

Push-button Gen 1 for control grips

Kit R908356049



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The cover shows an example application. The product delivered may differ from the image on the cover.

The original repair manual was created in the English language.

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1 About this documentation

1.1 Validity of the documentation

This documentation is valid for the following products:

- Gray Push-buttons Gen 1

This documentation is intended for machine/system manufacturers, assemblers and service engineers.

- ▶ Read this documentation completely and, in particular, the chapter 2 “Safety instructions” and the chapter 3 “General instructions on property and product damage” in the related instruction manual 29696-01-B before you start working with the product.

1.2 Required and supplementary documentation




- ▶ Only commission the product if the documentation marked with the book symbol  is available to you and you have understood and observed it.

Table 1: Required and supplementary documentation

Title	Document number	Document type
 Electronic joysticks and control grips Contains important information on the safe and proper transport, assembly, commissioning, maintenance and removal of the 4THE5 joystick and EC control grip.	29696-01-B	Instruction manual
 Technical data sheet Contains the permissible technical data. Please bear in mind that different technical data sheets apply depending on the version: Control components – Push-button Gen 1 Ergonomic control grip EC4000 Ergonomic control grip EC3500+ Ergonomic control grip EC3000+ Ergonomic control grip EC2000+ Ergonomic control grip EC1000+	64078 64091 64090 64089 64088 64086	Data sheet



For related documentation on the assembly and repair, please refer to the above-mentioned manual and, if necessary, to

www.boschrexroth.com/mobile-hydraulics-catalog.

1.3 Representation of information

Uniform safety instructions, symbols, terms and abbreviations are used throughout this documentation to ensure safe and proper use of the product. For clarification, they are explained in the sections below.

1.3.1 Safety instructions




This documentation contains safety instructions in chapter 2 “Safety instructions” on page 6 and in chapter 3 “General instructions on property damage and product damage” on page 6, as well as before a sequence of actions or an instruction for action involving a risk of personal injury and property damage. Always follow the measures for danger prevention associated with the use of this product.

Safety instructions are set out as follows:

 SIGNAL WORD
<p>Type and source of danger! Consequences of noncompliance ► Danger prevention measures</p>

- **Warning sign:** draws attention to the danger
- **Signal word:** identifies the degree of the danger
- **Type and source of danger:** indicates the type and source of the danger
- **Consequences:** describes what occurs if safety instructions are disregarded
- **Precautions:** states how the danger can be avoided


Table 2: Hazard classes as defined in ANSI Z535.6

Warning sign, signal word	Meaning
 DANGER	Identifies a dangerous situation that will result in death or serious injury if it is not avoided.
 WARNING	Identifies a dangerous situation that may result in death or serious injury if it is not avoided.
 CAUTION	Identifies a dangerous situation that may result in minor to moderate injury if it is not avoided.
NOTICE	Property damage: The product or surrounding area may be damaged.

1.3.2 Symbols

The following symbols indicate notices that are not safety-relevant but increase understanding of the documentation.

Table 3: Meaning of symbols

Symbol	Meaning
	If this information is disregarded, the product cannot be used and/or operated to its full extent.
►	Single, independent action
1. 2. 3.	Numbered instruction: The numbers indicate that the actions must be completed in order.

1.3.3 Designations

This documentation uses the following designations:

Table 4: Designations

Designation	Meaning
4THE5	Electronic joystick
EC...	Ergonomic control grip
DT04-06P	Connector type

2 Safety instructions

- ▶ Always follow all safety instructions in the instruction manual 29696-01-B.

WARNING

Danger due to malfunctions!

Despite all pre-cautions taken to avoid damages when replacing the button, the specification of the control grip (mechanical behavior, electrical behavior, aspect, ergonomics etc.) can be altered by this operation.

- ▶ Bosch Rexroth isn't responsible for the quality of the operation and the effects on the product.
- ▶ The choice of the splicing connector type, process of implementation and testing is under the customer responsibility.
- ▶ Wrong splicing connector and/or wrong splicing process can lead to unexpected movement of the machine.

3 General instructions on property damage and product damage

- ▶ Always follow all instructions in the instruction manual 29696-01-B.

NOTICE

Improper cleaning

Product can be damaged!

- ▶ Plug all openings with appropriate protective equipment to prevent cleaning agents from entering the joystick.
- ▶ Never use solvents or aggressive cleaning agents. Clean the joystick using only water and a plastic cleaning agent if necessary.
- ▶ Do not direct the high-pressure cleaner to sensitive components, e.g. joystick base, rubber parts (bellows), electric connections (solenoids, sensors) and actuation elements.
- ▶ Use fibre-free cleaning cloths for cleaning.

Environmental pollution due to incorrect disposal!

Careless disposal of the product and the packaging material could lead to environmental pollution!

- ▶ Dispose of the product and packaging in accordance with the national regulations in your country.

4 Scope of delivery

The Spare part kit **R908356049** is including:

- 10 pcs of push-button 1G (SH), high current version with DEUTSCH pins assembled with crimping, special traceability with a color point on the button shell.



5 Repair



The following steps and recommendations must be followed to minimize the risks of product damage done during the repair.

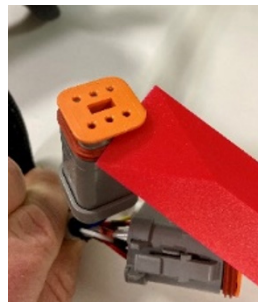
5.1 Replacement of the push-button

5.1.1 Replacement one-by-one of the push-button without wire cut

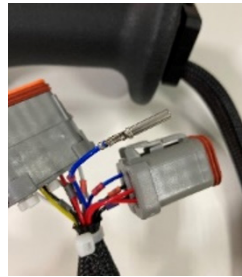
Connector disconnection

NOTICE! The wedge must not be damaged or deformed.

1. Remove the wedge from the connector using a flat tool.



2. Remove the 2 pins using a flat screwdriver.
PIN numbers according to your product drawing.



Opening the control grip face

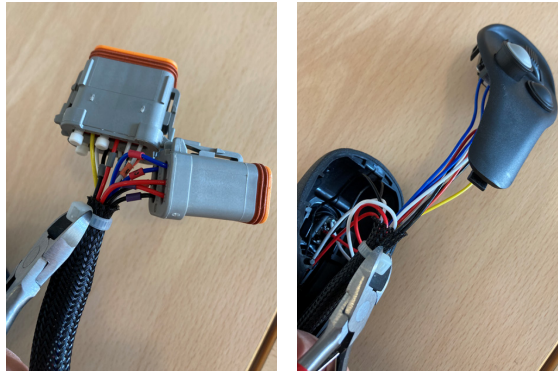
NOTICE! Do not damage components and wires inside the grip when opening the face. Fixation plastic clip can be damaged by opening the grip, resulting in a popping face.

3. Unplug the face using a flat large tool from the top right corner of the grip.

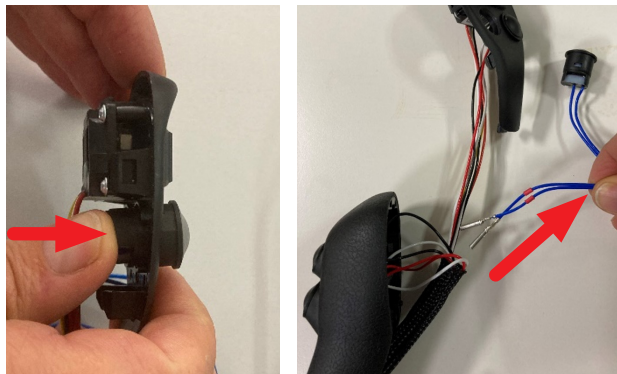


Removal of the ties

4. Cut the tie on the connector side with a cutting tool.
5. Cut the tie on the face side with a cutting tool.

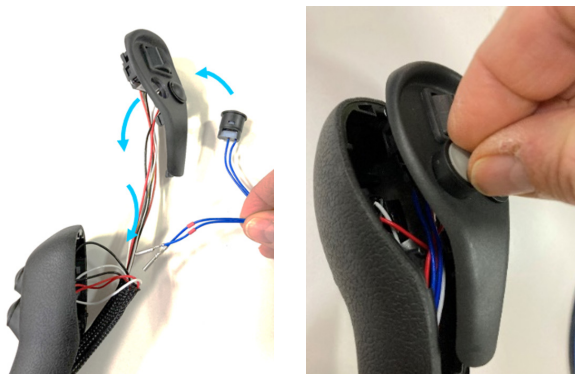
**Removal of the damaged switch**

6. Extract the damaged button by pushing the back of the button.
7. Pull the wires one by one from the harness.

**Insertion of the new button and closing**

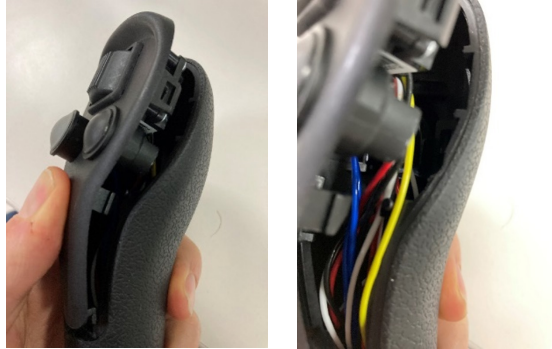
NOTICE! Risk of button movement in the fixation hole.

8. Insert the new button through the hole. Make sure it is fitting well, and pass the wires in the harness one by one to get through the grip to the connector.
9. Push the button with two fingers to avoid a miss alignment of the button in the shell.



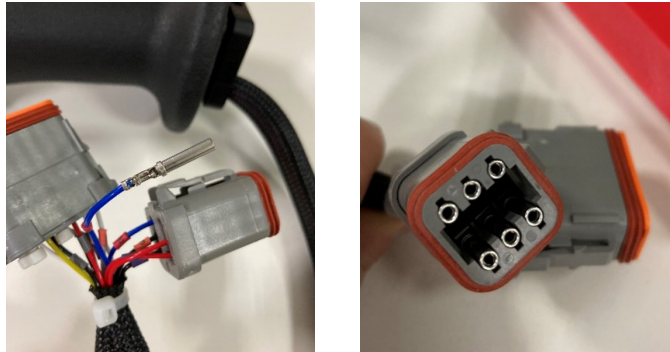
10. Assemble a new tie to make sure the wires are fitting together.

NOTICE! Risk of wire cut or wire insertion to the roller cap creating friction during the movement.



Connector reconnection **NOTICE!** Wrong connection creating a missing signal.

11. Insert the pins in the connector position previously disconnected using a small flat screwdriver to push the pin.
12. Place back the edge cap.



13. Assemble a new tie to make sure the wires are fitting together.

5.1.2 Replacement of one or multiple push-buttons with wire cut and splicing

1. Follow the same control grip opening process as in chapter 5.1.1.

WARNING! Wrong wire connection and damage could lead to potential wrong component behavior and unwanted machine movements!

2. Proceed the button rework process one push-button after each other, to avoid a mix of wires connection.
3. Cut the wires of the push-button to be changed at a distance that will allow an easy splicing implementation on the new switch without creating bad interferences with other components.
4. Proceed to the splicing, allowing a good mechanical strength, IP protection and electrical reliability.
5. Follow the same control grip enclosing process as in chapter 5.1.1 to limit the risk of wire brake and component interference.

5.2 Roller movement control

- ▶ Make sure no friction or wires are disturbing the movement and the correct return to neutral behavior of the roller.



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