Mounting instructions Directions for use

WALL ATTACHMENT

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Static inspection

Note:
The static (structural) inspection must be carried out before the installation of the ceiling or wall anchorage!

- The strength of the construction must be designed, checked and certified by a structural engineer.
- The respective regional construction regulations that apply must be followed.
- If a wrong hole is drilled by mistake, e.g. drilling of a reinforcement rod, the structural engineer who is responsible must be contacted, since adequate static load distribution in the ceiling may have been endangered.

Declaration of acceptance:
It is hereby certified that the supporting ceiling / wall and the ceiling anchoring / wall anchoring is safe and adequately strong.

Project: _____

_____

_____

Anchoring (please check the one that is applicable)

- with dowels authorized by construction authority ☐
- with counter-plate ☐
- other ☐

Location: _____

Signature / Stamp: (structural engineer / construction authority)

These installation instructions must be kept at hand together with the relevant operating instructions of the lamp for consultation at any time.

1. Safety instructions

It is not allowed to connect the lamp to the mains, until it has been fully assembled and installed. This device is not suitable for use in hazardous locations.

The devices are not suitable for use in combustible blends of anaesthesia agents with oxygen or nitrous oxide.
Repairs to the wall attachment and special installation work on the sliding contacts should only be carried out by ourselves or a company expressly authorised by ourselves.

The manufacturer is only responsible for operational safety of the wall attachment when repairs and modifications are carried out by his own staff or by persons who guarantee compliance with the safety regulations.

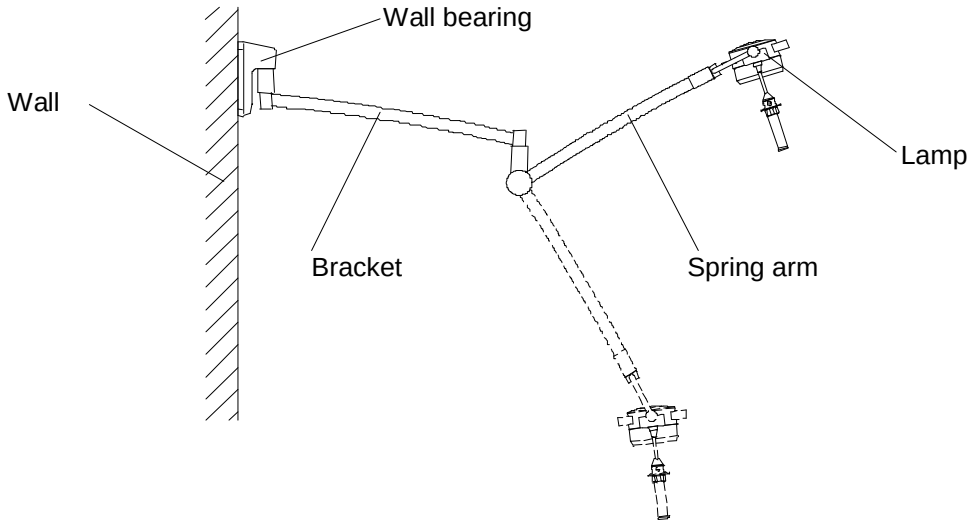
The manufacturer is not responsible for damage to persons or property caused by incorrect or improper use, or when used for incorrect purposes.

In view of the slight weight of the Dr. Mach lamps, it is not fundamentally necessary to drill through the wall and use a counter-plate.
Depending on the stability of the location, it may be necessary to use a counter-plate for the wall attachment.

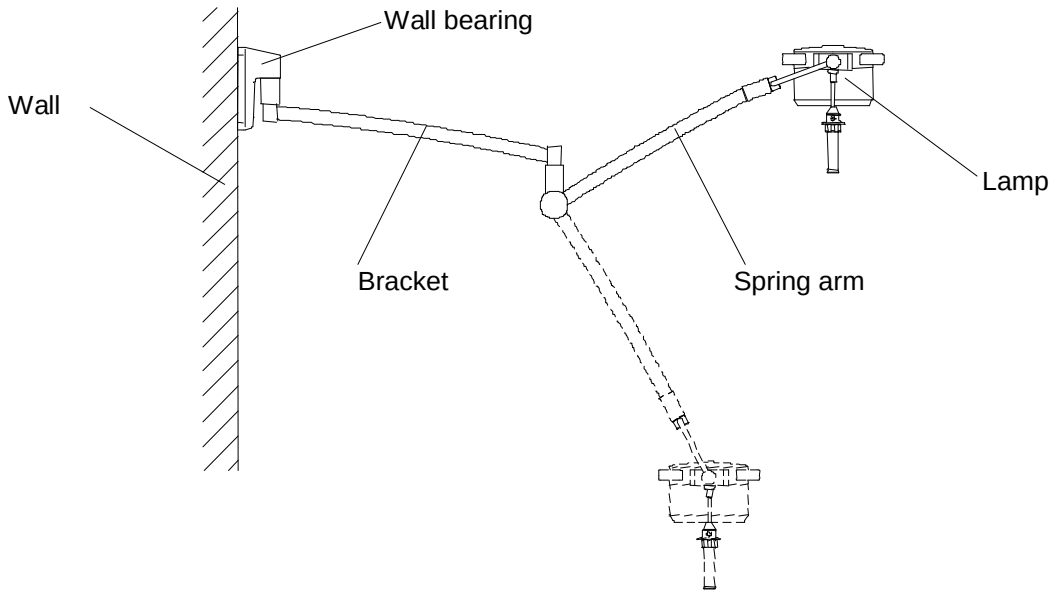
The forces arising when the widely extending articulated arms tilt, do make it necessary to drill very carefully with a certified hammer drill, paying close attention to the drilling tolerances.

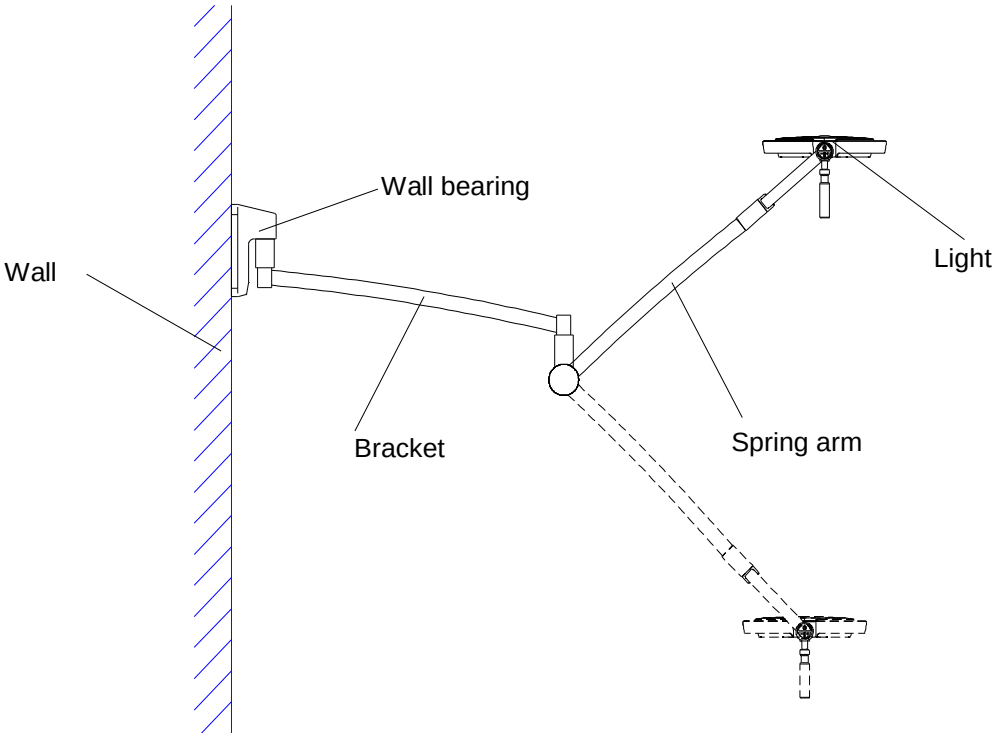
2. Mounting layout wall lamps

Type 1: **Mach 120; Mach 120F**



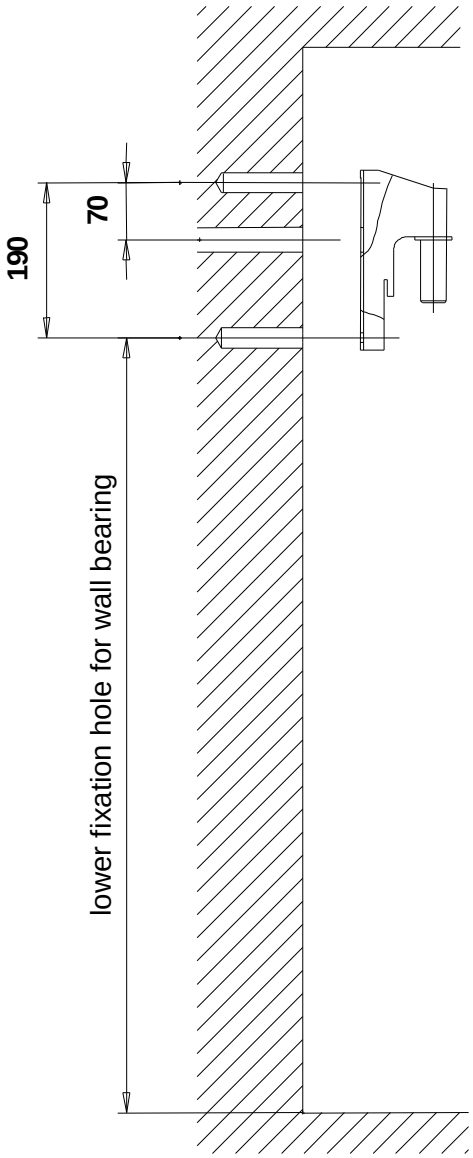
Type 2: **Mach 130; Mach 130F**




Wall bearing
Wall
Light
Bracket
Spring arm

3. Wall attachment

3.1 Preparatory work on the wall



Fastening with dowels

If dowels are included in the scope of supply, please do not use them!
Dr. Mach cannot guarantee that the supplied dowels are suitable with the existent wall.
Please ask a structural engineer for the proper dowels according to the configuration of the wall (see also the static inspection on page 5).

- In the case of a fixed connection, lay the electrical cable.

Fastening with counter-plate

Depending on the stability of the location, it may be necessary to use a counter-plate for the wall attachment.

- Ascertain the exact position of the OT-lamp-
- In the case of a fixed connection, lay the electrical cable.
- Stick the supplied drilling template to the wall.
- Drill the two holes ∅ 12mm and 190mm apart. When drilling, keep as closely as possible to the spacing between the holes. The counter-plate can be mounted with variations of up to 20mm.

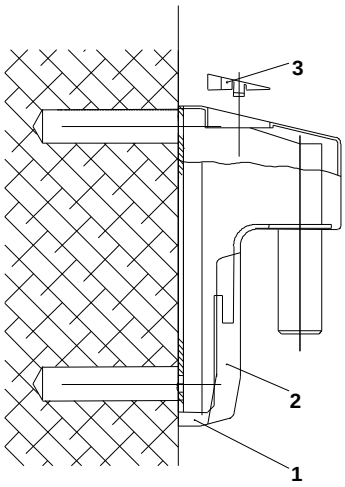
Electrical connection is carried out later using a 2m long cable provided by Dr. Mach with shock-proof plug on the wall arm.

It is important to check whether there is an appropriate plug socket in the vicinity.

If the lamp is to be connected directly, the mains connection must be located between the two fixing screws (see section showing electrical connection).

Follow any directions given by the technical staff!

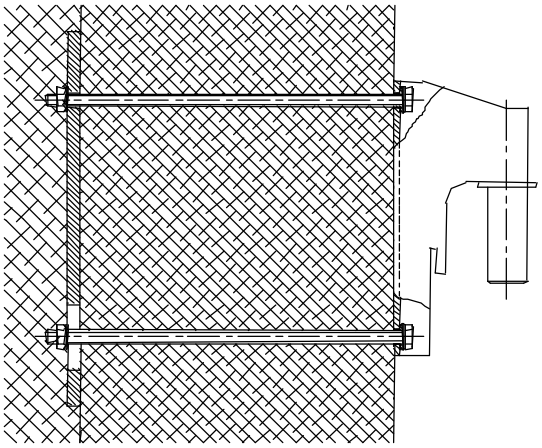
4.2 Mounting the wall bearing



For mounting the wall bearing proceed as follows:

Fastening with dowels

- Fix the wall bearing with the dowels recommended by the structural engineer.
- Place cover **1**, cover **2** and cap **3** in position in such a way that they engage in the locks.

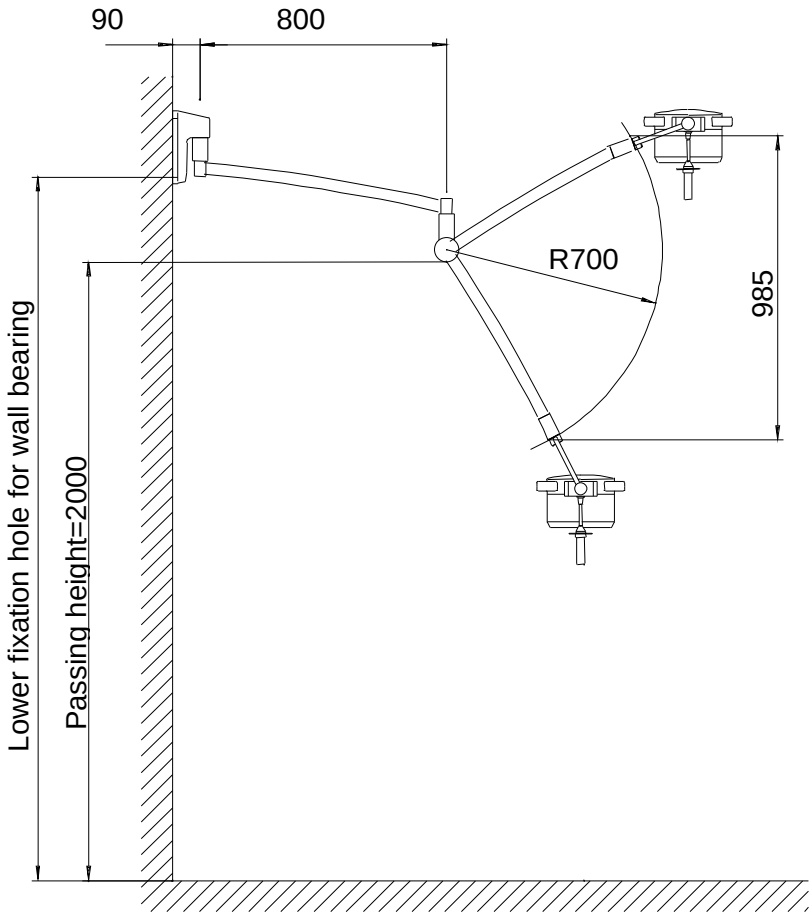


Fastening with counter-plate

- Fix the wall bearing, push through the M10 threaded rods and screw on the wall bracket and counter-plate using bolts and hexagonal nuts (if necessary, weld the hexagonal nuts to the counter-plate).
- Place cover **1**, cover **2** and cap **3** in position in such a way that they engage in the locks.

4.2.1 Wall attachment, room heights

Wall attachment



Room heights H wall attachments

Lamps	Lower borehole for wall bearing (min)
Mach 120	2274
Mach 120F	2274
Mach 130	2274
Mach 130F	2274
Mach LED 120	2274
Mach LED 120F	2274
Mach LED 130	2274
Mach LED 130F	2274

4. Electrical connection

4.1 Preparing the electrical connection

Wall attachment

The lights Mach 130 and Mach 130F are normally supplied with integrated transformer and connection cable with shock-proof plug. The socket used must be installed according to IEC or VDE 0100-710 requirements. In case of the lights Mach LED 120, Mach LED 120F, Mach 120 and Mach 120F the transformer is positioned in the wall bearing.

Once the electrical connections have been completed, check that the system functions correctly in a no-load operation trial run.
When connecting to an external transformer, the emerging voltage U will be approx. 10-20% above rated voltage because of no load and anticipated lead losses. There is no point in making any adjustments until the lamps have been completely mounted.

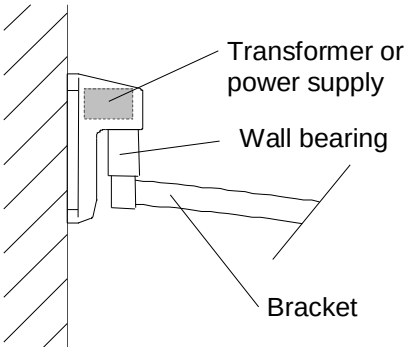
4.2 Position of transformer – Dr. Mach lamps

Lamps	External transformer	Transformer in the lamp housing	Remark
Mach 120 / 120F	X*		
Mach 130 / 130F	X	X*	For models with electronic transformer – potentiometer instead of change-over switch
Mach LED 120 / 120F	X*		
Mach LED 130 / 130F	X*		

* Transformer included in the extent of supply

5.3 Wall lights with external transformer / power supply

a. Lights Mach LED 120 / 120F and Mach 120 / 120F

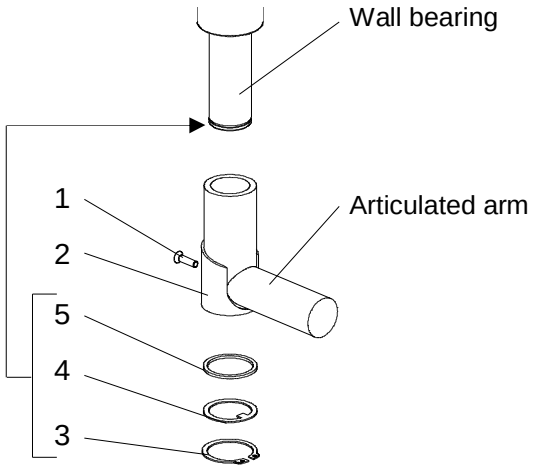


In case of the lights Mach LED 120, Mach LED 120F, Mach 120 and Mach 120F the transformer is positioned in the wall bearing.

It is possible to connect these lamps direct to a power supply cable through the wall.
Optionally the lights can be connected by the supplied connection cables with shock-proof plug to the wall socket.

5. Mounting the articulated arms and the l head

5.1 Mounting the articulated arms to the wall bearing

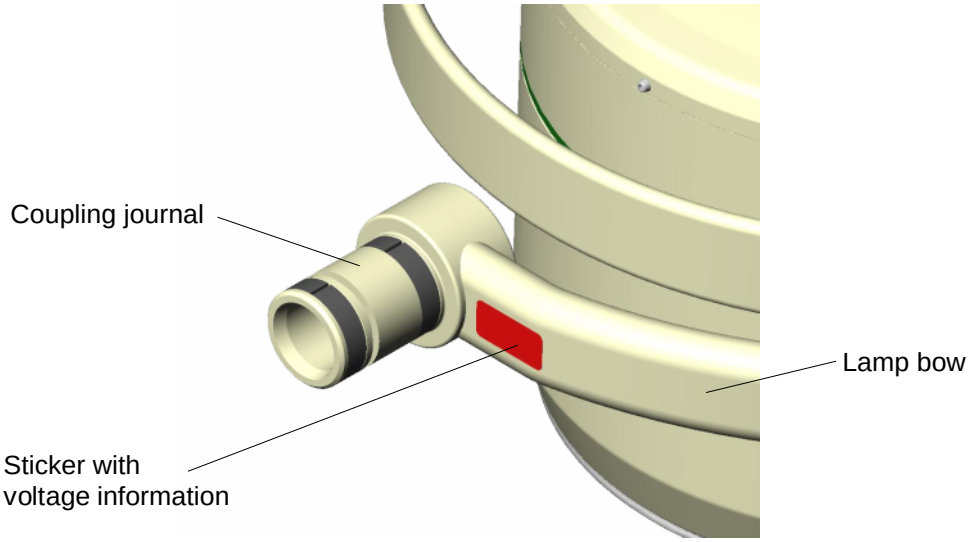


To mount the articulated arms proceed as follows:

- Loosen the screw **1**.
- Remove cover **2** including the sliding contact-plug.
- Remove circlip **3**, gib washer **4** and levelling washer **5** from the suspension tube (tool: mounting plier).
- Slide the articulated arm onto the suspension tube.
- Slide the levelling washer, gib washer and circlip onto the suspension tube in the correct order.
  Take care to ensure that the nose of the gib washer lies on the lateral bore (not shown) of the suspension tube, and that the safety ring slots properly into the groove of the suspension pipe (tool: mounting plier).
- Place the cover **2** back on the articulated arm and screw on with screw **1**.

5.2 Mounting the lamp to the spring arm

ATTENTION! Notice the rated voltage information!



Each lamp has a red sticker applied near the coupling journal at the lamp bow. The sticker shows the rated voltage of the lamp.
Connect the lamp only to the prescribed voltage, to avoid irreparable damage (e.g. the electrical components).

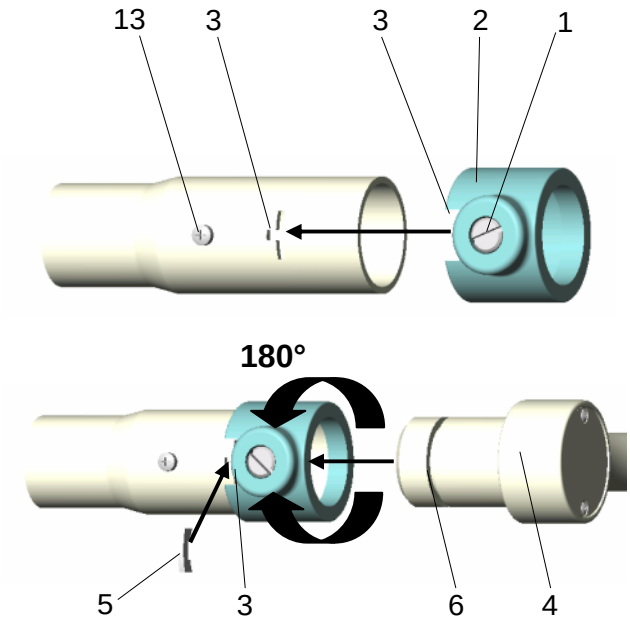
Following rated voltage is usual:

24-28V DC	***22,8V***	***230V***	***120V***	***110V***

After mounting the lamp take off the sticker and dispose it, otherwise it could fall down in the OT-field after some time!

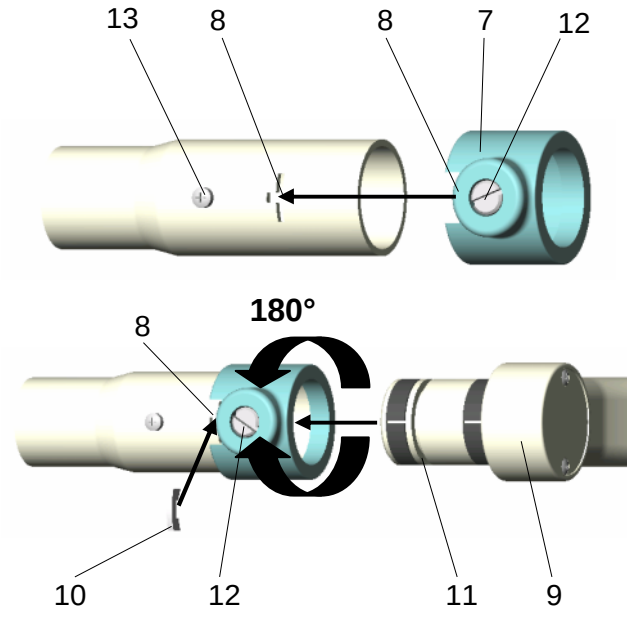
Do not remove screw 13, it is designed to fix the sliding contact and provides earthling!

Attention: If the spring arm is pushed downwards (the arm is under spring tension) it may bounce up and cause harm. While mounting the lamp head no other persons are allowed to be within the swivel range of the spring arm.



Mounting the lamp Mach 120/120F to the spring arm

- Loosen brake screw **1**, so the plastic bushing **2** can be slipped easy onto the spring arm.
- Slip plastic bushing **2** onto the spring arm to overlap slots **3**.
- Check if the journal **4** of the lamp is greased.
- Insert the greased journal **4** of the lamp and insert security segment **5** completely into slot **3**, so that the security segment leads in groove **6**.
- Rotate plastic bushing **2** by 180° **up to the provided drilling for the brake screw** and screw in brake screw **1** until you reach the desired brake effect for lamp head **4**.
- Check if lamp head **4** is firmly fixed.



Mounting the lights Mach LED 120/120F, Mach LED 130/130F and Mach 130/130F to the spring arm

- Loosen brake screw **12**, so the plastic bushing **7** can be slipped easy onto the spring arm.
- Slip plastic bushing **7** onto the spring arm to overlap slots **8**.
- Check if the journal **9** of the lamp is greased.
- Insert the greased journal **9** of the lamp and insert security segment **10** completely into slot **8**, that the security segment leads in groove **11**.
- Rotate plastic bushing **7** by 180° **up to the provided drilling for the brake screw** and screw in brake screw **12** until you reach the desired brake effect for lamp head **9**.
- Check if lamp head **9** is firmly fixed.

6. Cleaning

Note: Before doing any cleaning work turn off the lamp, disconnect from mains and make sure that the lamp cannot be switched on again.
Please ensure that no disinfection liquid flows into the joints or lamp head.

The surface of the ceiling attachment can be easily kept clean by simply wiping with a wet cloth. You can use conventional cleaning agents.

Caution:
In order to prevent any damage at plastic parts, do not use scouring agents or alkaline, acidic and alcoholic cleaning agents.

For cleaning proceed as follows:
- Draw plug from mains.
- Wipe the surface of the ceiling attachment with a wet cloth. As a cleaning agent you can use water or a soap solution (washing-up liquid).

7. Maintenance

Note: Before doing any maintenance work, turn off the lamp, disconnect from mains and make sure, that the lamp cannot be switched on again.

7.1 Periodical maintenance work

The following maintenance work/tests has/have to be done every six months:
- check on defects in paint work;
- check on fissures at plastic parts;
- check on deformation of the suspension.

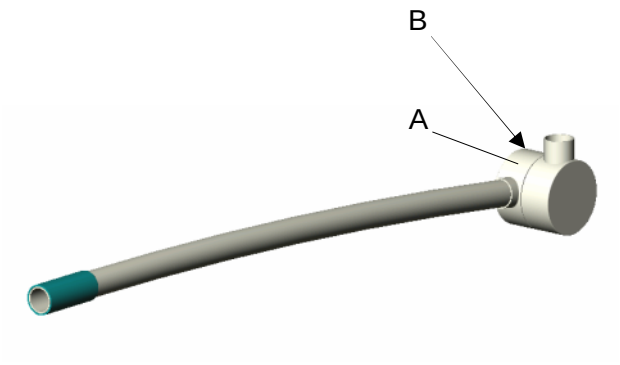
The following maintenance work/tests has/have to be done once a year:
- check the function;
- electrical safety test;
- check the suspension.

Remark: **Check and grease the security segment once a year.**

7.2 Adjusting the spring force

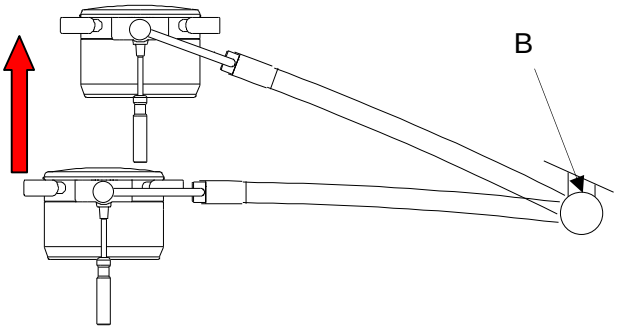
Springs are wearing parts, thus the spring force can decrease in time and must be readjusted.

Note: Set the spring force in such a way, that the spring arm with the lamp head holds its position at every set height.



In case the spring arm with the lamp <u>moves down</u> on its own, proceed as follows:

- Remove lateral cover **A**. The adjusting screw (**B**) for the spring force is visible now.
- Push the lamp and spring arm upwards as much as possible, so the spring is without charge.
- Insert a slotted screwdriver into the screw **B**.
- Turn the adjusting screw **to the left** (anticlockwise), until the lamp holds its position at every set height.



In case the spring arm with the lamp <u>moves up</u> on its own, proceed as follows:

- Remove lateral cover **A**. The adjusting screw (**B**) for the spring force is visible now.
- Push the lamp and spring arm upwards as much as possible, so the spring is without charge.
- Insert a slotted screwdriver into the screw **B**.
- Turn the adjusting screw **to the right** (clockwise), until the lamp holds its position at every set height.

7.3 Maintenance of the segment

- Dismount the lamp head in reverse order of mounting (see chapter 5.2).
- Check the thickness of the segment. It must be at least 1,5mm. In case the thickness of the segment is less than 1,5mm, it has to be changed.
- Grease the segment and the coupling journal of the lamp.
- Mount the lamp to the spring arm (see chapter 5.2).

8. Data

8.1 Technical data

	Wall attachment
Rated voltage	120V / 230V
Rated frequency	50 / 60Hz
Power consumption	60W
Rated current at 24V	2,5A
Protection class	I.

The device is not suitable for use in combustible blends of anaesthesia agents with air or for use in combustible blends of anaesthesia agents with oxygen or nitrous oxide.
The device is designed for continuous operation.

8.2 Environmental conditions

Operation

	Min.	Max.
Temperature	+10°C	+40°C
Relative atmospheric humidity	30%	75%
Air pressure	700hPa	1060hPa

Transport / storage

	Min.	Max.
Temperature	+10°C	+40°C
Relative atmospheric humidity	30%	75%
Air pressure	700hPa	1060hPa

9. Disposal

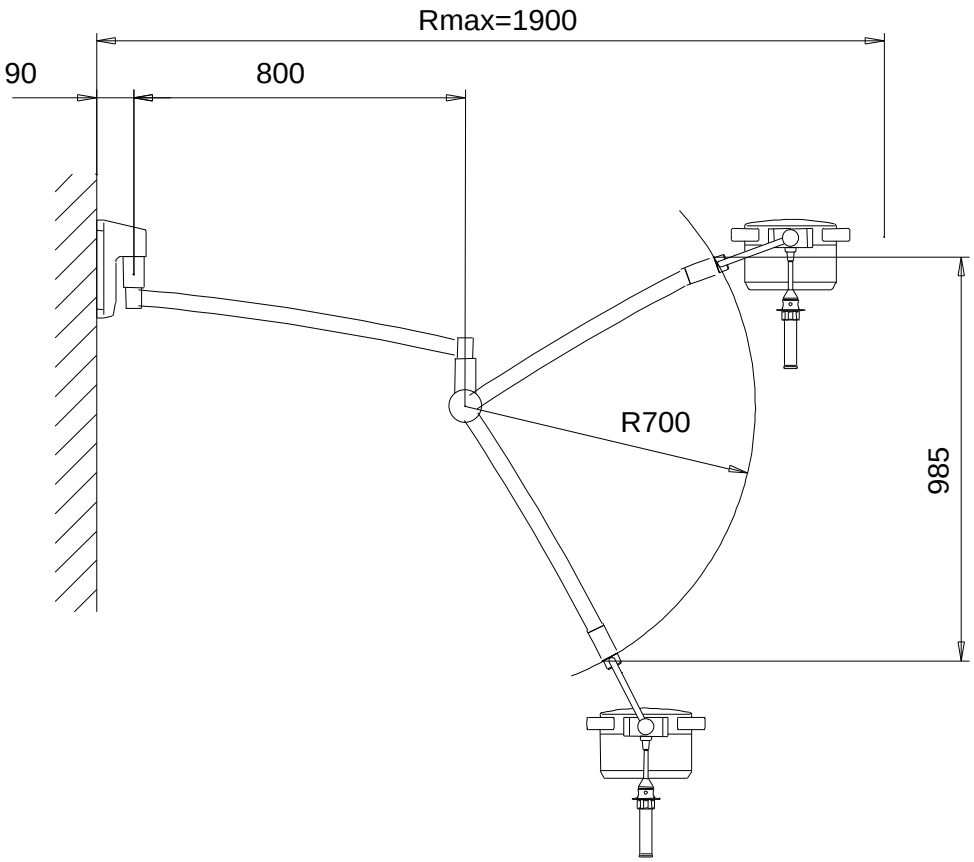
The wall attachments do not contain any danger goods.
The components of the wall attachment should be properly disposed at the end of its shelf life. In order to respect all regulations for disposal, please contact us before disposing the product.

10. CE- mark

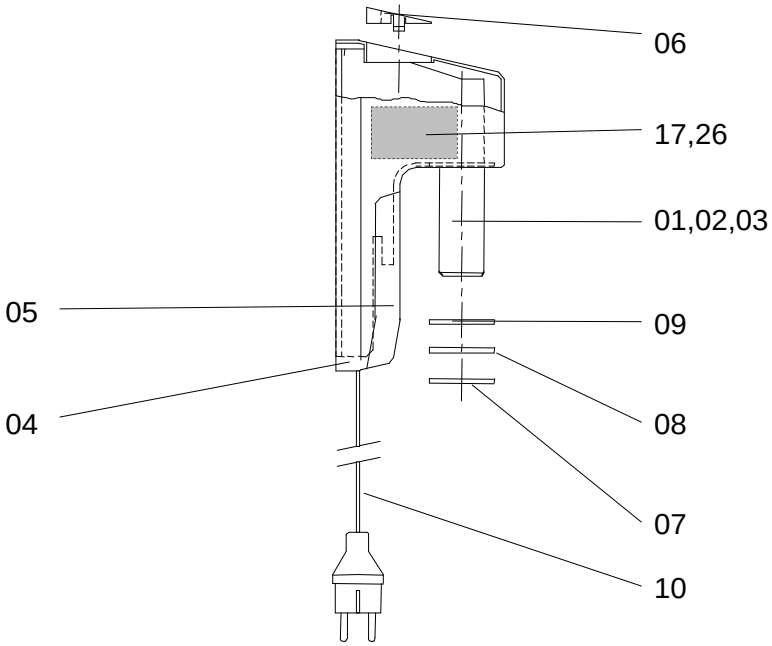
CE

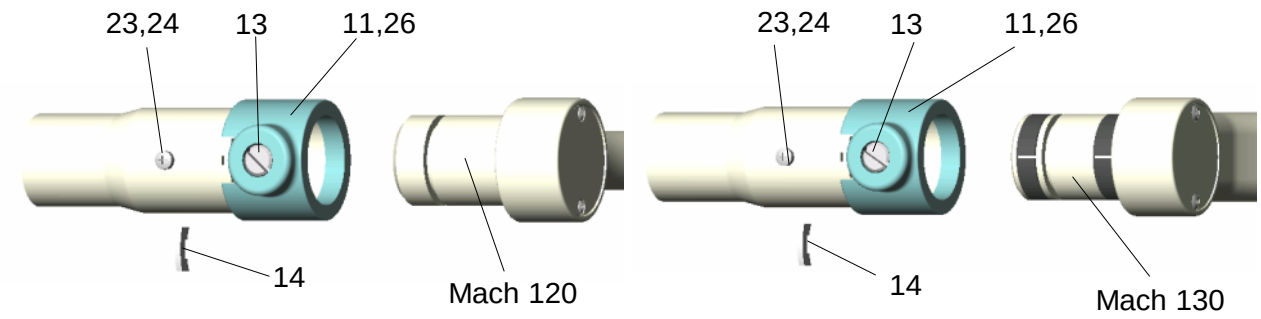
The products wall attachment comply to the EMC standards 93/42/EEC for medical products of the European Community's Council.

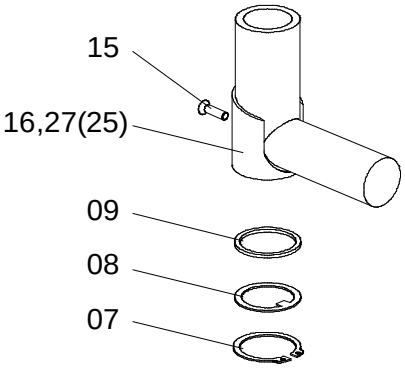
10. Dimensions and range of movement

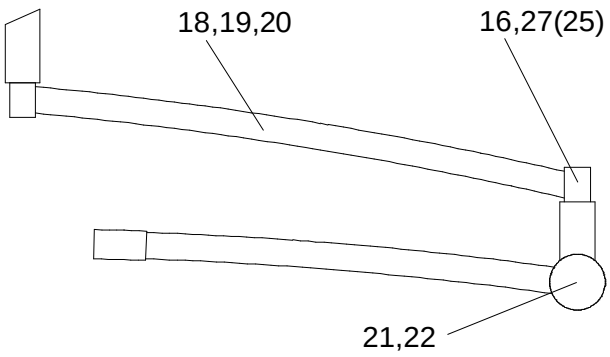


12. Spare parts









13. Spare parts list

Item	Qty.	Name	Part no.	Remark
01	1	Wall bearing 230V / 24V with power supply 60W Halogen	74844004	For Mach 120/120F
02	1	Wall bearing 230V / 24V with power supply 60W LED	74844005	For Mach LED 120/120F and Mach LED 130/130F
03	1	Wall bearing without transformer	74844002	For Mach 130/130F
04	1	Cover for wall bearing	74841003	
05	1	Wall bearing panel	74841004	
06	1	Cover	74841005	
07	1	Circlip (Seegerring)	74011014	
08	1	Gib washer	74011013	
09	1	Levelling washer	74011012	
10	1	Connection cable with safety plug	74015020	
11	1	Securing sleeve RAL5021	74013012	Ondal 1502738
12				
13	1	Brake screw	74015007	
14	1	Securing segment	74015006	
15	1	Screw for cover	65112029	
16	2	Cover for arm RAL5021	74015022	Halogen lights
17	1	Power supply 60VA inside wall bearing	67010404	Mach 120/120F, mach LED 120/120F, Mach LED 130/130F
18	1	Arm 1-2 kg	74861007	Mach 120/120F
19	1	Arm 2-3 kg	74861008	Mach 130/130F
20	1	Arm 1,8-2,7 kg	74861011	Mach LED 120/120F, Mach LED 130/130F
21	1	Lateral cover, left	74015010	Ondal T37284
22	1	Lateral cover, right	74015011	Ondal T38505
23	1	Screw M3x10 D7985 :Zn	65152045	
24	1	Lock washer A3,2	65582003	
25	1	Sliding contact for new-type swing		Ondal T19694
26	1	Securing sleeve RAL 5010	74013122	LED lights
27	2	Cover for arm RAL 5010	74015009	LED lights