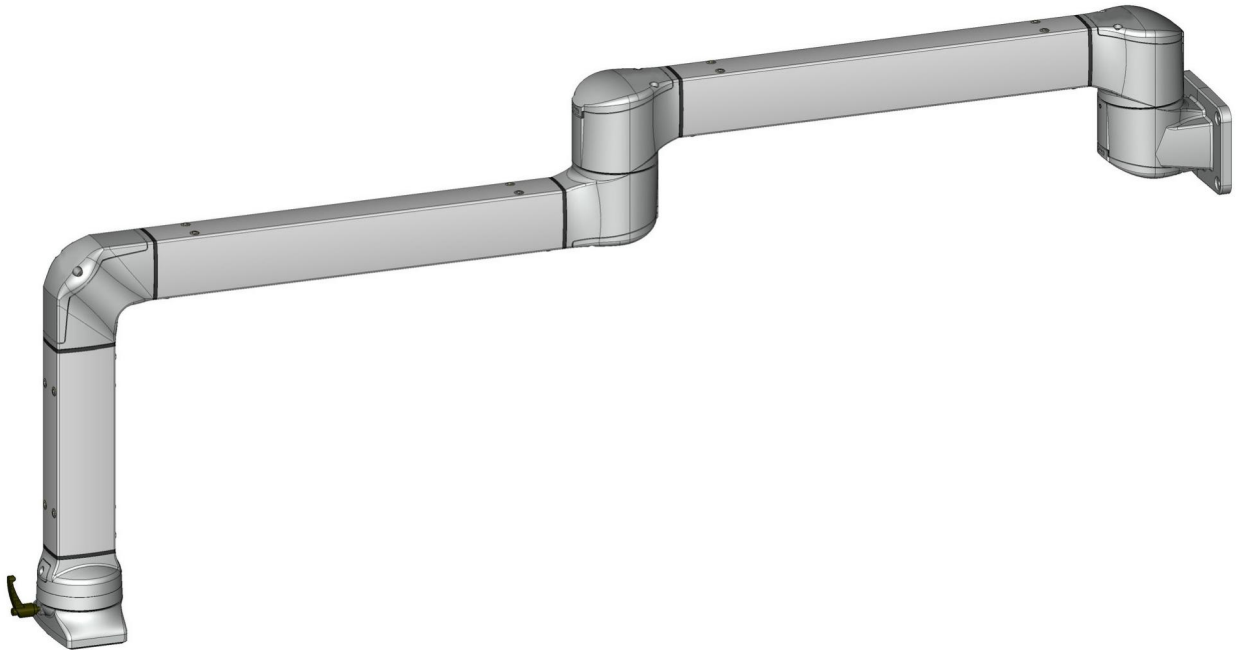


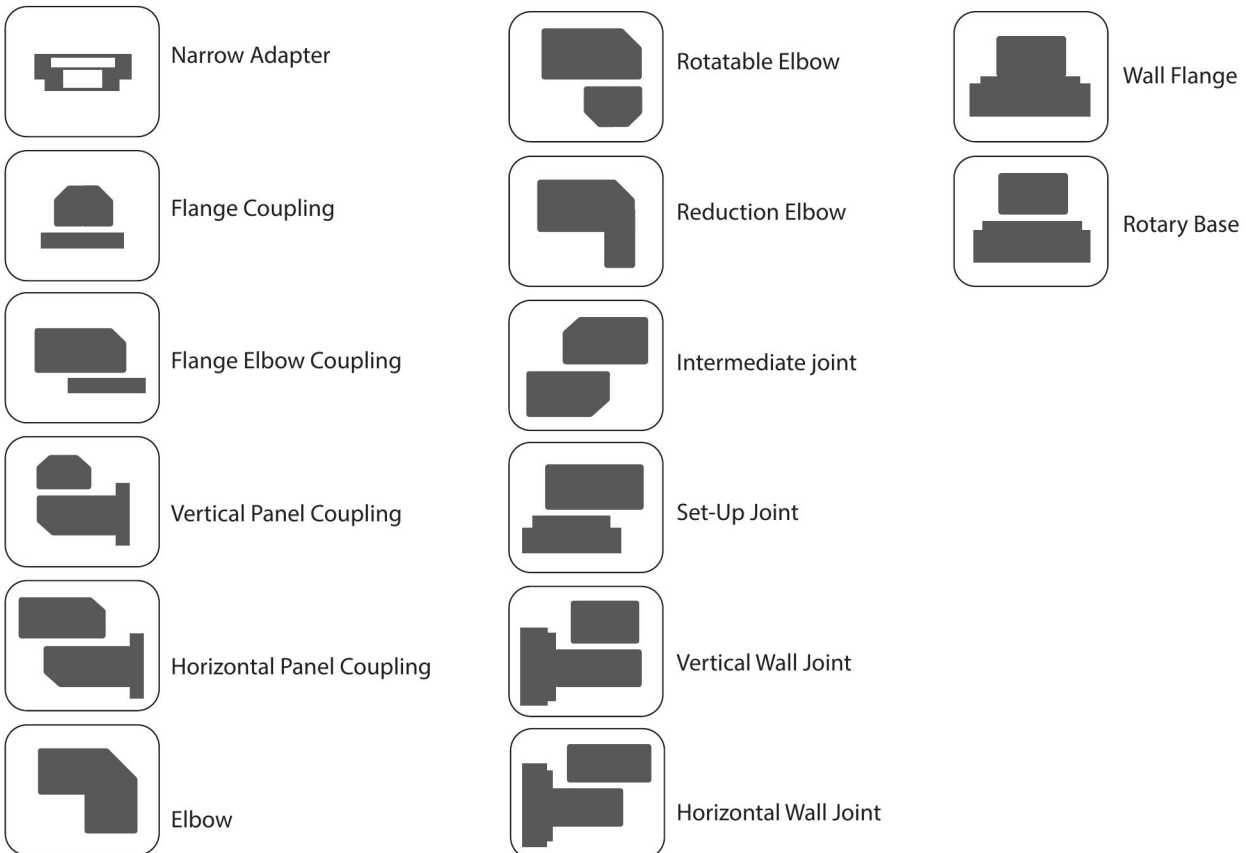
Installation and Operating Instructions

Suspension System

SYSPEND 180-MAX

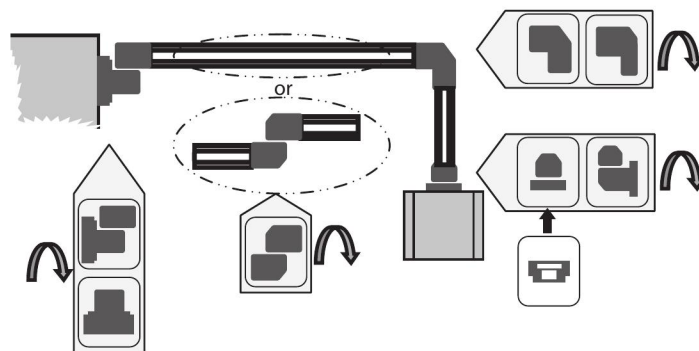
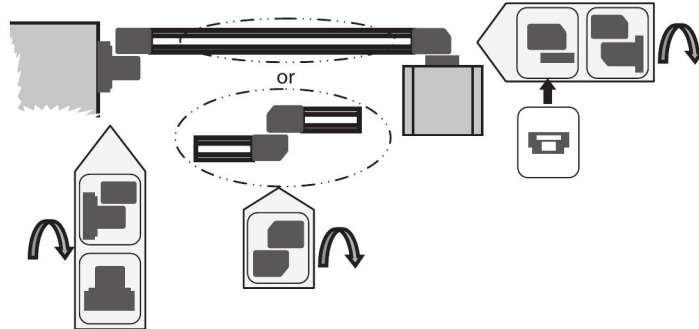
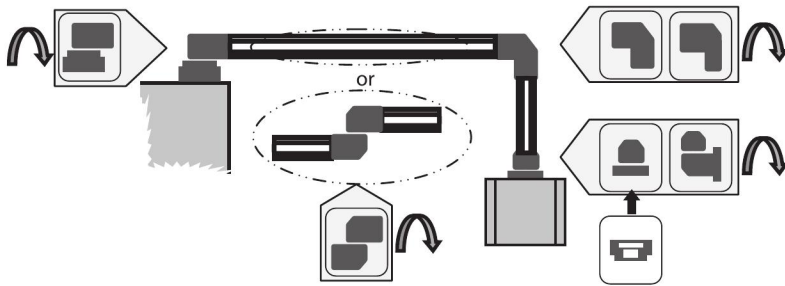
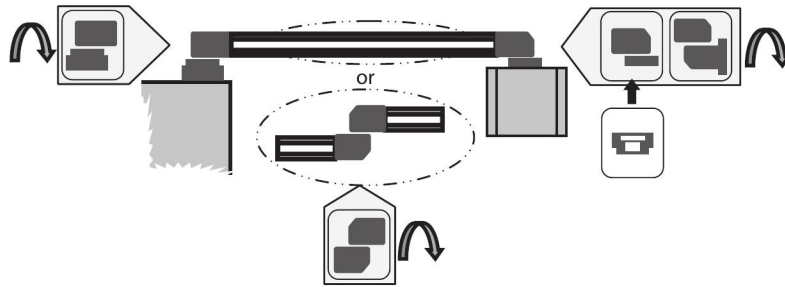
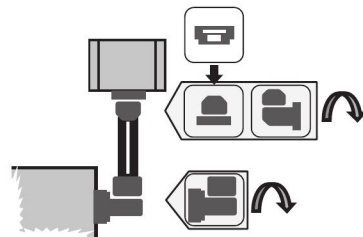
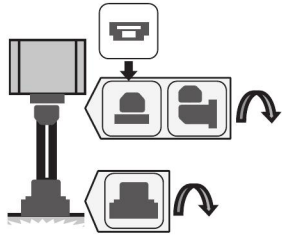


Component pictograms



Application examples

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



Directory

| | |
|---|----|
| Directory | 3 |
| Indication and Use of the instructions | 3 |
| Safety instructions | 3 |
| Mechanical Data | 4 |
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| Installation and adjustment | 4 |
| Mounting to plant or machine | 4 |
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| Tube mounting horizontally | 5 |
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| Horizontal tube adjustment (also possible later) | 6 |
| Mounting to enclosure | 7 |
| Mounting to control enclosure by using coupling or elbow coupling | 7 |
| Mounting to control enclosure by using adapter (narrow sections) | 7 |
| Mounting to control enclosure by using panel coupling | 8 |
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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

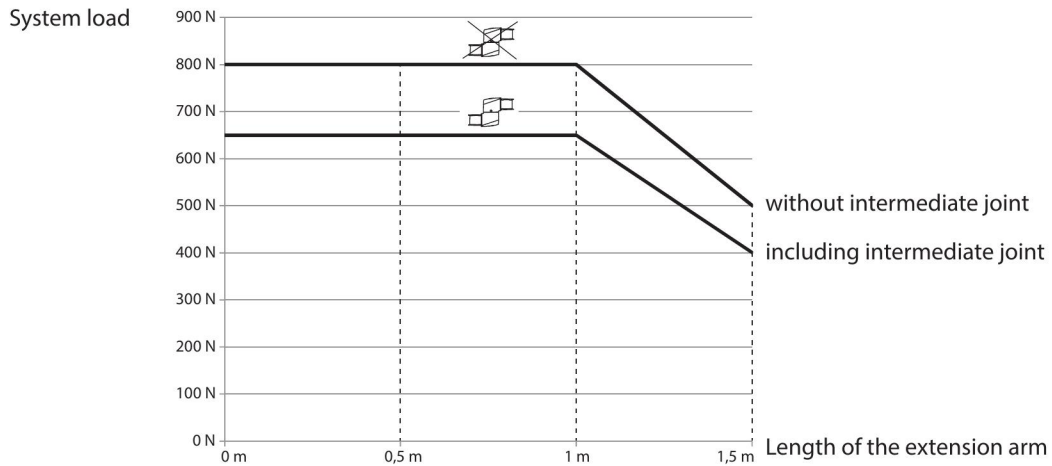
Safety instructions

-  ▶ 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.
Attention

Mechanical Data

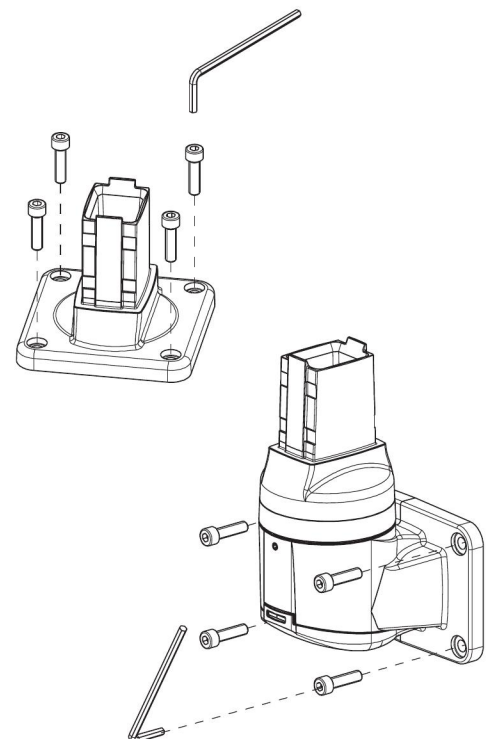
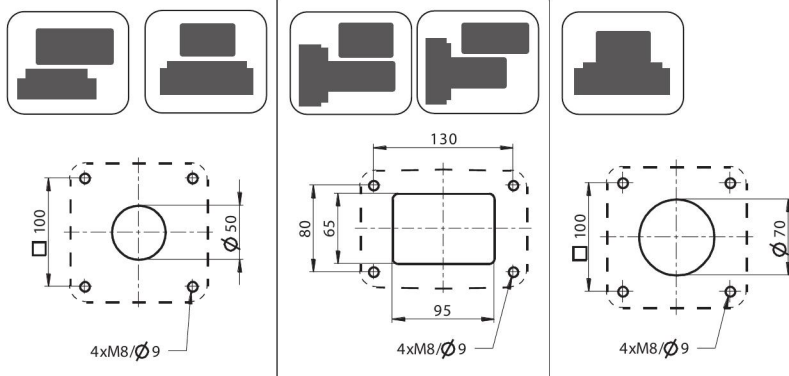
| | |
|------------------|---------------------|
| Material: | |
| Components | GD-AI |
| Seals | CR (Neoprene) / NBR |
| Plastic | POM |
| Protection class | IP 65 |

Load diagram for static load capacity SYSPEND 180-MAX



Installation and adjustment

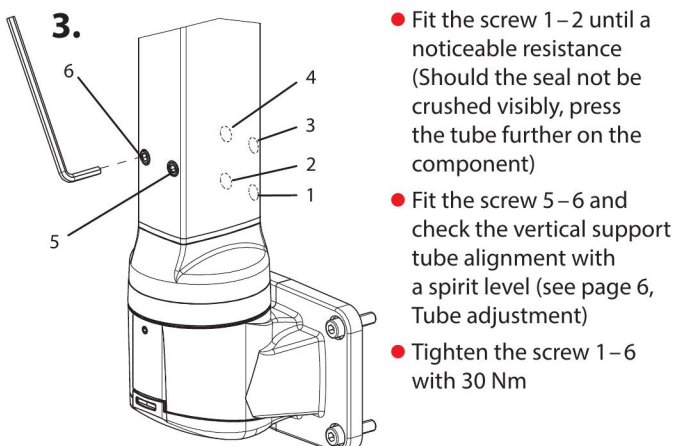
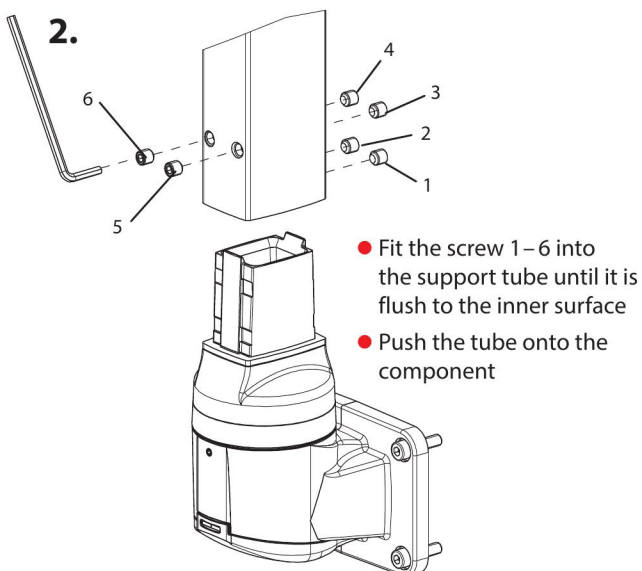
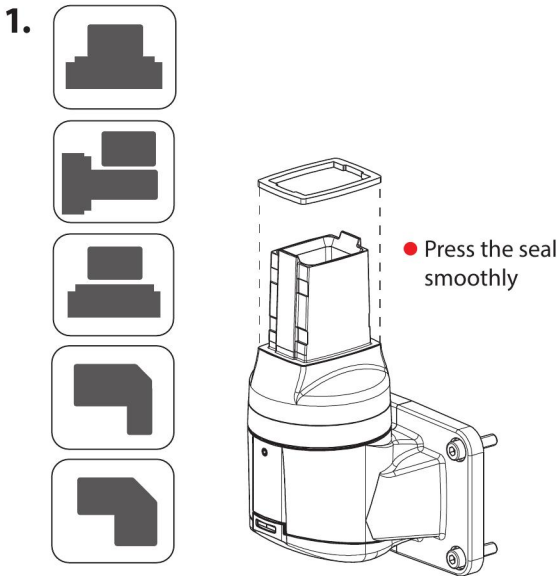
① Mounting to plant or machine



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

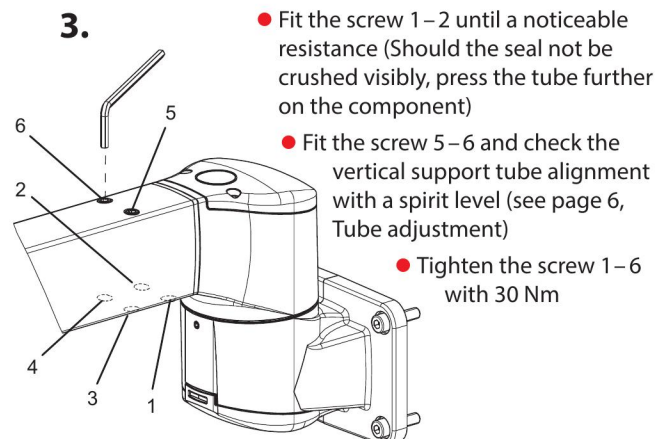
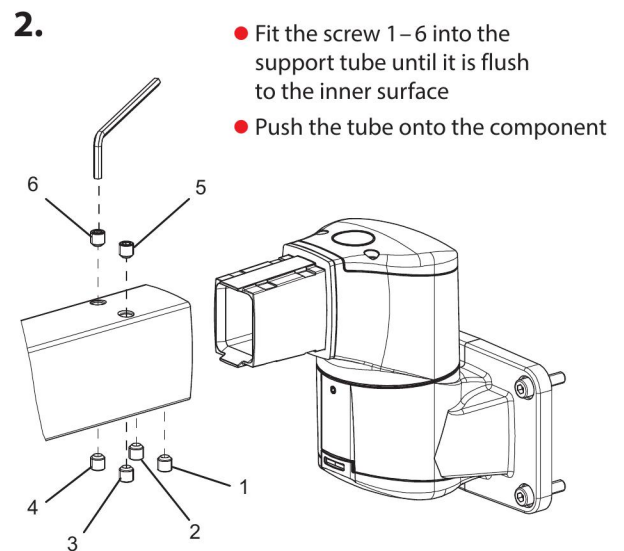
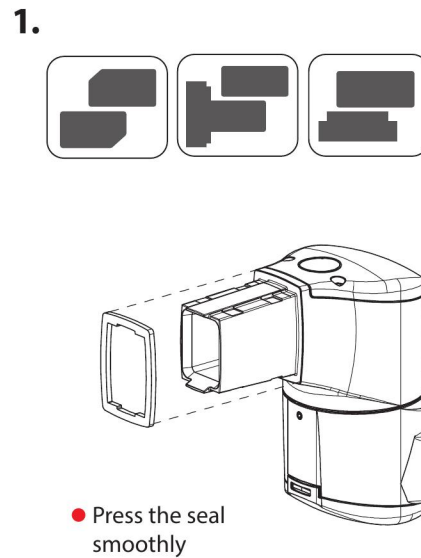
② Tube mounting vertically

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



③ Tube mounting horizontally

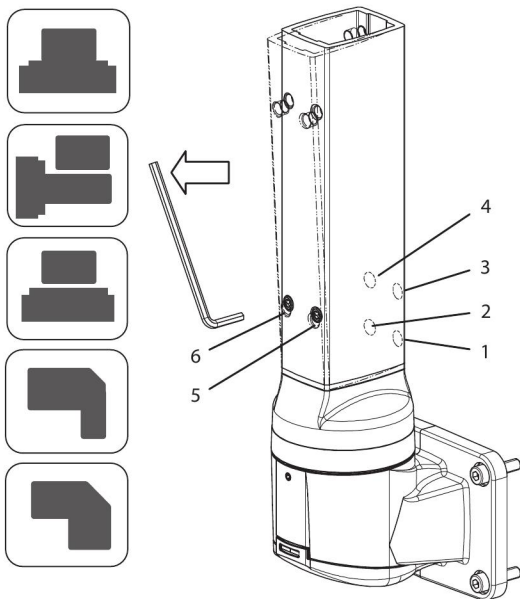
Indication: Mounting of the component "Horizontal Wall Joint" is illustrated below.



④ Vertical tube adjustment (also possible later)

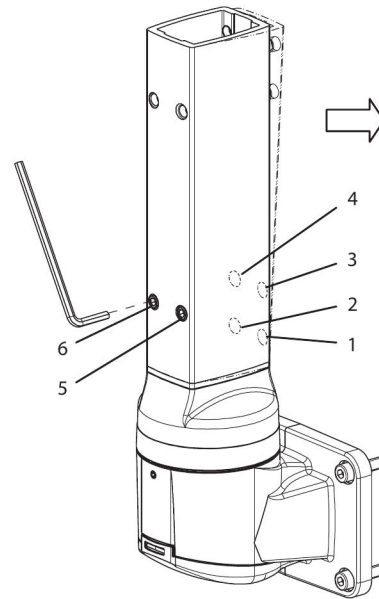
Indication: Adjustment of the component "Vertical Wall Joint" is illustrated below.

Left adjustment



- Loosen the screw 3-6
- Tighten the screw 5-6 until the desired position is reached
- Tighten the screw 3-6 with 30 Nm

Right adjustment

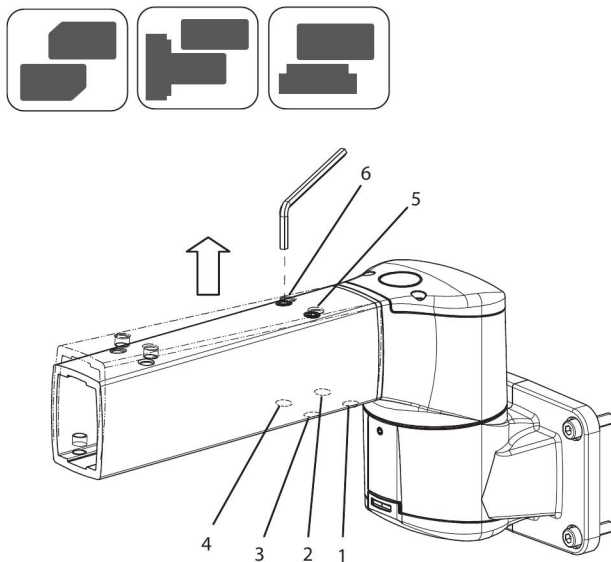


- Loosen the screw 3-6
- Tighten the screw 3-4 until the desired position is reached
- Tighten the screw 3-6 with 30 Nm

⑤ Horizontal tube adjustment (also possible later)

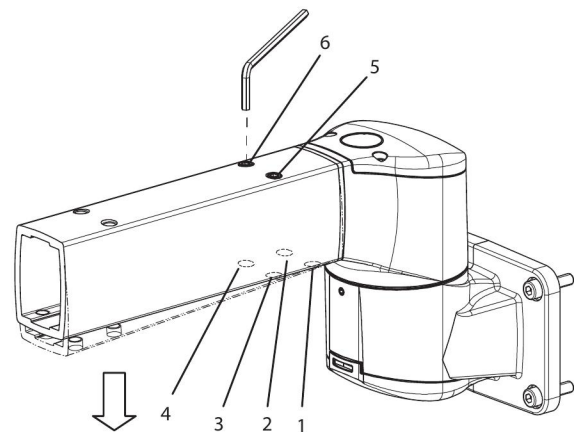
Indication: Mounting of the component "Horizontal Wall Joint" is illustrated below.

Upward adjustment



- Loosen the screw 3-6
- Tighten the screw 5-6 until the desired position is reached
- Tighten the screw 3-6 with 30 Nm

Downward adjustment



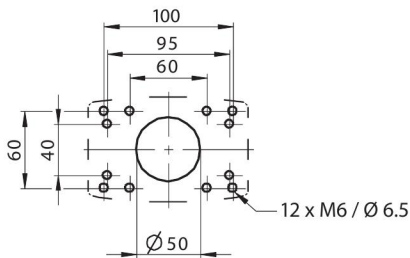
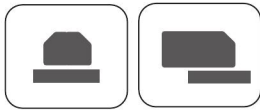
- Loosen the screw 3-6
- Tighten the screw 3-4 until the desired position is reached
- Tighten the screw 3-6 with 30 Nm

Mounting to enclosure

① Mounting to control enclosure by using coupling or elbow coupling

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

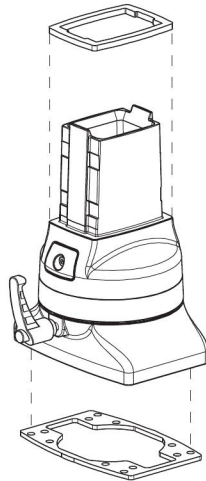
1.



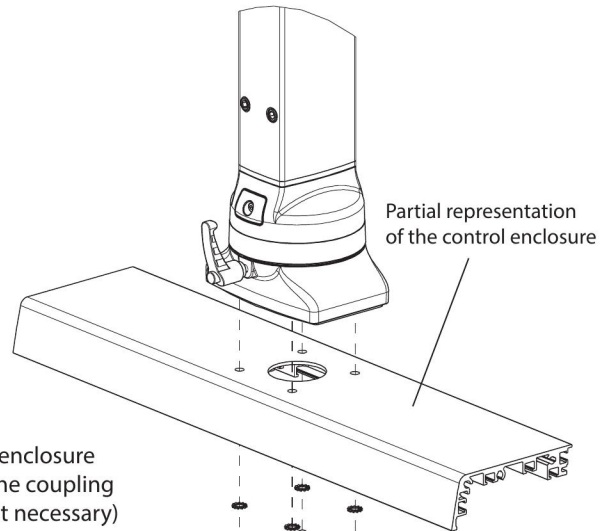
At least 4 bolting points must be used:

- 100 x 60
- 95 x 40
- 60 x 60

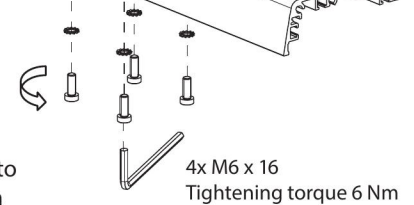
- Press the seal smoothly
- Tube mounting see page 5
- Tube adjustment see page 6



2.

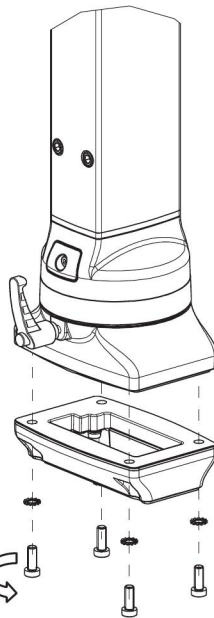
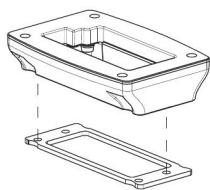
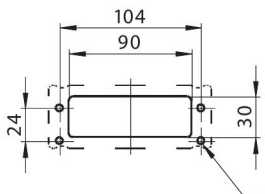


- Lift the enclosure under the coupling (support necessary)
- Attach the lock washers to the screws
- Fit the screws through the horizontal section into the coupling and tighten them with 6 Nm



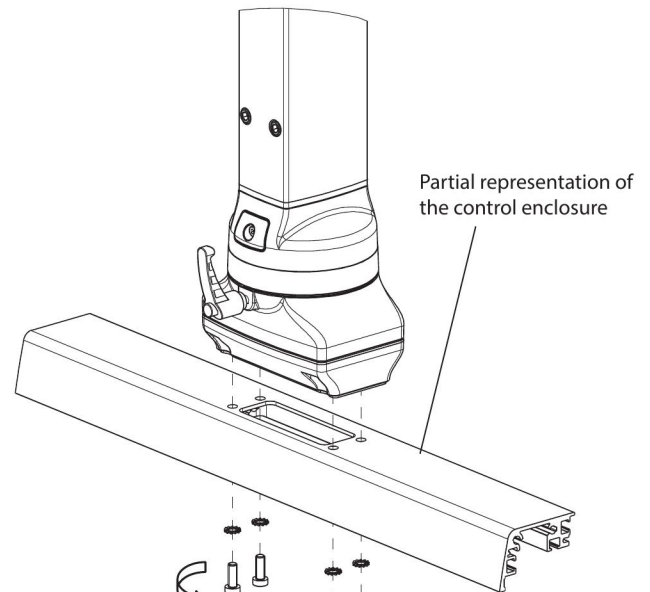
② Mounting to control enclosure by using narrow adapter

Only use in conjunction 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

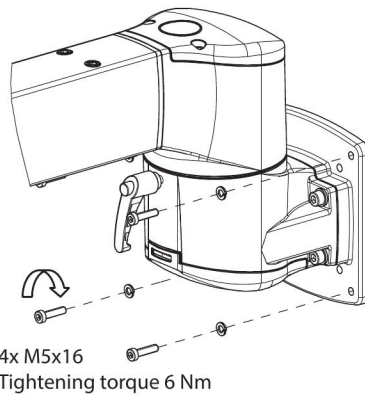
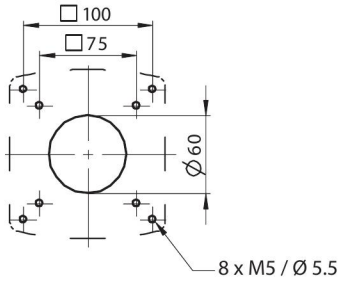
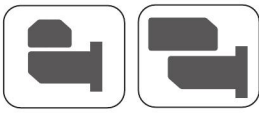


4x M6 x 16
Tightening torque 6 Nm

- 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

③ Mounting to control enclosure by using panel coupling

Indication: Mounting of the component "Panel coupling W" is illustrated below



At least 4 bolting points must be used:

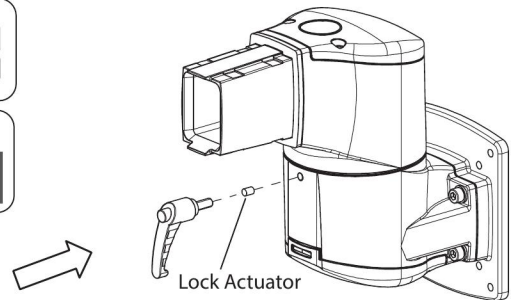
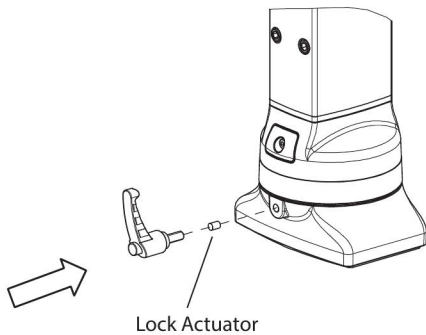
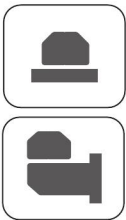
- 100 x 100
- 75 x 75

- Mount the panel coupling with lock washers and screws



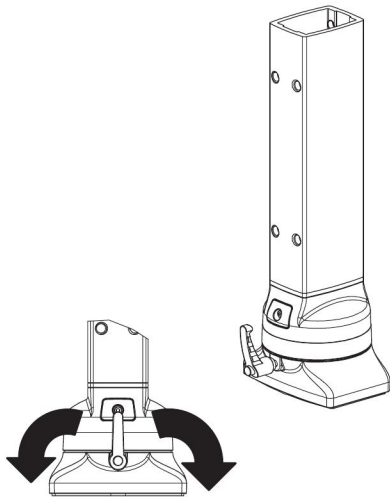
When using panel coupling components, always ensure that the stability of the mounting surface is suitable for mounting.

Screwing the clamping lever

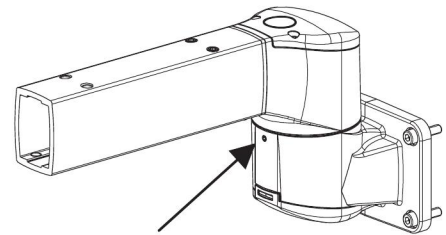


- Insert the Lock Actuator in the threaded bore
- Screw the clamping lever

Modification of firmness



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

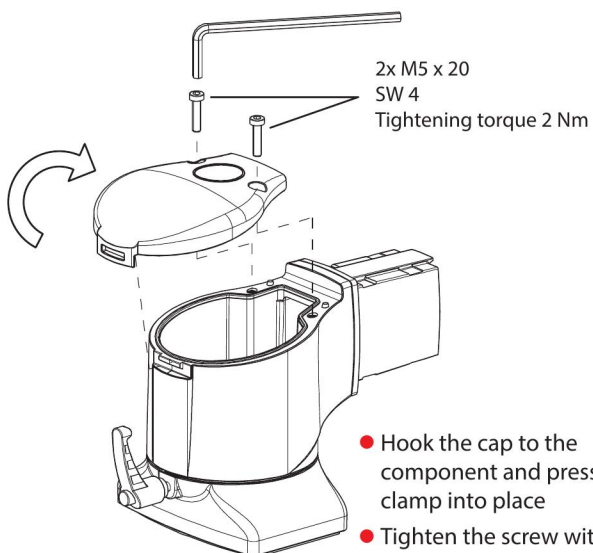
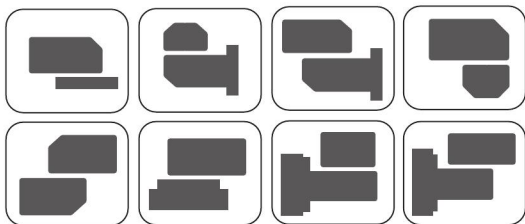


Adjustment screw M6

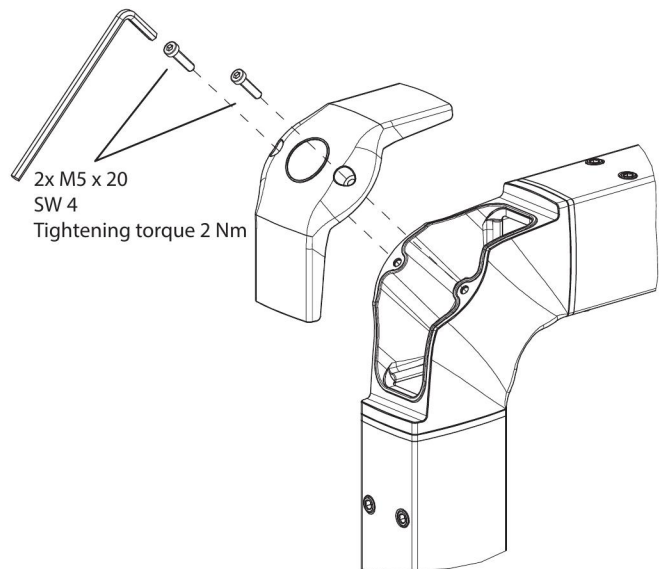
- Adjust screw to increase or decrease resistance
- Factory preset to optimum torque setting

Joint cap mounting and dismounting

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



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



Attitude of the tightness of torque (M)



Attention!

The adjustment must be carried out in the not installed condition of the components. It is important to ensure that the component may have no bearing clearance and the plain bearings rest plan after fixing the threaded sleeve. If the resistance is accomplished in completely installed condition, accepts BERNSTEIN AG no liability for breakage, personal injury or fall of the system.



1. Unscrew the cover if necessary.



2. Unscrew the threaded pin M4 (fig.1)



3. Loosen threaded nut with tool item no. 980 5422 000. (Fig. 5) max. 1 revolution anticlockwise./



4. Set the desired swing torque by tightening the threaded nut (fig.5)



5. Screw the threaded pin M4 as far as the stop (fig.4)



6. Mount the cover if necessary.

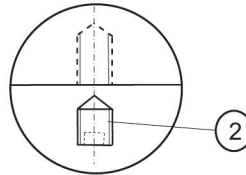


Abb.5

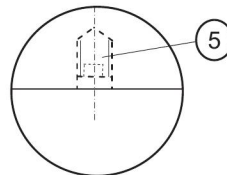


Abb.4

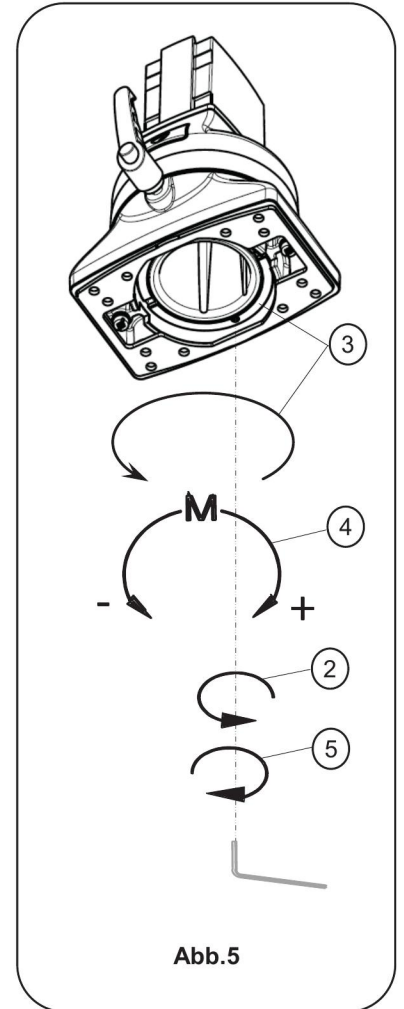


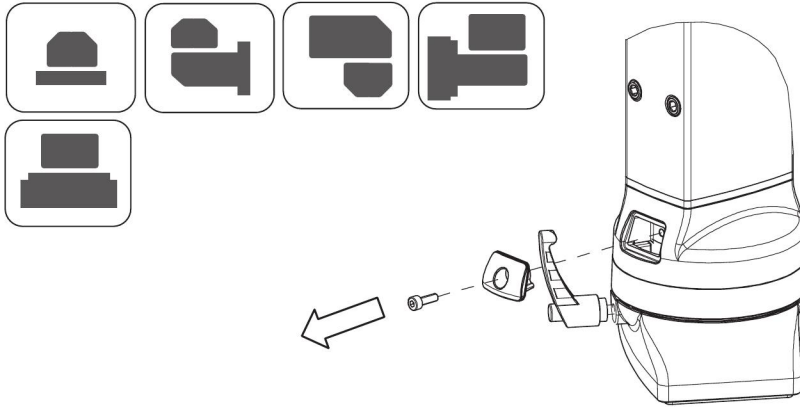
Abb.5

Accessories

| Article number | Type |
|----------------|------------------|
| S1MRL | Rotation Limiter |

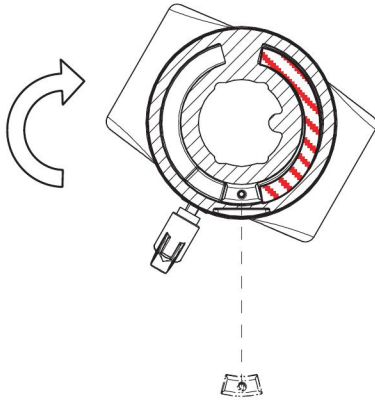
Indication: Mounting of the swivel angle limiter is illustrated below by the component "coupling".

1.



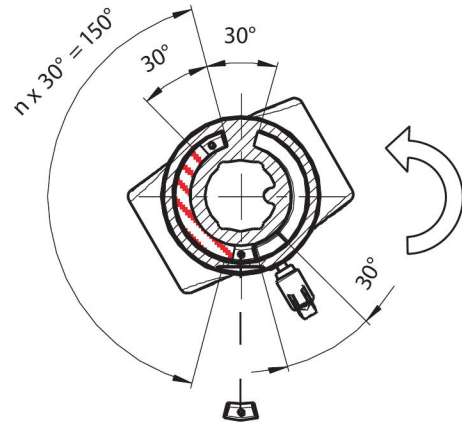
● Dismounting of the dust cap

2a.



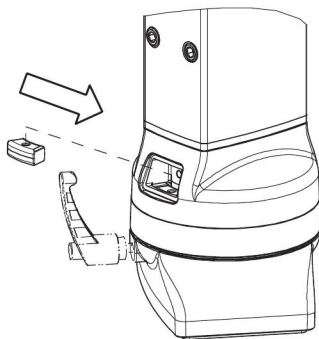
● In order to limit the swivel angle to the left, turn the bottom of the coupling to the right

2b.



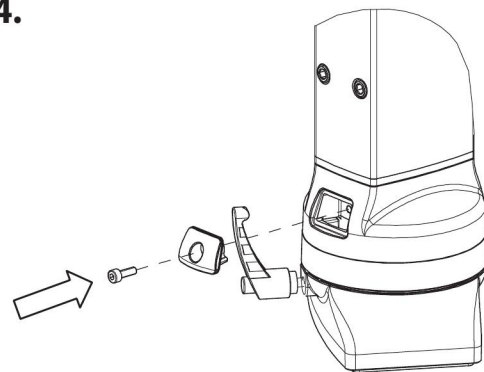
● In order to limit the swivel angle to the right, turn the bottom of the coupling to the left

3.



● Insert swivel angle limiter

4.



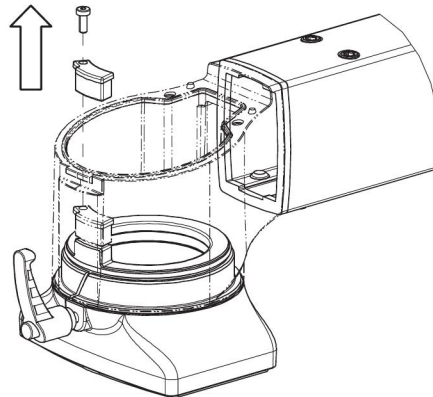
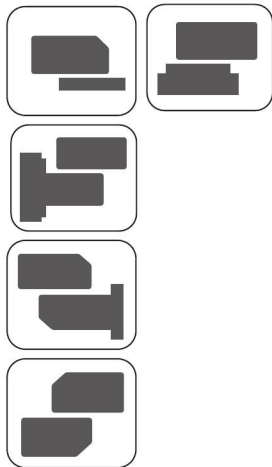
● If the desired limitation is set, the dust cap must again be fitted

Once fitted the swivel angle limiters can be removed at any time

| Article number | Type |
|----------------|------------------|
| S1MRL | Rotation Limiter |

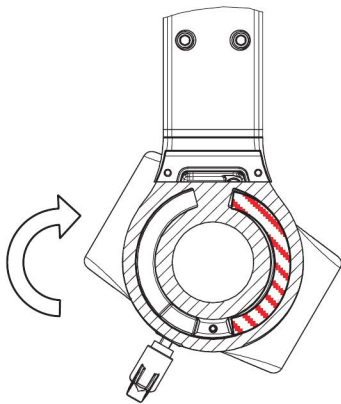
Indication: Mounting of the swivel angle limiter is illustrated below by the component "elbow coupling".

1.



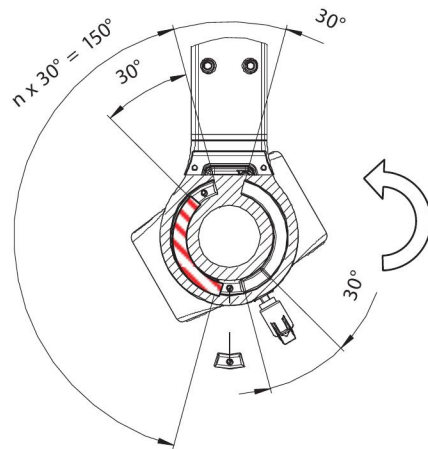
- For removal of cover, see page 9
- Unscrew the locking tappet and remove it

2a.



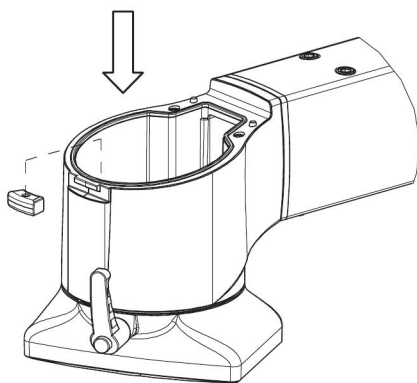
- In order to limit the swivel angle to the left, turn the bottom of the coupling to the right

2b.



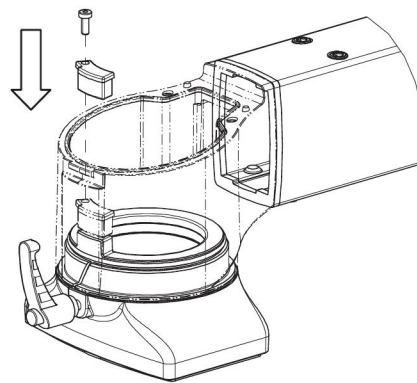
- In order to limit the swivel angle to the right, turn the bottom of the coupling to the left

3.



- Insert swivel angle limiter

4.

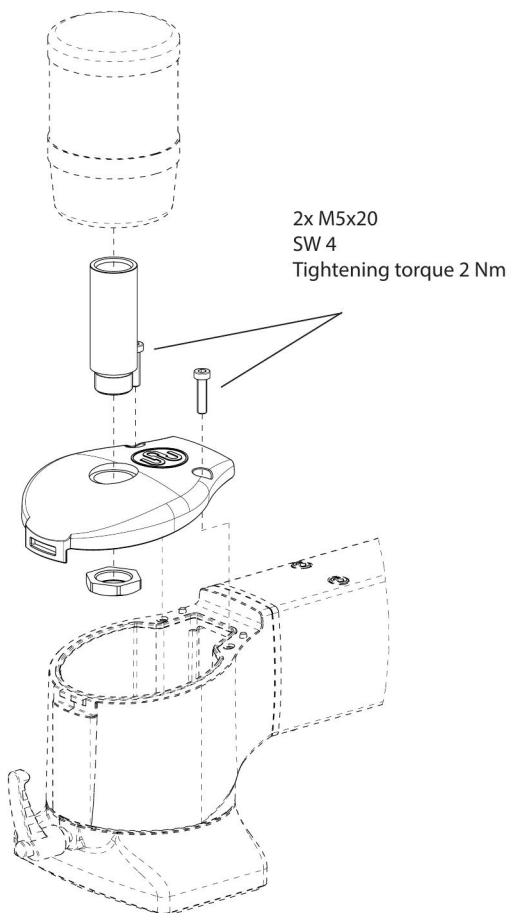
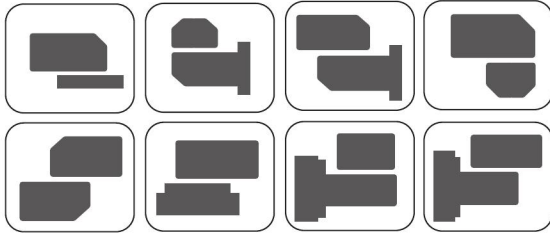


- If the desired limitation is set, the dust cap must again be fitted
- Fit the cover again as described, see page 9

Once fitted the swivel angle limiters can be removed at any time

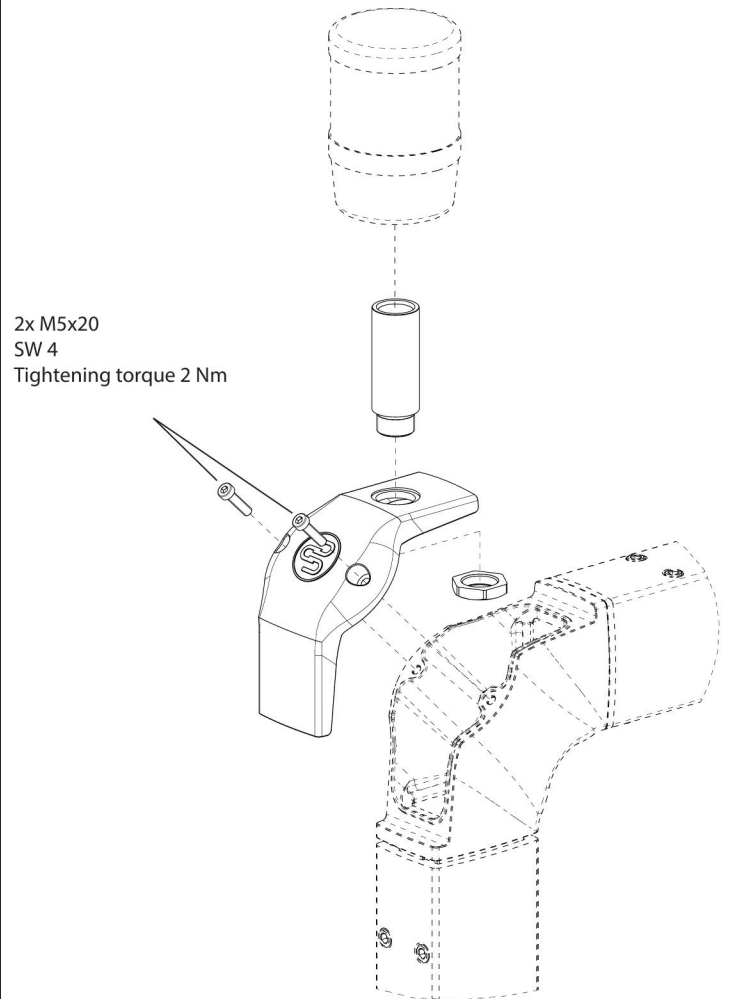
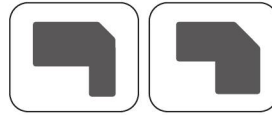
Accessories

| 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

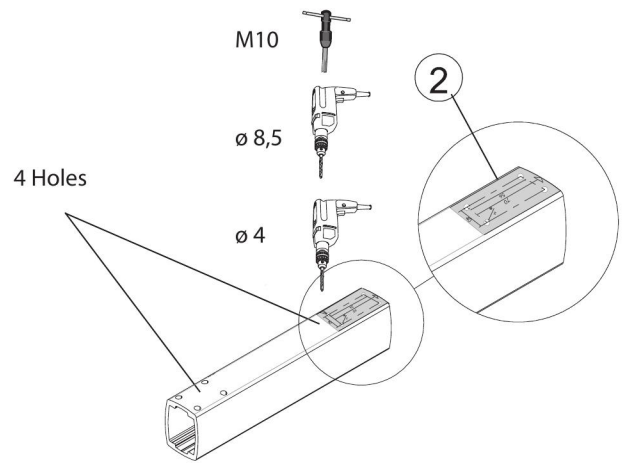
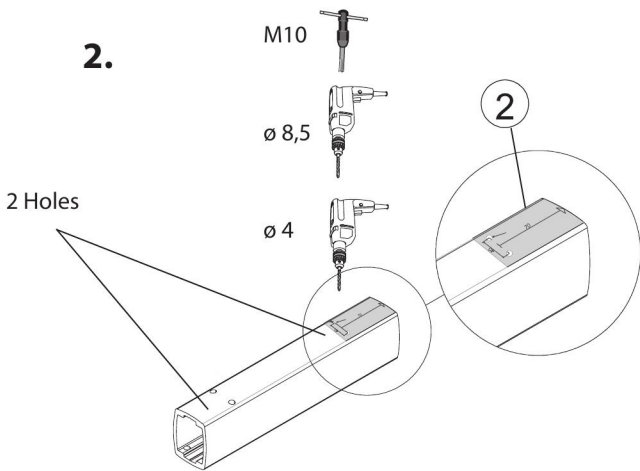
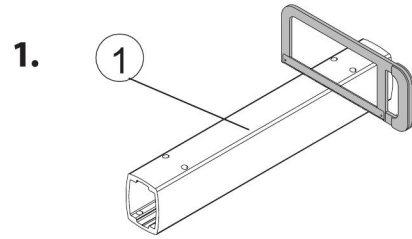
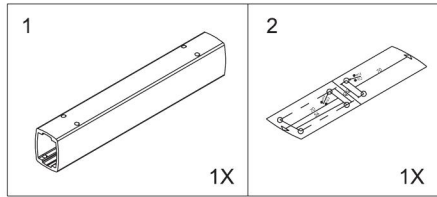
| Article number | Type |
|----------------|--|
| S1MSLAA | Set of signal lamps Elbow cap RAL 9006 |
| S1MSLARE | Set of signal lamps Reducing elbow cap RAL 9006 |



- 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

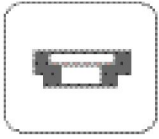


The original operating and installation instructions are the German language version.
Other languages are a translation of the original operating and installation instructions.

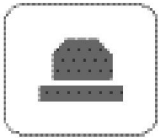
Earthing

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

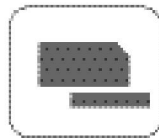
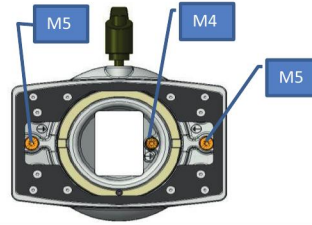
Fixing positions for earth screws



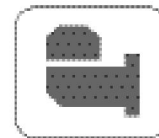
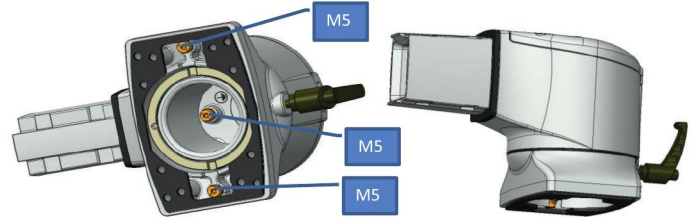
Narrow Adapter
S1MA



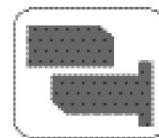
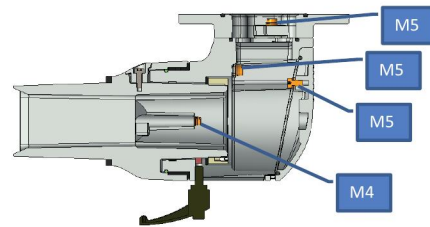
Flange Coupling
S1MFC



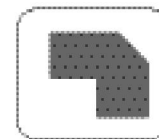
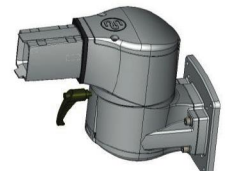
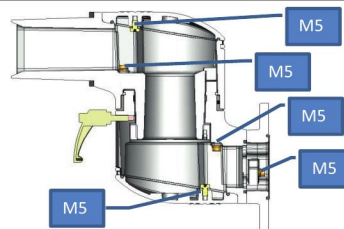
Flange Elbow Coupling
S1MFEC



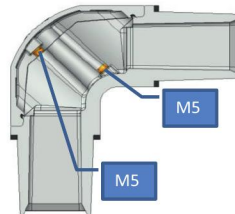
Vertical Panel Coupling
S1MPCV

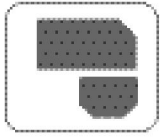


Horizontal Panel Coupling
S2MPCH

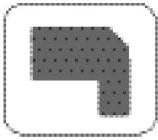
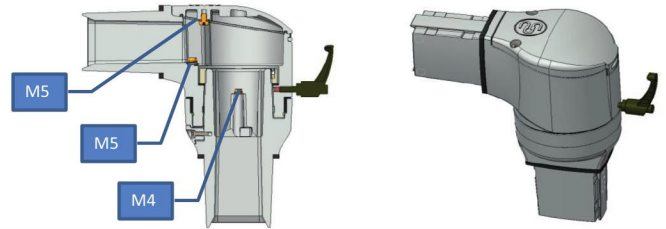


Elbow
S1ME

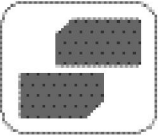
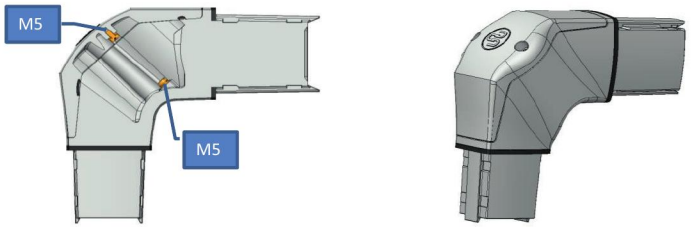




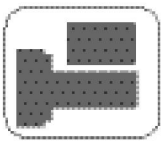
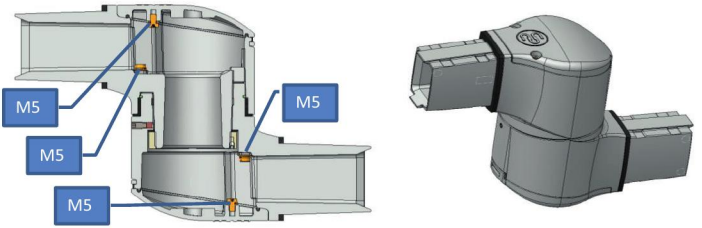
Rotatable Elbow
S1MER



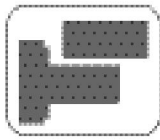
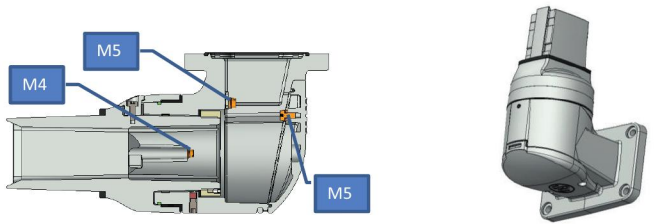
Rotatable Elbow
S1MER



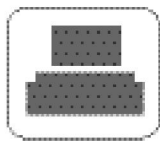
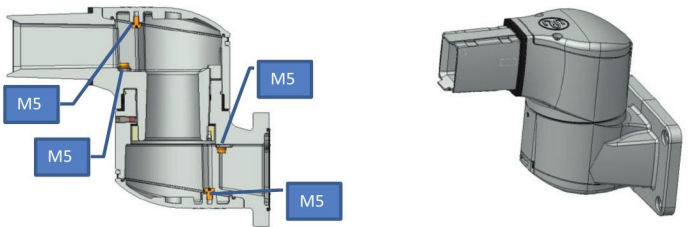
Intermediate Joint
S1MIJ



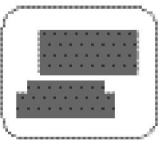
Vertical Wall Joint
S1MWJV



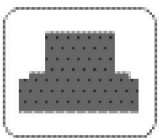
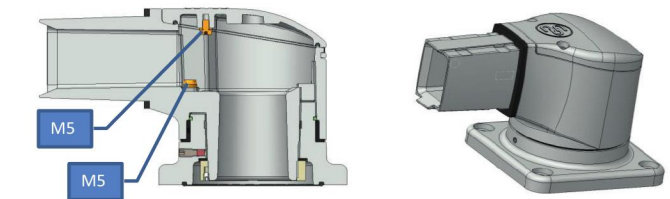
Horizontal Wall Joint
S1MWJH



Rotary Base
S1MTBB



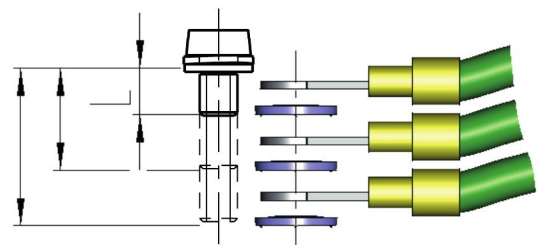
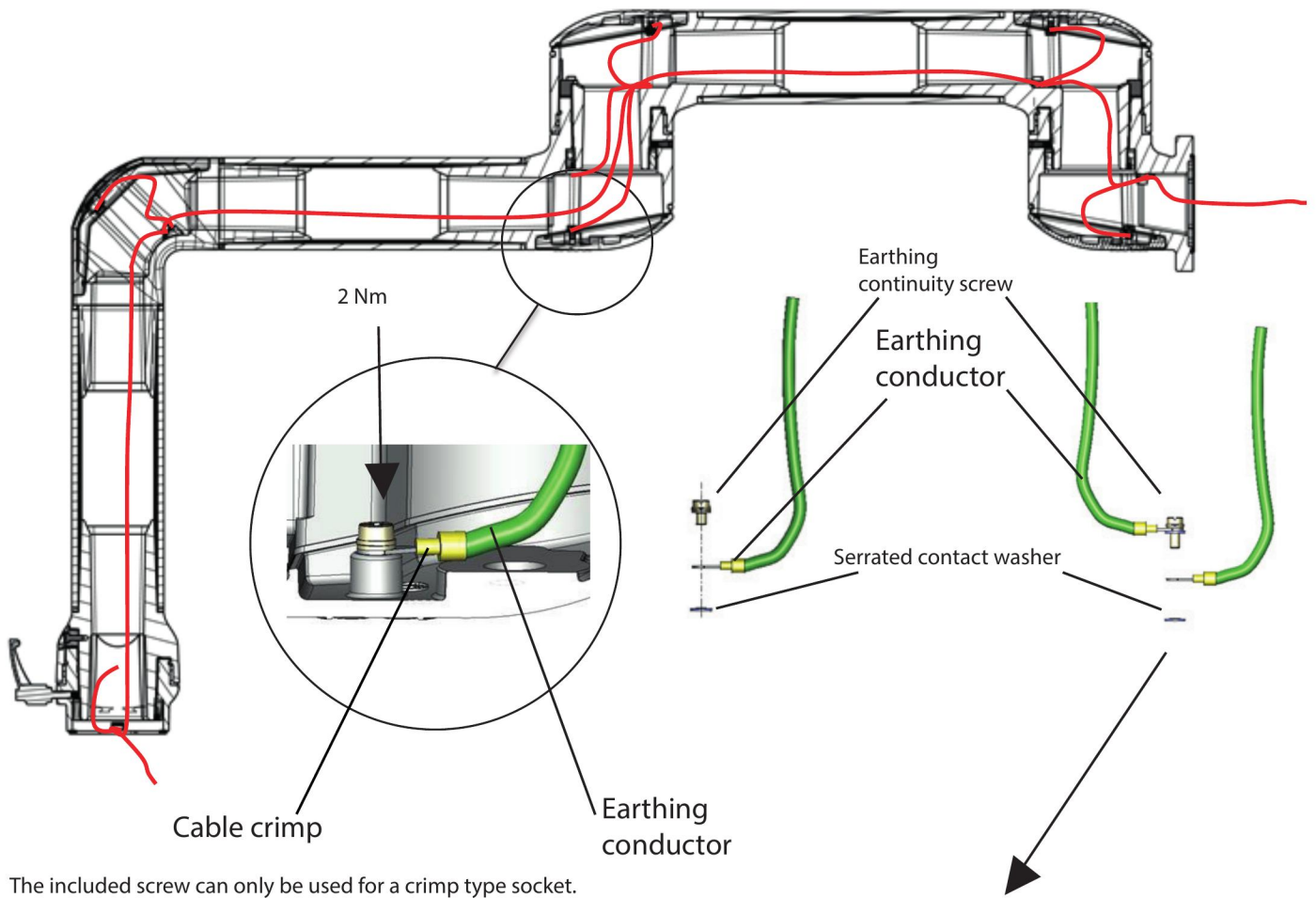
Set-Up Joint
S1MSJ



Wall Flange
S1MWF



Earthing example



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.