Translation of the
Original operating instructions v1.2

Manual

Stainless steel industrial monitor

SHD9000 series

adstec
Industrial IT

Status: 2025-10-30

Read these instructions carefully before use and keep them in a safe place. The instructions contain important information on the product, in particular on its intended use, safety, installation, use, maintenance and disposal.

Pass the instructions on to the user after installation and with the product in the event of resale.

These instructions can be downloaded at: https://www.ads-tec-iit.com in the download area.

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Inhalt

1 General notes on documentation

1.1 General information

These operating instructions are intended to ensure the safe and efficient use of the SHD9000 industrial monitors , hereinafter referred to as the "device".

All specified safety instructions and instructions for action are a prerequisite for safe working and must be observed.

The operating instructions must be read by all users and must be accessible at all times.

The original of these operating instructions was written in German. Any non-German version of these operating instructions is a translation of the German operating instructions.

1.2 Explanation of the safety instructions

1.2.1 Structure of the safety instructions

The signal word classifies the hazard.
The type/consequence and source of the hazard are indicated below the signal word.
Instructions for avoiding the danger are marked with an arrow.

DANGER

Type and source of danger!

Possible consequences of ignoring the hazard

➡ Measures for hazard avoidance

1.2.2 Explanation of the signal words

DANGER

Indicates an imminent danger. If it is not avoided, death or serious injury will result.

WARNING

Indicates a potentially imminent danger. If it is not avoided, death or serious injury may result.

CAUTION

Indicates a potentially imminent danger. If it is not avoided, slight or minor injuries may result.

ATTENTION

Indicates a potentially harmful situation. If it is not avoided, the system or something in its vicinity may be damaged.

Recommendation for use:
Provides information on conditions that must be observed to ensure error-free operation. It also provides tips and advice on the efficient use of devices and software optimisation.

1.3 Relevant documentation for the device

The following documentation is authoritative for setting up and operating the device:

- These operating instructions:
  Contains information on installation, commissioning and operation of the appliance as well as technical data.
- Website:
  In addition to the operating instructions, drivers, software, user manuals, brochures and flyers can be downloaded from the download area at https://www.ads-tec-iit.com.

1.4 Symbols

Symbol	Meaning
	Labelling of batteries and electronic devices. These must not be disposed of with household waste, but must be collected separately. Used batteries and electronic devices must be returned to the point of sale or to a disposal system.
	Symbol for the protective conductor connection (PE)
	Symbol for the functional earth connection (FE)
	Symbol for hot surface

1.5 Data, illustrations, changes

All data, texts and illustrations have been compiled to the best of our knowledge and belief. They do not constitute a guarantee of properties. Despite the greatest possible care, no liability can be accepted for correctness, completeness and up-to-dateness. We reserve the right to make changes.

1.6 Trademark

Please note that the software and hardware designations and brand names of the respective companies used in this documentation are subject to general trademark protection.
®®Big-LinX and X-Remote are registered trademarks of ADS-TEC. All other third-party trademarks used are hereby recognised.
ADS-TEC reserves the right to assert all rights in the event of an infringement of the trademark rights.

1.7 Copyright

2 General information on the device

2.1 Manufacturer & Contact

The manufacturer of the device is ads-tec Industrial IT GmbH. It is hereinafter referred to as ADS-TEC.

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Web: https://www.ads-tec-iit.com

2.2 Intended use

The device is used to visualise a wide variety of processes on systems and machines in different application environments.

Thanks to its IP class, the device can also be used in wet and dusty production environments.

The operator is solely responsible for compliance with the **operator's obligations** and for observing any technical or legal changes that may occur.

Installation, commissioning and operation may only be carried out by **trained and qualified personnel**. take place.

Interventions by the user are only intended to carry out the processes described in this document. If further changes are to be made, the manufacturer or a service centre authorised by the manufacturer must be consulted.

The appliance must **be de-energised** during service work. Suitable measures must be taken to avoid **electrostatic discharges** on components.

The device may only be assembled, installed and operated **within the permissible specifications.** Use in non-specified environments is prohibited.

2.3 Non-intended use

Any other operation of the appliance or operation beyond that described is considered improper use.

The device must not be used to control vehicles or for applications for which further approvals outside the manufacturer's declaration are required, e.g. hazardous areas, medical technology and shipping.

The product does not support the safety function of functional safety. Do not use the product to analyse safety-relevant data in order to transfer a system to a safe state.

The appliance must not be put into operation if it is damaged during transport or if the specifications are not met, and must be taken out of service if conditions change.

If the device is not used as intended, ADS-TEC accepts no responsibility or liability for personal injury or damage to property resulting directly or indirectly from handling the device.

If the appliance is opened by an unauthorised person, this may pose a risk to the user and invalidate the warranty.

If the appliance shows obvious signs of damage, e.g. caused by incorrect operating/storage conditions or improper handling, it must be shut down immediately and protected against unintentional use.

The device can be damaged by unauthorised mechanical modifications. Ensure that the device is not drilled into, chiselled into, shot through or otherwise altered in its external shape!

2.4 Environmental conditions

ATTENTION

Damage due to heat

If the device is exposed to radiation from sunlight or other sources of light or heat, it may overheat and be damaged.

➡ Do not expose the device to direct sunlight or other light sources or heat sources.

The appliance may be operated under the environmental conditions specified in the **technical data**. If these specifications are not adhered to, the warranty for the device will be invalidated. ADS-TEC is not liable for damage caused by incorrect handling.

2.4.1 Vibration/shock

The swing/shock tests were carried out as follows:

Vibration near machines/conveyor belts

- Test specimen: functional device
- Test standard: EN 60068-2-6
- Oscillating mould: Sinus
- Test axes: X / Y / Z
- Frequency: 2...200 Hz
- ±Frequency change: 1 octave/min
- Deflection: 3 mm
- Amplitude: 10 m/s²
- Test duration: 2 h per axle
- DUT status: DUT electrically in operation
- Test criterion: Visual inspection after the test and functionality of the test specimen during and after the test

Shock near machines/conveyor belts

- Test specimen: functional device
- Test standard: EN 60068-2-27
- Shock shape: half-sine
- Test axes: +X / -X / -Y / +Y / +Z / -Z
- Amplitude: 250 m/s²
- Duration: 11 ms
- Number: 10 shocks per direction and axis
- DUT status: DUT electrically in operation
- Test criterion: Visual inspection after the test and functionality of the test specimen during and after the test

2.5 Conformity

The manufacturer hereby declares that the product described in this manual complies with all relevant provisions of the following European Directives:

- 2011/65/EU RoHS Directive
- 2014/30/EU EMC Directive
- 2014/35/EU Low Voltage Directive
- EC 1907/2006 REACH Regulation

The device is a class A device (industrial area). This class may cause radio interference in residential areas.
The EU Declaration of Conformity is available for download at
https://www.ads-tec-iit.com/en/support/eu-conformity/

Recommendation for use:

To comply with the statutory EMC requirements, the connected components and the cable connections must also fulfil these requirements. Shielded bus and LAN cables with shielded plugs must therefore be used and installed in accordance with the instructions in the respective operating manuals.

2.6 Warranty / Repair

During the warranty period, repairs may only be carried out by the manufacturer or by persons authorised by the manufacturer.

2.7 Limitation of liability

ADS-TEC accepts no liability for personal injury, damage to property, damage to the device or consequential damage caused by non-compliance with these operating instructions, improper use of the device, repairs and other actions on the device by unqualified electricians not certified by ADS-TEC or the use of unauthorised spare parts. Non-compliance with maintenance intervals also leads to exclusion of liability. It is also strictly forbidden to make unauthorised modifications or technical changes to the device.

3 Scope of delivery and nomenclature

Check that the contents of the packaging are intact: If you notice any damage, please contact the manufacturer immediately. The device must not be put into operation.

Check the contents of the packaging for completeness with regard to your order:

- 1 x device, depending on order with integrated HDBaseT receiver module
- 1 x 3-pin plug for power supply
- Quick start guide
- Accessories according to order/delivery note

The type code of the SHD9000 has the following meaning.

Example:

DVG-	**SHD9024**	**001 -**	**AA**	**/AB**
A	**B**	**C**	**D**	**E**

A: Device with software

B: SHD90xx = name of device family: Smart Hygienic Display
SHP9019: 19“ display
SHP9024: 24“ display

C: Configuration
Numbers 001…899: standard variants
Numbers 900…999: sample devices, e.g. for test purposes

D: Operating system: letters AA...ZZ

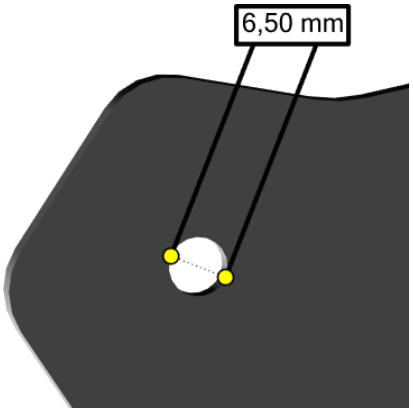
E: Exact specification of the parts list version and software configuration

4 Mechanical assembly

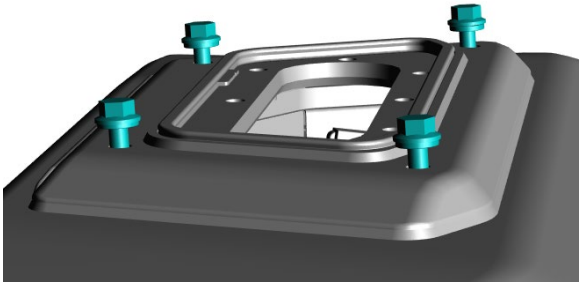
The **external dimensions** of the device can be found in chapter 9 **Dimensional drawings.**

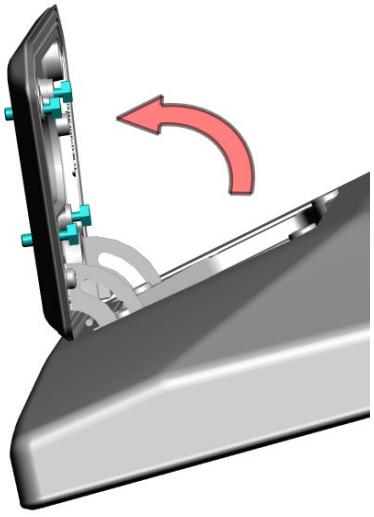
4.1 Attachment to VESA 100 interface

1. Screw the optional VESA 100 flange to a wall that can safely support the weight of the device (M6 or ¼" screw connection; torque and screw lock of the customer's choice and responsibility).

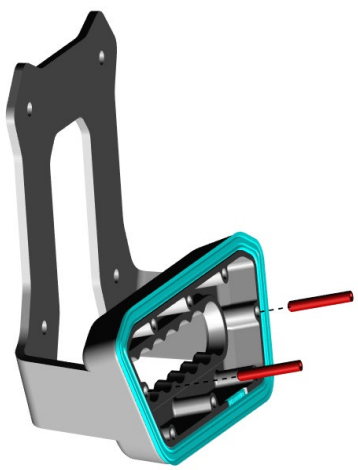


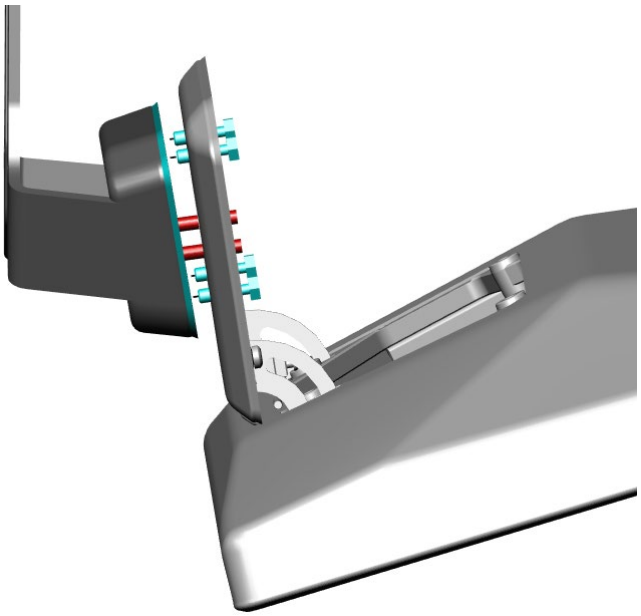
2. Loosen the screws and open the interface cover



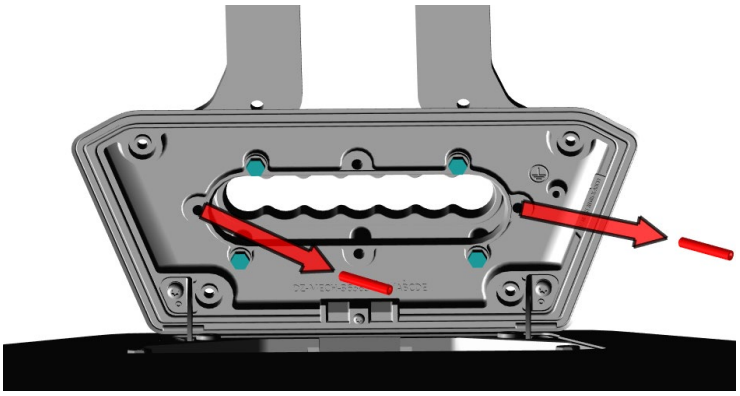


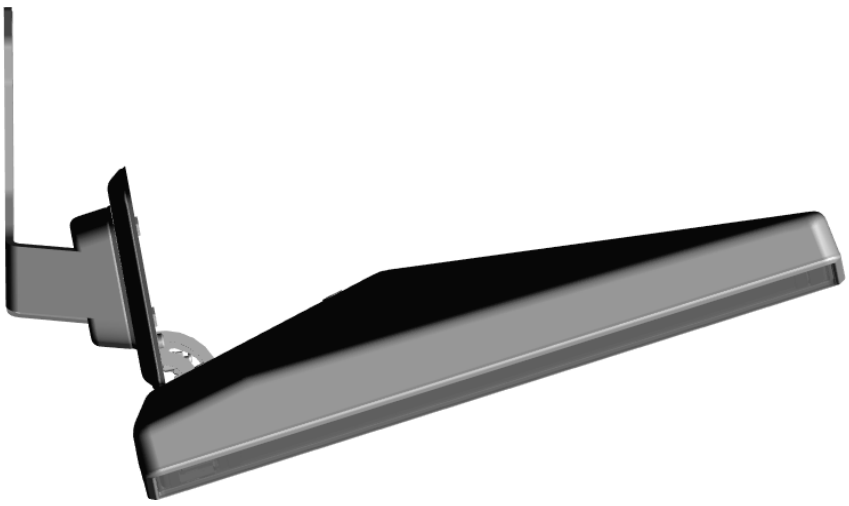
3. Place the device with the interface cover on the pre-mounted VESA flange.
   Two threaded pins (M5x30, Allen key 4 mm, ISO 4026) can be used to make this easier.
   Tighten the four **mounting screws**.



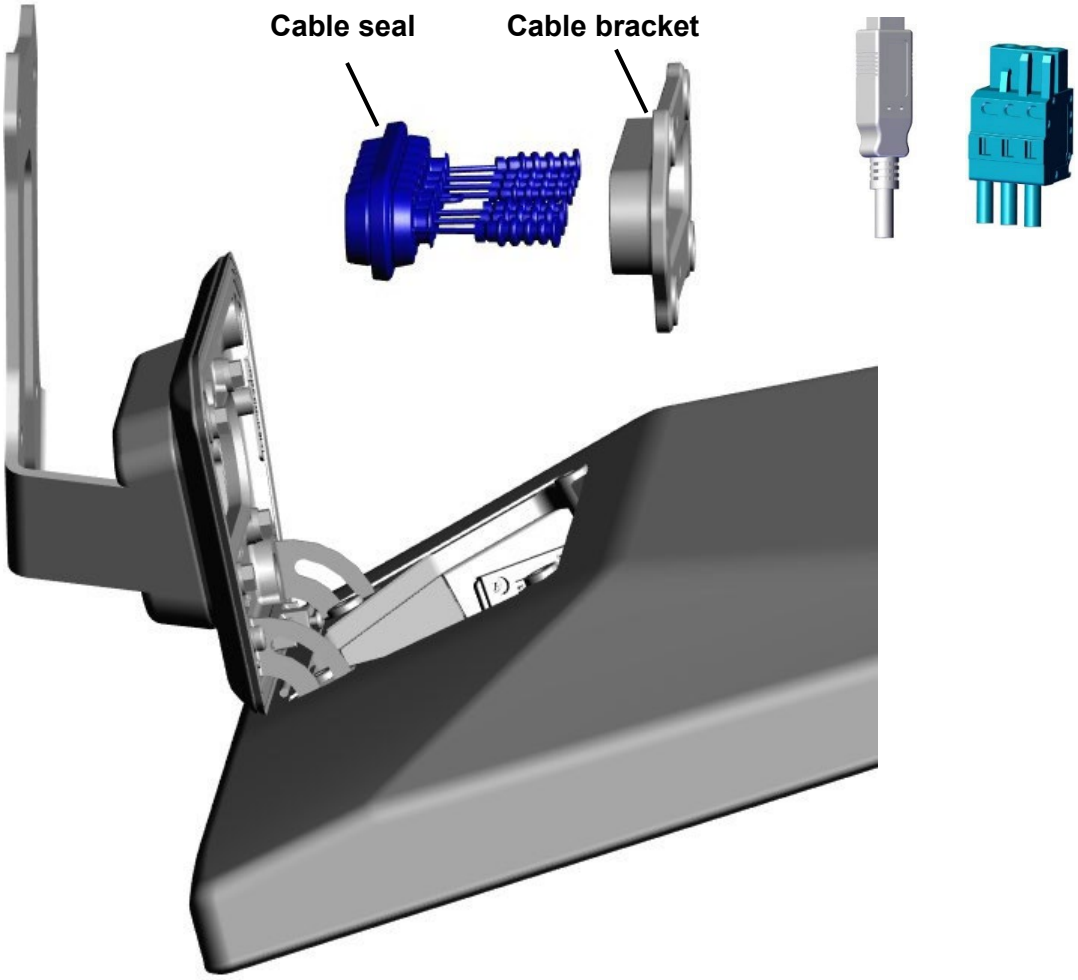


After tightening the mounting screws, remove the two threaded pins (if used).

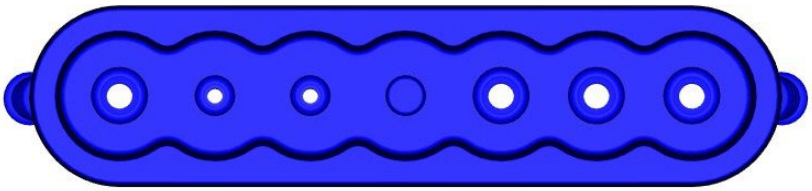




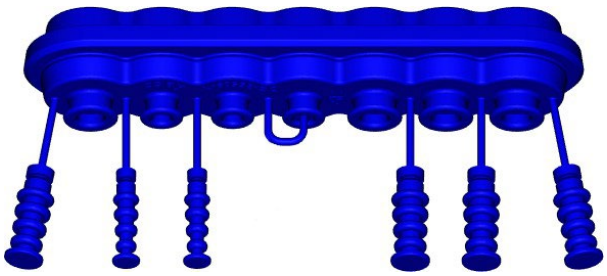
4. Route all cables through the **VESA flange, slotted cable seal** and **cable bracket**.
   To comply with the IP protection class: Note the different hole diameters.



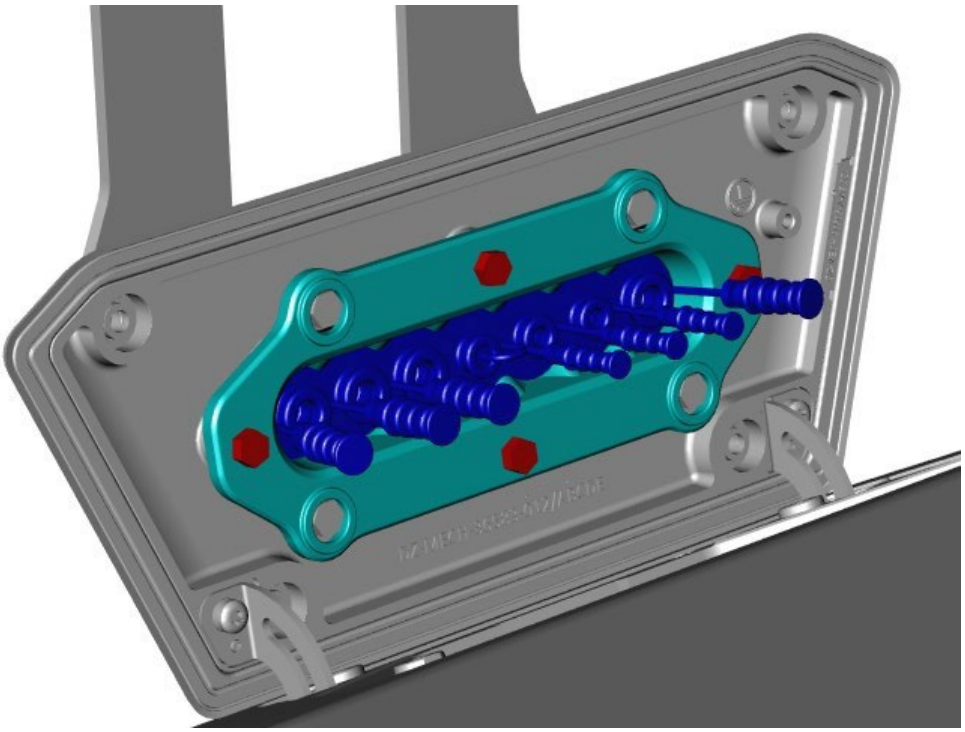
Large holes for cable diameters 5...7 mm, small holes for cable diameters 3...5 mm



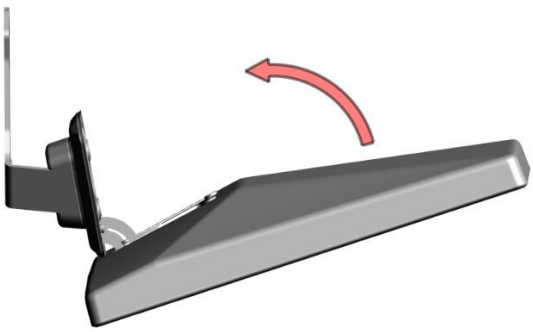
Seal any unused holes with plugs:



5. Press the **seal** into the cut-out in the interface cover. Fit the **cable bracket** and screw tight (M5x18 screws supplied).

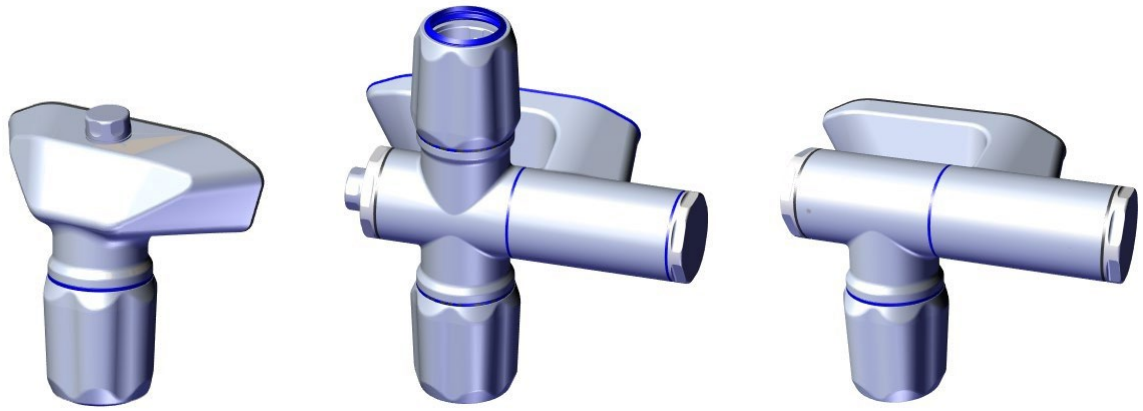


6. Fold up the device. Tighten the interface cover.

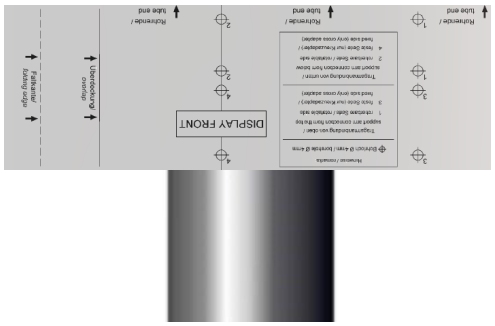


4.2 Attachment to a tube end

The different swivel and tilt adapters are always attached to the end of a tube in the same way.

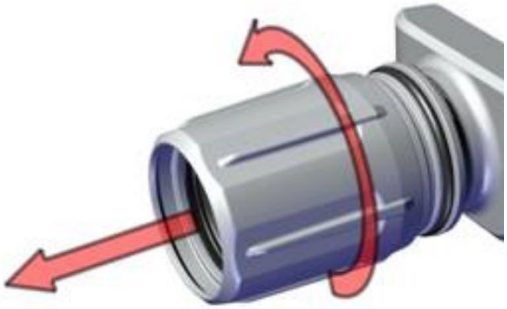


1. **Deburr** the end of your holder tube (diameter 48.3 mm).
2. Stick the **drilling template** around the end of the holder tube. Then drill two 4 mm holes in the positions indicated by the drilling template, depending on the mounting option.

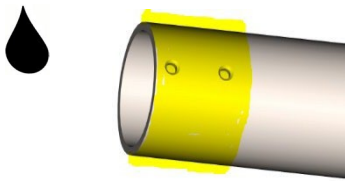


Please note: In the appendix to this operating manual, you will find additional dimensional drawings and schematic diagrams of the individual mounting options in the document ‘SHX9000 attaching tube adapter’.

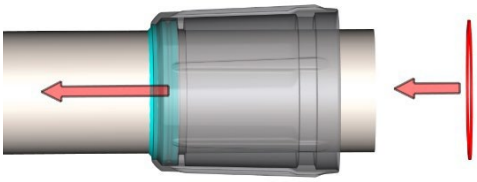
3. Unscrew the **sealing sleeve**. Make sure that the **spacer ring** that is exposed does not get lost (see step 5).



4. Apply a suitable **lubricant** to the seal and tube shoulder to make it easier to push on the sealing sleeve (depending on the application, e.g. penetrating oil, soap or fitting grease).



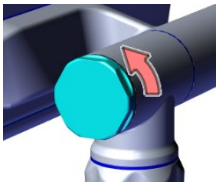
5. Push the sealing sleeve onto the tube and check once again that the **seal** is seated correctly. Then insert the spacer ring.



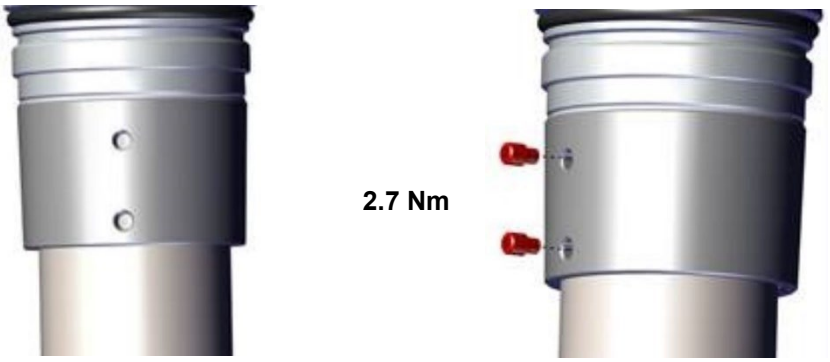
6. Remove the grub screws (if present):

7. Feed all required lines through the tube adapter and tube.

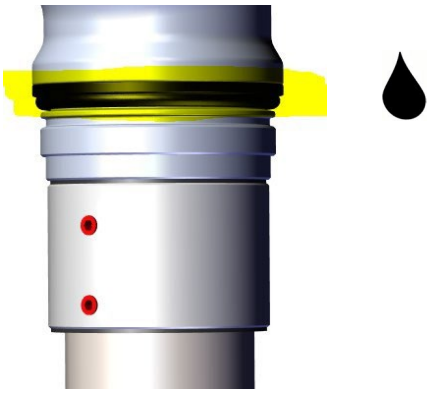
Tip: Remove the end cap on **swivel and tilt adapters** for better accessibility, see section 4.4.



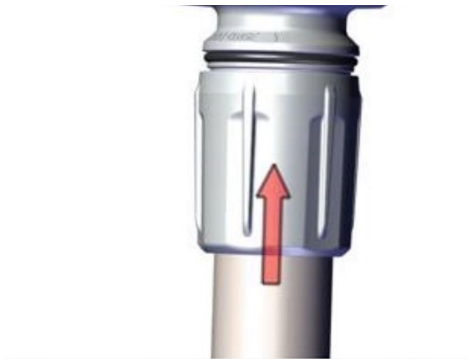
8. Push the tube adapter onto the tube. Align the parts so that the holes in the tube and tube adapter are on top of each other and the grub screws can be screwed back in.



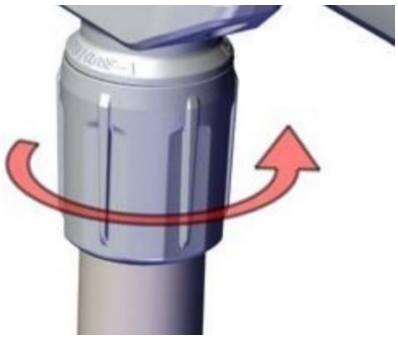
9. Lubricate the upper seal thinly with a suitable **lubricant** (depending on the application, e.g. penetrating oil, soap or fitting grease).



10. Slide on the sealing sleeve:



... and tighten them as much as necessary:



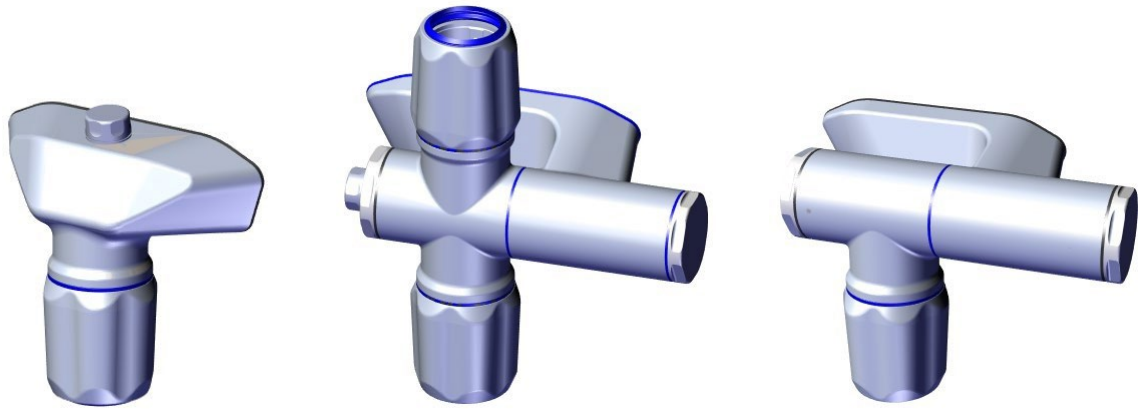
Recommendation:

In the first step, the sealing sleeve is used to eliminate any remaining play (wobble). It is screwed on until the tube adapter is seated on the appliance **without play.**

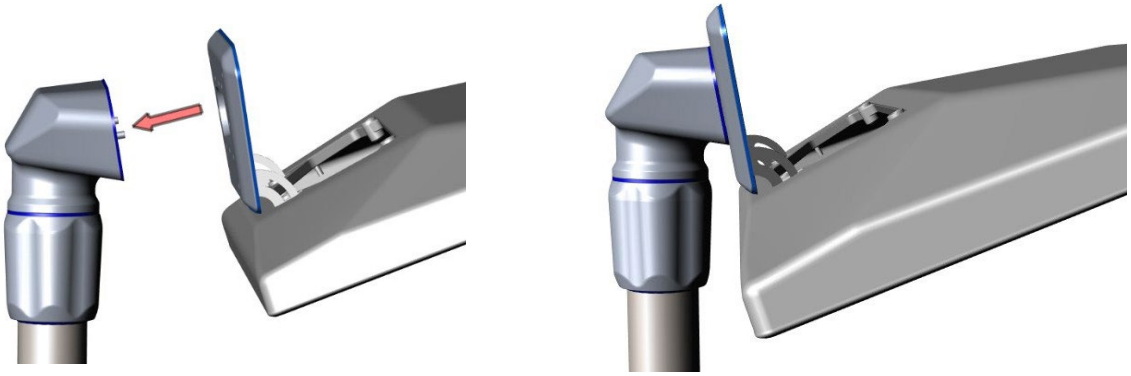
If the sleeve is then turned further, this can increase the **rotational resistance**.

4.3 Attachment to a swivel or tilt adapter

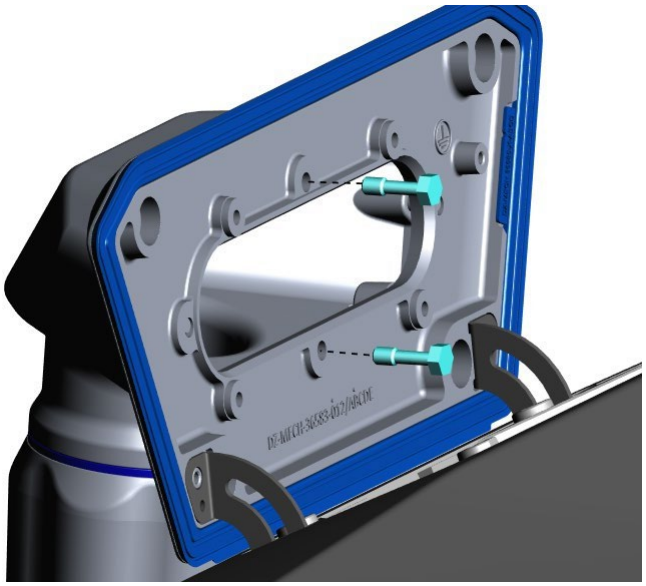
The device is always attached to an adapter flange in the same way for the various swivel and tilt adapters.



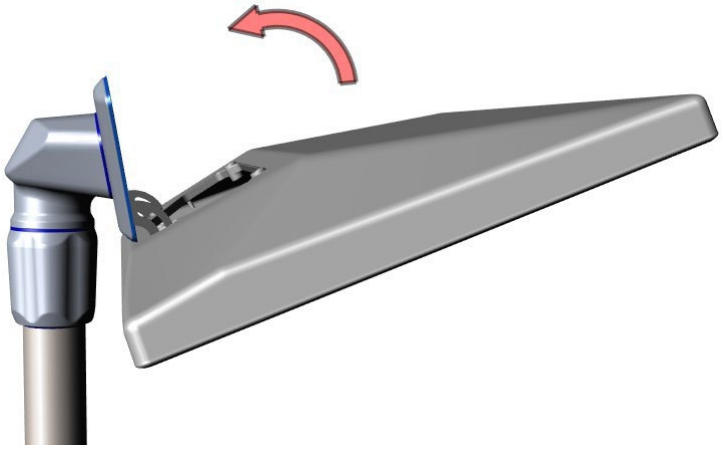
1. Route all cables, then place the device on the two pins on the flange with the interface cover open:



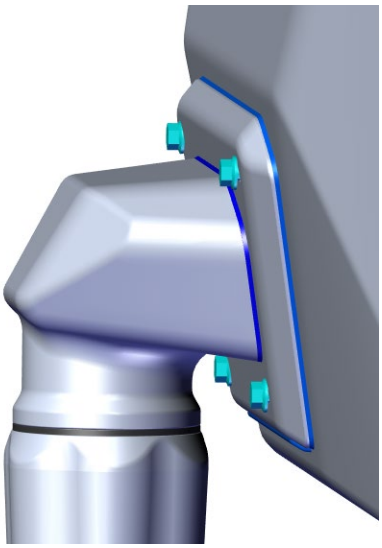
2. Tighten the **mounting screws**. Then, connect all cables.



3. Fold up the device:

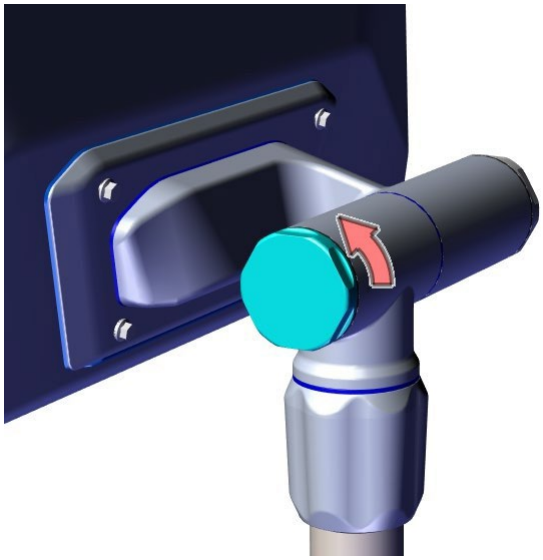


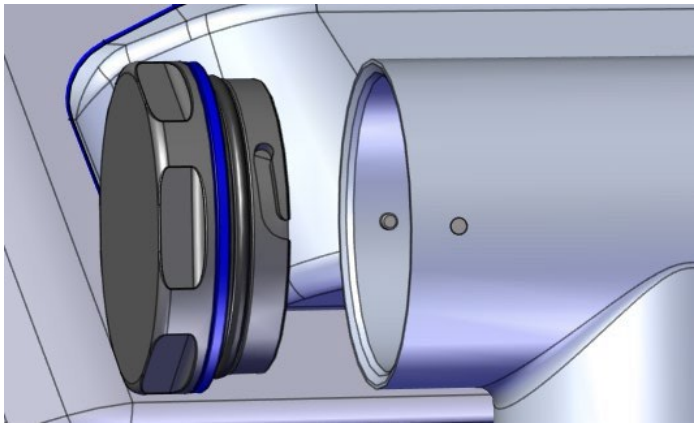
4. Tighten the interface cover



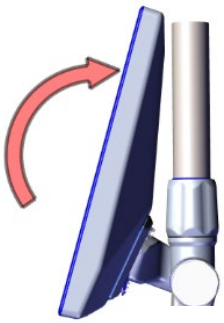
4.4 Mounting a button module

1. If an end cap is fitted to the turn/tilt adapter, remove it (bayonet lock, spanner size 50 mm).

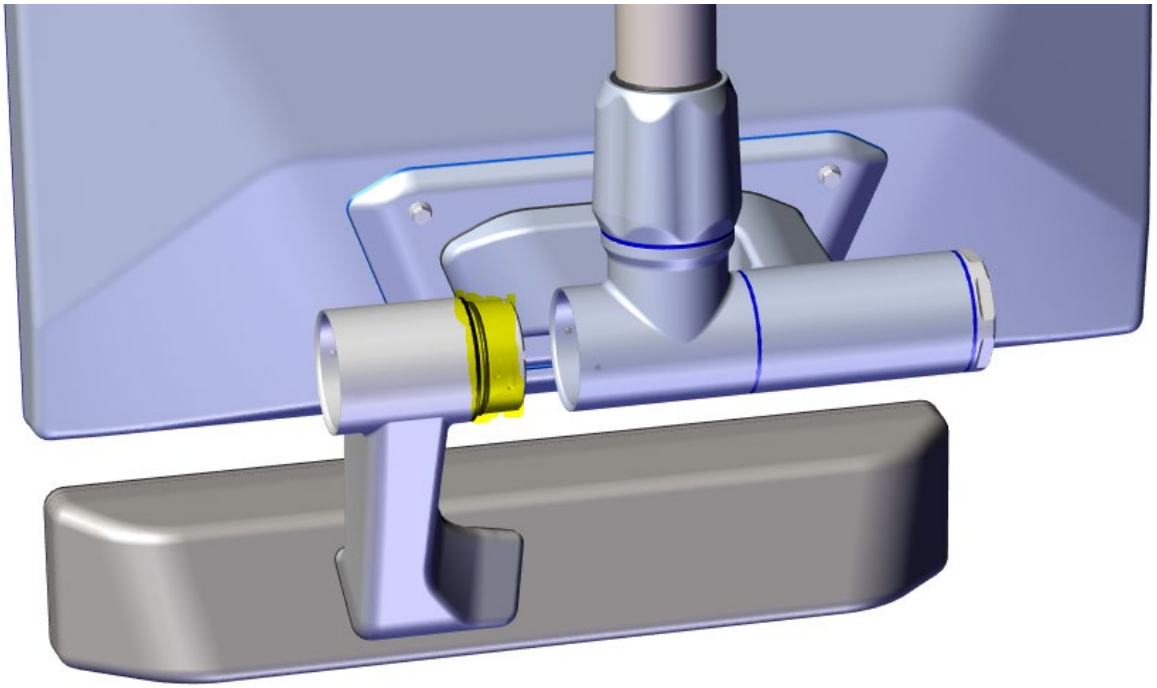


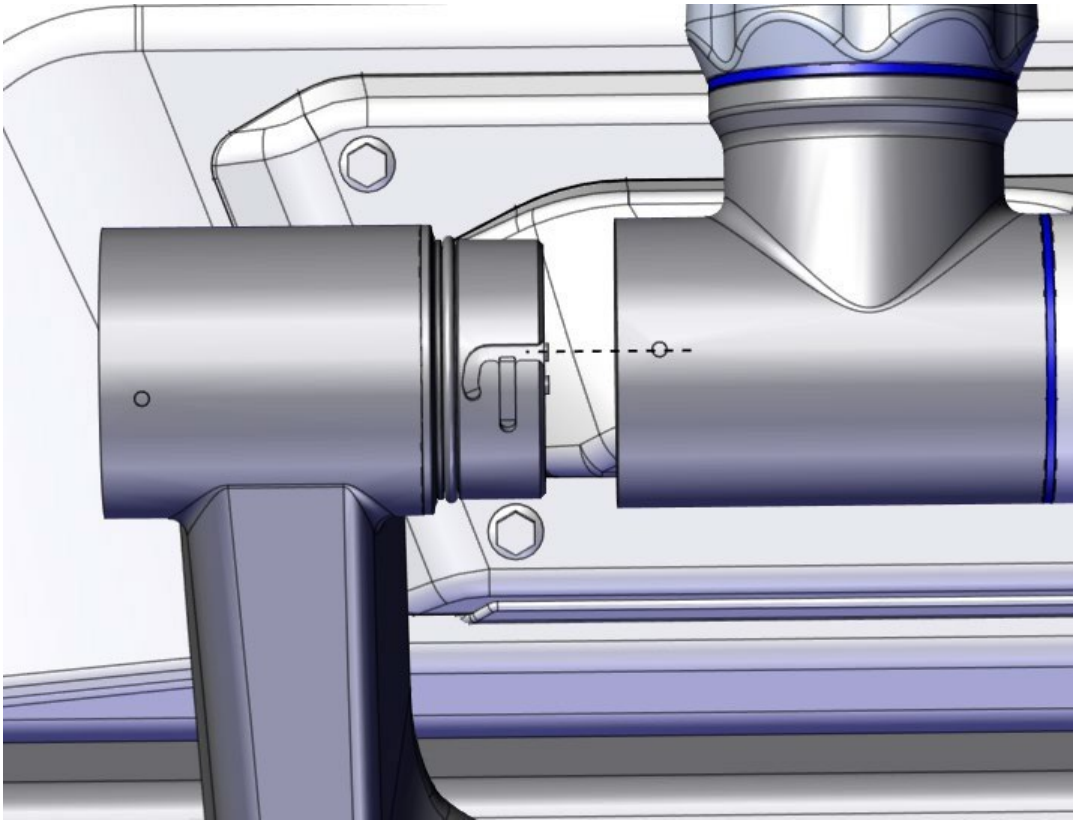


Swivel the PC all the way up:



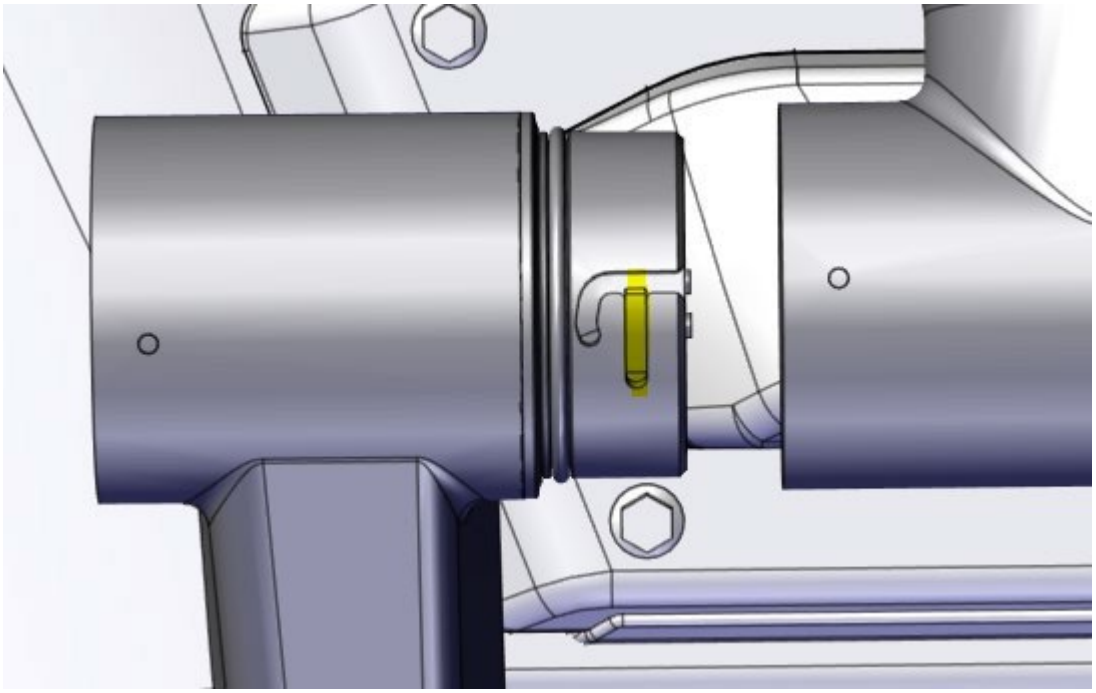
2. Lightly grease the connection tube of the button module (e.g. with penetrating oil, soap or tap grease). Then, insert the connection tube into the turn/tilt adapter. Ensure that the grooves of the bayonet catch are aligned with the two pins inside the adapter.

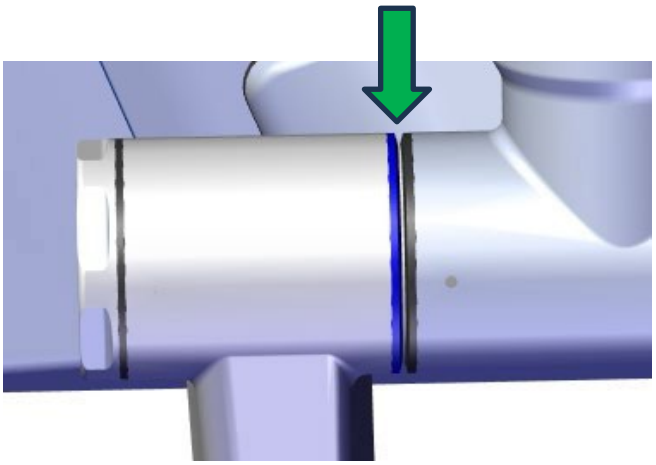




3. **Bayonet catch, groove 1**: The use of groove 1 (yellow in the image) allows the push-button module to be swivelled further down, making it easier to route the connection cables.

> This position is **not intended for normal operation**, but only to simplify the laying of cables and wires.

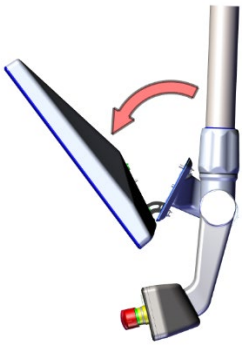




Note: When using groove 1, there is a small gap between the two tube sections (green arrow in the picture above).

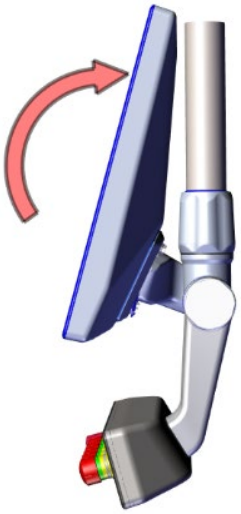
4. **To use slot 1 for easier cable connection**:

   Loosen the screws on the interface cover and fold the PC downwards.

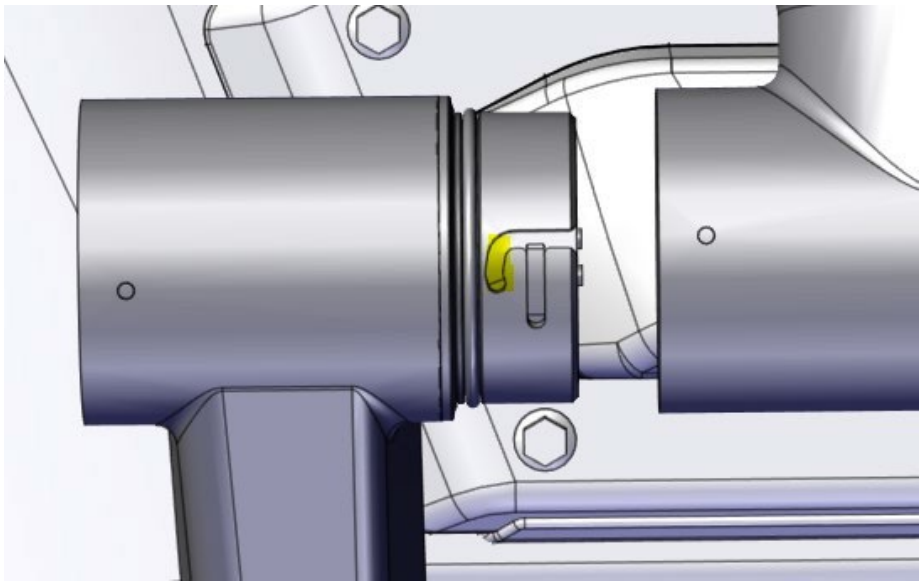


Now, connect all cables.

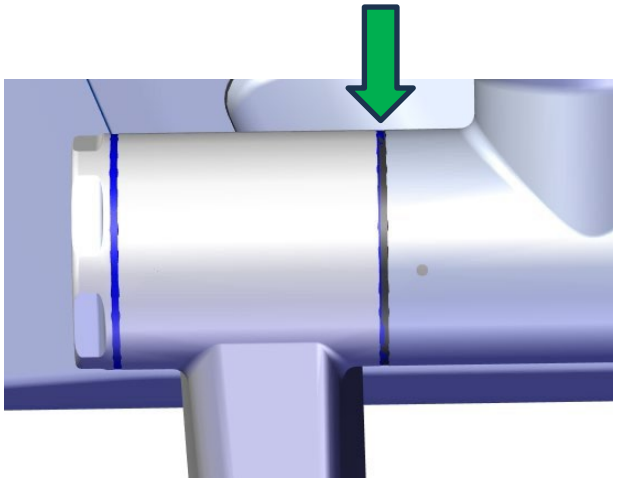
After connecting the cables, fold the PC back up and tighten the screws on the interface cover.



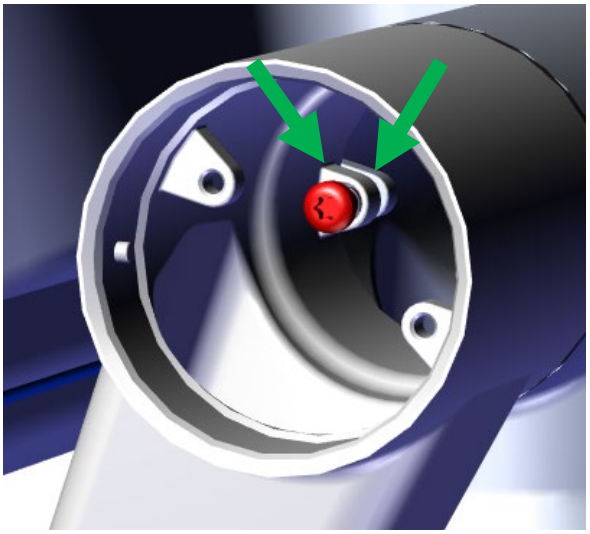
5. **Bayonet lock, groove 2**: After connecting all cables, the button module should be moved so that the pins inside engage in groove 2 (marked yellow in the following image).



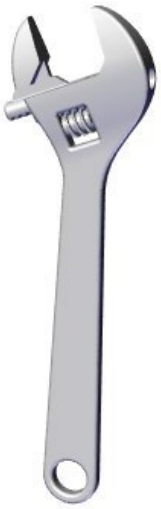
The gap between the tube sections is now completely closed. The push-button module is in the working position:



6. Check that the two fastening lugs are aligned (green arrows in the picture).
   Then screw in the two locking screws (Tx 20).

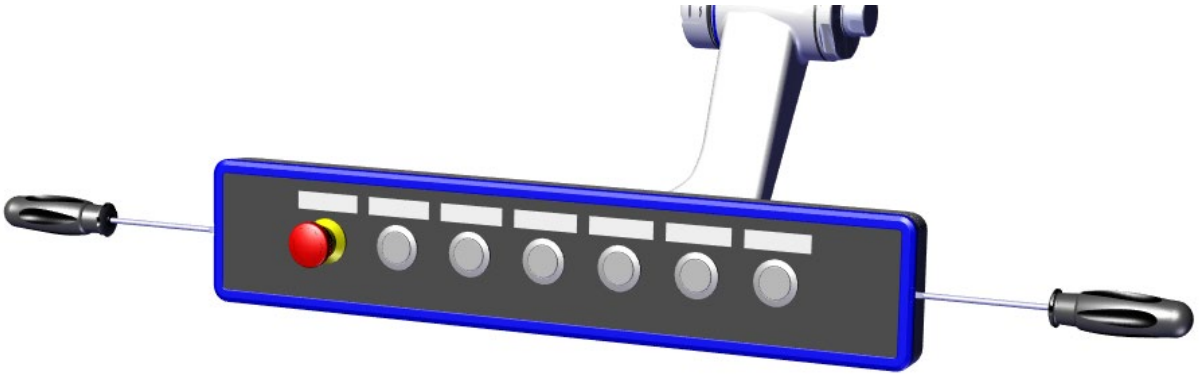


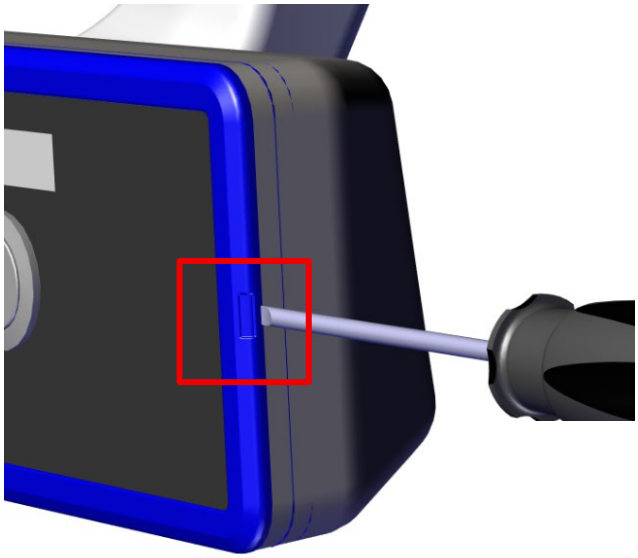
7. Attach the end cover (bayonet lock, spanner size 50 mm):

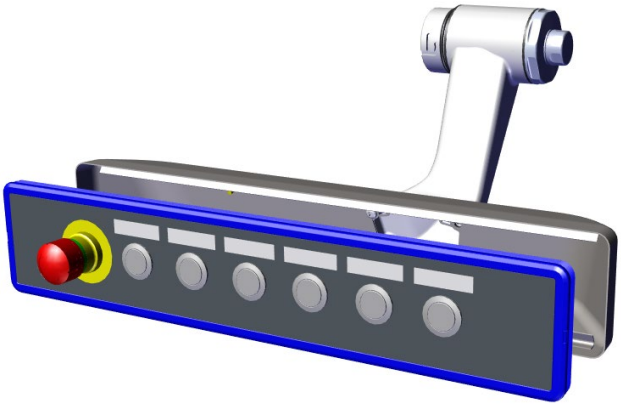


4.5 Opening the button module

To open the button module, use a flat-head screwdriver to press into the **recesses** on the left or right of the front panel and then lever the front panel out.







WARNING

Risk of electric shock!

The housing of the push-button module is made of metal and has no special insulation.

- Do not use dangerous electrical voltages in the push-button module.
- Connect the PE earth connection of the push-button module to the PE connection cable of the device.

5 Electrical connections

5.1 Prerequisites

ATTENTION

Damage due to electrostatic discharge

Electrostatic discharges can cause damage to the appliance.

- Observe the relevant safety measures when handling electrostatically sensitive components.

ATTENTION

Damage to the electronics

The electronics can be damaged if plug connections are plugged in or unplugged while the system is energised.

- Ensure that no voltage is present when connecting or disconnecting connectors.

When using the optional push-button module:

:

WARNING

Risk of electric shock!

The housing of the push-button module is made of metal and has no special insulation.

- Do not use dangerous electrical voltages in the push-button module.
- Connect the PE earth connection of the push-button module to the PE connection cable of the device.

5.2 Earthing concept

The earthing concept depends largely on the conditions at the installation site and must be planned and implemented by a qualified electrician.

A PE **earthing lug** is provided **in the service slot** of the device.

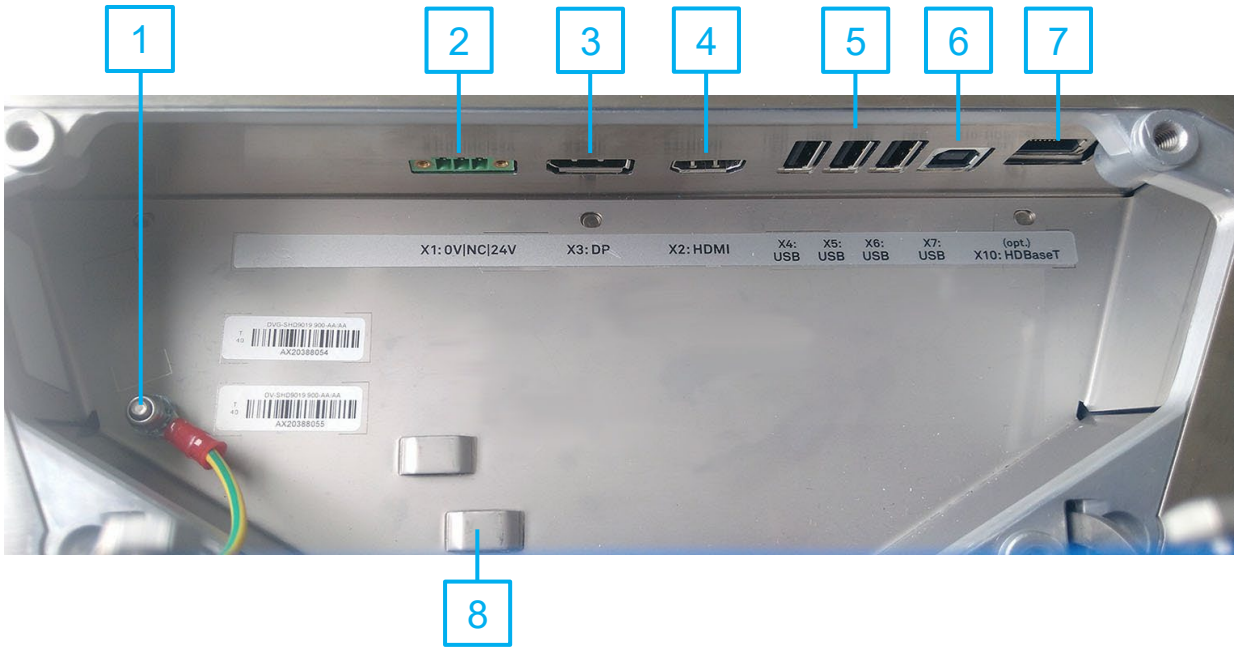
Conductor cross-sections:

PE: AWG 16 (1.5 mm^2), optimum: AWG 13 (2.5 mm^2). The cable colour must be green-yellow.

The device is operated with **low voltage** (ELV = Extra Low Voltage).

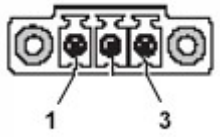
The **PE connection** is therefore optional (but recommended).

5.3 Interface overview



1	Connection for protective earth (PE), see section 5.2
2	Power supply, see section 5.4
3	DisplayPort 1.2
4	HDMI
5	3 x USB 2.0 type A (max. 0.5 A per port)
6	1 x USB 2.0 type B
7	Optional: HDBaseT extender (RJ45), see section 7.2
8	Lugs for cable strain relief

5.4 Power supply

1	Reference potential (0 V)	 (Image shows socket in the device)
2	n.c.	
3	+24 VDC ± 20 %	

Conductor cross-sections: V+ / 0V: AWG 18 (≙ 0.75 mm²)

The maximum values for current and power consumption can be found in chapter 10 Technical data.

Requirements for the power supply

- Conformity of the power supply unit: Class PS2 according to IEC 62368-1 - or – Limited Power Source (LPS) according to IEC 60950-1 - or - SELV/PELV according to IEC 61140
- Conductor cross-sections: AWG 18 (≙ 0.75 mm2)
- Minimum temperature resistance of the connecting cables: 105 °C
- Short-circuit current: < 8 A

Additional information for devices with UL approval for use in the USA and Canada:

- Limited-Energy Circuit according to UL/CSA 61010-1/ UL/CSA 61010-2-201 or
- Limited Power Source (LPS) according to PCB/CSA 60950-1 or
- Class 2 according to National Electrical Code (NEC), NFPA 70, Clause 725.121 and Canadian Electrical Code (CEC), Part I, C22.1.
- Only use copper conductors for connecting the power supply.

5.5 Maximum cable lengths

Application recommendation:
Observe the maximum cable lengths for the respective application.

The maximum length of cables you can use to connect the monitor and computer is:

- **HDMI** up to max. 15 m
- **DisplayPort** up to max. 10 m
- **USB 2.0** up to max. 15 m (with active hubs, otherwise 5 m)

For large distances between the display and computer, you need the HDBaseT version:

- **HDBaseT™** up to max. 100 m, see section 7.2

6 Commissioning

The monitors start immediately after the supply voltage is applied.

7 Features

7.1 DisplayPort™

The devices have a receiver module in accordance with DisplayPort 1.2.

7.2 HDBaseT™ (optional)

With HDBaseT™, the connection between the computer and monitor is established using a LAN cable with RJ45 plugs. The distances that can be bridged depend on the network infrastructure used:

- with CAT6a patch cable without sockets etc.: maximum 70 m
- With LAN installation cable Cat. 7 or 7a + Sockets + Two 1 m patch cables: maximum 100 m

Status displays of the receiver module

The two LEDs in the socket signal various system statuses:

	LED signal	Action
HDCP	flashes red	No encryption active
HDBT	on	Connection available
	off	No connection available

HDCP = High-bandwidth Digital Content Protection; HDBT HDBaseT™

Note: The HDBaseT connection is used to transmit image and touch signals from a remote computer to the device. It cannot be used for communication via Ethernet networks.

ATTENTION

Damage to the electronics

- Only lay the cable from the remote computer to the device indoors in order to minimise the risks posed by voltage peaks caused, for example, by indirect lightning strikes.
- If necessary, use additional surge protection devices.

8 Materials and cleaning

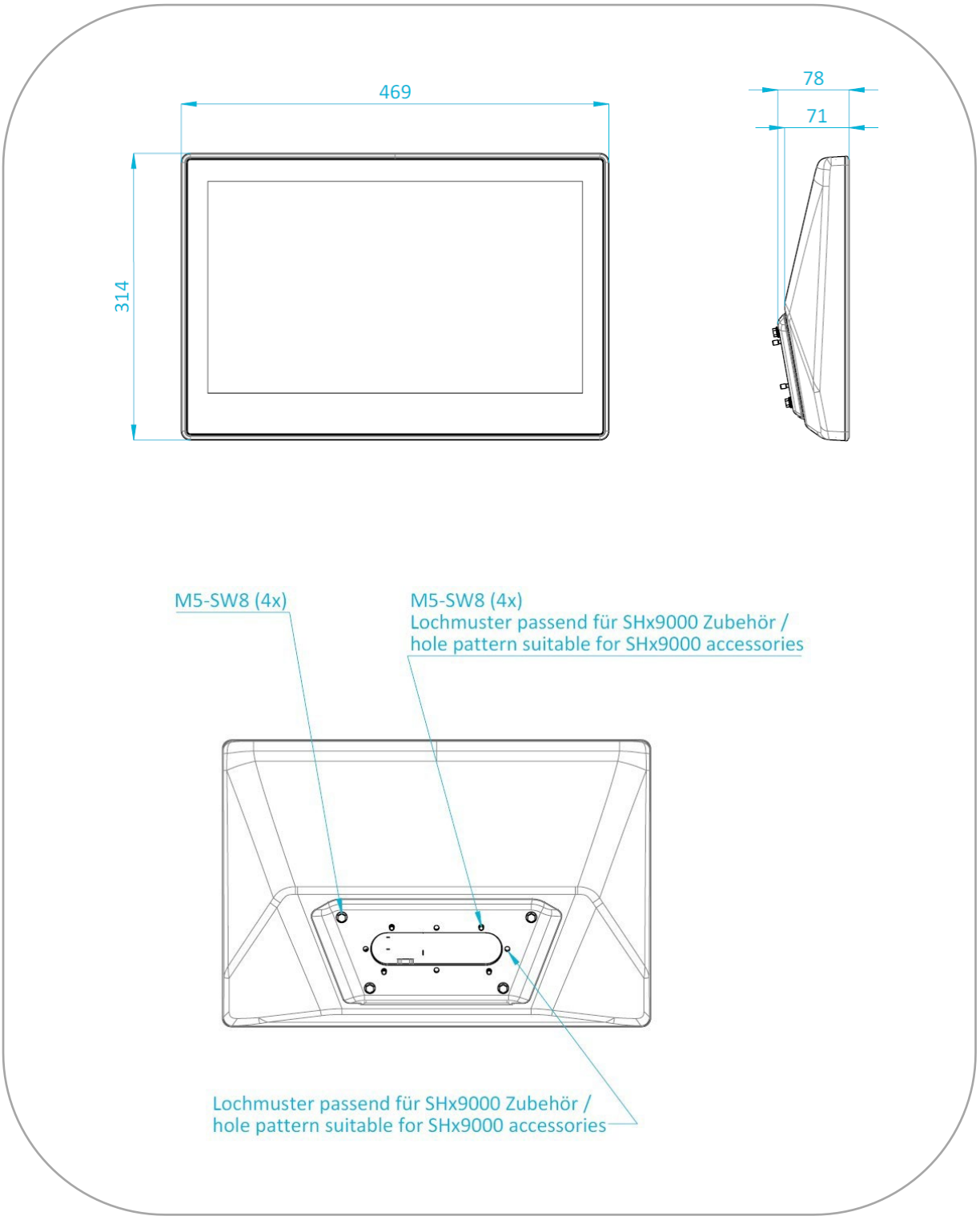
The following materials are used on the exterior:

- Housing: stainless steel (AISI 316L)
- Seals: silicone
- Anti-splinter film on the display: polyethylene (PE)

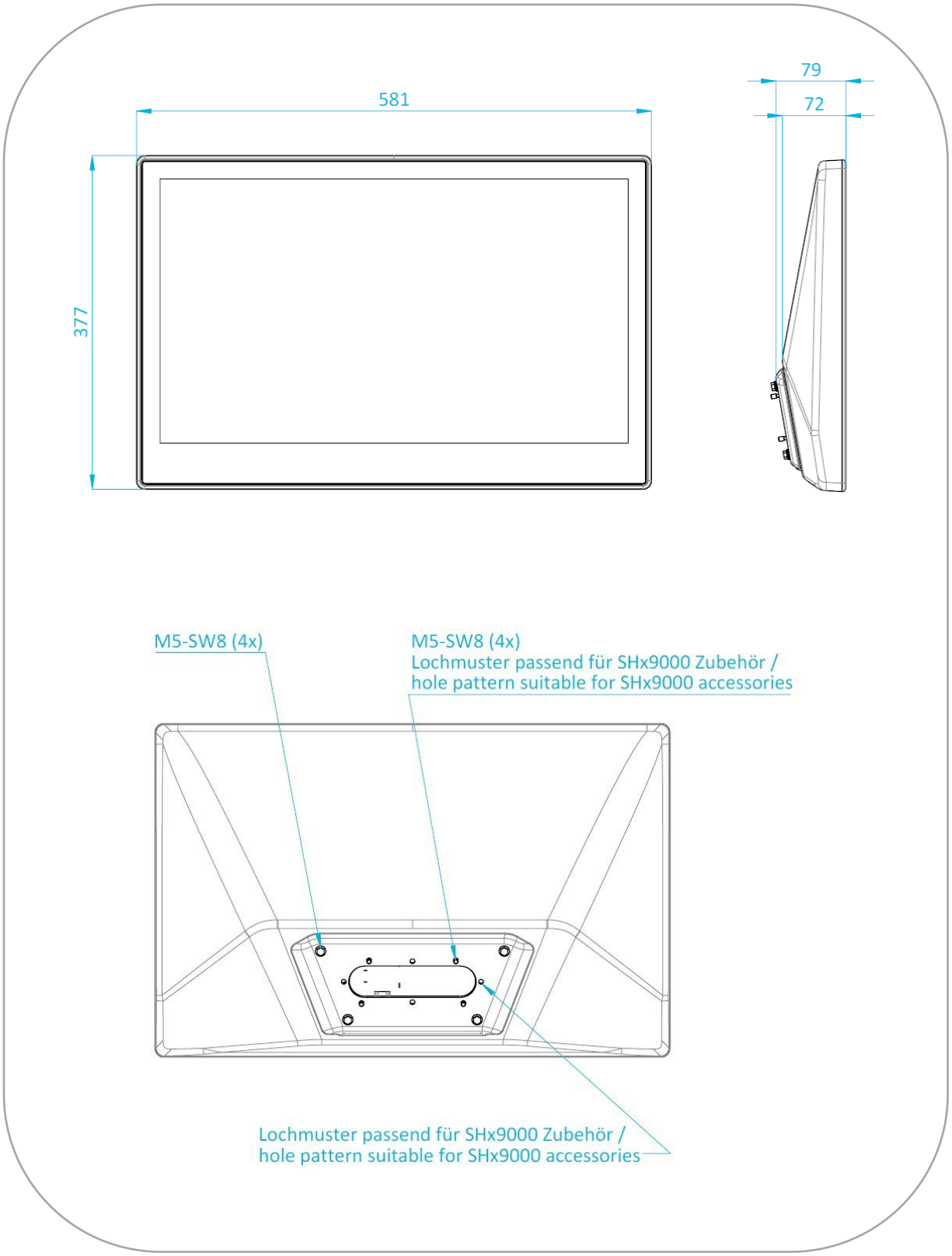
Please take these materials into account when selecting cleaning agents.

9 Dimensional drawings

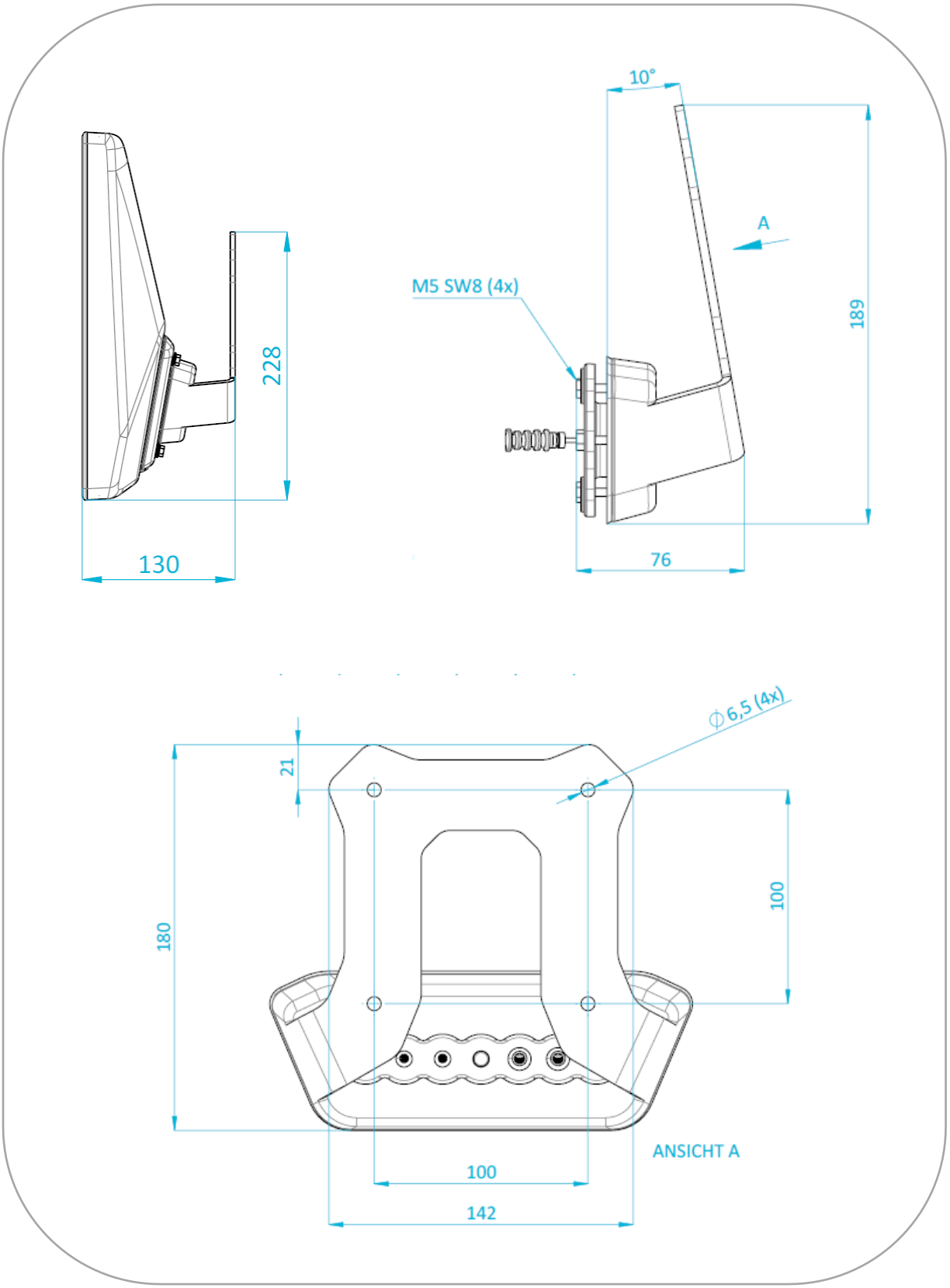
9.1 SHD9019



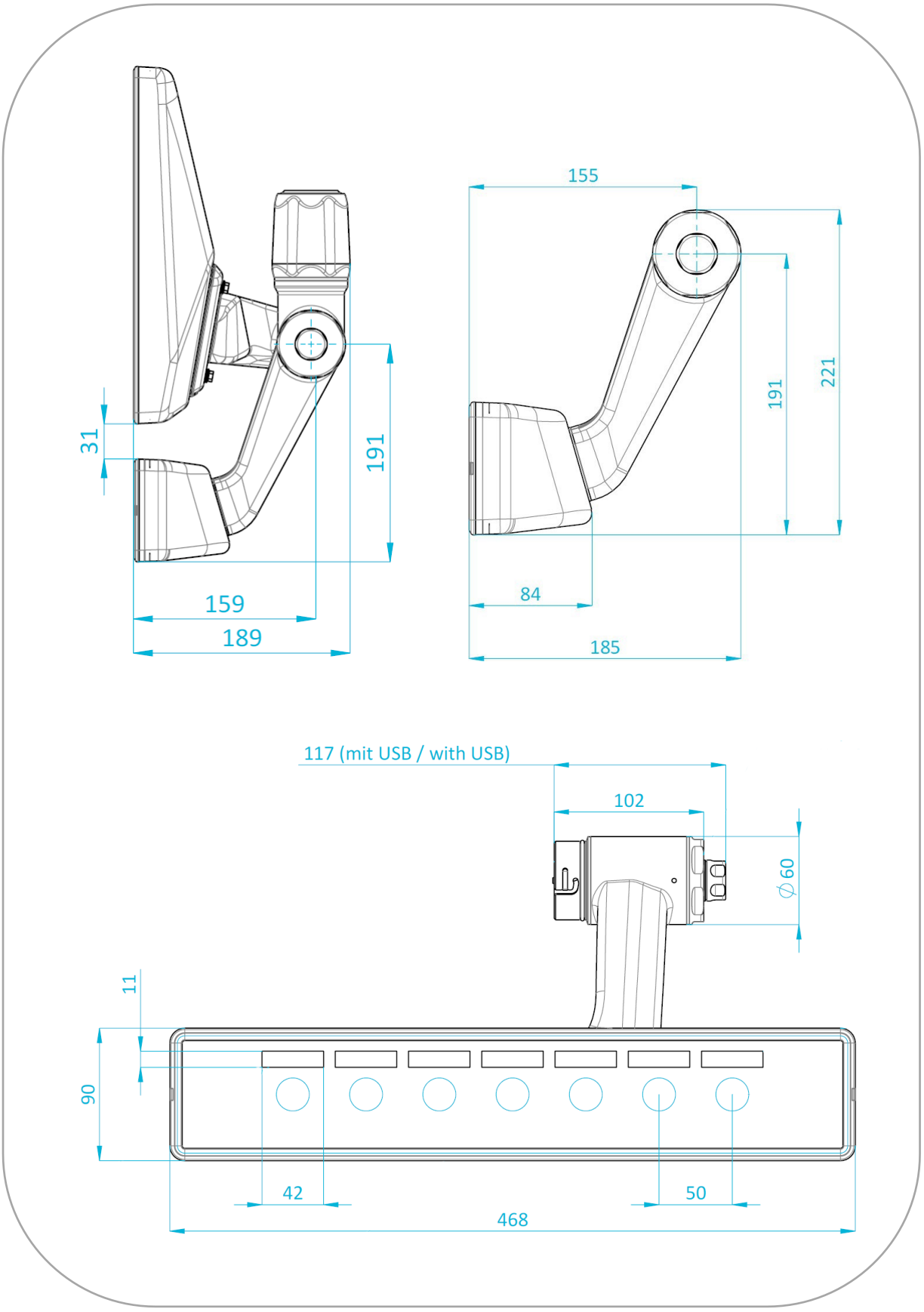
9.2 SHD9024



9.3 VESA mount (SHD90xx)



9.4 Push-button module (SHD90xx)



10 Technical data

	SHD9019	SHD9024
Display – Brightness – Contrast ratio – Colours – LED backlight	18.5" TFT Full HD (1920 x 1080) 500 nits (typ.) 1000:1 (typ.) 16.7 million 50.000 h	23.8" TFT Full HD (1920 x 1080) 250 nits (typ.) 1000:1 (typ.) 16.7 million 30.000 h
Touch	PCAP multi-touch, tempered glass with anti-splinter film	
Housing	All-round enclosed stainless steel housing	
Cooling	Passive cooling, fanless	
Interfaces	1 x HDMI 1 x DisplayPort 1.2 3 x USB 2.0 (max. 0.5 A per port) 1 x USB slave 1 x status LED in the front	
Optional interfaces	1 x HDBaseT™ interface (receiver)	
Power supply	24 VDC ± 20 % max. 55 W max. 3 A	24 VDC ± 20 % max. 45 W max. 1.8 A
Perm. ambient temperature	In operation: 0...+50 °C For storage: -25...+70 °C	
Protection class	IP69 (not verified by UL, tested by ADS-TEC) Humidity: 5...95 %, non-condensing UL rating of enclosure: Type 1 acc. to UL61010-2-201	
Operating height	Max. 3048 m above sea level	
Vibration/shock	See section 2.4.1 "Environmental conditions"	
EMC	Class A (industrial area) according to EN 61000-6-2/4	
Dimensions	See section 9 "Dimensional drawings"	
Weight	Approx. 6.5 kg	Approx. 8 kg

11 Service & Support

ADS-TEC and its partner companies offer their customers comprehensive service and support, providing fast and competent assistance with all questions relating to ADS-TEC products and assemblies.

As ADS-TEC devices are also used by partner companies, these devices may have customised configurations. If questions arise regarding these special configurations and software installations, these can only be answered by the partner.

No support is provided for devices that were not purchased directly from ADS-TEC. In this case, support will be provided by our partner company.

11.1 ADS-TEC Support

The ADS-TEC support team is available for direct customers from Monday to Friday

from 8.30 a.m. to 5 p.m. on the telephone number below:

Tel: +49 7022 2522-202

E-mail: support.iit@ads-tec.de

Alternatively, you can use the support form on our website www.ads-tec.de to contact us. Our support team will then get in touch with you as soon as possible.

11.2 Company address

ads-tec Industrial IT GmbH

Heinrich-Hertz-Str.1

72622 Nürtingen

Germany

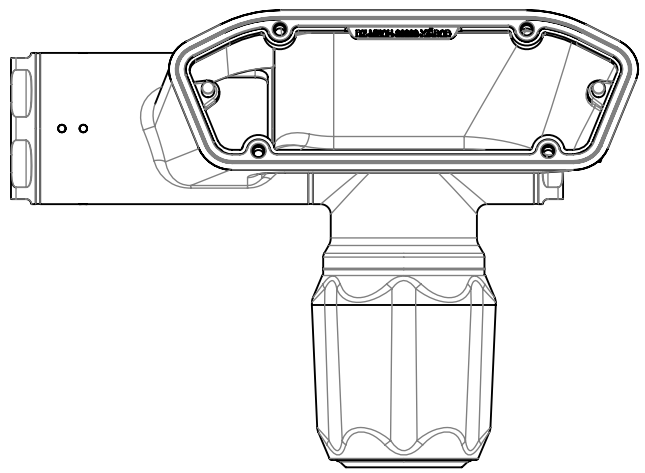
Tel: +49 7022 2522-0

e-mail: mailbox@ads-tec.de

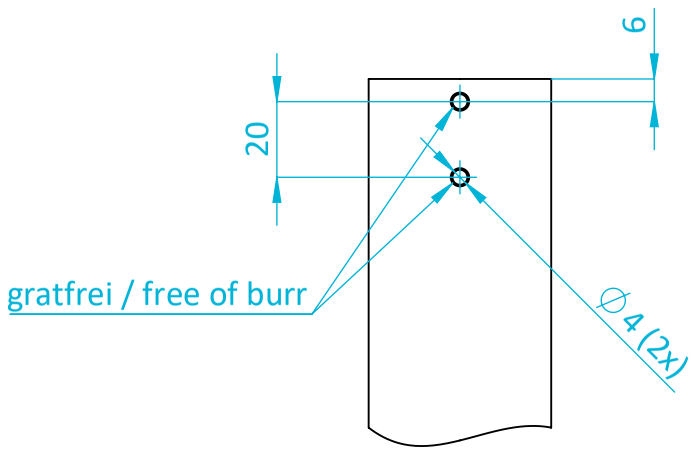
Home: www.ads-tec.de

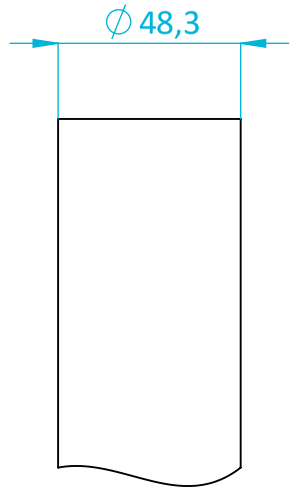
SHx9000 Dreh-Neige-Adapter "T-Form" unten drehbar
SHx9000 Swivel-tilt adapter from bottom "T-shape"

Vorderseite / front view



Rohr / tube





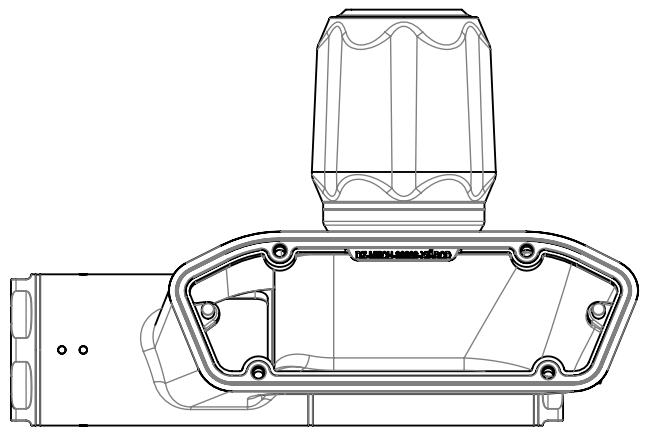
Vorderseite / front view

Rückseite / back view

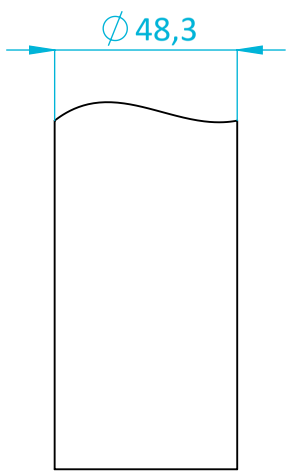
Anmerkung /
Bohrschablone im Lieferumfang enthalten /
drilling template included in delivery

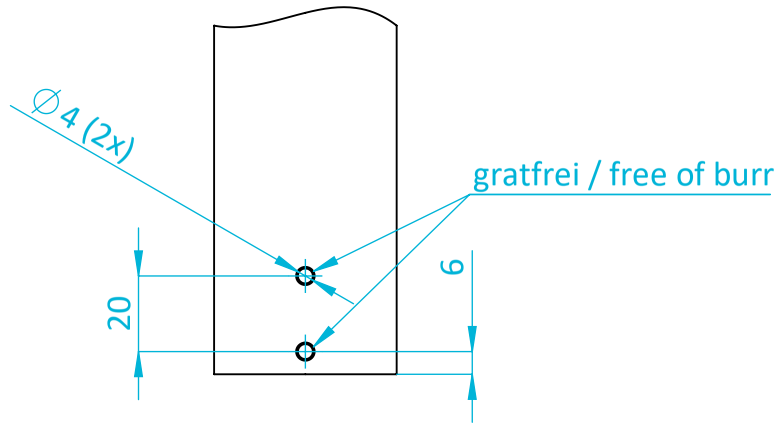
SHx9000 Dreh-Neige-Adapter "T-Form" oben drehbar
SHx9000 Swivel-tilt adapter from above "T-shape"

Vorderseite / front view



Rohr / tube





Vorderseite / front view

Rückseite / back view

Anmerkung /
Bohrschablone im Lieferumfang enthalten /
drilling template included in delivery

Industrial IT

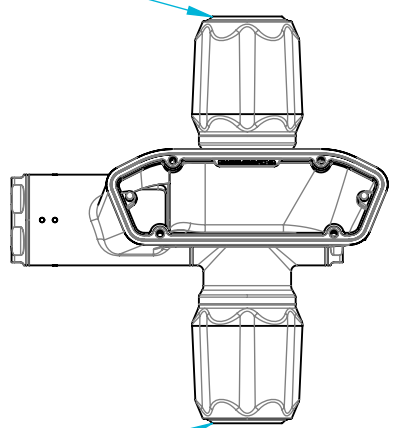
SHx9000 Befestigung Rohradapter

SHx9000 attaching tube adapter

SHx9000 Dreh-Neige-Adapter "K-Form" unten drehbar
SHx9000 Swivel-tilt adapter from bottom "K-shape"

Vorderseite / front view

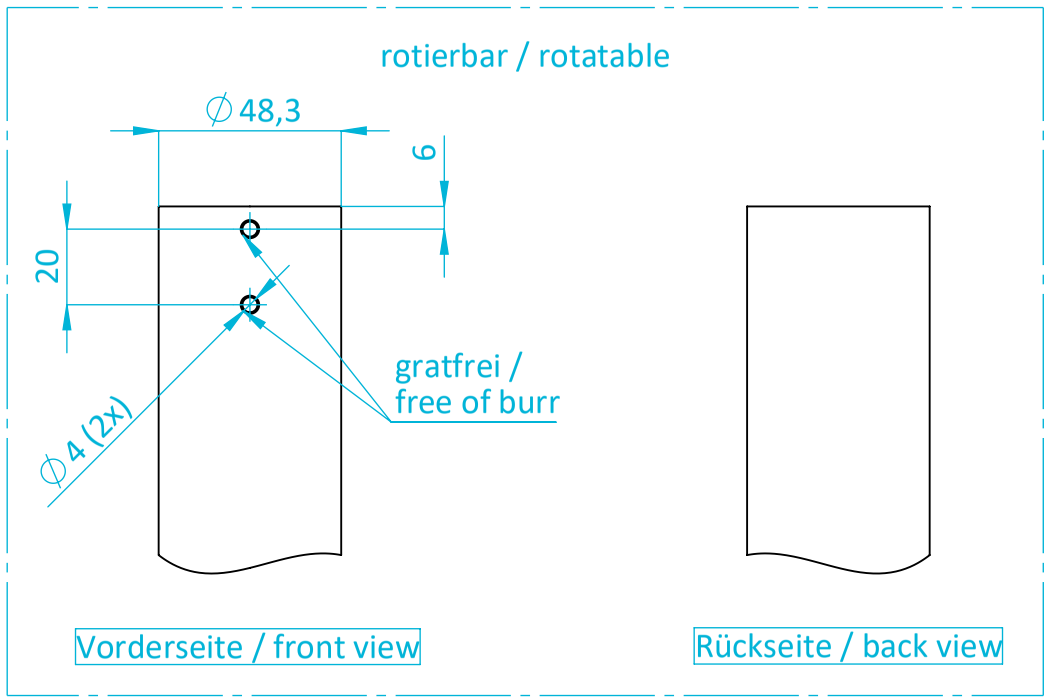
fix, nicht rotierbar /
fixed, not rotatable



rotierbar / rotatable

Rohr / tube

rotierbar / rotatable

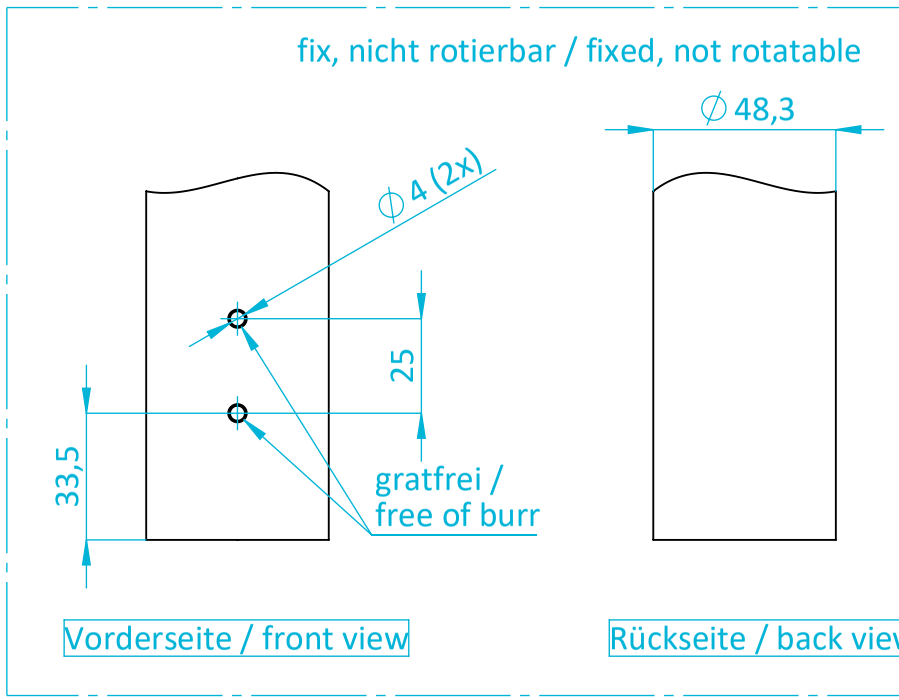


Vorderseite / front view

Rückseite / back view

Anmerkung /
Bohrschablone im Lieferumfang enthalten /
drilling template included in delivery

fix, nicht rotierbar / fixed, not rotatable



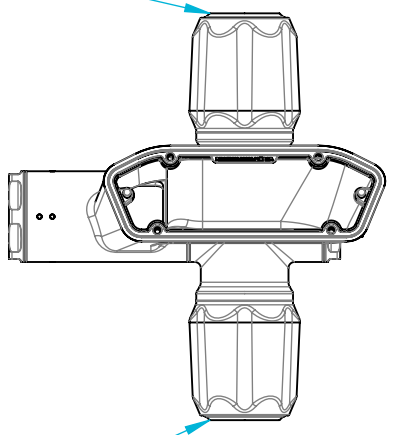
Vorderseite / front view

Rückseite / back view

SHx9000 Dreh-Neige-Adapter "K-Form" oben drehbar
SHx9000 Swivel-tilt adapter from above "K-shape"

Vorderseite / front view

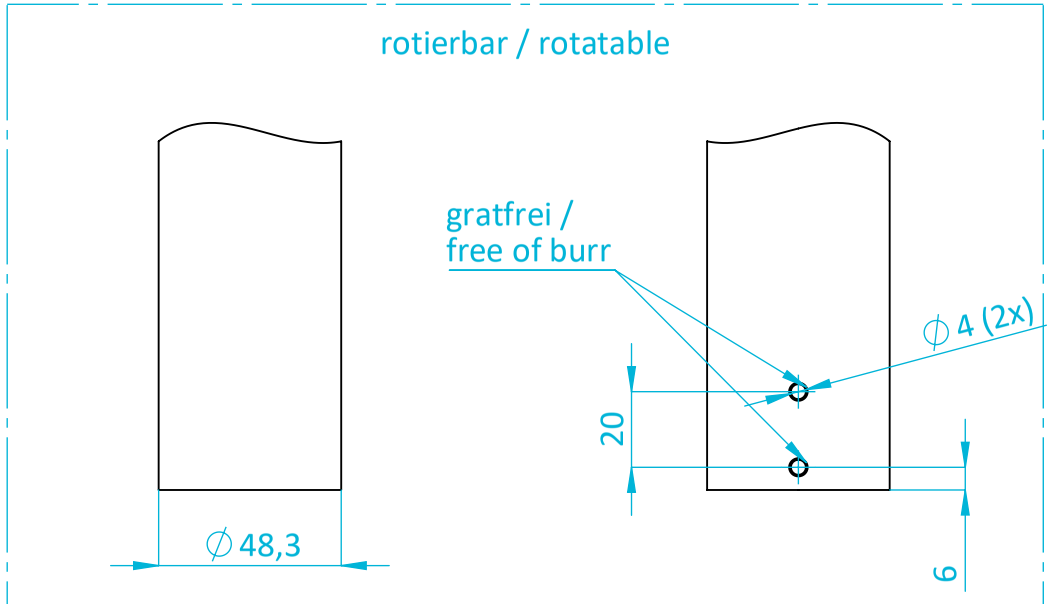
rotierbar / rotatable



fix, nicht rotierbar /
fixed, not rotatable

Rohr / tube

rotierbar / rotatable

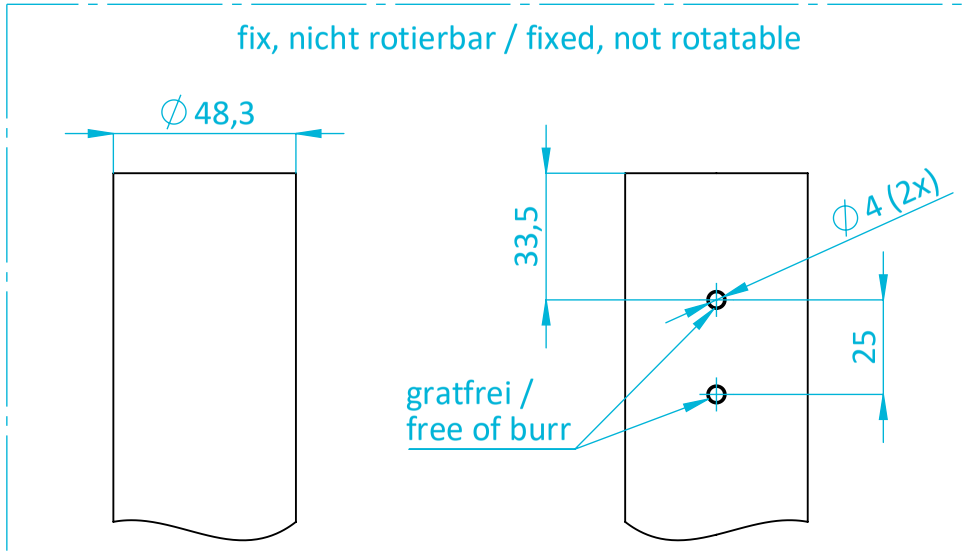


Vorderseite / front view

Rückseite / back view

Anmerkung /
Bohrschablone im Lieferumfang enthalten /
drilling template included in delivery

fix, nicht rotierbar / fixed, not rotatable



Vorderseite / front view

Rückseite / back view

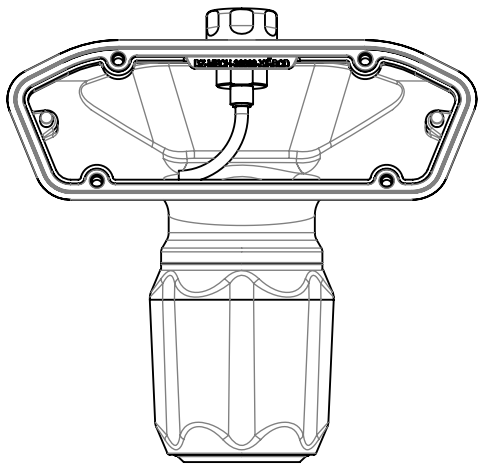
Industrial IT

SHx9000 Befestigung Rohradapter

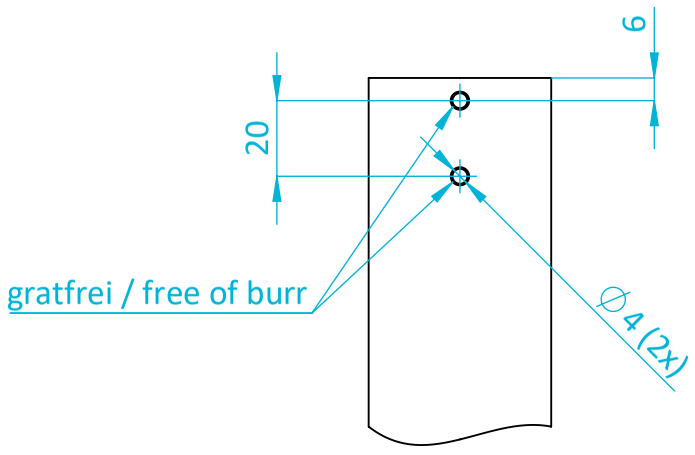
SHx9000 attaching tube adapter

SHx9000 Dreh-Adapter von unten
SHx9000 Swivel-adapter from below

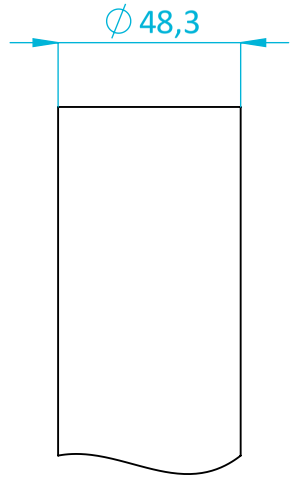
Vorderseite / front view



Rohr / tube



Vorderseite / front view



Rückseite / back view

Anmerkung /
Bohrschablone im Lieferumfang enthalten /
drilling template included in delivery

SHx9000 Befestigung Rohradapter

SHx9000 attaching tube adapter