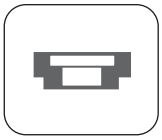
Installation and Operating Instructions

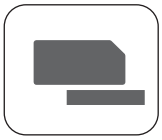
Suspension System

SYSPEND 180-MAX

Component pictograms


Narrow Adapter


Flange Coupling

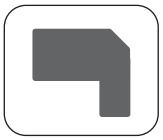

Flange Elbow Coupling

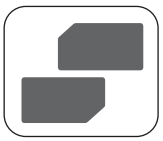

Vertical Panel Coupling


Horizontal Panel Coupling

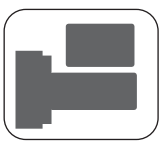

Elbow

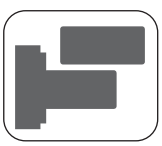

Rotatable Elbow

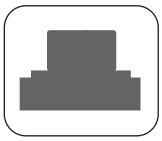

Reduction Elbow

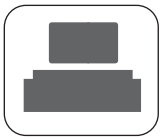

Intermediate joint

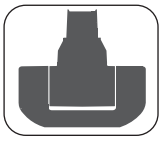

Set-Up Joint


Vertical Wall Joint

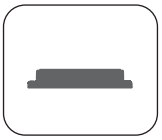

Horizontal Wall Joint


Wall Flange


Rotary Base

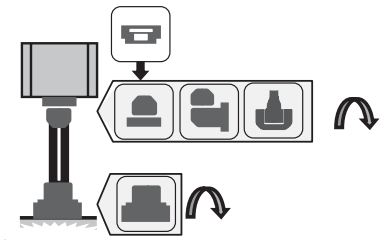

Turn / Tift coupling S /

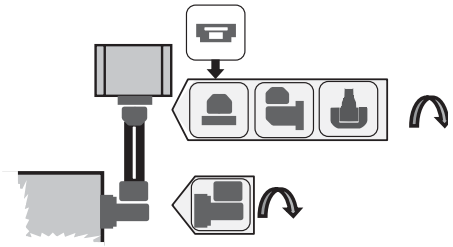

Turn / Tift coupling W /

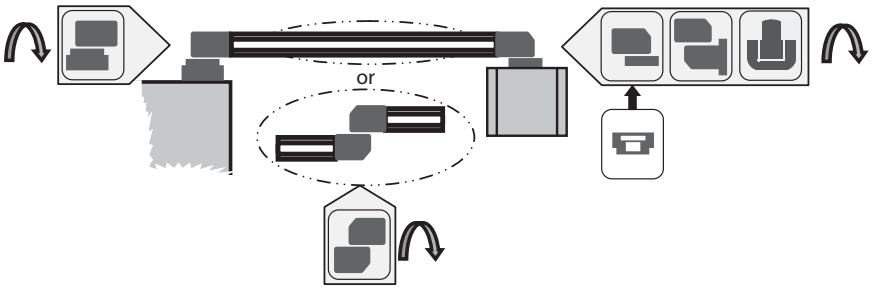

Adapter plate
VESA 75/100 /

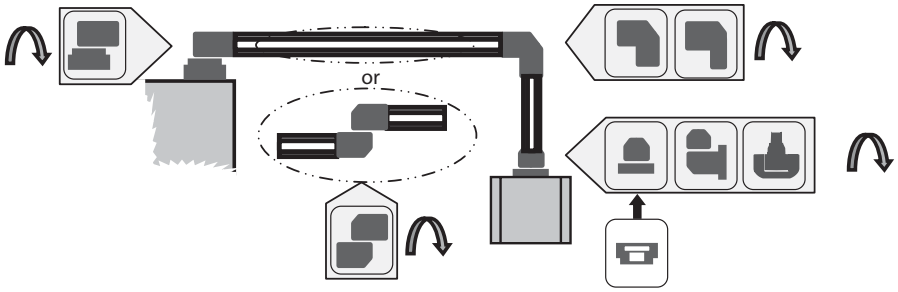
Application examples

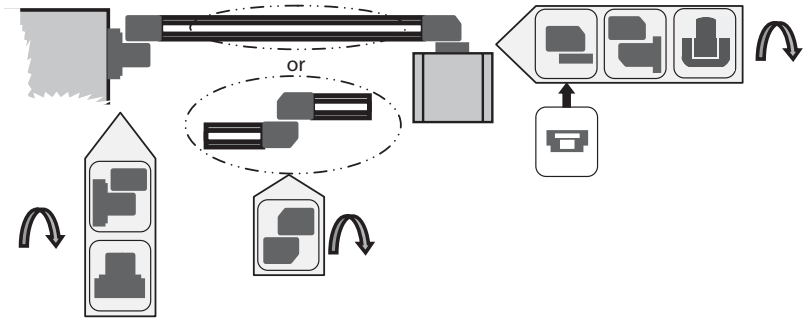
= This component can either be mounted on the wall or be operated as a standing unit.

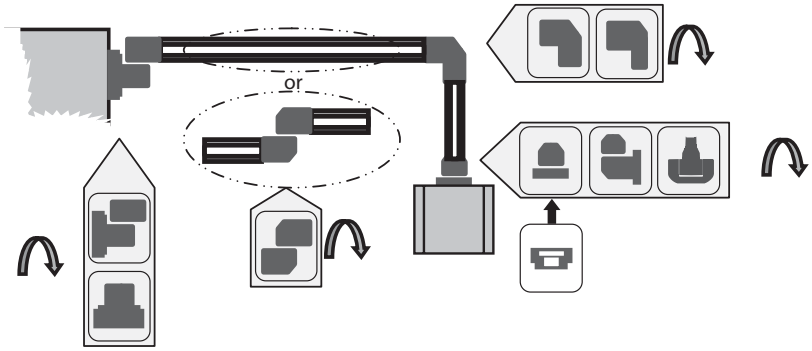












Directory

Indication and Use of the instructions

The sequence of the chapters is not necessarily the operation or assembly sequence.
Not all chapters apply for each component.

Indication:

- Pick out the pictogram for the corresponding component shown on the title page
- You will see in the chapters pictograms for which the mounting step applies
- Mounting starts with the plant, machine or wall mounting and the corresponding chapter

Safety instructions

Attention ▶ Do not reach into the tubes

Attention ▶ The excessive crushing, stretching and bending of power lines has to be avoided.

Attention ▶ The power line system has to be checked for abrasion points regularly.

Attention ▶ Mounting or the electrical connection of the power line system must be carried out by a qualified electrician.

Attention ▶ Do not damage seals during installation as otherwise the technical characteristics cannot be complied with.

Attention ▶ When using panel coupling components, always ensure that the stability of the mounting surface is suitable for mounting.

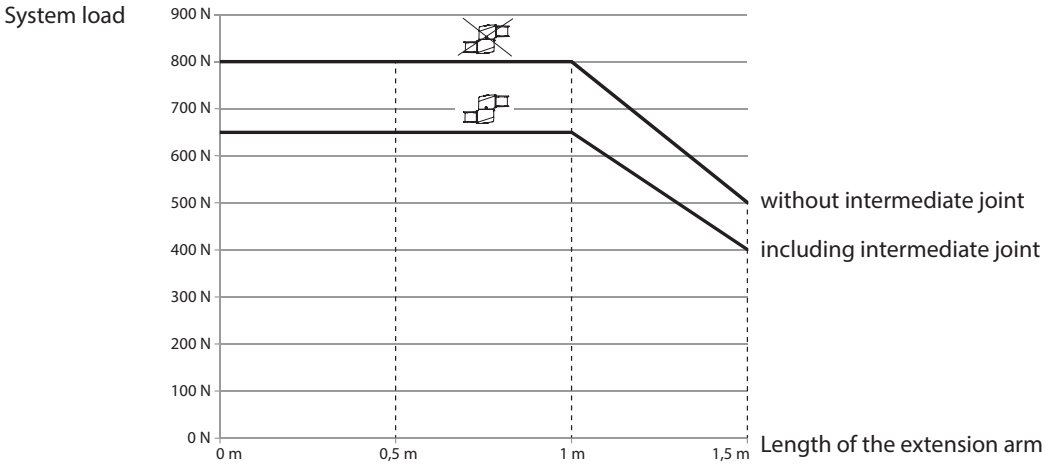
Attention ▶ The coupling components are designed for mounting centrally on the control enclosure.
Off-center installation is not permitted.

Attention ▶ The tightening torques of the screw connections should be inspected on a regular basis.

Mechanical Data

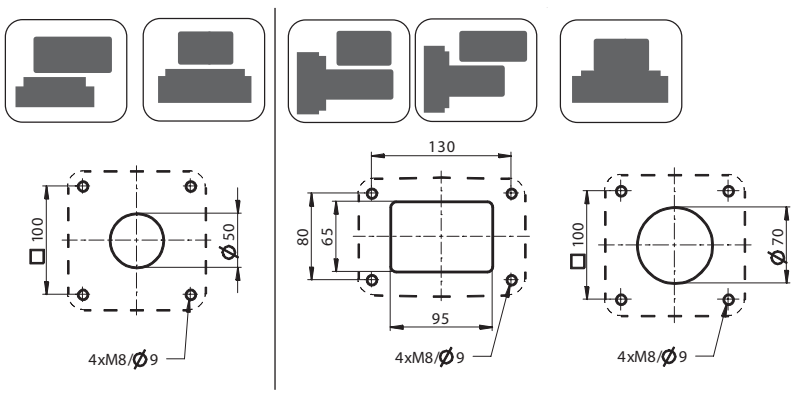
Material:	
Components	GD-Al
Seals	CR (Neoprene) / NBR
Plastic	POM
Protection class	IP 65

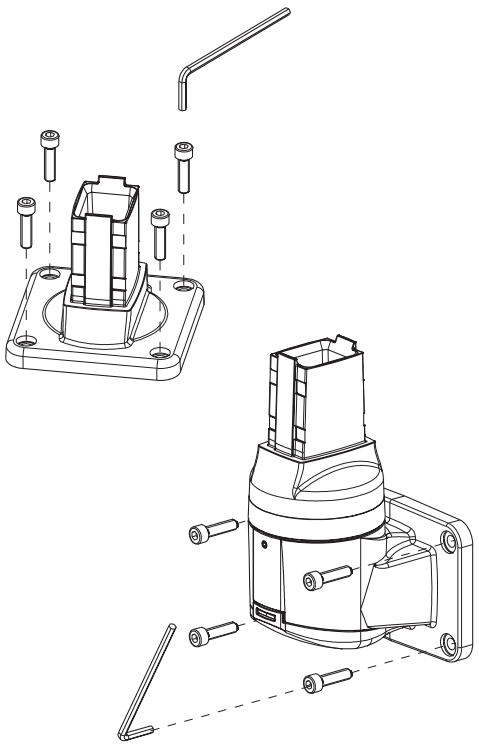
Load diagram for static load capacity SYSPEND 180-MAX



Installation and adjustment

① Mounting to plant or machine



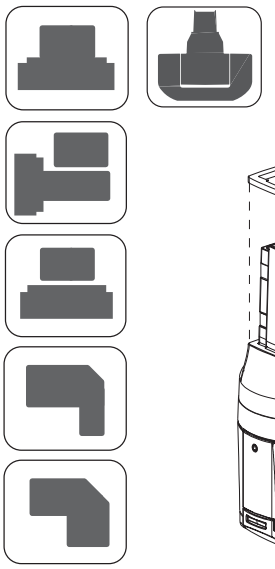


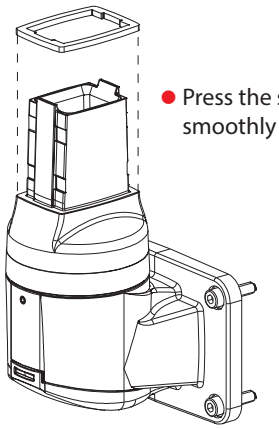
Caution: The mounting surface must be smooth and flat.
If not avoided, it is possible that problems of load, adjustment and protection class arise.

② Tube mounting vertically

Indication: Mounting of the component "Vertical Wall Joint " is illustrated below.

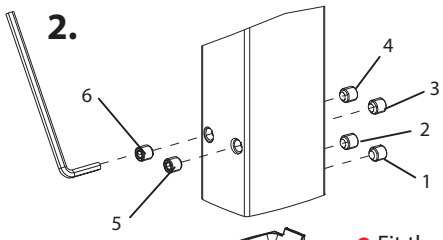
1.

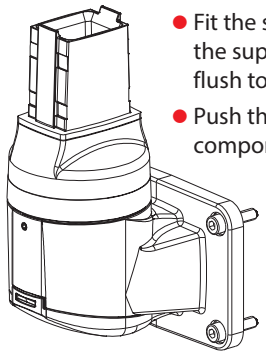




- Press the seal smoothly

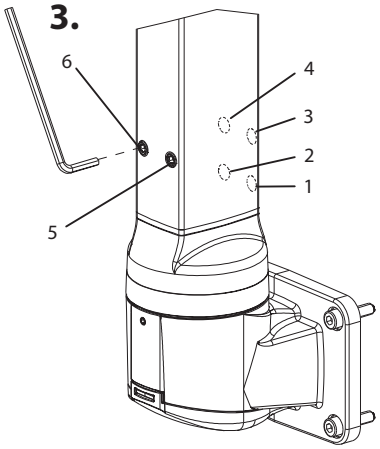
2.





- Fit the screw 1 – 6 into the support tube until it is flush to the inner surface
- Push the tube onto the component

3.

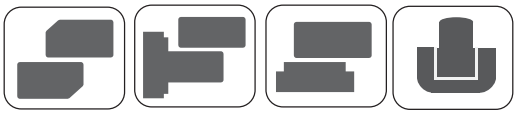


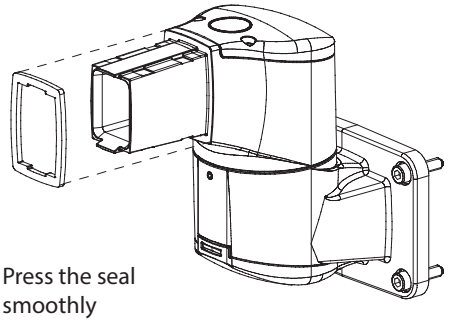
- Fit the screw 1 – 2 until a noticeable resistance (Should the seal not be crushed visibly, press the tube further on the component)
- Fit the screw 5 – 6 and check the vertical support tube alignment with a spirit level (see page 6, Tube adjustment)
- Tighten the screw 1 – 6 with 10 - 12 Nm

③ Tube mounting horizontally

Indication: Mounting of the component "Horizontal Wall Joint " is illustrated below.

1.

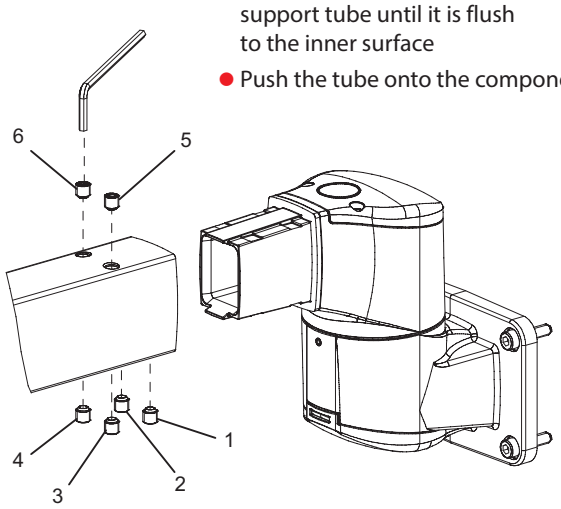




- Press the seal smoothly

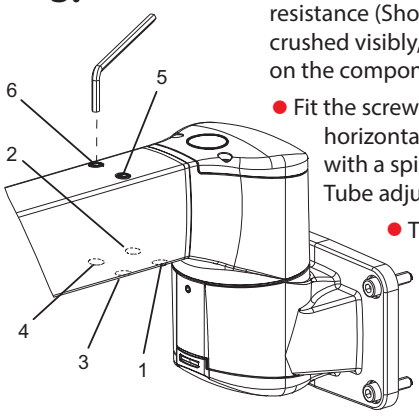
2.

- Fit the screw 1 – 6 into the support tube until it is flush to the inner surface
- Push the tube onto the component



3.

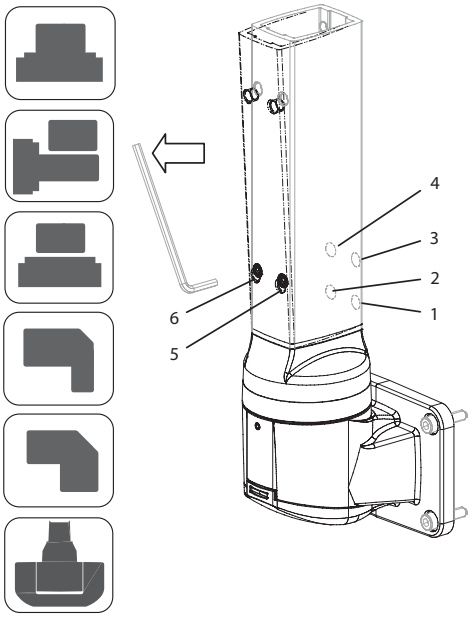
- Fit the screw 1 – 2 until a noticeable resistance (Should the seal not be crushed visibly, press the tube further on the component)
- Fit the screw 5 – 6 and check the horizontal support tube alignment with a spirit level (see page 6, Tube adjustment)
- Tighten the screw 1 – 6 with 10 - 12 Nm



④ Vertical tube adjustment (also possible later)

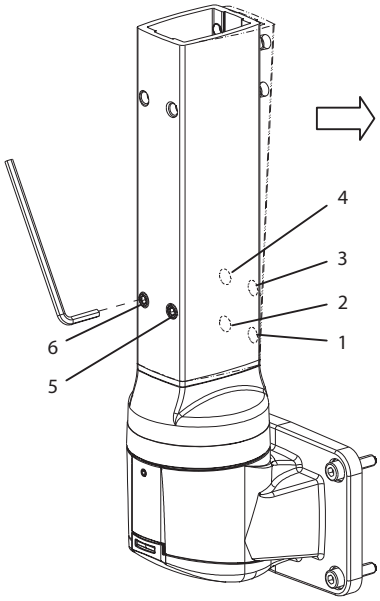
Indication: Adjustment of the component "Vertical Wall Joint " is illustrated below.

Left adjustment



- Loosen the screw 3 – 6
- Tighten the screw 5 – 6 until the desired position is reached
- Tighten the screw 3 – 6 with 10 - 12 Nm

Right adjustment

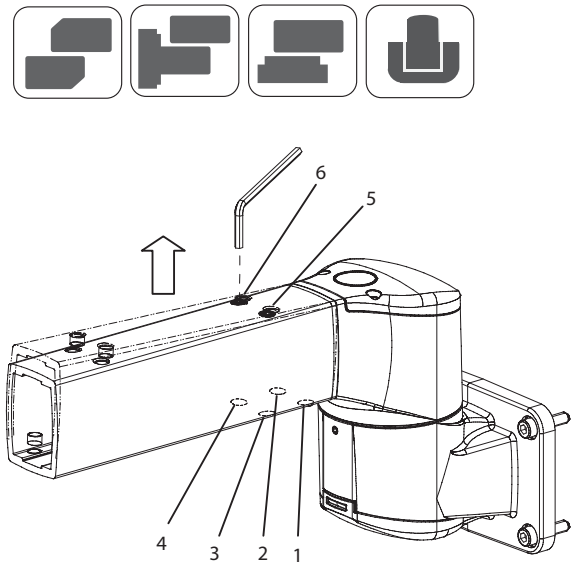


- Loosen the screw 3 – 6
- Tighten the screw 3 – 4 until the desired position is reached
- Tighten the screw 3 – 6 with 10 - 12 Nm

⑤ Horizontal tube adjustment (also possible later)

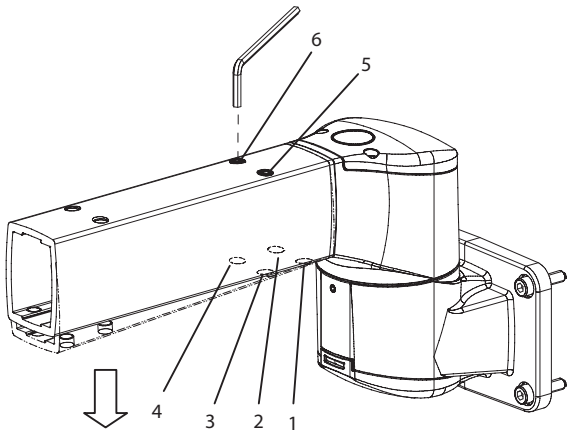
Indication: Mounting of the component "Horizontal Wall Joint " is illustrated below.

Upward adjustment



- Loosen the screw 3 – 6
- Tighten the screw 5 – 6 until the desired position is reached
- Tighten the screw 3 – 6 with 10 - 12 Nm

Downward adjustment



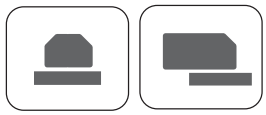
- Loosen the screw 3 – 6
- Tighten the screw 3 – 4 until the desired position is reached
- Tighten the screw 3 – 6 with 10 - 12 Nm

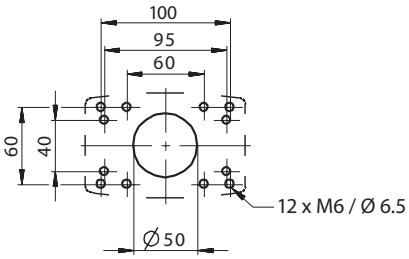
Mounting to enclosure

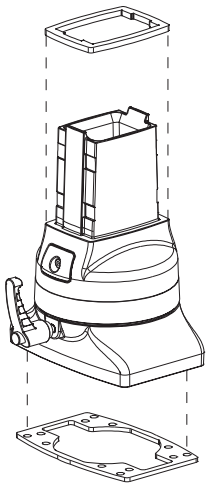
① Mounting to control enclosure by using coupling or elbow coupling

Indication: Mounting of the component "Flange Coupling" is illustrated below

1.



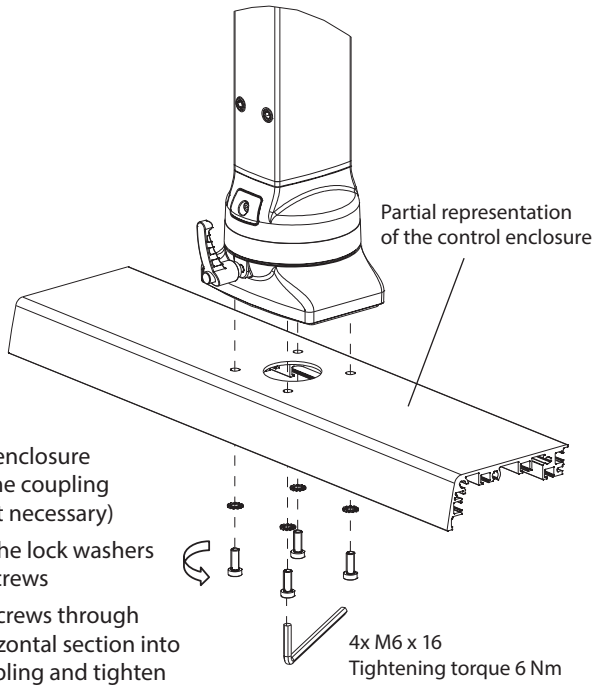




At least 4 bolting points must be used:
- 100 x 60
- 95 x 40
- 60 x 60

- Press the seal smoothly
- Tube mounting see page 5
- Tube adjustment see page 6

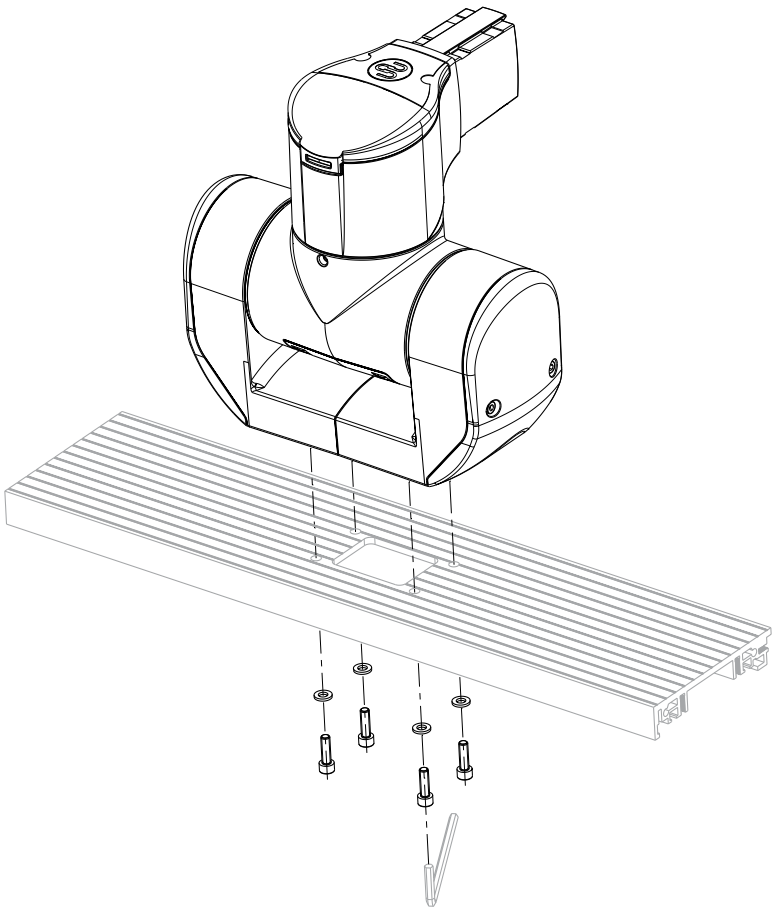
2.



- Lift the enclosure under the coupling (support necessary)
- Attach the lock washers to the screws
- Fit the screws through the horizontal section into the coupling and tighten them with 6 Nm

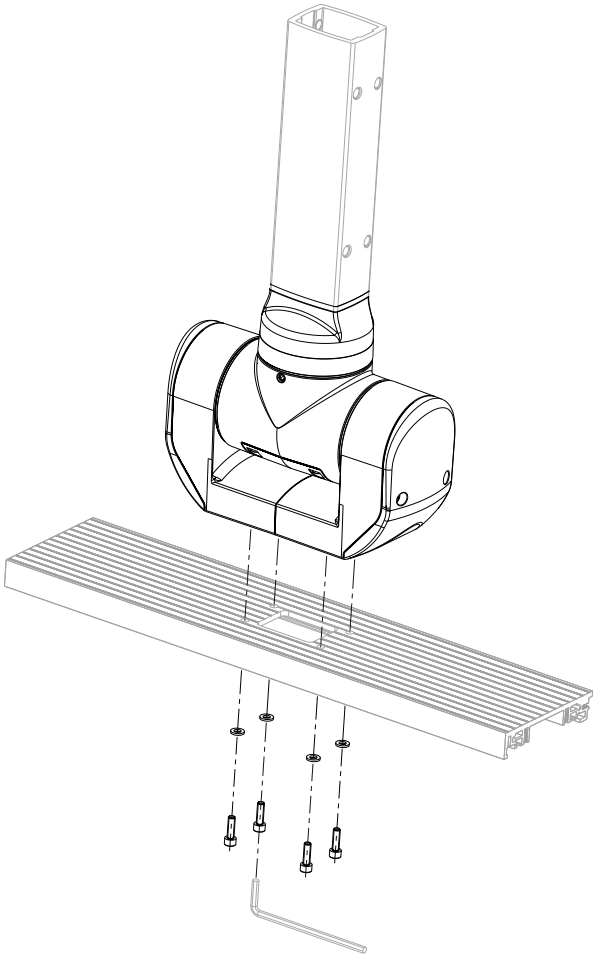
4x M6 x 16
Tightening torque 6 Nm

② Turn/tilt coupling W



4x M6 x16 or 4x M6 x 25
Tightening torque 6 Nm

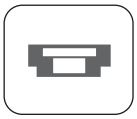
3. Turn/tilt coupling S

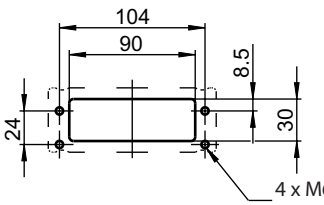


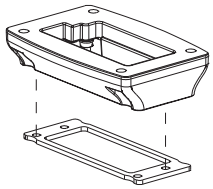
4x M6 x16 or 4x M6 x 25
Tightening torque 6 Nm

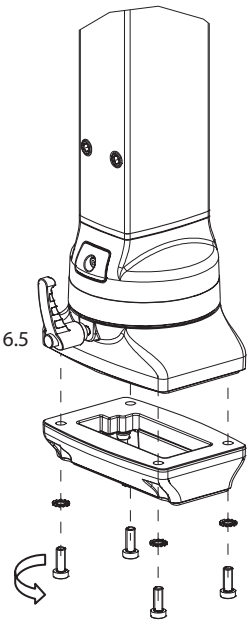
4. Mounting to control enclosure by using narrow adapter

Only use in conjuction with Flange Couplings and Flange Elbow Couplings.



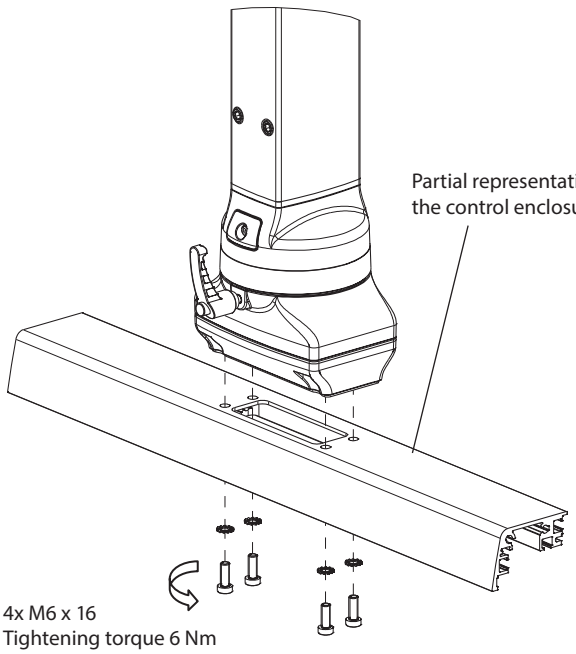






- Adhere the seal to the underside of the adapter
- Mount the adapter with lock washers and screws to the coupling

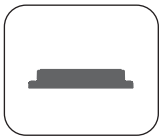
4x M6 x 16
Tightening torque 6 Nm

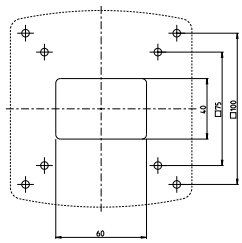


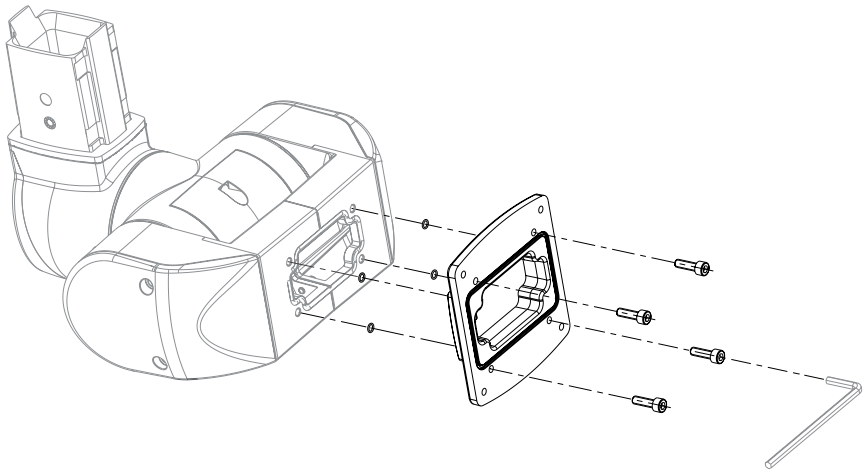
4x M6 x 16
Tightening torque 6 Nm

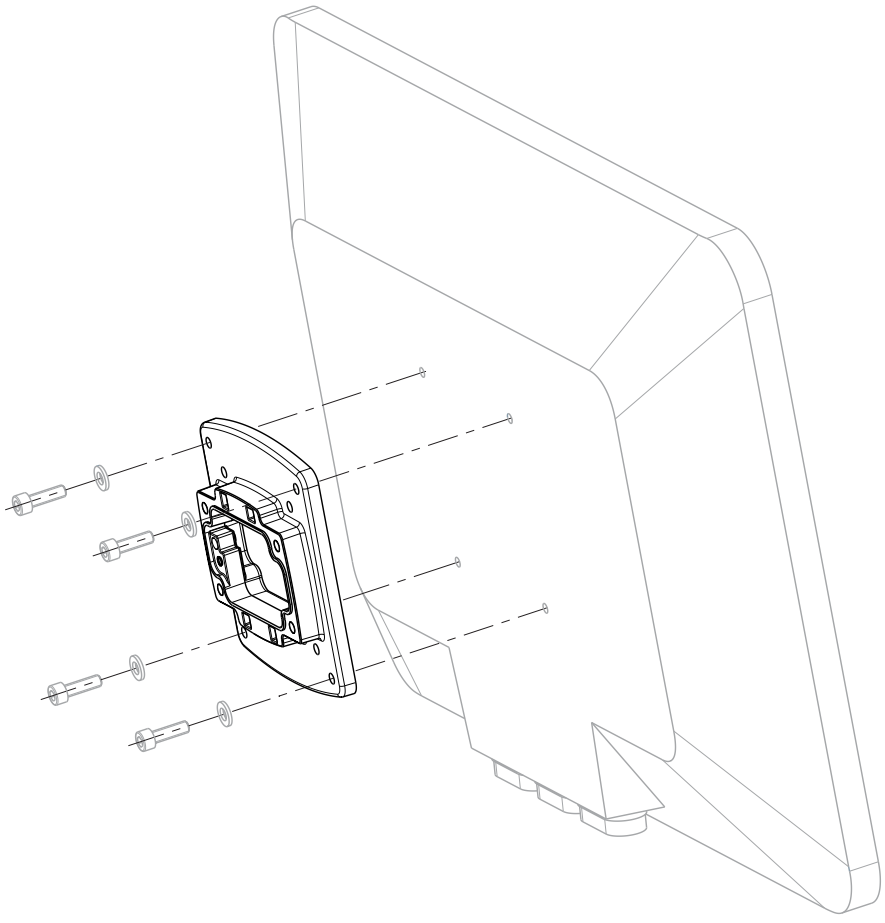
- Lift the enclosure under the coupling (support necessary)
- Attach the lock washers to the screws
- Fit the screws through the horizontal section into the coupling and tighten them with 6 Nm

5. Mounting to control enclosure by using adapter plate VESA 75/100)



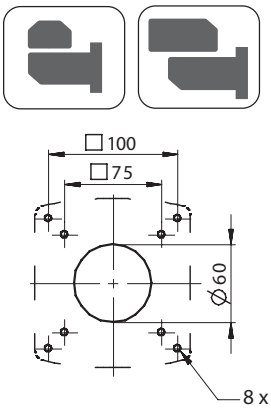




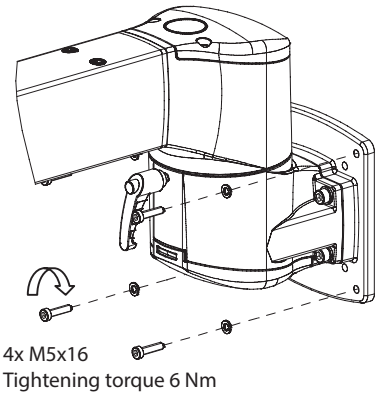


6. Mounting to control enclosure by using panel coupling

Indication: Mounting of the component "Horizontal Panel Coupling " is illustrated below



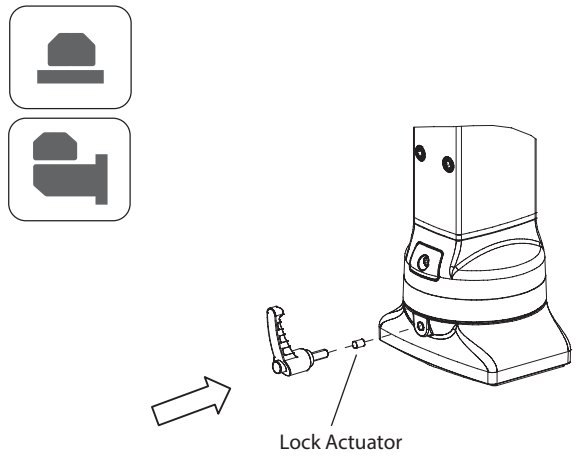
At least 4 bolting points must be used:
- 100 x 100
- 75 x 75

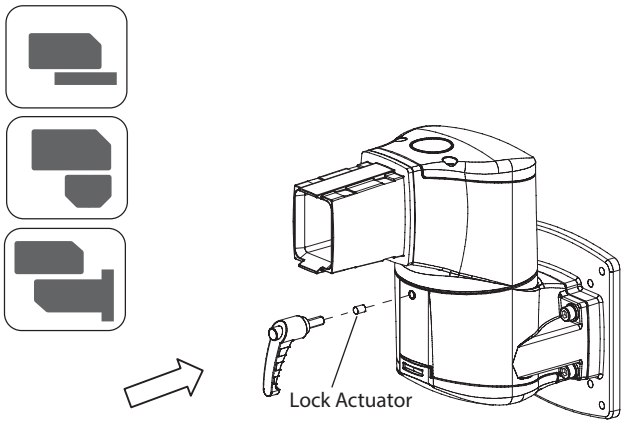


- Mount the panel coupling with lock washers and screws

Attention ▶ When using panel coupling components, always ensure that the stability of the mounting surface is suitable for mounting.

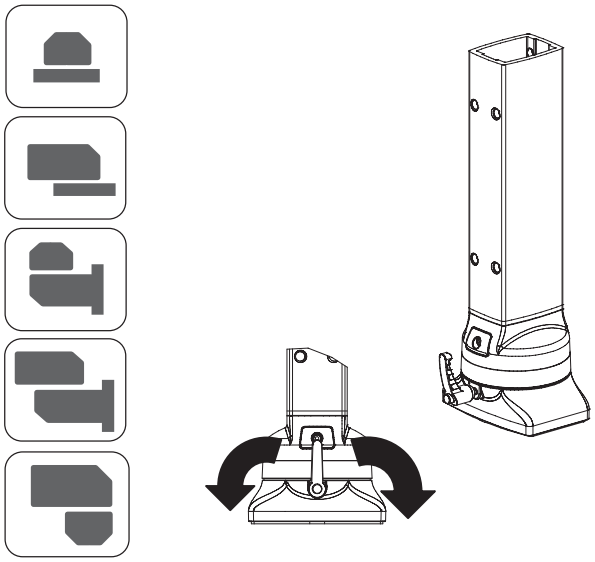
Screwing the clamping lever



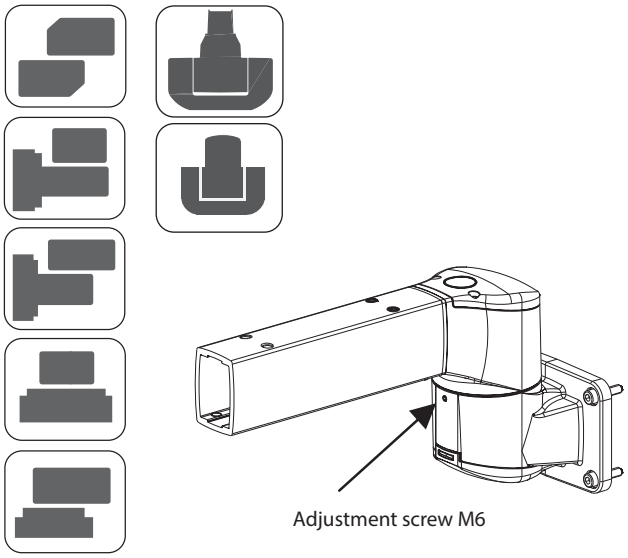


- Insert the Lock Actuator in the threaded bore
- Screw the clampling lever

Modification of firmness



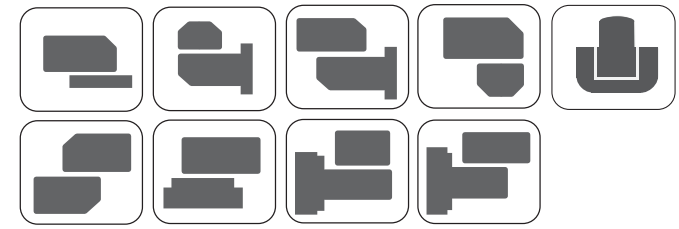
- Adjust the clamping lever to increase or decrease resistance
- Factory preset to optimum torque setting

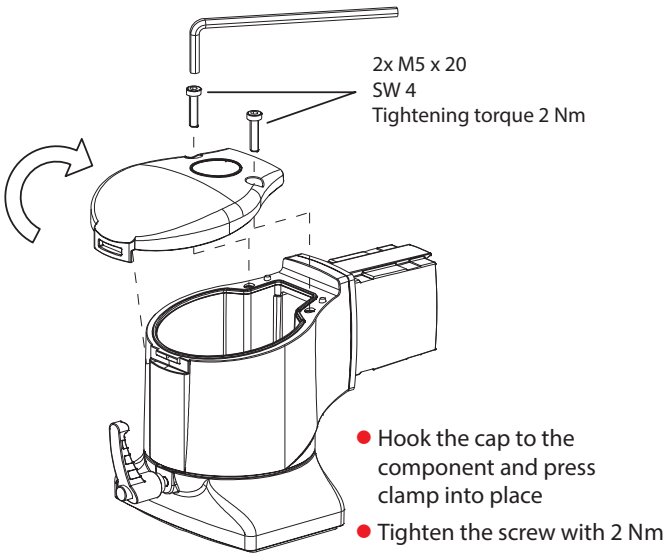


- Adjust screw to increase or decrease resistance
- Factory preset to optimum torque setting

Joint cap mounting and dismounting

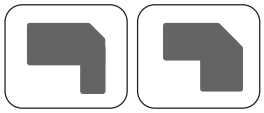
Indication: Mounting and dismounting of the component "elbow coupling" is illustrated below

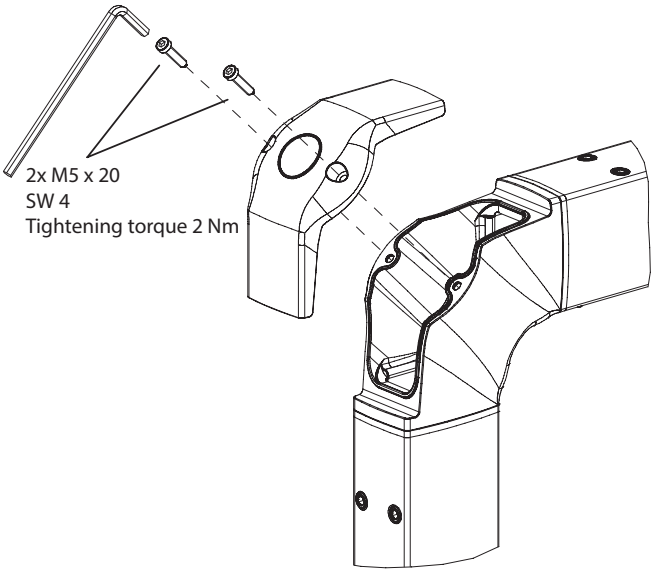




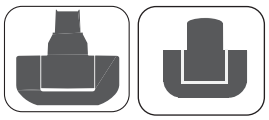
- Hook the cap to the component and press clamp into place
- Tighten the screw with 2 Nm

Indication: Mounting and dismounting of the component "elbow" is illustrated below



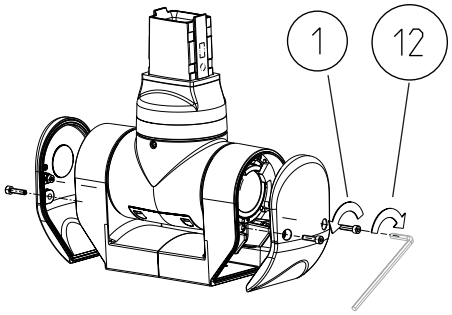


Attitude of the tightness of torque (M) and the tilt angle limitation

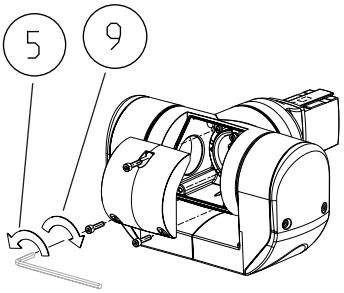


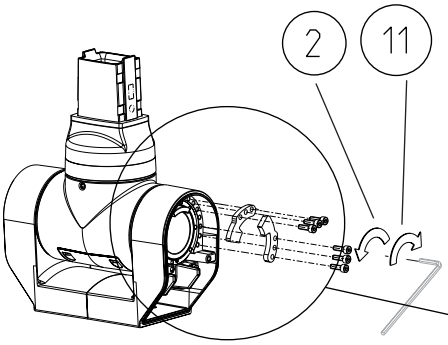
Turn / tilt coupling

Indication: The attitude is illustrated using the component DNK S as an example.



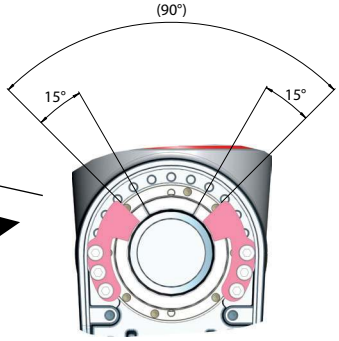
Unscrew the cover Pos.1/ Pos.5
Mount the cover Pos. 9 / Pos.12

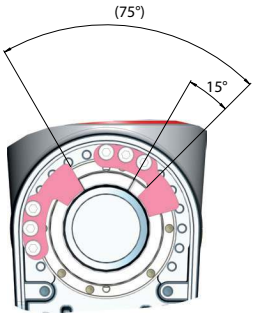


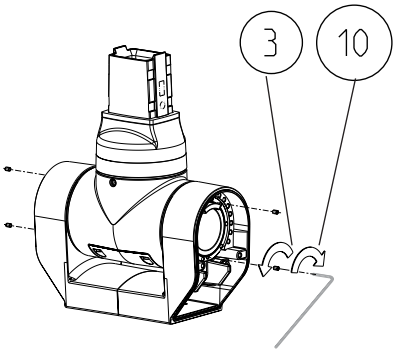


Unscrew the tilt angle limiter Pos.2
Mount the tilt angle limiter Pos. 11

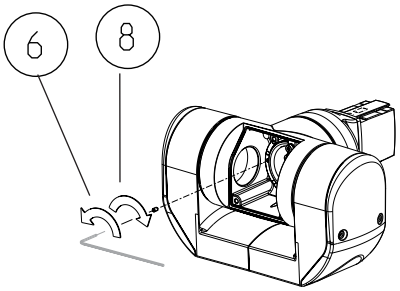
Application examples for tilt angle limiter

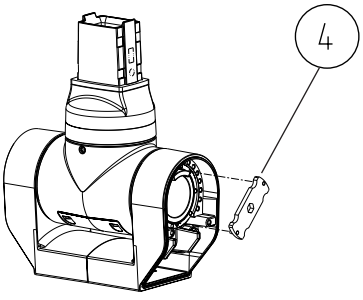




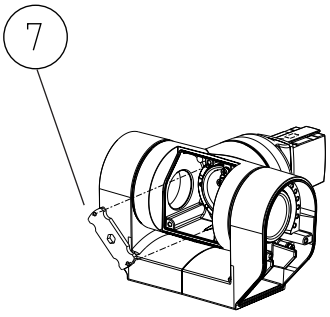


Unscrew the threaded pin M4 Pos. 3 / Pos. 6 /
Screw the threaded pin M4 Pos.8/ Pos. 10





Loosen threaded nut with tool item no. 980 5422 000. Pos. 4 / Pos. 7 max. 1 revolution anticlockwise. Set the desired inclination moment Pos.4 / swing torque Pos.7 by tightening the threaded sleeve / nut

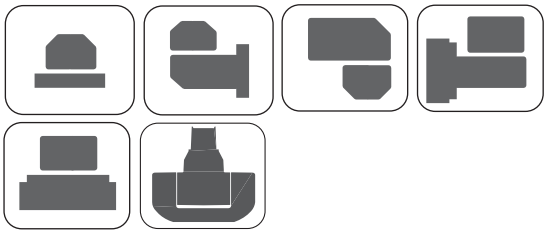


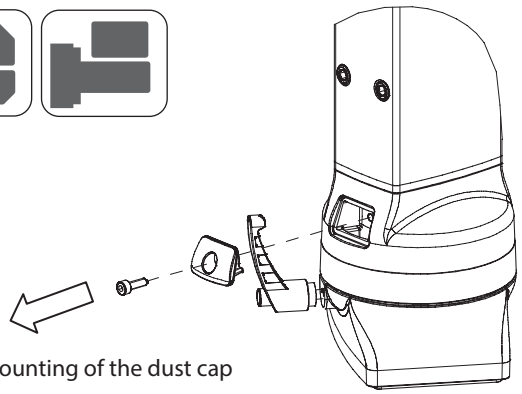
Accessories

Article number	Type
S1MRL	Rotation Limiter

Indication: Mounting of the rotation limiter is illustrated below by the component “coupling”.

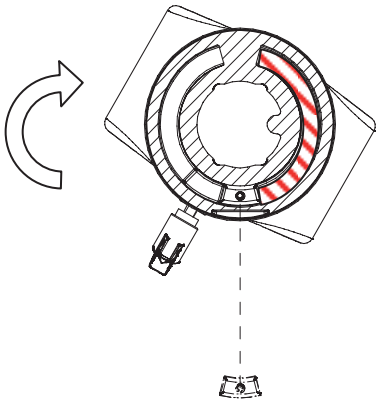
1.





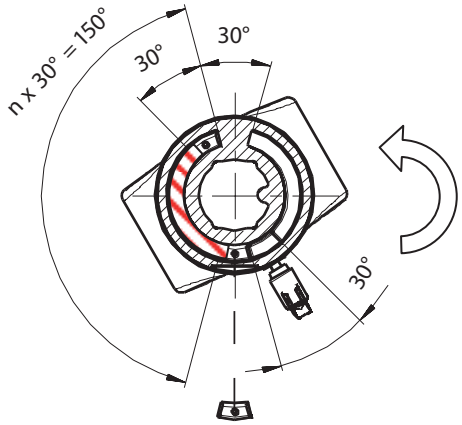
- Dismounting of the dust cap

2a.



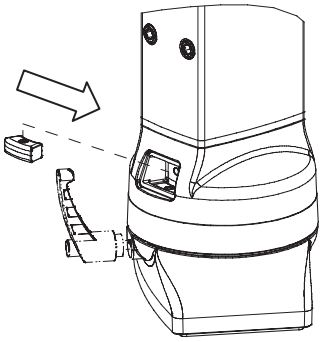
- In order to limit the rotation to the left, turn the buttom of the coupling to the right

2b.



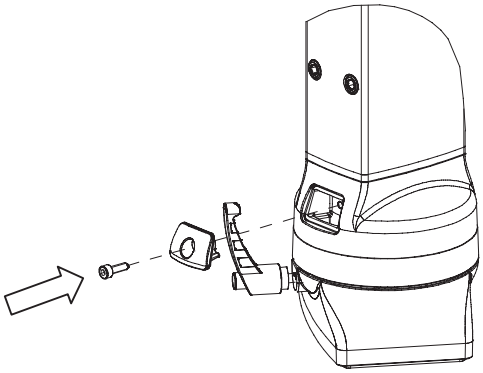
- In order to limit the rotation to the right, turn the bottom of the coupling to the left

3.



- Insert rotation limiter

4.



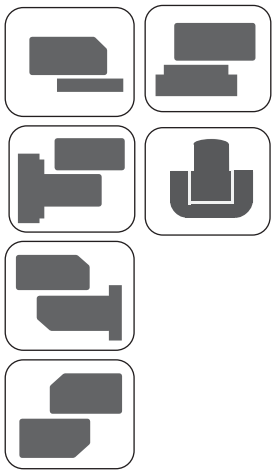
- If the desired limitation is set, the dust cap must again be fitted

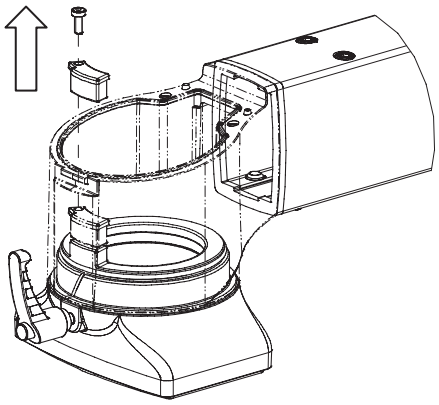
Once fitted the rotation limiters can removed at any time

Article number	Type
S1MRL	Rotation Limiter

Indication: Mounting of the rotation Limiter is illustrated below by the component “elbow coupling”.

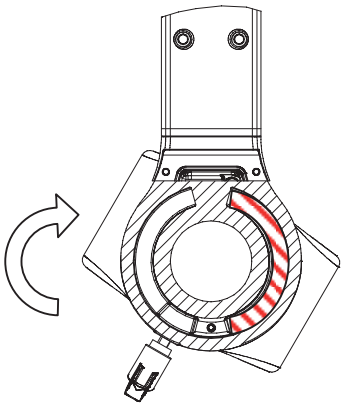
1.





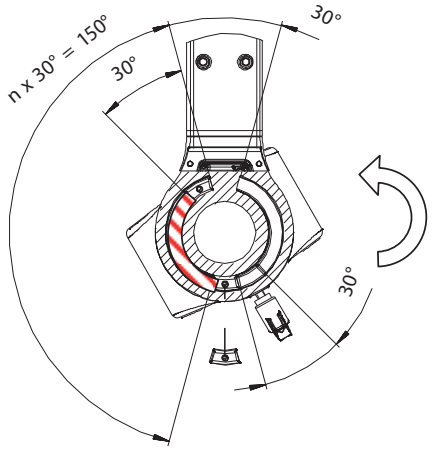
- For removal of cover, see page 9
- Unscrew the locking tappet and remove it

2a.



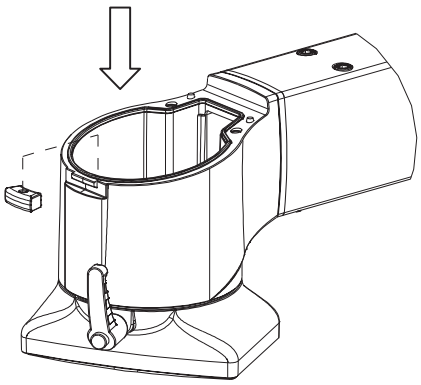
- In order to limit the rotation to the left, turn the buttom of the coupling to the right

2b.



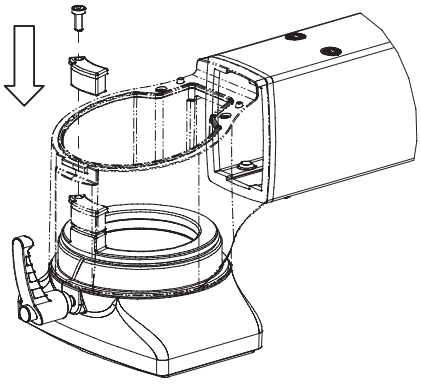
- In order to limit the rotation to the right, turn the bottom of the coupling to the left

3.



- Insert rotation limiter

4.

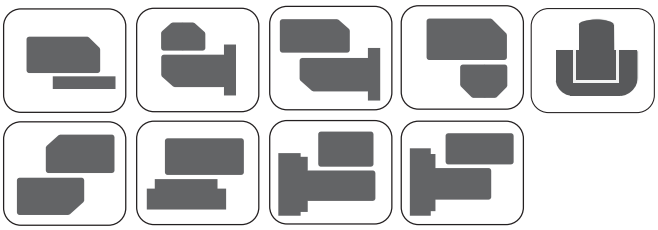


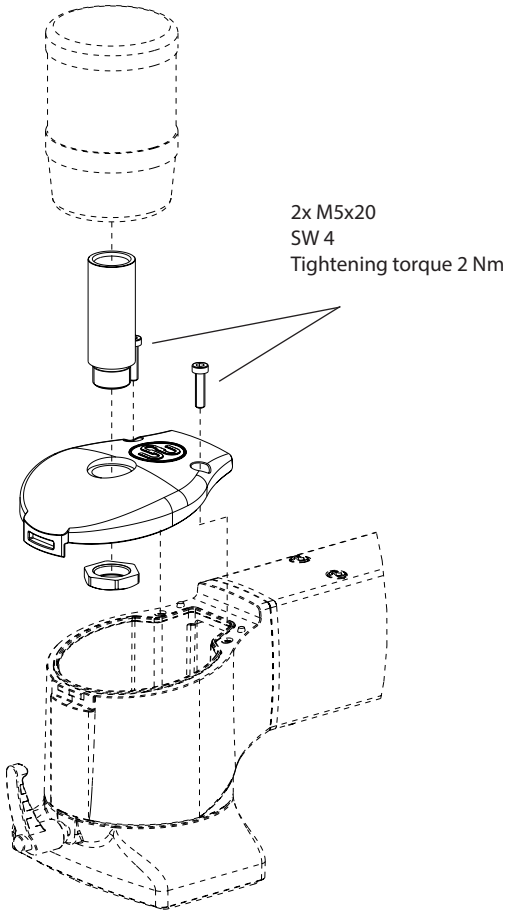
- If the desired limitation is set, the dust cap must again be fitted
- Fit the cover again as described, see page 9

Once fitted the rotation limiters can removed at any time

Accessories

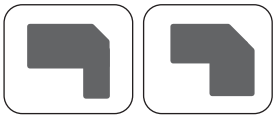
Article number	Type
S1MSLAR	Set of signal lamps Joint cap RAL 9006

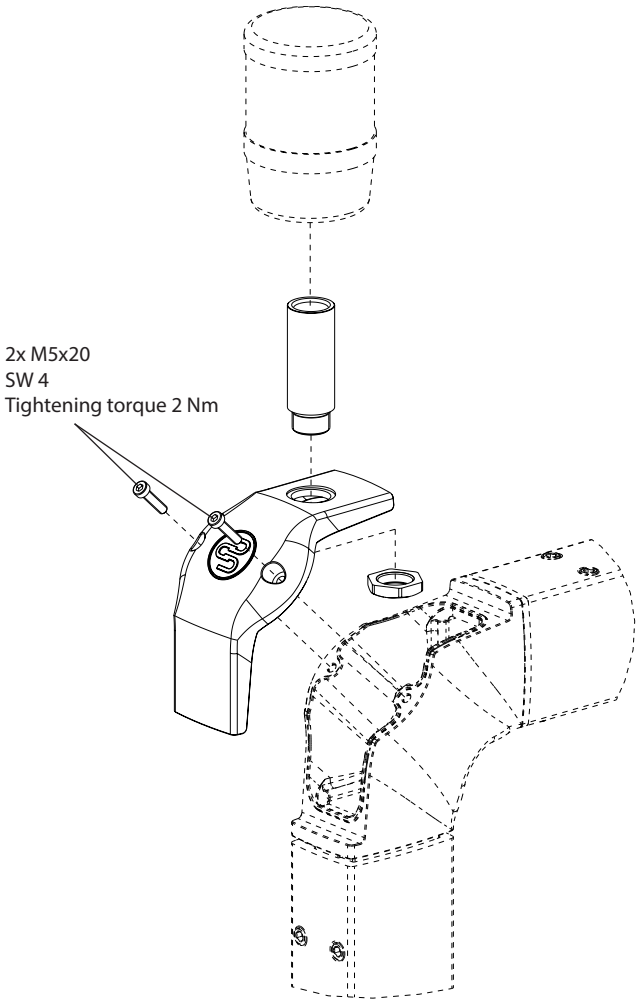




- For removal of cover (if required) see page 9
- Insert the signal lamp connecting tube into the suitable shaft and fix it with nut SW27
- Screw the signal lamp part on the connecting tube
- Refit the cover again on the component

Article number	Type
S1MSLAA	Set of signal lamps Elbow cap RAL 9006
S1MSLARE	Set of signal lamps Reducing elbow cap RAL 9006

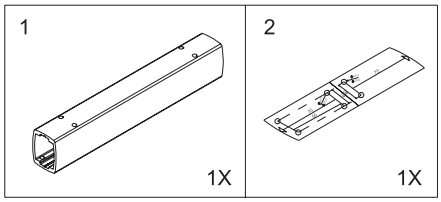


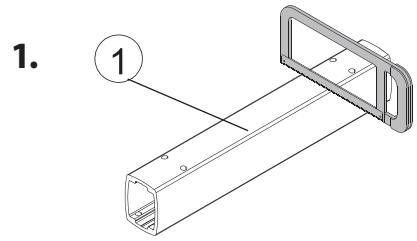


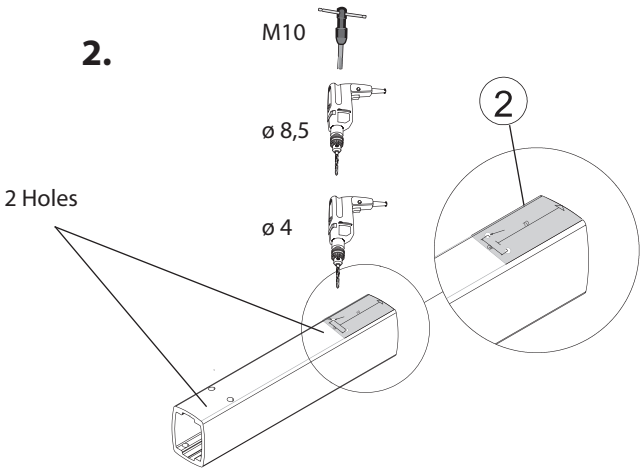
- For removal of cover (if required) see page 9
- Insert the signal lamp connecting tube into the suitable shaft and fix it with nut SW27
- Screw the signal lamp part on the connecting tube
- Refit the cover again on the component

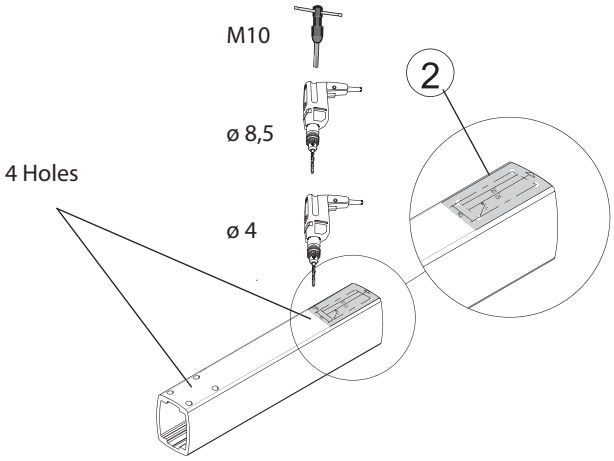
The German version is the original Installation and Operating Instructions.
If this manual appears in other languages, it is simply the translation of the original Installation and Operating Instructions.

Tube Cutoff





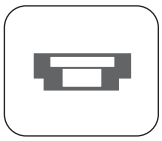




Earthing

The design of the protective conductor system must be in accordance with UL Standard UL 508A paragraph 14.

Fixing positions for earth screws

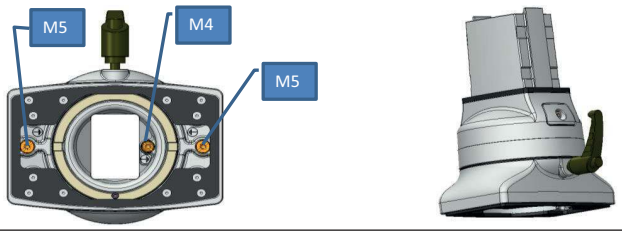


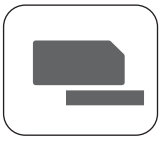
Narrow Adapter

S1MA , S1MAG

Flange Coupling

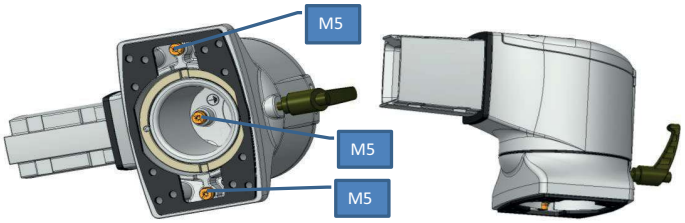
S1MFC, S1MFCG



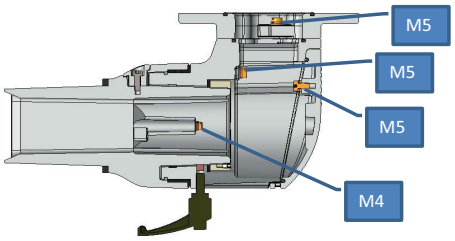


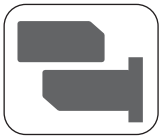
Flange Elbow Coupling

S1MFEC, S1MFECG

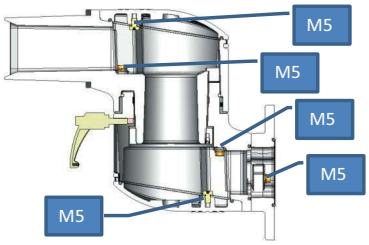


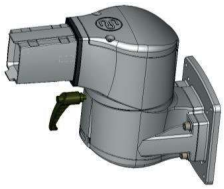
Vertical Panel Coupling
S1MPCV, S1MPCVG



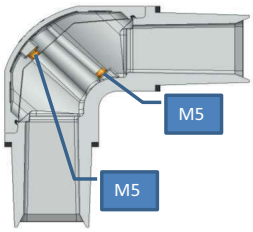


Horizontal Panel Coupling
S1MPCH, S1MPCHG

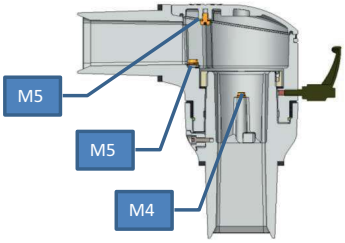




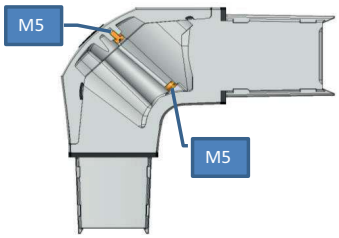
Elbow
S1ME, S1MEG

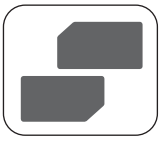


Rotatable Elbow
S1MER, S1MERG

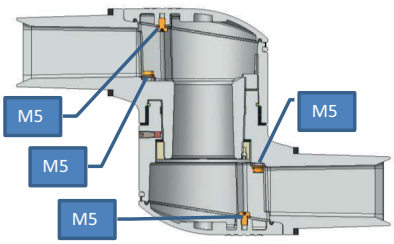


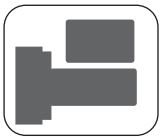
Reduction Elbow
S1MRE



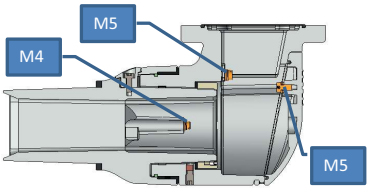


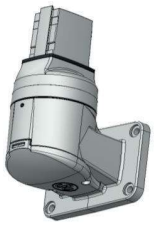
Intermediate Joint
S1MIJ, S1MIJG

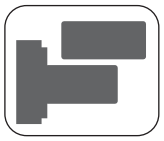




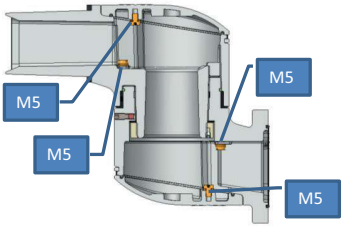
Vertical Wall Joint
S1MWJV, S1MWJVG

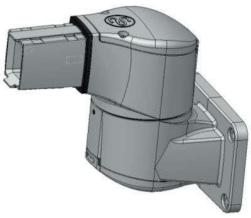




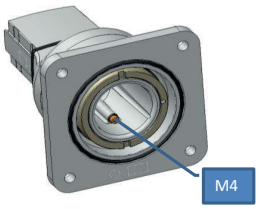


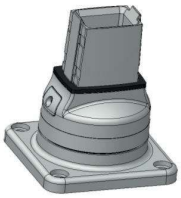
Horizontal Wall Joint
S1MWJH, S!MWJHG

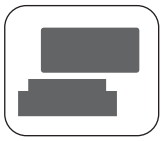




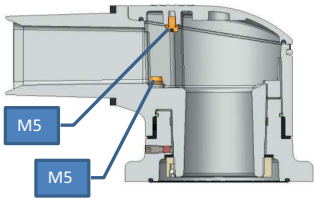
Rotary Base
S1MTBB, S1MTBBG

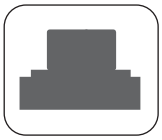




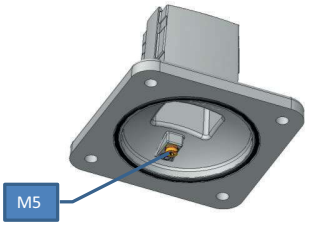


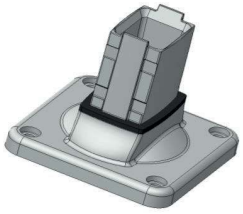
Set-Up Joint
S1MSJ, S1MSJG

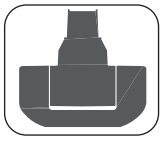




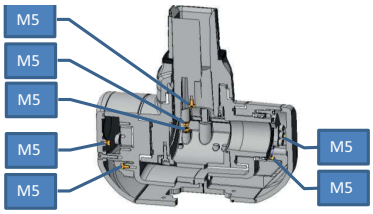
Wall Flange
S1MWF, S1MWFG

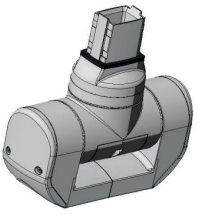




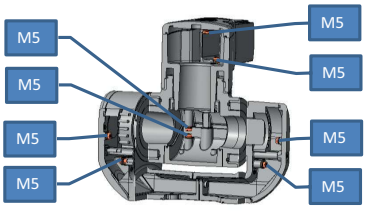


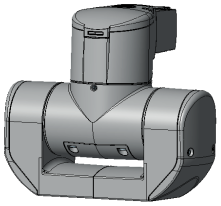
Turn / tilt coupling S
S1MSCV

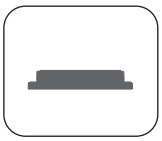




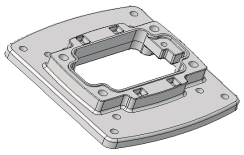
Turn / tilt coupling W
S1MSCH

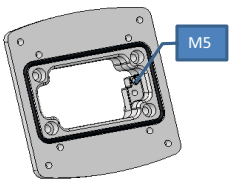




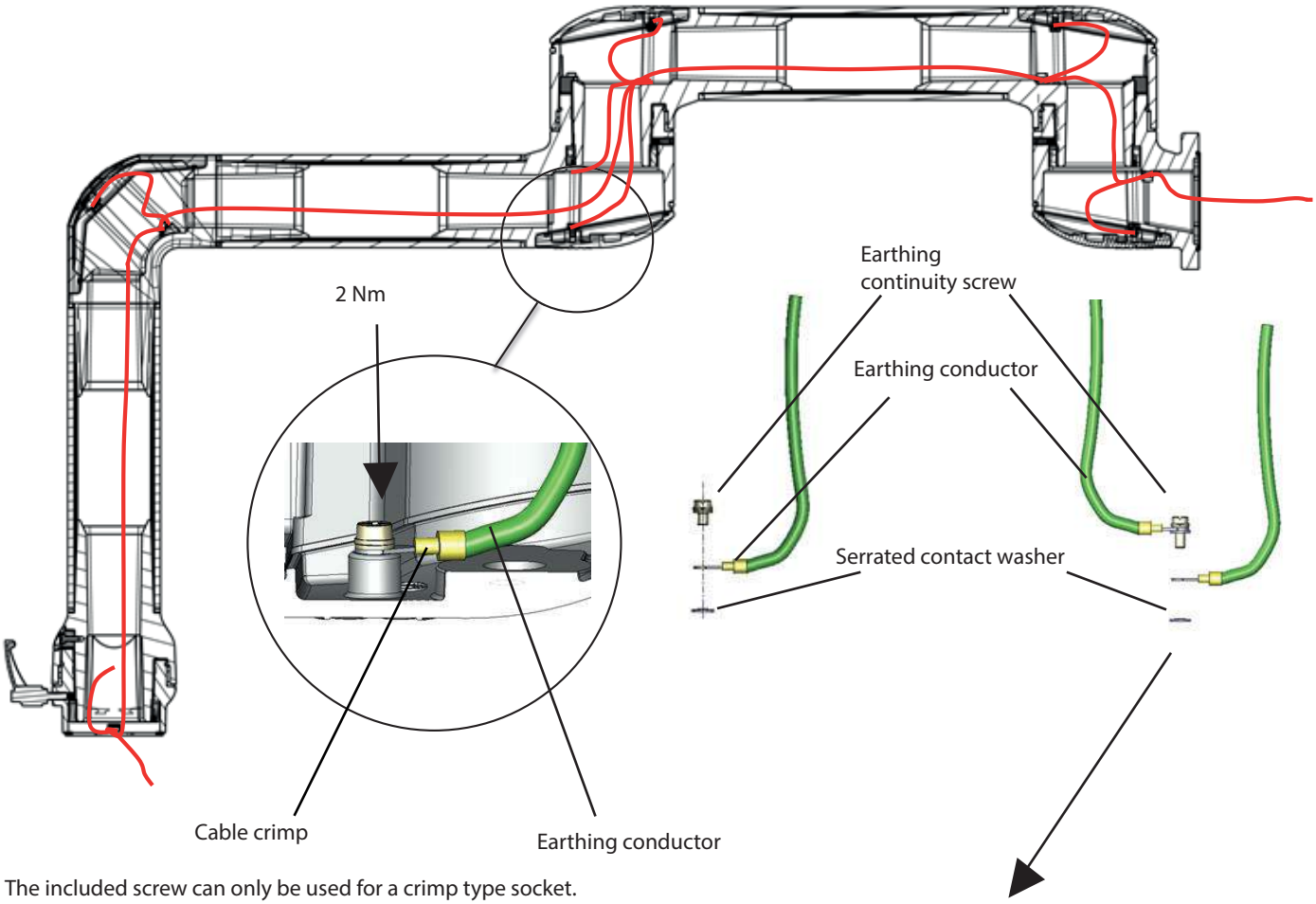


Adapter plate VESA 75/100
S2MVAP

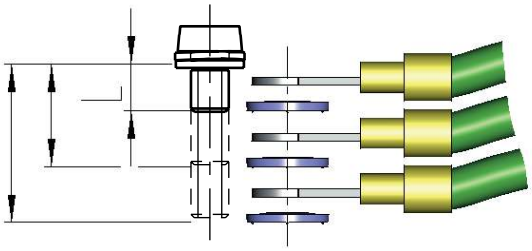




Earthing example



The included screw can only be used for a crimp type socket.



Screw length (L) must be suitable for the amount of crimps being used!!
A serrated washer must separate each cable crimp!

As it is a suspension system with moving parts, it should be ensured that the chosen cable length permits these movements.

The original operating and installation instructions are the German language version.
Other languages are a translation of the original operating and installation instructions.