E)

### Disassembly:

- ⇒ Use a size 4 Allen key to remove four hex bolts on the lower side of the cover of the valve unit. It is not necessary to remove the fifth hex bolt, size 2.5
- ⇒ Remove the upper part of the valve unit cover

### Mounting:

- ⇒ Take the upper part of the valve unit cover with integrated transmitter supplied with the SRC
- ⇒ Set it onto the lower part
- ⇒ Bolt the two halves together using the hex bolts and the size 4 Allen key.







Upper part of cover with transmitter





Operator handle complete

## 5.7 Teaching in a new transmitter

 <b>WARNING</b>	
	<b>Danger due to electric shock</b>
	<p>Power supply must be on while a new transmitter is being taught in. For receivers SB-M/L / EVE, the voltage must be &gt;80 V.</p> <ul style="list-style-type: none"> <li>▶ Only to be carried out by a qualified electrical specialist</li> </ul>

 <b>CAUTION</b>	
	<b>Wrong behavior after teach-in of a new transmitter in an area with several SRC radio systems</b>
	<p>Persons can be injured by uncontrolled gripper movements of the vacuum tube lifter <b>Jumbo</b></p> <ul style="list-style-type: none"> <li>▶ While teaching in a new transmitter, only the desired transmitter may be actuated. Do not actuate any other <b>SRC</b> radio transmitters during this phase. Failure to observe the above instructions can lead to malfunctions. Malfunctions include one transmitter addressing several receivers.</li> </ul>

 <b>CAUTION</b>	
	<b>Switching off the vacuum generator by starting the teach-in procedure</b>
	<p>There is a risk that people in the vicinity could be hit and injured</p> <ul style="list-style-type: none"> <li>▶ The teach-in procedure may not be started during operation.</li> <li>▶ Deposit all picked up loads and switch off the vacuum generator before starting the teach-in procedure.</li> </ul>

<b>CAUTION</b>	
	<b>Improper handling of the system</b>
	<p>System damage through ESD damage to the board</p> <ul style="list-style-type: none"> <li>▶ Observe ESD protective measures during board operation</li> </ul>

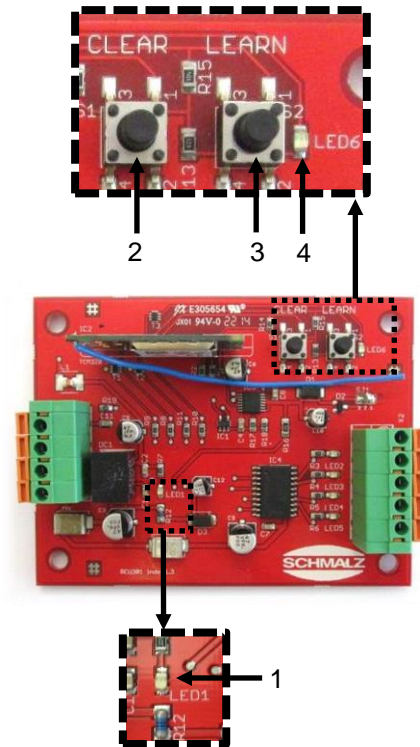
## To teach-in the transmitter, proceed as follows:

The numbers “(x)” in the text have been provided in the following figures for ease of orientation on the printed circuit board

- ⇒ Open the receiver cover using a Phillips head screwdriver PH2
- ⇒ LED1 (1) should now light up. It indicates that the printed circuit board is supplied with voltage

## Teach-in procedure on the receiver printed circuit board as follows:

- ⇒ Press the CLEAR button (2) for a second
- ⇒ LED6 (4) flashes at regular intervals
- ⇒ Actuate the **SRC** radio transmitter to be taught in
- ⇒ LED6 (4) lights up for 3 seconds
- ⇒ LED6 (4) starts to flash again at regular intervals
- ⇒ Press the LEARN (3) button for a second to end the teach-in procedure / the teach-in procedure is ended automatically after about 10 seconds and the transmitter is saved if no further action is taken.



## Teach in an additional transmitter to the same receiver



An **SRC** radio transmitter that has already been taught-in is deleted if it is actuated during this procedure.



When teaching in multiple systems, make sure to do so one by one. Otherwise, the systems might malfunction because senders cannot be clearly assigned to their respective receivers.

- ⇒ To do this, start the teach-in procedure described above by pressing the LEARN (3) button.
- ⇒ LED6 (4) flashes at regular intervals
- ⇒ Actuate the **SRC** radio transmitter to be taught in
- ⇒ LED6 (4) lights up for 3 seconds
- ⇒ LED6 (4) starts to flash again at regular intervals
- ⇒ Press the LEARN (3) button for a second to end the teach-in procedure / the teach-in procedure is ended automatically after about 10 seconds and the transmitter is saved if no further action is taken.
- ⇒ Put the cover of the control box back on.

## 5.8 Mounting Accessories

### 5.8.1 Signal lamp

The signal lamp can be screwed onto a suitable location using the bracket supplied. We recommend a location that the operator can see from the entire working area.



### 5.8.2 Mechanical locking device

The mechanical locking device is screwed directly onto the motor protection or main switch. For further information, read the installation instructions provided.



## 5.9 Functional test for radio remote control **SRC**

Start the vacuum generator using the radio transmitter.  
Also see section 6.3 Starting the vacuum generator.

When the radio system is operated in connection with a vacuum generator, also check the speed control by either using the radio transmitter's foil keys (JU-E Solar with control) or the control dial on the receiver (SB-V with controlling option).

In case of a radio control malfunction, check the installation using section 7 Troubleshooting.





## 6 Operation





The following operating steps must be checked by a qualified specialist before the initial start of operations and section 1.6 (Requirements and instructions for installation, maintenance and operating staff) must be read.

Visible faults must be completely rectified before beginning work.

### 6.1 General Safety Instructions Regarding Operation

 <b>WARNING</b>	
	<p><b>Non-observance of the general safety instructions for normal operation</b></p> <p>This can result in personal injury or damage to the system.</p> <p>▶ The system must only be operated by trained personnel who have read and understood the operating instructions.</p>
 <b>CAUTION</b>	
	<p><b>Uncontrolled gripper movements</b></p> <p>Risk of injury from the gripper jolting upward when the device is switched on.</p> <p>▶ Never bend over the device.</p> <p>▶ Keep your distance from the device (with arms extended).</p> <p>▶ The gripper must not rest on a workpiece prior to activation!</p> <p>▶ Before switching on the device, move the control handle/lever to the “lower” position.</p>

### 6.2 What to do in an emergency

 <b>WARNING</b>	
	<p><b>Risk of injury due to lowering of the tube lifter in the event of a vacuum generator failure or unexpected powering down</b></p> <p>This can result in a crushing injury.</p> <p>▶ If the vacuum in the lift tube collapses, move the control handle/lever to the lift position, immediately if possible, to cause the non-return valve to lower the tube lifter and the load slowly.</p> <p>▶ Stay clear of the danger zone at all times.</p> <p>▶ The operator must sound the alarm immediately in the event of danger.</p> <p>▶ If possible, set down the load safely.</p>



## 6.3 Starting the vacuum generator

⇒ Turn the motor protection or main switch to the “1 ON” position



⇒ Move the control lever (**JUMBOSPRINT**), or actuating lever (**JUMBOFLEX**) completely to the “Release” position and hold to prevent the vacuum tube lifter from jolting upward

⇒ While holding the lever in the “Release” position, press the ON command button



**JUMBOERGO Solar**



**JUMBOERGO Induction**



**JUMBOSPRINT**



**JUMBOFLEX**

## 6.4 Regulating the vacuum generator

### 6.4.1 Transmitter JU-E solar with control

This function is only available for **JUMBOERGO** type vacuum tube lifters in combination with a blower SB-V and the JU-E transmitter with control.

The default setting of the receiver board upon first commissioning is at 75% blower performance. The last blower setting will always be saved upon shutdown and used the next time the device is switched on.

- ⇒ Use the regulation keys on the foil keypad to regulate the suction capacity of the vacuum blower
- ⇒ Clicking the up button will increase the vacuum blower's suction capacity. As a result, the vacuum tube lifter can lift more porous loads or becomes become more agile when handling airtight workpieces.
- ⇒ Clicking the down button will decrease the vacuum blower's suction capacity. As a result, the vacuum tube lifter may no longer be able to lift more porous loads or might become less agile when handling airtight workpieces.
- ⇒ Each push changes the performance level (5 %). Keeping the buttons pressed will automatically browse through the performance levels.
- ⇒ All blower performance levels between 50 % and 100 % can be selected in 5 % steps.

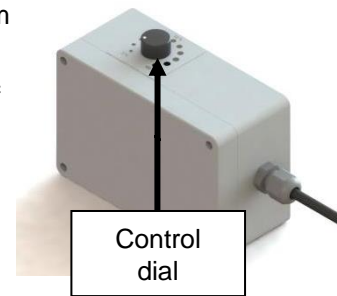


**JUMBOERGO Solar with control**

## 6.4.2 Transmitter JU-S and JU-E induction

This function is available for **JUMBOSPRINT** and **JUMBOERGO** type vacuum tube lifters in combination with a blower SB-V.

- ⇒ Use the control dial on the receiver to regulate the suction capacity of the vacuum blower
- ⇒ The blower output can be continuously regulated by turning the control dial
- ⇒ The following performance levels can be achieved: 0% to 100%



## 6.5 Switching off the vacuum generator

- ⇒ Set down the workpiece
- ⇒ Move the twist grip (**JUMBOERGO**) control lever (**JUMBOSPRINT**), or actuating lever (**JUMBOFLEX**) completely to “Release” and hold
- ⇒ While holding the lever in the “Release” position, press the OFF command button
- ⇒ At the end of each shift, move the motor protection or main switch to the “0 OFF” position, and secure the device from misuse.



**JUMBOERGO Solar**



**JUMBOERGO Induction**



**JUMBOSPRINT**



**JUMBOFLEX**

## 7 Troubleshooting



Please read section 1.6 (Requirements & instructions for installation, maintenance and operating staff) before starting installation

If you cannot switch on or control the vacuum generator, check through following list in order to identify and solve problems.

### 7.1 Radio remote control with unregulated vacuum generator (SB-M/L / EVE)

Problem	Cause	Identifying the cause	Solution
<b>The receiver does not switch on the vacuum generator.</b>	The main switch has not been activated.	Check the switching status of the main switch.	Turn to the "1 On" position
	No power at receiver board	LED1 not illuminated	Check the power supply
	Back-up fuses for the power supply unit faulty	Check fuses next to contactor in receiver	Replace fuses and check power supply
	Fuse for the power supply unit faulty	Check the power supply fuse on top of the power unit in the receiver	Replace fuse and check power supply
	The transmitter has not been taught-in	Radio traffic indicated by flickering LED6 when transmitter is actuated	Perform teach-in procedure
	Transmitter is faulty	The teach-in procedure cannot be completed successfully	If this failure occurs, please contact your Schmalz service partner.
		The button jams (you can hear a cracking sound when you press and release the button)	Replace the transmitter
		The button switches correctly, but does not transmit (you can hear a cracking sound when you press and release the button)	
	Receiver is defective.	There is no reaction after transmitter programming.	If this failure occurs, please contact your Schmalz service partner
		No radio traffic indicated by flickering LED6	
<b>High loading time for transmitter version JU-E Solar</b>	Solar cell does not receive enough light	Window is dirty	Clean foil keypad
		Window is scratched or cannot be cleaned	If this failure occurs, please contact your Schmalz service partner
		Photometry must show at least 300 Lux	Increase workplace lighting
	Backup batteries depleted	Remove batteries and test with new ones	Replace inserted batteries with new ones

Problem	Cause	Identifying the cause	Solution
<b>Low number of transmission cycles for transmitter version JU-E Solar</b>	Completely depleted transmitting board	Increasing number of transmitting cycles after multiple loading cycles	Multiple successive loading cycles
	Solar cell does not receive enough light	See high loading time	See high loading time
	Backup batteries depleted	Remove batteries and test with new ones	Replace inserted batteries with new ones

## 7.2 Radio remote control with frequency-controlled vac. generator (SB-V)

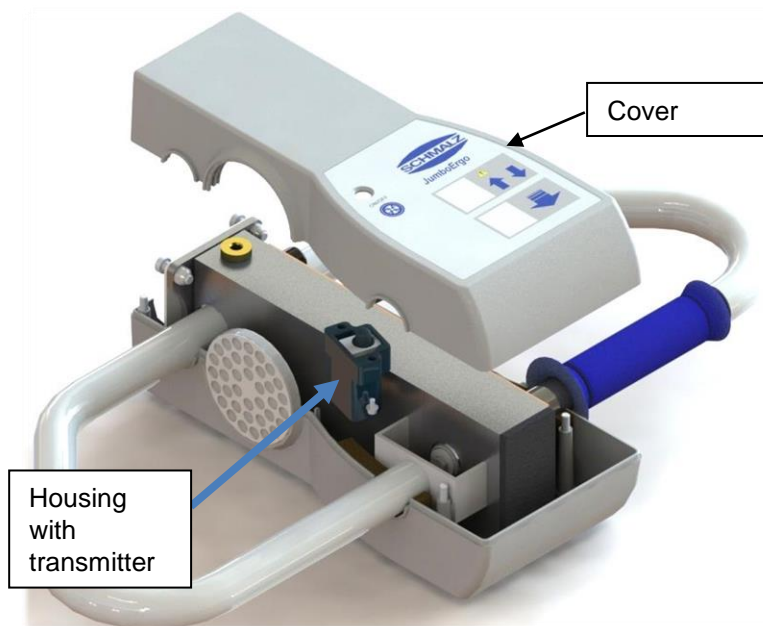
Problem	Cause	Identifying the cause	Solution
<b>The receiver does not switch on the vacuum generator.</b>	The main switch has not been activated.	Check the switching status of the main switch.	Turn to the "1 On" position
	No power at receiver board	LED1 not illuminated	Check the power supply
	Frequency inverter not set	Check position of DIP switches in frequency inverter	Correct DIP switch positions according to circuit diagram
	Receiver board not connected properly	Check wiring	Connect cables correctly according to circuit diagram
	Error in wiring	Check wiring	Repair wiring
	The transmitter has not been taught-in	Radio traffic indicated by flickering LED6 when transmitter is actuated	Perform teach-in procedure
	Transmitter is faulty	The teach-in procedure cannot be completed successfully	If this failure occurs, please contact your Schmalz service partner
		The button jams (you can hear a cracking sound when you press and release the button)	Replace the transmitter
		The button switches correctly, but does not transmit (you can hear a cracking sound when you press and release the button)	
	Receiver is defective.	There is no reaction after transmitter programming.	If this failure occurs, please contact your Schmalz service partner
		No radio traffic indicated by flickering LED6	
<b>Vacuum generator cannot be controlled</b>	Frequency inverter not set	Check position of DIP switches in frequency inverter	Correct DIP switch positions according to circuit diagram
	Receiver board not connected properly	Check wiring	Connect cables correctly according to circuit diagram
	Error in wiring	Check wiring	Repair wiring

Problem	Cause	Identifying the cause	Solution
<b>High loading time for transmitter version JU-E Solar</b>	Solar cell does not receive enough light	Window is dirty	Clean foil keypad
		Window is scratched or cannot be cleaned	If this failure occurs, please contact your Schmalz service partner
		Photometry must show at least 300 Lux	Increase workplace lighting
	Backup batteries depleted	Remove batteries and test with new ones	Replace inserted batteries with new ones
<b>Low number of transmission cycles for transmitter version JU-E Solar</b>	Completely depleted transmitting board	Increasing number of transmitting cycles after multiple loading cycles	Multiple successive loading cycles
	Solar cell does not receive enough light	See high loading time	See high loading time
	Backup batteries depleted	Remove batteries and test with new ones	Replace inserted batteries with new ones

## 7.3 Installation of replacement transmitter (JU-E Induction)

### Disassembly:

- ⇒ Use a size 4 Allen key to remove four hex bolts on the lower side of the cover of the valve unit. It is not necessary to remove the fifth hex bolt, size 2.5
- ⇒ Remove the upper part of the valve unit cover
- ⇒ Using a 2.5 mm Allen key, undo both inner hexagon socket screws that hold the inner housing
- ⇒ Remove the housing together with the push-button
- ⇒ Remove the push-button and the plate below from the housing
- ⇒ You can replace the push-button as necessary, or if it is showing signs of wear
- ⇒ Pull the transmitter module out of the housing and replace it with a new one



### CAUTION

#### Damage to components through static electricity

Fatal damage to electronic components through static electricity

- ▶ ESD protective clothing must be worn

### Mounting:

- ⇒ Perform the steps in the opposite order as during disassembly
- ⇒ Now perform the receiver teach-in procedure described in section 5.7.



Operator handle complete

## 7.4 Installation of replacement transmitter (JU-E Solar)

The transmitter can only be replaced as a whole. Individual components cannot be replaced due to the sensitive nature of the electronics.

### Disassembly:

- ⇒ Use a size 4 Allen key to remove four hex bolts on the lower side of the cover of the valve unit. It is not necessary to remove the fifth hex bolt, size 2.5
- ⇒ Remove the upper part of the valve unit cover



Upper part of cover  
with transmitter

### Mounting:

- ⇒ Perform the steps in the opposite order as during disassembly
- ⇒ Now perform the receiver teach-in procedure described in section 5.7.

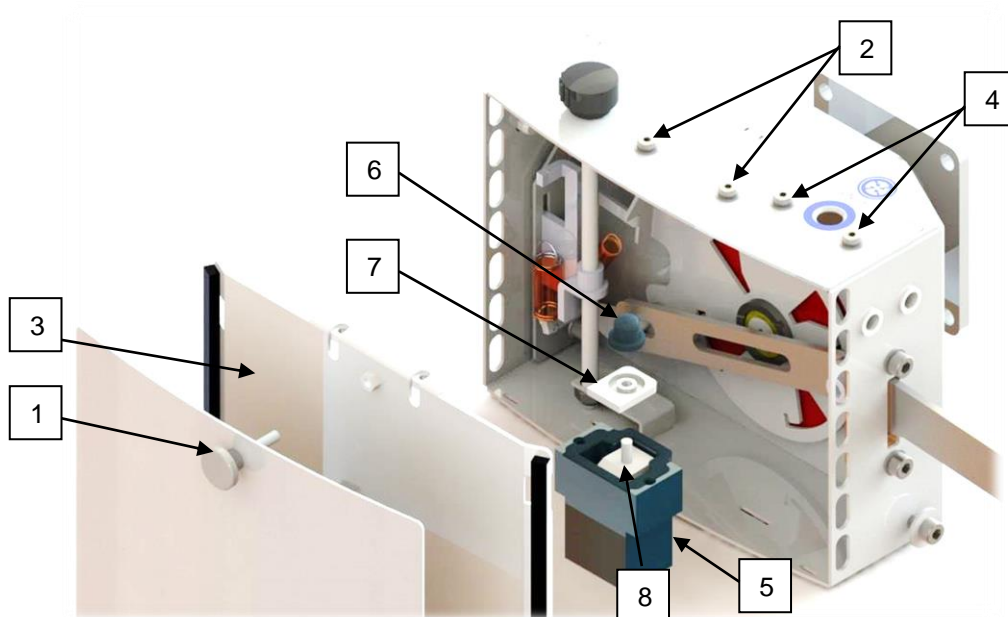


Operator handle complete

## 7.5 Installation of replacement transmitter (JU-S)

### Disassembly:

- ⇒ Remove the front cover by unscrewing the knurled screw (1)
- ⇒ Remove the filter fleece (not illustrated on below image)
- ⇒ using a 2.5 mm Allen key, undo both central inner hexagon socket screws (2) on the top of the valve unit
- ⇒ Tilt the perforated plate (3) outward to the front and remove it
- ⇒ Using a 2.5 mm Allen key, undo both left inner hexagon socket screws (4) that hold the transmitter housing
- ⇒ Remove the housing (5) together with the push-button (6)
- ⇒ Remove the push-button (6) and the plate below (7) from the housing (5)
- ⇒ You can replace the push-button as necessary, or if it is showing signs of wear
- ⇒ Pull the transmitter assembly (8) out of the housing and replace it with a new one



### CAUTION

#### Damage to components through static electricity

Fatal damage to electronic components through static electricity

- ▶ ESD protective clothing must be worn

### Mounting:

- ⇒ Perform the steps in the opposite order as during disassembly
- ⇒ Now perform the receiver teach-in procedure described in section 5.7.

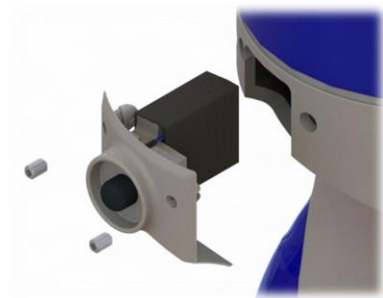




## 7.6 Installation of replacement transmitter (JU-F 20/35)

### Disassembly:

- ⇒ Using a 2 mm Allen key, completely remove both inner hexagon setscrews to the right and left of the push-button
- ⇒ Insert a flathead screwdriver between the transmitter and the operator handle near the screw holes
- ⇒ You can release and pull the transmitter out by rotating the screwdriver or by levering it with the screwdriver



In case transmitter clips break off, remove the fragments from the operator handle. If you should not do this, operator handle malfunctions may result.

### CAUTION

#### Damage to components through static electricity

Fatal damage to electronic components through static electricity

- ▶ ESD protective clothing must be worn

### Mounting:

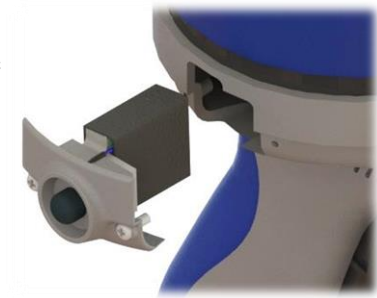
- ⇒ Place the clips on the corresponding holes again
- ⇒ Press the transmitter clips completely into the holes
- ⇒ The transmitter is now positioned flush on the operator handle
- ⇒ Screw the set screws into the holes on the transmitter so that they are flush
- ⇒ Now perform the receiver teach-in procedure described in section 5.7.



## 7.7 Installation of replacement transmitter (JU-F 27/50)

### Disassembly:

- ⇒ Completely remove both fillister head screws to the right and left of the push-button using a PZ 1 screwdriver
- ⇒ Pull the transmitter out



### CAUTION

#### Damage to components through static electricity

Fatal damage to electronic components through static electricity

- ▶ ESD protective clothing must be worn

### Mounting:

- ⇒ Insert the new transmitter in the recess
- ⇒ Position the holes over one another
- ⇒ Screw the transmitter into place again using the fillister head screws
- ⇒ Gently tighten the screws. The screws may otherwise be stripped or break
- ⇒ Now perform the receiver teach-in procedure described in section 5.7.





## 8 Maintenance

### 8.1 General notes



Please read section 1.6 (Requirements & instructions for installation, maintenance and operating staff) before starting maintenance.

 <b>WARNING</b>	
	<p><b>Risk of injury due to system maintenance by untrained personnel</b></p> <p>This can result in serious injury</p> <p>► The system must only be maintained by trained personnel who have read and understood the operating instructions.</p>

### 8.2 Cleaning

#### JU-E solar type transmitters

Clean foil keypad or solar cell window from sticking objects and dirt at least once a week in order to preserve maximum capacity of the solar cell.

Clean the button using a slightly dampened cloth with soap and warm water, and then allow it to dry at room temperature.

CAUTION	
	<p><b>Damage to components through water</b></p> <p>Fatal damage to electronic components through ingress of water</p> <p>► During cleaning, make sure that <b>no water gets into the electronics.</b></p>

Under no circumstances should solvents such as trichloroethylene, carbon tetrachloride, hydrocarbons, or vinegar-based cleaning products be used for cleaning. The use of sharp objects, metal brushes, sand paper, etc. is also prohibited.

#### JU-F, JU-S and JU-E Induction type transmitters

Clean clinging matter and dirt from the button and the surrounding area at least once a month.

Clean the button using a slightly dampened cloth with soap and warm water, and then allow it to dry at room temperature.

CAUTION	
	<p><b>Damage to components through water</b></p> <p>Fatal damage to electronic components through ingress of water</p> <p>► During cleaning, make sure that <b>no water gets into the electronics.</b></p>

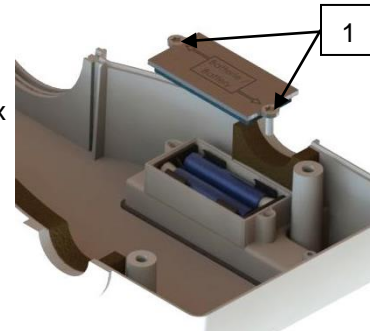
Under no circumstances should solvents such as trichloroethylene, carbon tetrachloride, hydrocarbons, or vinegar-based cleaning products be used for cleaning. The use of sharp objects, metal brushes, sand paper, etc. is also prohibited.

### 8.3 Changing batteries for JU-E solar type transmitters

<b>CAUTION</b>	
	<p><b>Damage to components through leaked batteries</b></p> <p>Fatal damage to electronic components through battery acid</p> <p>► The backup battery must be changed every two years in order to prevent damage to components and to ensure continuous performance.</p>

#### Dismantling

- ⇒ Use a size 4 Allen key to remove four hex bolts on the lower side of the cover of the valve unit. It is not necessary to remove the fifth hex bolt, size 2.5
- ⇒ Remove the upper part of the cover with the foil keypad.
- ⇒ Place the cover, with the foil keypad facing down, on a clean, soft surface to prevent damage.



- ⇒ Remove both Torx screws (1) on the cover using a Torx wrench T15 to open the battery housing.
- ⇒ Now you can remove the cover and replace the depleted batteries.



When replacing the batteries, use only VARTA type 04903 (AAA HIGH ENERGY) type batteries. Using other battery types or manufacturers can lead to malfunctions or damage.

#### Mounting

<b>CAUTION</b>	
	<p><b>Damage to components through excessive tightening torques</b></p> <p>System damage</p> <p>► Gently tighten the screws. Otherwise, you can damage parts of the housing.</p>

<b>CAUTION</b>	
	<p><b>Damage to components through polarity reversal</b></p> <p>System damage</p> <p>► Insert the batteries into the battery housing in the correct position. The negative side of the battery must face the contact spring.</p>

- ⇒ Insert the new batteries into the holder
- ⇒ You can now return the cover and Torx screws (1).

## 9 Decommissioning and disposal

### 9.1 Decommissioning

This device may only be decommissioned by qualified specialist personnel.

1. Disconnect the supply line to the receiver of the radio remote control **SRC** from the power supply
2. Electrically disconnect the receiver
3. Mechanically disassemble the receiver
4. All transmitter versions can remain on the vacuum tube lifter. The transmitter JU-F can only be disassembled by destroying it.

### 9.2 Disposal

Only qualified specialist personal may prepare the radio remote control **SRC** for disposal.

- ⇒ Shutting down the radio remote control **SRC** (see 9.1)
- ⇒ Completely disassemble the transmitter and receiver. Separate the materials and place them in the appropriate disposal receptacles.

For proper disposal, please contact a company specializing in the disposal of technical goods and instruct them to observe the current disposal and environmental regulations.

The manufacturer of the device will be happy to assist you in finding a suitable company.

## Schmalz Services



### Global contact

Our sales network of local field representatives, international subsidiaries and trade partners ensures quick and competent information and consultation in more than 50 countries worldwide.

 [www.schmalz.com/salesnetwork](http://www.schmalz.com/salesnetwork)

---



### Online documentation

Conveniently download catalogs, operating instructions and CAD data and get comprehensive information about our products and services.

[www.schmalz.com/dokumentationen](http://www.schmalz.com/dokumentationen)




### “How-to” videos

In short, easy-to-understand videos we explain the comprehensive functions offered by our products. Take a look, it's worth it!

 [www.schmalz.com/gewusst-wie](http://www.schmalz.com/gewusst-wie)

---

Further services ranging from consultation to training can be found at

 [www.schmalz.com/services](http://www.schmalz.com/services)