

Inspection and repair instructions

YLED-1F



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1 Pictograms and advice in this document

	This symbol indicates possible sources of danger. It is also necessary to heed the safety instructions and specific dangers in the associated fitting instructions and instructions for use of the support arm system.
	This symbol indicates a possible danger from electrical current. Please also note the safety instructions and the hazard specification in the associated installation and operating instructions from the manufacturer of the support arm system.
	This symbol indicates important information and tips about usage.
	Information about disposal of the device.

2 Safety instructions

	To avoid the risk of an electric shock, this device must only be connected to a supply network that has a protective earthing conductor.
	Risk of injury during dismantling! The lamp is dismantled from the spring arm in the reverse order to its assembly and may only be carried out after appropriate adjustment of the spring arm's height stop (if present) in the horizontal position.
	Changes to the light are prohibited and will invalidate the manufacturer's certificate of conformity and all warranty claims.
	Installation, inspection and repair work may only be carried out by the manufacturer or by specially trained staff.
	It is forbidden to carry out inspection or repair activities whilst the lamp is in use.
	Do not remove the rating plate or the warning labels.

3 Inspection requirements






To ensure safe and reliable operation of the light, it must be maintained regularly. A visual inspection of the light must be carried out at least annually, and an additional functional test must be carried out at least every two years. All inspection work must be carried out by the manufacturer, Dr. Mach GmbH & Co. KG or by persons authorized and trained by Dr. Mach GmbH & Co. KG. Details about the inspection required can be found in this YLED-1F inspection Instructions, as well as in the Inspection Schedule (see Appendix).

All inspection and repair procedures must be documented!

The light is designed to have a life-span of 10 years. To ensure reliable operation beyond the estimated life-span, the light needs to be given a functional test annually as part of the inspection work.

The inspection interval of the support system may deviate from the above. The relevant information can be found in the respective manufacturer's instructions for use or inspection instructions.

The following information must be observed before performing any inspection work:

	<p>Attention, this light requires 230 V!</p> <p>For all inspection and inspection work, switch off the light and disconnect the mains plug! Secure the light against being switched on again!</p>
	Set the height stop (if fitted) to the horizontal position before removing the lamp from the spring arm. Also observe the instructions for use and installation of the support systems.
	Before any inspection or test work is carried out, disconnect the lamp from the mains using the main switch. A standby operation of the lamp (in which the uppermost LED flashes) is not sufficient.
	All inspection and testing work on electronic components must be carried out with sufficient ESD [<i>Electrostatic discharge</i>] protection (ESD wrist strap, ESD work clothing, etc.).
	All inspection and testing must be carried out in a clean, dry and dust-free environment.

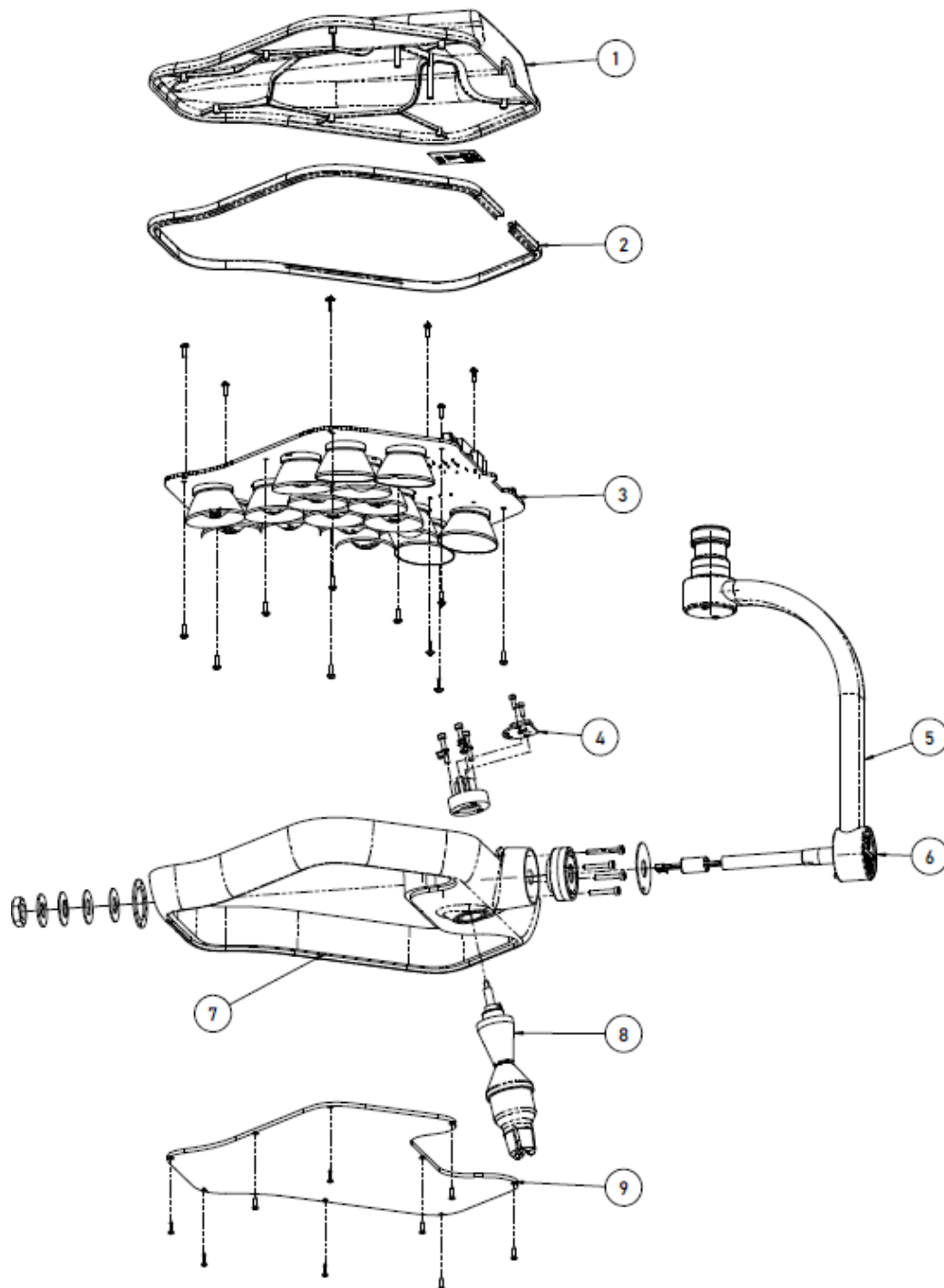


Circuit diagrams, component lists and other documents can be provided on request.



These inspection instructions correspond to the current technical status of the YLED-1F.

4 Repair activities



1 upper part, 2 sealing, 3 main circuit board, 4 potentiometer, 5 angle joint, 6 control panel, 7 lamp holder, 8 handle adapter, 9 light-emitting disc

4.1 Replacing the light-emitting disc



WARNING! Electric shock!

Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!



The light-emitting disc of the YLED-1F is fixed with nine screws.



Using a suitable Phillips screwdriver, loosen (turn counter-clockwise) these nine screws.

Remove the pane using a suction lifter.



If the light-emitting disc is not replaced, but only the lamp has to be opened, please note the following:

Do not reach into the light exit points of the pane!

Place the disc on a clean surface only with the outside on.



Carefully remove the protective film on the front and back of the new light-emitting disc.



Place the light-emitting disc on the lamp holder, paying attention to the recesses/countersinks. The screw countersinks point outwards!

Install the new light-emitting disc in reverse order.

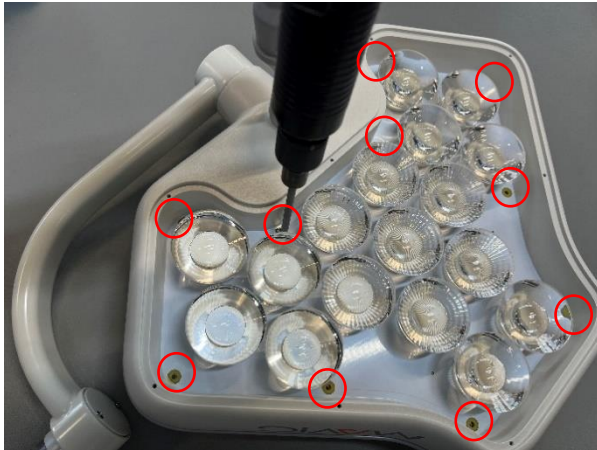


The light-emitting disc can be damaged during assembly. The fastening screws must be tightened with a torque of 17 Ncm!

4.2 Replacing upper part - light cover / sealing

**WARNING! Electric shock!**

Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!



After the light-emitting disc has been removed beforehand (see section 4.1), the upper part of the housing of the light can be removed. This is attached with a total of ten screws on the main circuit board.

Using a suitable Phillips screwdriver, loosen (turn counter-clockwise) these nine screws.



Be careful not to touch the sensitive lens surfaces with tools or your fingers!



The upper part of the housing can be removed and the sealing pulled off the cover.





The sealing must be fitted into the new housing, see illustration.

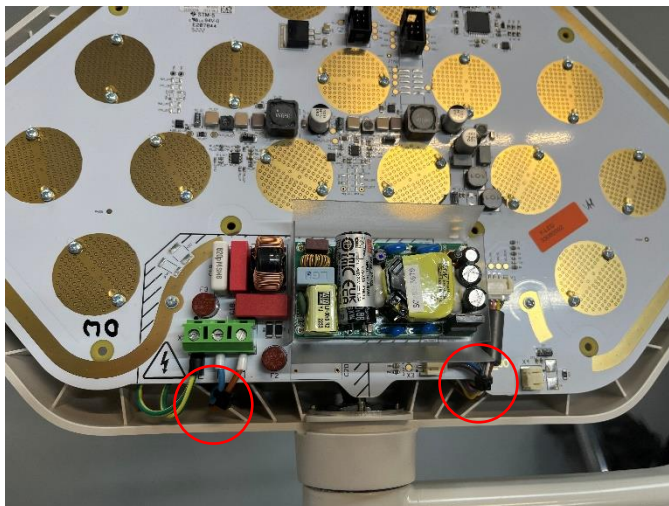


Depending on the length of the seal, shorten it at the marked point if necessary.

Reassemble the cover and the light-emitting disc in reverse order as described in sections 4.1 and 4.2

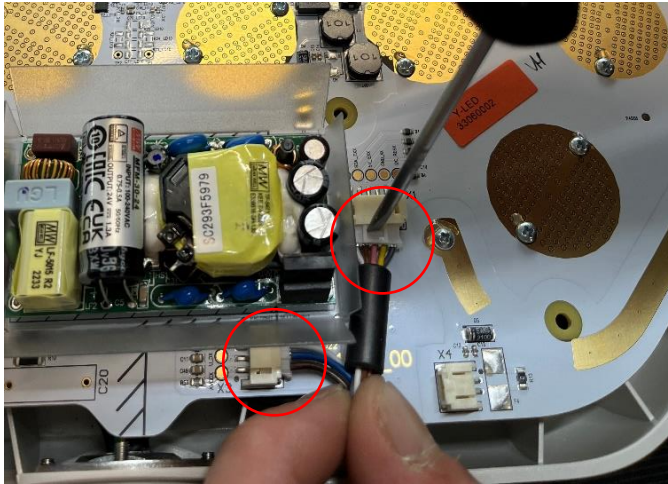
4.3 Exchange potentiometer and main circuit board

	<p>WARNING! Electric shock!</p> <p>Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!</p>
	<p>The main circuit board and potentiometer must always be replaced together!</p>



In order to be able to exchange the potentiometer, the light-emitting disk and the light cover must first be removed (see Sections 4.1 and 4.2).

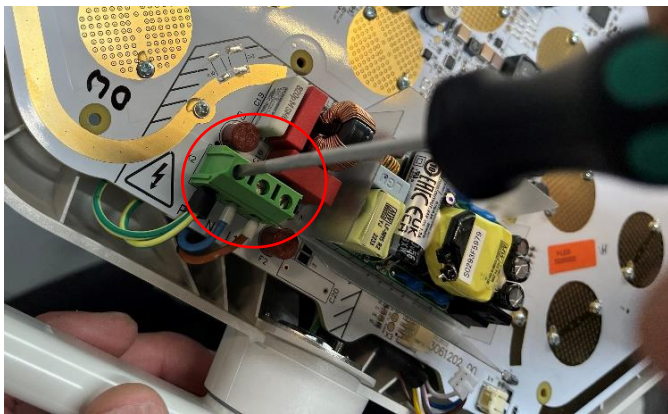
Remove the two cable ties, see illustration.



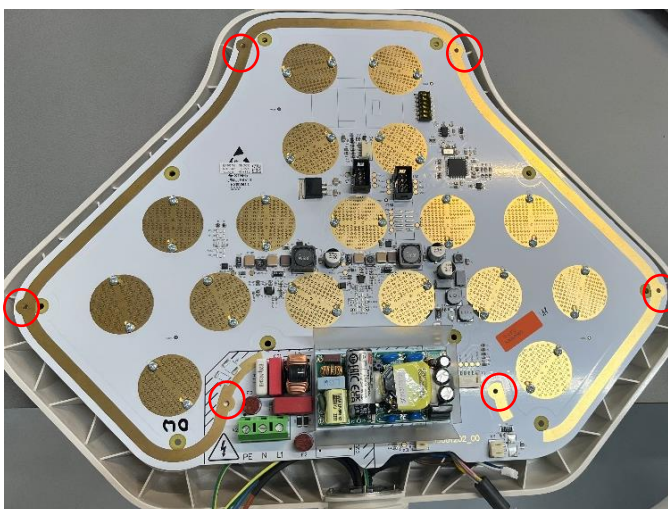
First carefully detach the marked cables (potentiometer) from the main circuit board.



Do not pull on the cable!



Loosen and remove the yellow-green, blue and brown cable from the screw terminal using a slotted screwdriver, see illustration.



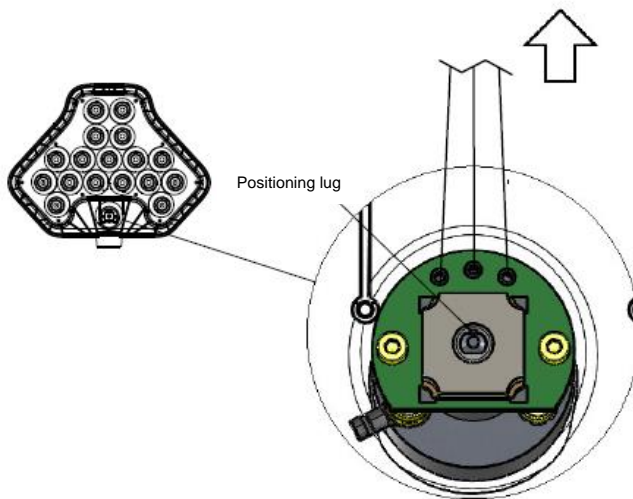
Use a suitable Phillips screwdriver to loosen the six screws on the main circuit board (turn anti-clockwise).

The main circuit board can be removed.



The two marked cylinder screws of the potentiometer must then be loosened using a 2.0 mm hexagon socket screwdriver.

The potentiometer can be removed.



The new potentiometer is installed in reverse order.

During installation, the positioning lug must be aligned towards the main circuit board in the direction of the cable with connector. The cable of the potentiometer also points towards the main circuit board.

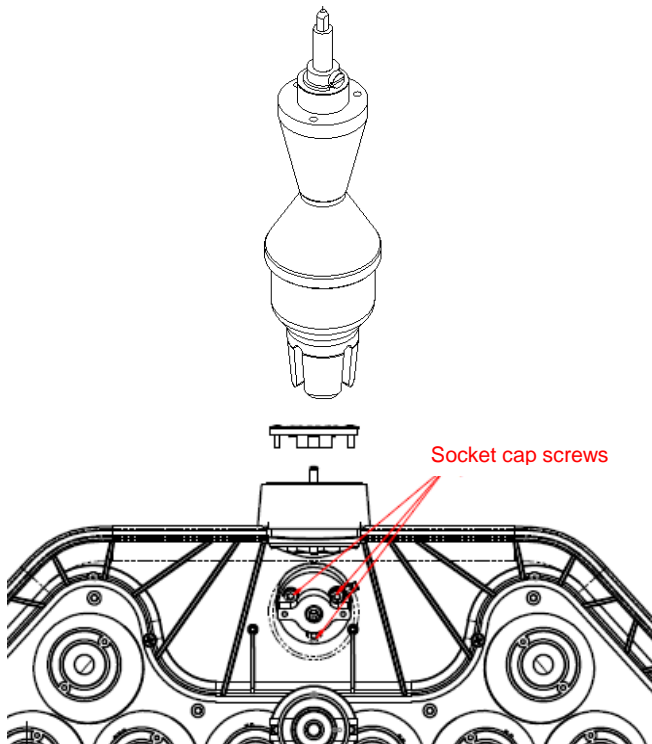
Install the main circuit board, the cover, the light-emitting disc (4.1, 4.2 and 4.3) in reverse order.

4.4 Replacing handle adapter



WARNING! Electric shock!

Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!

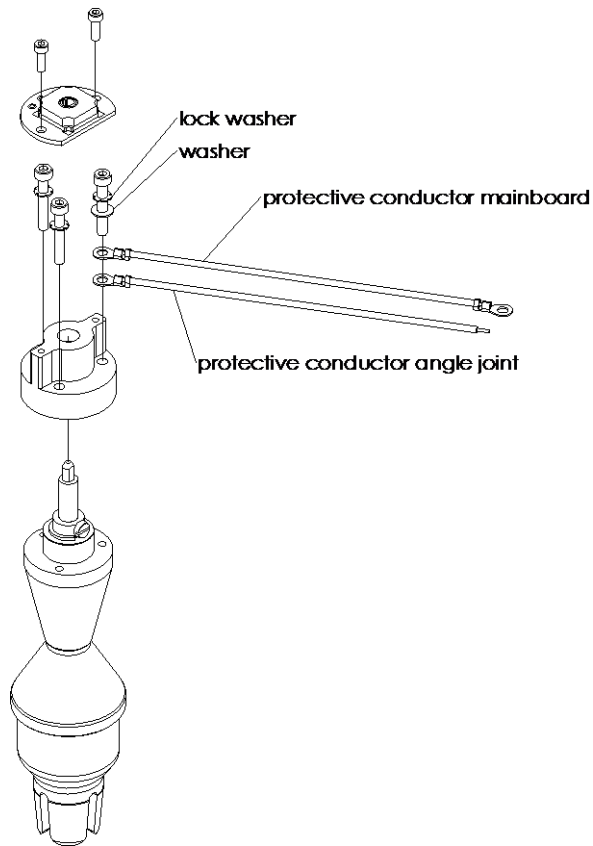


To be able to replace the handle adapter for the sterilisable handle, the light-emitting disc, the cover and the main circuit board with potentiometer must first be removed, see sections 4.1, 4.2 and 4.3.

Then the three socket cap screws marked in the illustration must be loosened with a 2.5 mm Allen key (turn anti-clockwise).



Now counter bearing and handle adapter can be removed.



Reassemble the cover, the light-emitting disc and the main circuit board with potentiometer in reverse order as described in sections 4.1, 4.2 and 4.3.

It is important to pay attention to the assembly sequence of the protective conductor connection (see illustration).

4.5 Replacing control panel

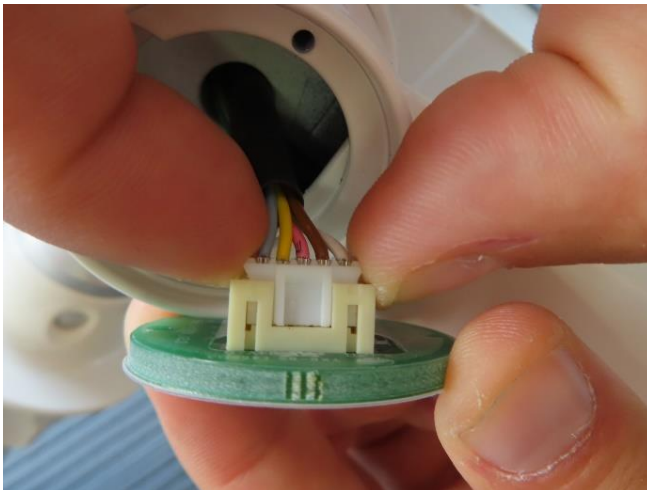


WARNING! Electric shock!

Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!



Use a suitable Phillips screwdriver to loosen the two fastening screws (turn anti-clockwise).



Carefully disconnect the connector from the control panel.



Do not pull on the cable!

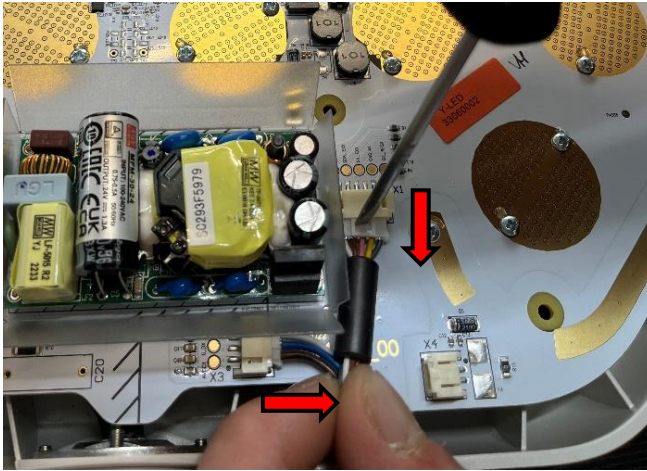
The control panel is assembled in reverse order.

4.6 Replacing control panel cable

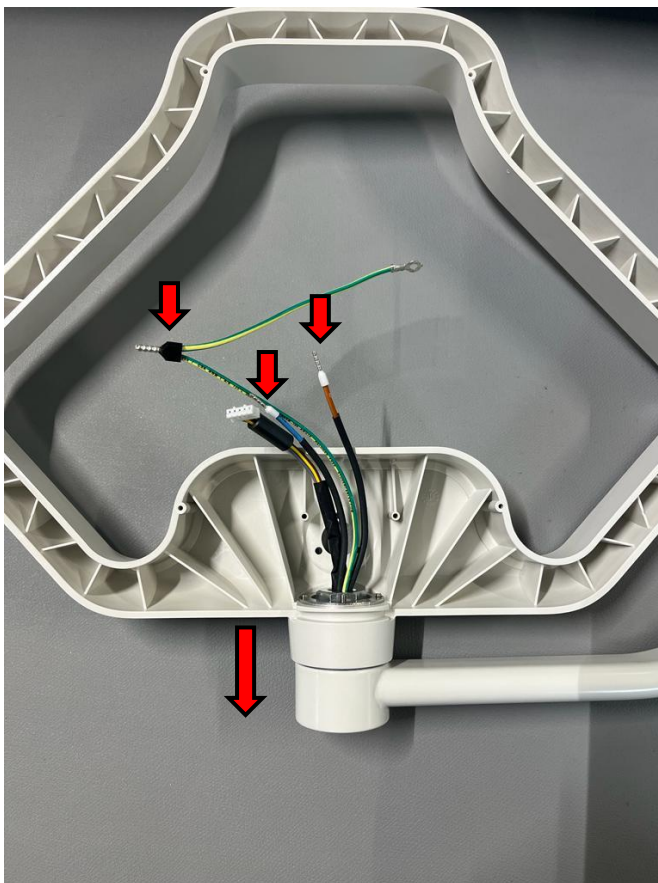


WARNING! Electric shock!

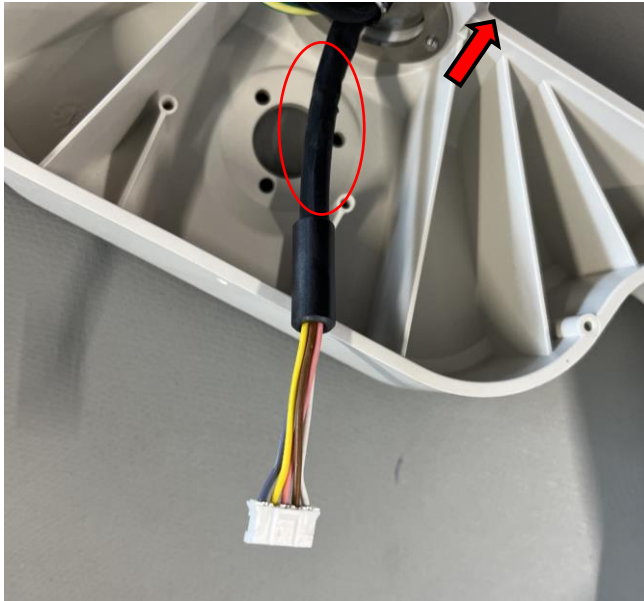
Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!



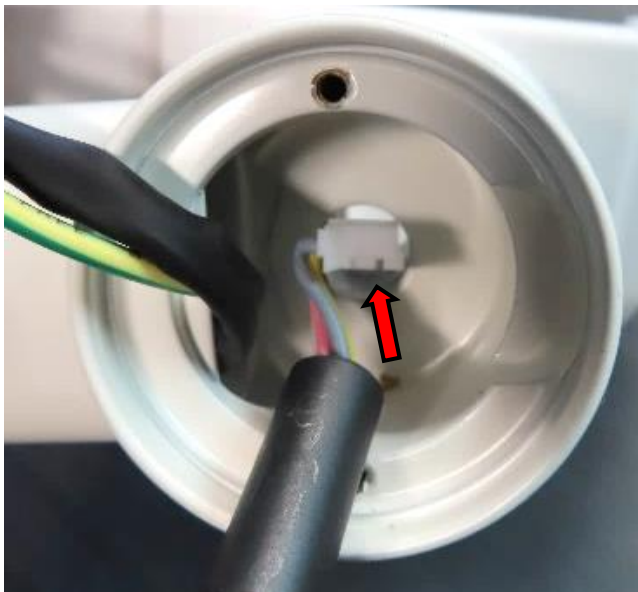
To be able to replace the control panel cable, the light-emitting disc, the cover, the main circuit board with potentiometer, the handle adapter and the control panel must be removed, see section 4.1-4.5.



In the next step, the protective conductor and power supply cable must be pushed/pulled through the light angle joint so that only the control panel cable remains.



To remove the defective control panel cable, cut the plug from the cable at the marked point using a side cutter and then pull it through the light angle joint from the inside.



The new control panel cable must be routed through the light angle joint from the outside to the inside (the cable end with the ferrite sleeve first), carefully bending the cable slightly without damaging it.

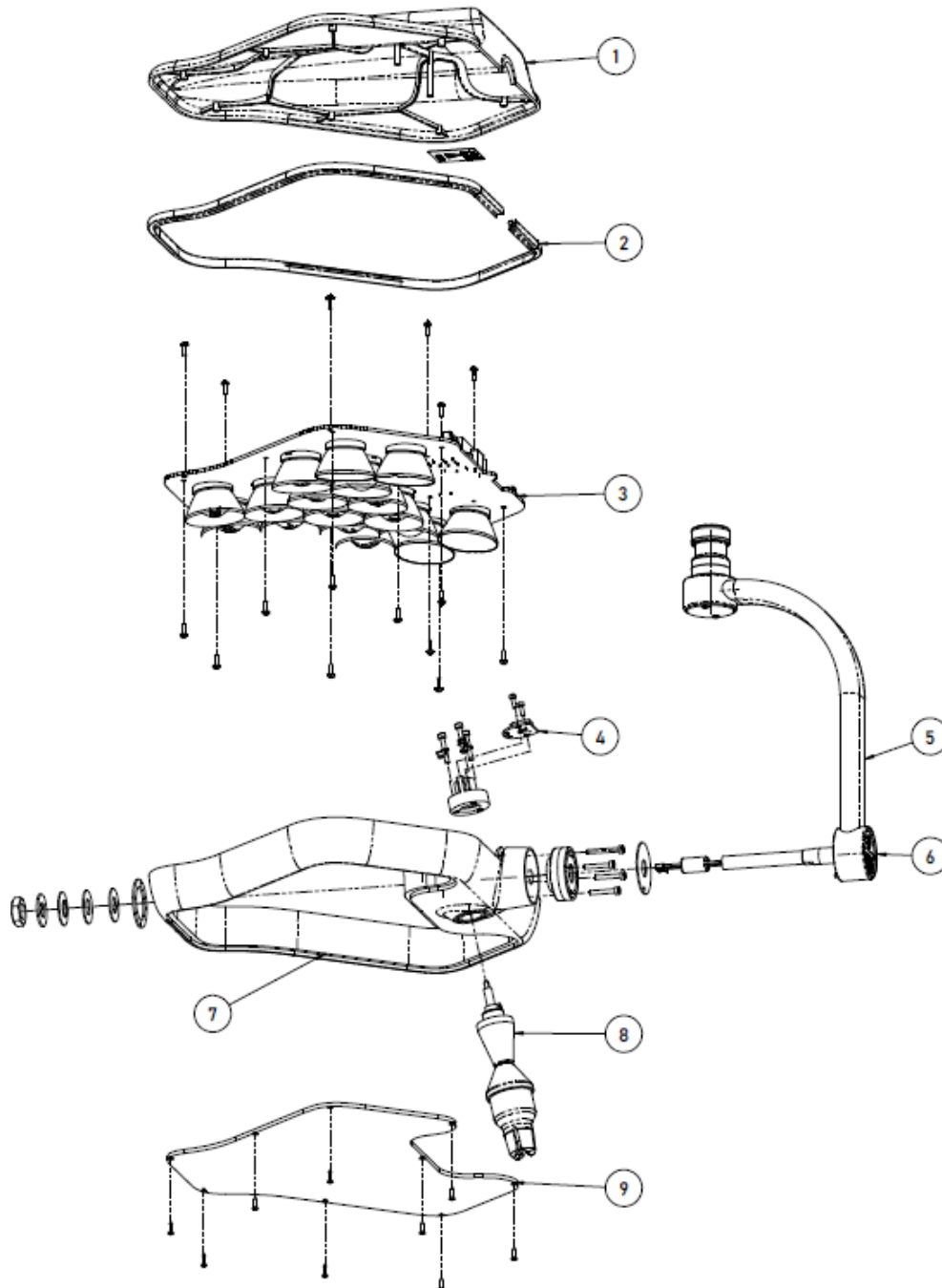
Assemble the control panel, handle adapter, potentiometer, main circuit board, cover and light-emitting disc 4.1-4.5 in reverse order.

4.7 Replacing angle joint



WARNING! Electric shock!

Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!



1 upper part, 2 sealing, 3 main circuit board, 4 potentiometer, 5 angle joint, 6 control panel, 7 lamp holder, 8 handle adapter, 9 light-emitting disc



To replace the angle joint, the light-emitting disc, the cover, the main circuit board with potentiometer, the handle adapter and the control panel must be removed, see section 4.1-4.5.

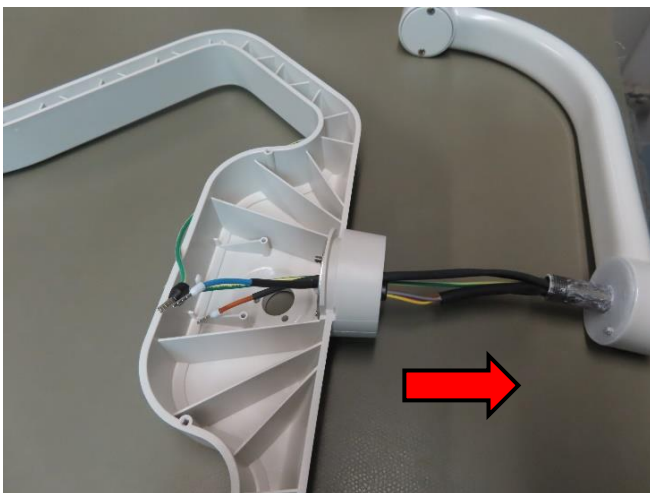
In the next step, the nut must be loosened using a suitable open-ended spanner.



Fasten the nut with a tool and move it via the angle joint.



Cut off the plug including the ferrite sleeve on the control panel cable at the marked point using a side cutter.



The angle joint can then be carefully pulled out of the lamp holder.



The assembly of the new angle joint takes place in reverse order.

Power supply cables, control panel cables and protective earth cables must be routed through the light connection. The control panel cable must be bent carefully for this.

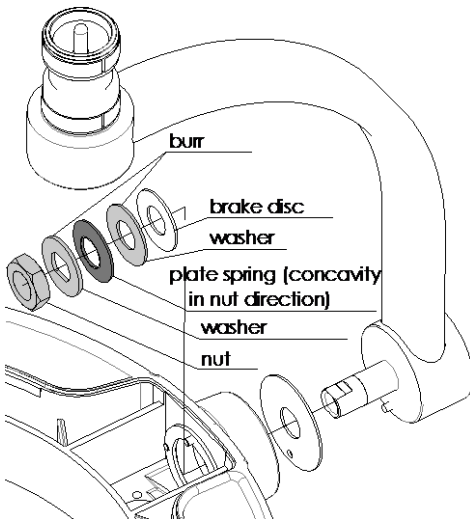


Illustration exemplary



Pay attention to the order when installing the discs!

Power supply cable, control panel cable and protective earth cable must be routed through the brake disc, washer, plate spring, washer and nut.



In the next step, the protective earth cable and power supply cable must be pushed/pulled through the light angle joint.



In order to guide the control panel cable through the nut, it must be carefully bent.



The brake disc, disc, plate spring and washer must be pushed onto the bolting pin of the angle joint and then secured with the nut. See the following section 4.8.

4.8 Adjustment of the movability of the light



WARNING! Electric shock!

Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!



If the movement of the light is too easy or too difficult, the mobility in the light angle joint can be adjusted.

The light-emitting disc and the upper part of the YLED-1F must first be removed (see sections 4.1 and 4.2).



Adjust the mobility of the light angle joint by loosening or tightening the nut. Use suitable pliers for this.



Fix the nut with pliers and move over the angle joint.

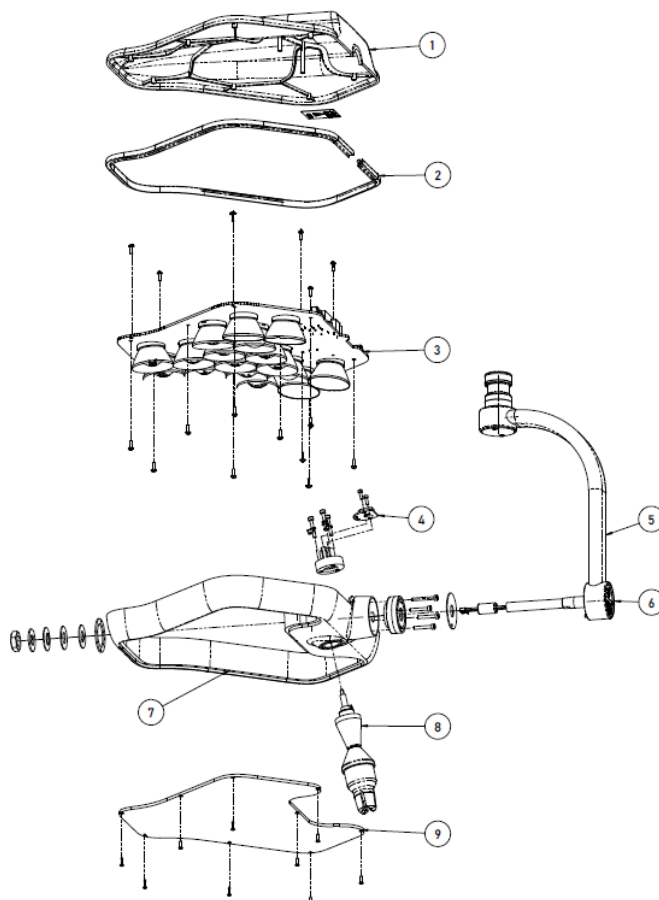
When tightening the nut, make sure that the lamp can be moved easily, but at the same time remains stationary in any position.

4.9 Replacement of the lamp holder



WARNING! Electric shock!

Before carrying out any repair work, disconnect the light from the mains supply at all poles and secure it against being switched on again!



1 upper part, 2 sealing, 3 main circuit board, 4 potentiometer, 5 angle joint, 6 control panel, 7 lamp holder, 8 handle adapter, 9 light-emitting disc

In order to replace the lamp holder, the light-emitting disc, the cover, the circuit board with potentiometer, the handle adapter and the angle joint must first be removed (see sections 4.1-4.4 and 4.8).



The step of disconnecting the plug of the control panel cable is not necessary!

The assembly of the new lamp holder is carried out in reverse order.

5 Spare parts

Spare parts and other technical support can be obtained from Technical Service:

+49 (0) 8092 2093 0
service@dr-mach.de

6 Disposal



The light does not contain any harmful substances.

The components of the light should be disposed of appropriately at the end of the product's life.

Take care that the material is carefully separated.

The electrical circuit boards should be recycled appropriately. The housing of the light and the other components should be disposed of according to the materials they contain.

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Dr. Mach Inspection Schedule				
Documentation of the inspection work on the light (The inspection intervals are to be found in the latest version of the accompanying documents)				
Please <u>also</u> observe the inspection schedule of the support arm system manufacturer.				
Please contact us if you have any questions about the inspection of the products. You can reach us on telephone number +49 8092 2093-0.				
Manufacturer:	Dr. Mach GmbH & Co. KG		Customer/Address:	
	Am Brucker Feld 4			
	85567 Grafing, GERMANY			
Light:	Type:		Inventory No.:	
	Serial No.:			
Inspector:			Person to contact at the customer's premises:	
No.	Activity		Checked (yes, no, nn=not necessary)	Result (OK, F=Fault, H=Advice)
1.	Visual inspection (annually)			
1.1	Light head / Monitor suspension			
1.1.1	Checking for external damage (damaged paintwork, cracks, deformation and clearances)			
1.1.2	Checking all parts are tightly fastened			
1.1.3	Checking that type plate and stickers are present and legible			
1.2	Suspension (ceiling, wall, stand)			
1.2.1	Checking for external damage (damaged paintwork, cracks, deformation and clearances)			
1.2.2	Check that all parts are tightly fastened (particularly those of the ceiling suspension; air-conditioning ceiling opening, if necessary)			
1.2.3	Checking that type plate and stickers are present and legible			

2.	Functional check (every 2 years)		
2.1	Protective conductor test for protection class I equipment (see also EN 62353/VDE 0751 section 5.3.2)		
2.1.1	Measurement of protective contact of plug to accessible conductive parts of the device for devices with a non-detachable mains connection cable (max. 0.3Ω)		
2.1.2	Measurement of protective contact connection of the device to accessible conductive parts of the device for non-detachable devices (max. 0.3Ω)		
2.2.	Leakage current measurement (see also EN 62353/VDE 0751 section 5.3.4)		
2.2.1	Direct measurement of the earth leakage current of the entire device when placed on an insulated surface (max. 0.5 mA)		
2.2.2	Leakage current measurement of light body (if 2.2.1 is not possible) (maximum 0.3 mA)		
2.3	Light head		
2.3.1	Checking of illuminated field		
2.3.2	Functional testing of all operating elements		
2.3.3	Check ease of movement of the lamp head		
2.3.4	Check the stops of the lamp suspension		
2.3.5	Check coupling for sterile handle, check sterility and that handle is securely fitted		
2.3.6	Check brake screw on light body		
2.4	Video system		
2.4.1	Checking operation of the camera		
2.4.2	Checking the image transfer		
2.4.3	Functional testing of all operating elements		
2.5	Monitor suspension		
2.5.1	Checking ease of movement of the monitor suspension		

2.5.2	Checking the attachments of the monitor suspension		
2.5.3	Check coupling for sterile handle, check sterility and that handle is securely fitted		
2.6	Suspension		
	Note: For the inspection work on the suspension, the instructions for use of the manufacturer of the support arm system must also be observed and the corresponding inspection report of the support arm system must be completed.		
2.6.1	Check the <u>securing segments</u>		
2.6.2	Check the support arm system (see manufacturer's inspection schedule)		
2.6.3	Check the screw connection between the ceiling suspension device and the support arm system.		
3.	Documentation of inspection / archiving of documents		
Notes / Remarks:			
Date:		Name of inspector:	Signature of inspector: