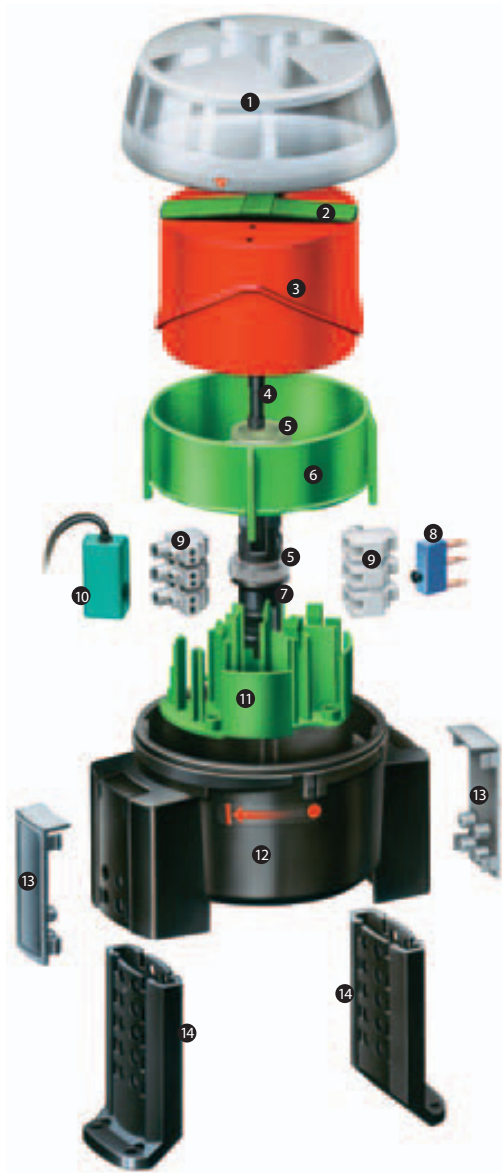


## Content

|   |   |
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| Legend  | 1 |
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| Mounting of the SWITCHmaster® Adjusting of the cams | 5 |
| Technical data                                      | 6 |
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## 1. Legend



- 1 Klarsichtdeckel mit Bajonett-Verschluss  
Transparent cap with bayonet catch
- 2 Grüne Markierung  
Green marks
- 3 Rotring  
Red ring
- 4 Einstellwerkzeug  
Adjusting tool
- 5 Universal-Schaltnocken  
Universal cams
- 6 Grünring  
Green ring
- 7 Nockenwelle  
Stem
- 8 Mikroschalter  
Micro switch
- 9 Klemmleisten  
Terminal strip
- 10 Induktiv-Schalter  
Inductive switch
- 11 Montageplatte  
Mounting plate
- 12 Gehäuse  
Casing
- 13 Clips  
Clips
- 14 Füße  
Feet

## 2. Sicherheitshinweise

Read this mounting instructions before initiation. The warranty claim will expire in case of not considering this instruction.

- » The SWITCHmaster® is designed for use as optical display and electric position indicator for actuators, which enable a valve to perform a rated pivoting angle of 90°.
- » Incorrect handling and non-adherence to the rules of usage lead to the total and irrevocable loss of cover provided in the warranty.
- » Check the correctness of the technical parameters, especially the temperature and voltage values before mounting and commissioning SWITCHmaster®.
- » In explosion-protected areas connect SWITCHmaster® only with intrinsically safe circuits.
- » When working on the SWITCHmaster®, always
  - isolate the compressed air supply and
  - isolate the voltage supply.
- » Exchange the unit immediately, if there is any damage to the unit which could permit the entry of moisture into the unit.
- » In explosion-protected areas, it may be necessary to provide direct sunlight protection, to shield the surface of the unit from the overheating effects of too much direct sunlight.
- » Clean the SWITCHmaster® only with cleansing agents which do not attack the SWITCHmaster® material. Do not use scouring agents, alcohol or chemical thinners..

## 3. General information

This instruction shall help the user to make the mounting of the SWITCHmaster® easier as well as the adjusting of the cams. Thereby the position indicator can be used optimal.

**1**

### A. Packaging contents

- 1 complete SWITCHmaster® with 2 feet 1 bag with
  - » 2 clips: to arrest the feet
  - » 4 screws: to attach the feet to the actuator
  - » 1 mounting and cam adjusting instruction

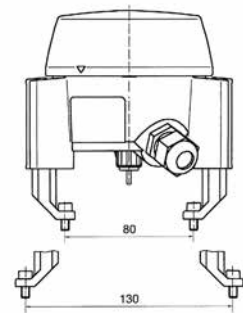
**2**

### B. Mounting of the feet

- » Pull out both feet from the SWITCHmaster® casing.

**3**

- » Before mounting consider inside or outside position of the feet:



inside position: 80 mm  
outside position: 130 mm

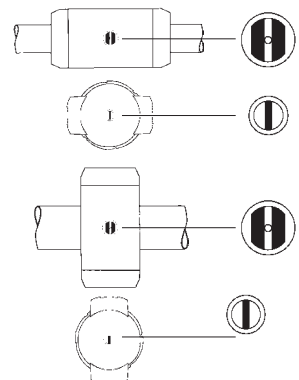
**4**

- After deciding the position of the feet, mount the feet with the enclosed self-locking screws.

Mounting of SWITCHmaster® onto actuator with valve 2/2-way valve: closed

In case of mounting the actuator in direction of pipeline:  
Turn the double D of the stem of SWITCHmaster® into position as shown in the sketch.

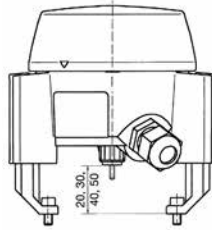
In case of mounting the actuator in cross-direction of pipeline:  
Turn the double D of the stem of SWITCHmaster® into position as shown in the sketch.



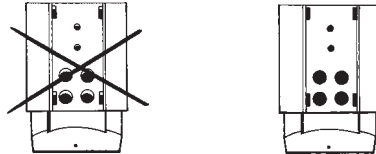
- 5** Push the SWITCHmaster® over both feet until the double-D of the cam dips into the slot of the shaft:  
When lock-in position of the feet is reached, do not push any further!

**+**  
**6**

The projection of the shaft can be 20, 30, 40 or 50 mm.



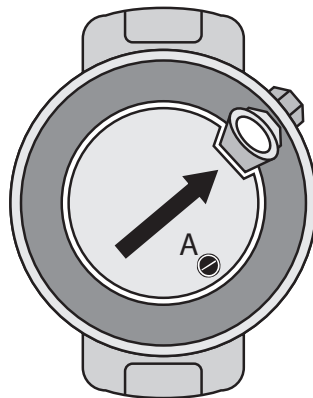
- 7** Press the clips into the lateral openings until they lock into place. The lateral 4 round openings on each side of the foot and foot guide have to suit exactly on top of each other.



## C. Electrical connection

**Only an electrical expert is allowed to connect the unit!**

- 8** Take off the transparent cap.
- 9** Lift the red and green ring from the casing.
- 10** Pull out the mounting plate vertically up.
- 11** Unscrew the coupling ring of the cable gland and lead-in of the trip line.
- 12** Connection of the trip line according to the wiring diagram on the mounting plate.
- 13** Re-lock the mounting plate. The recess has to be aligned towards the fitting (see drawing on the right). Tight the fastening screw (A). Lay out the cable, so that the movement of the red/green rings is not restricted in any way (10 mm distance from black casing). Tighten firmly the coupling ring of the cable gland.



## D. Adjusting of the cams

for electrical position indication.

### Attention!!

The valve and actuator should be adjusted - in case of actuators with adjustable pivoting angle - before adjusting the cams.

- » A suitable test control unit is necessary for adjusting. (e.g. our Uni-SwitCheck).
- » Bring the SWITCHmaster® into neutral switching position!

The adjusting tool (E) has to be used for adjusting the reversing point.

- » Fig. A: The lower cam can be adjusted, if the tool is inserted until mark 1: Delivery condition!
- » Fig. B: For adjusting the upper cam the adjusting tool has to insert into the opposite recess until mark 2 is reached

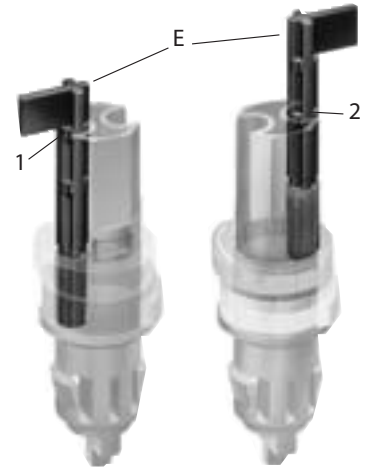


Abb. A:  
Einstellen der  
unteren Nocke

Abb. B:  
Einstellen der  
oberen Nocke

Fig. A

Fig. B

### Allocation of the cams and switches

((arbitrary appointment of the allocation)

- » The upper cam actuates the upper placed switch for the „Open-position“ of the valve. (terminal strip 1-3)
- » The lower cam actuates the lower placed switch for the „Closed-position“. (terminal strip 4-6)..

### Adjusting of the „OPEN- and CLOSED-position“ according to the matrix

Please adjust the lower cam at first, and than the upper cam.

### Attention!!

In the adjusting instruction (page 20/21) it is assumed, that the valve (viewed from top) will be closed clockwise!

### After position adjusting...

- » ... the auxiliary tool is not allowed to turn any longer!
- » ...pull out the auxiliary tool upwards and insert it in the lower recess of the stem, so that the „flag“ points to the opposite recess!



3. Adjusting of the cams

| Micro switches     | operated switching   |
|--------------------|--|
| Inductive switches | damped switching   |
| Valve              |  |
| „CLOSED“           |  |
| „OPEN“             |  |
| 2-fold             | <p>1. Close the valve.<br/>2. Insert the adjusting tool according to fig. A<br/>3a The switch is ( I ) operated/damped: Turn the adjusting tool clockwise until the switch is ( II ) no longer operated/ damped. Keep on turning until ( III ) switching point is reached.<br/>3b The switch is not operated/damped: ( II ) Turn the adjusting tool clockwise until switching point is reached. ( III )</p>            |
| 1-fold „Open“      | <p>1. Open the valve.<br/>2. Insert the adjusting tool according to fig. B<br/>3a The switch is already operated/damped: ( IV ) Turn the adjusting tool anticlockwise until the switch is no longer ( V ) actuated/damped. Keep on turning until ( VI ) switching point is reached.<br/>3b The switch is not operated/damped: ( V ) Turn the adjusting tool anticlockwise until switching point is reached. ( VI )</p> |
| 1-fold „Closed“    | <p>1. Close the valve.<br/>2. Insert the adjusting tool according to fig. A<br/>3a The switch is operated/damped: ( I ) Turn the adjusting tool clockwise until the switch is no longer operated/damped. Keep on turning until ( II ) switching point is reached. ( III )<br/>3b The switch is not operated/damped: ( II ) Turn the adjusting tool clockwise until switching point is reached. ( III )</p>             |

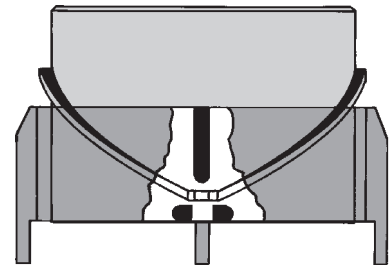
E. Positioning of the optical indication

2/2-way valve: closed

3/2-way valve: switching position is random.

Please control:

Red and green ring has to be placed as shown.

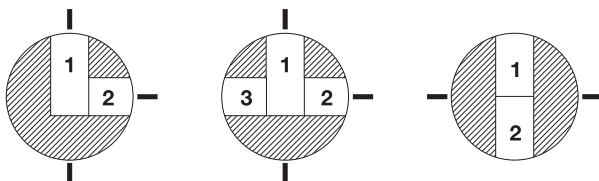


14

- » Take hold the red and green ring as shown.
- » Take care that lower flanges of red and green ring are flush.
- » Align the inner Double-D of the red ring onto the corresponding Double-D of the cam.
- » Push the 4 gates of the green ring into the guides of the casing..

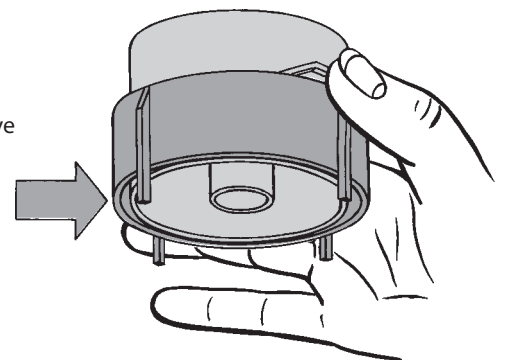
15

Check the green marks and install them so that they show the flow path of the valve



The lateral visible colors of the red or green ring show:

- green = 2/2-way valve open
- red = 2/2-way valve closed



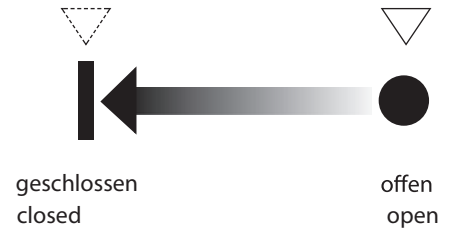
Design and materials can be changed without notice. Errors and omissions excepted

## 16 F. Closing of the transparent cap

Adjust the red arrow shown on the transparent cap to the marking ● on the casing:

1. press down the cap...

2. ...and turn until the red arrow is showing on the marking I



### General Data

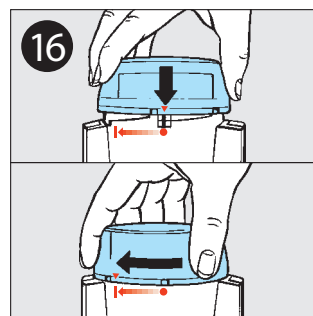
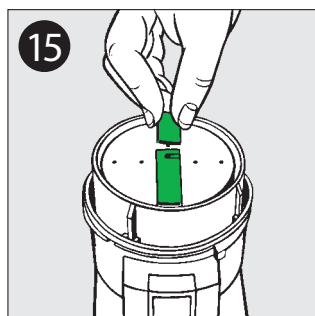
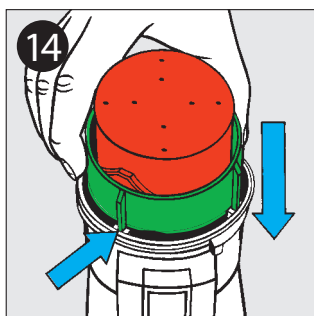
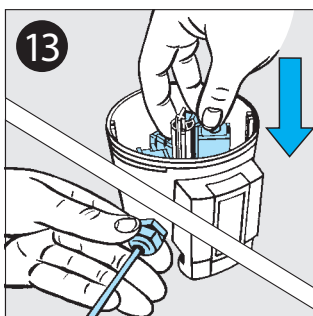
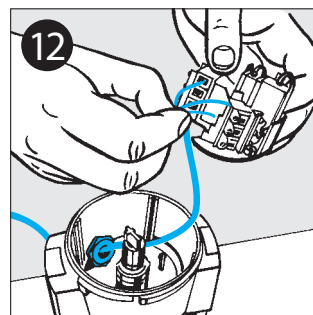
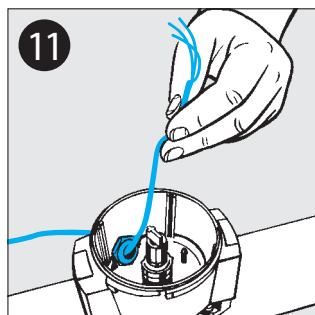
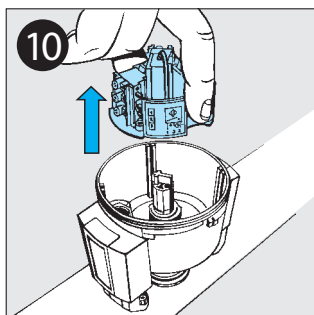
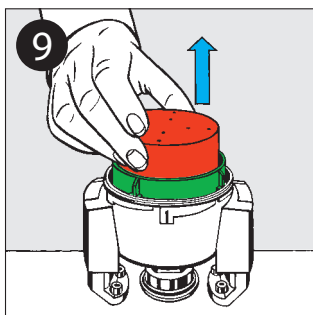
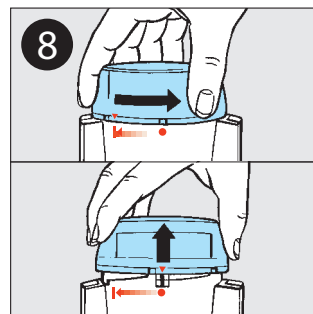
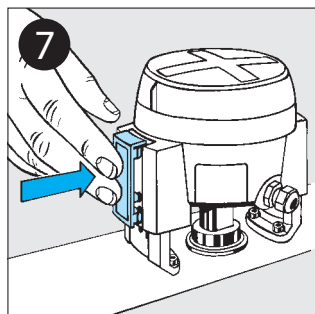
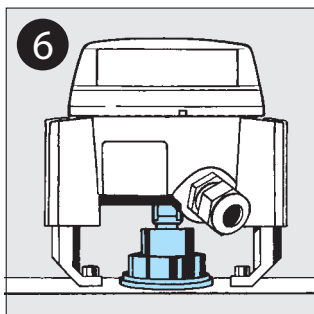
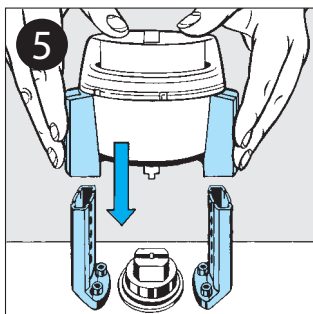
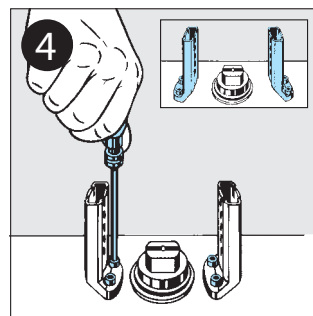
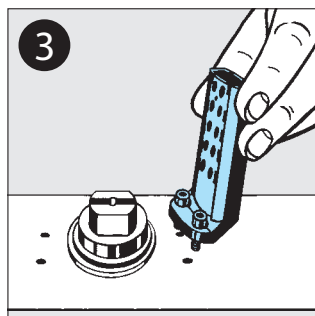
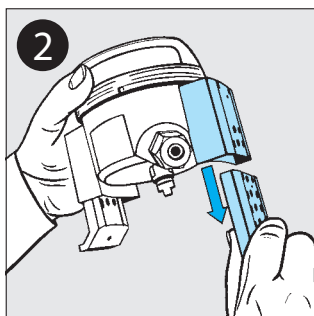
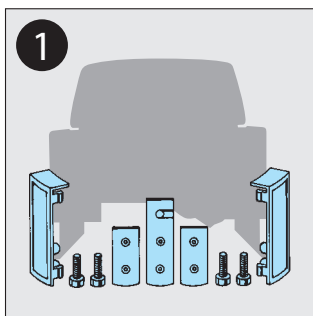
|                                |  |
|--------------------------------|--|
| Mounting measurements          | According to VDI/VDE 3845 for flange facing 30 x 80 and 30 x 130 (see dimensioned drawing) |
| <b>Materials</b>               |  |
| - Cap                          | Lexan 143 R (PC)   |
| - Stem                         | Delrin (POM)   |
| - Seals                        | Perbunan (NBR)   |
| - Cable gland/nut              | Polyamid (PA)  |
| - Other parts of plastic       | Bayblend T45, (ABS + PC)   |
| - Hexagon socket screw         | Stainless steel AISI 304   |
| Protection                     | IP67, VDE 0470/EN 60529  |
| Temperature range              | -20 °C to +70 °C   |
| Indication and switching range | 0°...90° pivoting angle  |
| Cable gland                    | With strain relief,<br>Clamp range 7-13 mm   |
| Cable                          | Ø 7-13 mm, max. 2,5 mm <sup>2</sup>  |
| Weight                         | ca. 0,325 kg   |

### SWITCHMASTER Versions

|  |  |
|--|--|
| Typ M, Microswitches   | Typ SM - M2 (Signal „Open + Close“)  |
| Voltage range  | 4 V/DC - 250 V/DC  |
| Current range  | 1mA - 5A   |
| Switches functions   | Change over contact, contacts old plated   |
| Typ D, inductive sensor, direct switching, three-wire system, with LED   | Typ SM - D2 (Signal „Open + Close“)<br>Typ SM - DA (Signal „Open“)<br>Typ SM - DZ (Signal „Close“) |
| Voltage range  | 10 - 30 V/DC   |
| Current range  | 100 mA   |
| Switches functions   | puls schaltend, PNP Schließer, in Endlage bedämpft oder unbedämpft                                 |
| Typ N, inductive sensor, Namur EN 60947-5-6, with LED, explosion-proofed | Typ SM - N2 (Signal „Open + Close“)<br>Typ SM - NA (Signal „Open“)<br>Typ SM - NZ (Signal „Close“) |
| Voltage supply   | rated voltage 8 V/DC, max. 16 V/DC   |
| Output current   | damped <= 1 mA; undamped >= 3 mA   |
| Switching function   | damped or undamped in end-position   |
| Switching power  | max. 34 mW   |

### ATEX- Version (different from „general data“)

|               |   |
|---------------|---|
| Material      | ATEX- Series                                    |
| Cover         | Lexan 143R CPC antistatic coated                |
| Casting, feet | Bayblend T45 (ABS + PC) antistatic coated       |
| ATEX- Name    | EX II 2 G EEx ia IIB T6<br>-20°C C < Ta < +70°C |



Design and materials can be changed without notice. Errors and omissions excepted