Mounting instructions  Directions for use

MACH 112

Halogen-spot lamp for consulting room and hospital

Stand model with five-feet base, design without heat protection filter  1120 1012 00
Stand model with five-feet base, design with heat protection filter  1121 1012 00
Wall model, design without heat protection filter               1120 1021 00
Wall model, design with heat protection filter                1121 1021 00
Table clamp, design without heat protection filter           1120 1025 00
Table clamp, design with heat protection filter              1121 1025 00
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1. Safety instructions

Please pay attention to the directions for use when handling the lamp!

The lamp is supplied with integrated connection lead, earthed plug and a transformer 230 / 11.5V 20W – 70W and is to be used only with this transformer. The socket to be used for the lamp must be installed according to the requirements stipulated by the IEC 60601 and VDE 0100 710.

This device is not suitable for use in hazardous locations

The manufacturer is only responsible for the safety of the lamp if repairs and alterations have been carried out by themselves or a company who can guarantee that the safety regulations have been observed.

The manufacturer is not liable for personal or material damages if the lamp is misappropriately or incorrectly operated or misused.

The lamp is manufactured and tested according to the standards IEC DIN 60601. The lamp is tested for electromagnetic compatibility according to the standards EN 60601-1-2:2001. The lamp is classified as a group 1 device according to the MPG (law for medical products).

Attention: The lamp can be disconnected from mains only by pulling the plug off the earthed socket.

All Dr. Mach stand lamps are supplied with all installation and connection parts and components. For packaging reasons, the five-foot stand is supplied in dismantled state. The stand tube is always assembled as a unit and only needs to be attached to the foot with the lower fastening screw.
2. Mounting instructions

2.1 Pre-mounting of the stand

Fix the upper part 1 of the stand tube (with ball handle 2) to the lower part of the stand tube 3 and tighten.

2.2 Mounting the five-feet base with the stand tube

For mounting the stand proceed as follows:

- Place the central base 4 onto the stand tube Ø25 5. The stiffness is to ensure a tight fit that is free from any movement.
- Pre-mount the cam catch plate 6 (cams point inwards), with the lock washer 7 and cheese head screw M8 8, so that the extension arm 9 can still fit easily into the central base. Insert the extension arm 9 into the central base from above holding the cam catch plate 6 against from the opposite side.
- Insert the other 4 extension arms 10-13 in the sequence shown in the left figure into the central base. The extension arms are held by the cams of the cam catch plates.

Remark: Mount the two locking rollers 14 and 15, and the two electrically conductive rollers 16 and 17 as shown in the figure (not next to each other).

- Tighten the catch plate with an Allen key SW6 (approx. 15Nm). The cams of the catch plate must mate with the drill holes of the extension arms so that every extension arm is tightly fitted to both the central base and stand tube. The cams also prevent the extension arms from being pulled out.
2.3 Mounting the lamp

- Disengage clamping lever 19 to open plastic joint 18 just enough, so that it can be put on stand 20.
- The swivel arm 21 has to be mounted such a way, that its position is above the joint 18 (see figure).
- Adjust height and radius of the swivel arm and tighten clamping lever 19, so that the friction of the joint holds the lamp in the requested position.

2.4 Wall mounting

- Mark the position of the holes to be drilled in the wall according to the picture on the left.
  The wall bearing can be used as bore template.
  Check the horizontal position of the wall bearing by using a bubble level.
- Drill the holes and insert the enclosed dowels S6.
After inserting the dowels 22 fix the wall bearing 23 to the wall with the three enclosed screws 24.

Insert the lamp including the wall bracket 25 into the wall bearing and fix it with the knurled screw 26.

2.5 Table mounting

- Screw on the table clamp 27 on the table 28 in the desired position.
- Insert the lamp including the bracket 25 into the clamp hole and fix it with the clamping screw 29.
3. Directions for use

3.1 ON/OFF switch

Use the switch 31 at the lamp housing to turn the lamp on and off.

3.2 Positioning

For height adjustment the arm 21 can either be swivelled or adjusted in height by loosening adjusting lever 19.

The lamp head can be positioned with the flexible connection element 32.
4. Cleaning

4.1 Lamp head

The lamp has a high-quality surface, which can be cleaned with conventional cleaning agents.

Only use disinfectant with less then 20% alcohol.

4.2 Protective disk (heat protection filter)

The protective disk 34 is made of an high-quality plastic, the heat protection filter 35 is made of high quality glass. For cleaning use lukewarm water and a soft viscose sponge. Pay attention to the following during cleaning:
- Wipe over the protective disk 34 (heat protection filter 35) with a wet cloth (never use a dry cloth!).
- Only use disinfectant with less then 20% alcohol.

Wipe the protective disk 34 (heat protection filter 35) after cleaning with an antistatic, non-fluffy cloth.

5. Maintenance

5.1 General information

Service and a check of the lamp should be made every two years.
In order to keep the system easy-running throughout its life span, we recommend that the self-locking joints have to be tighten.
5.2 Changing of spare parts

5.2.1 Changing the halogen bulb

Dr. Mach uses special halogen bulbs as illuminants. Only original Dr. Mach replacement bulbs may be used. The use of other bulbs can lead to a considerable reduction of the light power and increase in the thermal load.

**ATTENTION!** Disconnect from mains before changing the bulb.

**ATTENTION:** Parts of the housing and the halogen bulb may be very hot immediately after use.

To change the bulb proceed as follows:
- Loosen the three screws 36 and remove the housing lower part 37.
- Remove the securing clip 38 as shown in the picture.
- Remove the halogen bulb carefully 39 (12V 30W).
- Mount the new halogen bulb in reverse order.
- Check the function of the lamp.

**Remark:**
The halogen bulbs have a service life of approx. 2000 hours without any deterioration in their luminosity.
5.2.2 Changing the protective disk (heat protection filter)

To change the protective disk (heat protection filter) proceed as follows:
- Remove the lower housing part 37 as shown in chapter 5.2.1.
- Loosen three nuts M3 40.
- Remove the disk holder 41.
- Exchange the protective disk (heat protection filter) 42.
- Mount the parts in reverse order.

5.3 Adjusting the mobility

In case the lamp head doesn’t hold its set position anymore, proceed as follows to adjust the mobility:
- Loosen the head screw 43.
- Remove the upper housing part 44 carefully by pulling it upwards.
  **Make sure that the cable of the ON/OFF switch is not damaged while removing the upper housing part.**
- Tighten the nut M10 45 with a wrench (size 17) as required.
- Mount the upper housing part 44 in reverse order.
6. Data

6.1 Technical data

6.1.1. Technical data of the lamp Mach 112

<table>
<thead>
<tr>
<th></th>
<th>Mach 112</th>
<th>Mach 112 WSF (with heat protection filter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light intensity</td>
<td>30,000 Lux / 0,5 m</td>
<td>20,000 Lux / 0,5 m</td>
</tr>
<tr>
<td>Colour rendering index</td>
<td>Ra = 92</td>
<td>Ra = 96</td>
</tr>
<tr>
<td>Halogen bulb</td>
<td></td>
<td>Halogen 12 V / 30 W</td>
</tr>
<tr>
<td>Current</td>
<td>~ Alternative current</td>
<td></td>
</tr>
<tr>
<td>Pr primary</td>
<td>230 V / 0,13 A</td>
<td></td>
</tr>
<tr>
<td>Sek secondary</td>
<td>12 V AC / 2,5 A</td>
<td></td>
</tr>
<tr>
<td>Hz Hertz – frequency</td>
<td>50 / 60 Hz</td>
<td></td>
</tr>
<tr>
<td>Class of protection</td>
<td>Not requested by standard</td>
<td></td>
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</tbody>
</table>

6.1.2. Technical data of the stand

<table>
<thead>
<tr>
<th>Data</th>
<th>Lamp type</th>
<th>Mach 112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand foot</td>
<td>Number of extension arms</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Length of arm</td>
<td>310mm</td>
</tr>
<tr>
<td></td>
<td>Rollers Ø</td>
<td>50mm</td>
</tr>
<tr>
<td>Stand tube</td>
<td>Approx. length</td>
<td>95cm – 145cm</td>
</tr>
<tr>
<td></td>
<td>Diameter</td>
<td>25mm</td>
</tr>
<tr>
<td></td>
<td>Extension</td>
<td>no</td>
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<tr>
<td></td>
<td>Power supply</td>
<td>no</td>
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<tr>
<td></td>
<td>Suitable for article no.</td>
<td>112 010 1200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>112 110 1200</td>
</tr>
<tr>
<td>Swivel arm + lamp head</td>
<td>Mounting</td>
<td>• Swivel arm and lamp head pre-mounted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Swivel arm to stand</td>
</tr>
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</table>
6.2 Environmental conditions

<table>
<thead>
<tr>
<th>Operation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>+10°C</td>
<td>+40°C</td>
</tr>
<tr>
<td>Relative atmospheric humidity</td>
<td>30%</td>
<td>75%</td>
</tr>
<tr>
<td>Air pressure</td>
<td>700 hPa</td>
<td>1060 hPa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport / storage</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>-10°C</td>
<td>+50°C</td>
</tr>
<tr>
<td>Relative atmospheric humidity</td>
<td>20%</td>
<td>90%</td>
</tr>
<tr>
<td>Air pressure</td>
<td>700 hPa</td>
<td>1060 hPa</td>
</tr>
</tbody>
</table>

7. CE- mark

The products Mach 112 comply with the standards 93/42/EWG for medical products of the European Community’s Council.
Dr. Mach applies the standard EN 60601-2-41.
Dr. Mach GmbH & Co. KG is certified according to DIN EN ISO 13485:2003.

8. Disposal

The components of the lamp should be properly disposed at the end of its shelf-life.
Make sure, that the materials are carefully separated.
The lamp does not contain any danger goods. The components should be disposed according to the contained materials.
9. Spare parts

01

02

03

04

05, 06
10. Spare parts list

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
<th>Name</th>
<th>EDVNO</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>01</td>
<td>1</td>
<td>ON/OFF switch</td>
<td>67340004</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>1</td>
<td>Lamp socket with clamps length 140mm</td>
<td>67320013</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>1</td>
<td>Halogen bulb 12V 30W</td>
<td>67100209</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>1</td>
<td>Safety clip for halogen bulb</td>
<td>04080211</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>1</td>
<td>Protective disk</td>
<td>01011208</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>1</td>
<td>Heat protection filter</td>
<td>01011203</td>
<td>Mach 112 with heat protection filter only</td>
</tr>
<tr>
<td>07</td>
<td>1</td>
<td>Connection cable with plug transformer</td>
<td>67200209</td>
<td>Not shown</td>
</tr>
</tbody>
</table>