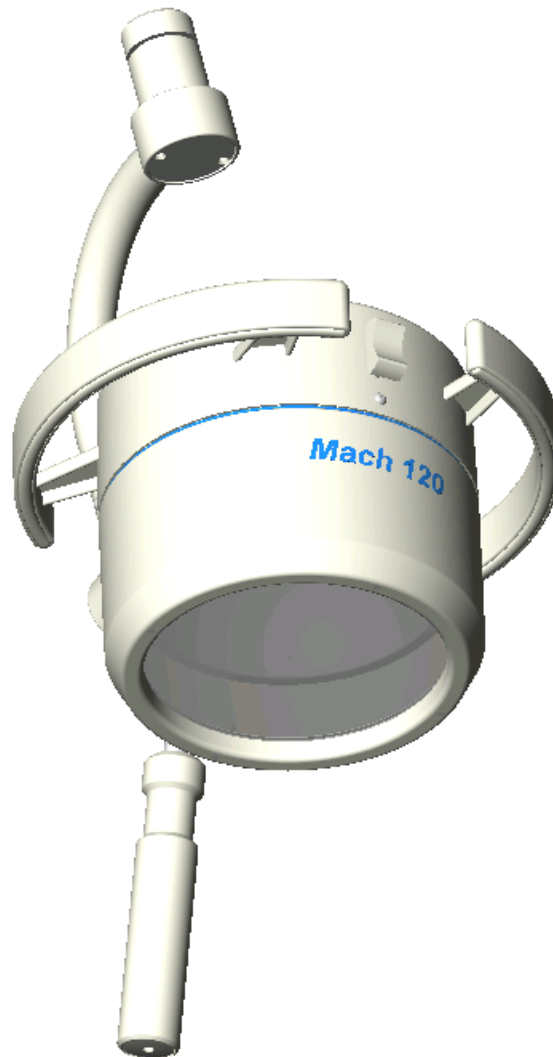


Instructions for use
MACH 120F/120
Ceiling, Wall, new-type stand model



Mach 120F ceiling lamp _____	Order No. 1202 2033 30
Mach 120 ceiling lamp _____	Order No. 1201 1033 30
Mach 120F wall lamp _____	Order No. 1202 2022 02
Mach 120 wall lamp _____	Order No. 1201 1022 02
Mach 120F, new-type stand model _____	Order No. 1202 2013 00
Mach 120, new-type stand model _____	Order No. 1201 1013 00

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1. Safety instructions

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

Attention:

**This device is not suitable for use in hazardous locations. The lamp is classified
As a Group 1 device according to the MedGV (Medical Ordinance).**

Repairs to the lamp and special installation work on the reflector or plug-in socket should only be carried out by ourselves or a company expressly authorised by ourselves.

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 body may only be dismantled from the swivel arm in reverse order of its assembly.

Make sure that the lamp is in perfect working order before every use.

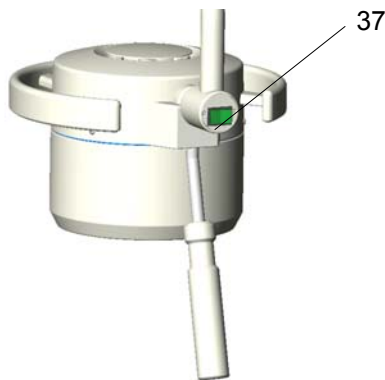
2. Operating the lamp Mach 120F/120

There are two types of Mach 120F/120 -lamps available:

- Mach 120F with focusable light field and dielectric light system Ra=93
- Mach 120 with fix-focus and standard light system Ra=86

The lamp types are equipped with an external transformer:

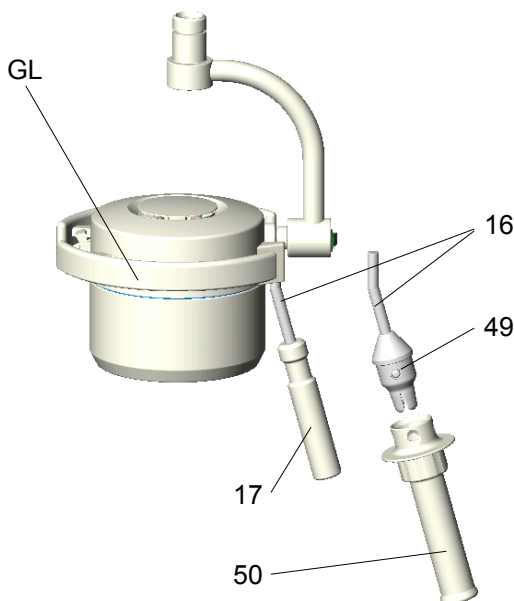
- Mach 120F/120, voltage 22,8V / external transformer.



2.1 ON/OFF switch

The switch 37 with signal lamp at the lamp bow turns the lamp on and off.

Because of the external transformer of the lamps, in addition to the switch 37 a two-pole switch ON/OFF must be provided by the customer.

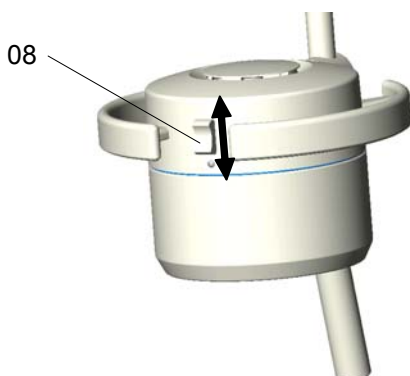


2.2 Positioning

Use the handle 17/50 or the handle rail GL to position the lamp.

There are two handle types available:

- Handle 17
The handle 17 is fixed to the handle bar 16 and can be removed.
- Sterilizable handle 50
The sterilizable handle can be removed for sterilisation. It is fixed by the couple to the handle bar 16.

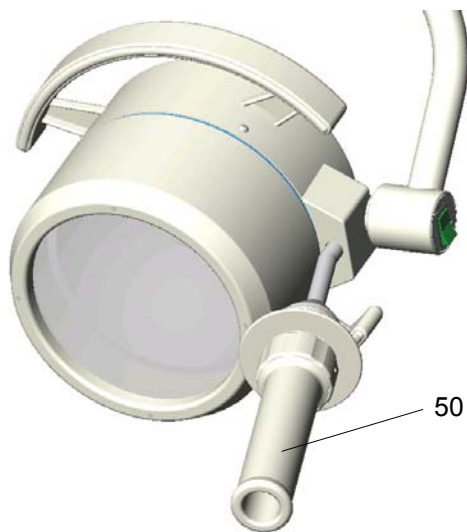


2.3 Light field adjustment - focusing (Mach120F only)

The lamp models Mach 120F have a focusing function. That means, you can either enlarge the diameter of the light field or bundle the light to a smaller area, depending on the circumstances.

To activate the focusing function, move lever 08 at the lamp head up and down (see figure).

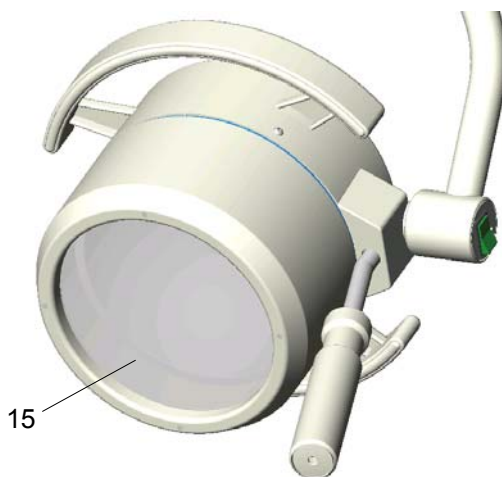
3. Cleaning



3.1 Sterilisable handle

The lamps Mach 120F/120 can be equipped as an option with a sterilisable handle **50**.

The sterilisable handle **50** can be removed and sterilised at temperatures up to a max. of 134°C. No other parts may touch the handle during sterilisation. The handle should be placed in a vertical position during sterilisation.



3.2 Lamp head, protective disk

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

The protective disk **15** is made of an high-quality plastic. Pay attention to the following during cleaning:

- Wipe over the disk **15** with a wet cloth (never use a dry cloth!).
- Only use disinfectant with less then 20% alcohol.



Alc. ≤ 20 %

Wipe the disk **15** after cleaning with an antistatic, non-fluffy cloth.

4. Maintenance

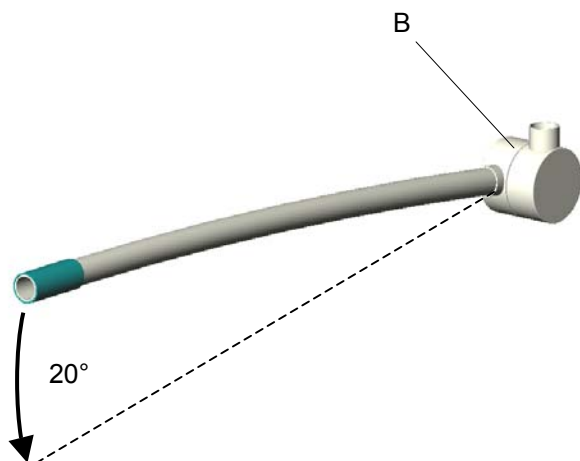
The lamp has been designed and built so that regular maintenance intervals are not necessary. In order to keep the system easy running throughout its life span we recommend that the hinges be greased once a year with an acid-free grease.

4.1 Adjustments at the ceiling/wall attachment and new-type stand

◆ Adjusting the spring arm (new-type attachment)

To adjust the spring force proceed as follows:

- a) **The spring arm moves down on its own:**
 - Pull the lamp head approx. 20° downwards until **drilled hole B** lies on the upper side of the joint between spring arm and horizontal arm and a screw is visible in the hole.
 - Insert a slotted screw driver into **drilled hole B**.
 - Turn adjusting screw **to the left** (anticlockwise), the spring force increases.
- b) **The spring arm moves up on its own:**
 - Pull the lamp head approx. 20° downwards until **drilled hole B** lies on the upper side of the joint between spring arm and horizontal arm and a screw is visible in the hole.
 - Insert a slotted screw driver into **drilled hole B**. Turn adjusting screw **to the right** (clockwise), the spring force decreases.

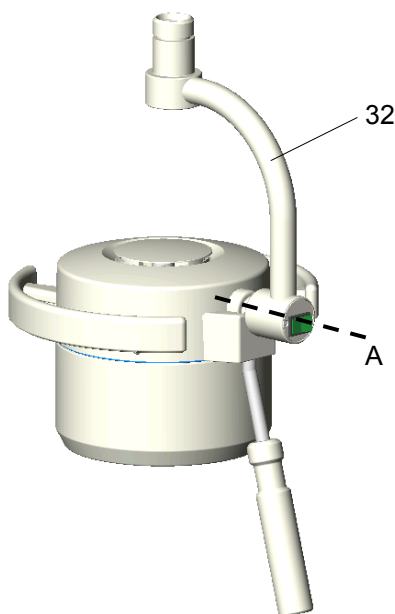


4.2 Adjustments at the lamp head

◆ Manipulating the lamp

The lamp bow **32** enables a perfect movability and positioning of the lamps Mach 120F/120.

The brake force in the axis **A** is set. It is usually not necessary to adjust it.



4.3 Changing of spare parts

4.3.1 Changing the halogen bulbs

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.

To change the bulbs proceed as follows:

- **Attention!! Turn off the lamp!**
- Loosen three screws **27** at the base frame **01**.
- Remove housing lower part **02** by pulling it downwards.

Attention! If the bulb is changed immediately after operating the lamp, some parts of the lamp may be hot.

Do not touch the halogen bulb with naked hands.

- Draw halogen bulb **11** (22,8-24V/40W) carefully from its socket.
- Put in the new halogen bulb.
- Mount the housing lower part **02** in reverse order of dismounting it.

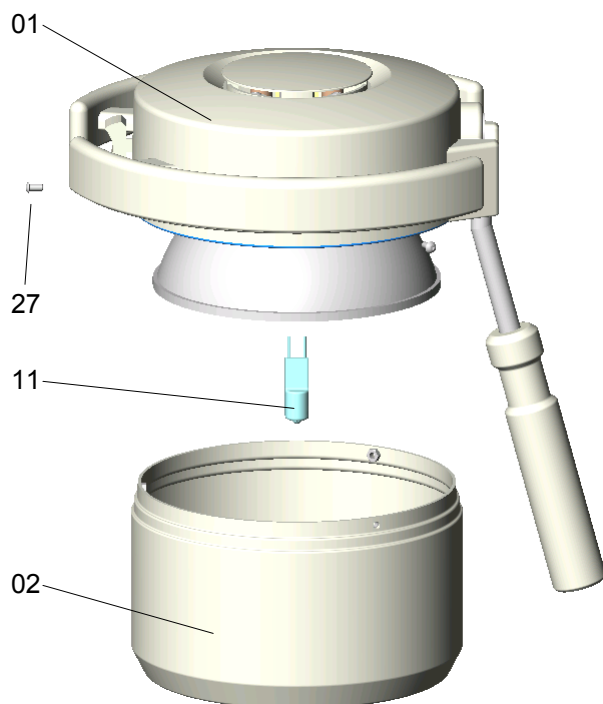
Remark:

The halogen bulbs have a service life of approx. 1000 hours without any deterioration in their luminosity.

4.3.2 Changing the fuses

Because of the external transformer of the Mach 120 lamps, the necessary fuses must be provided by the customer.

Pay attention to the instructions from the local installer.



4.3.3 Changing the filter disk

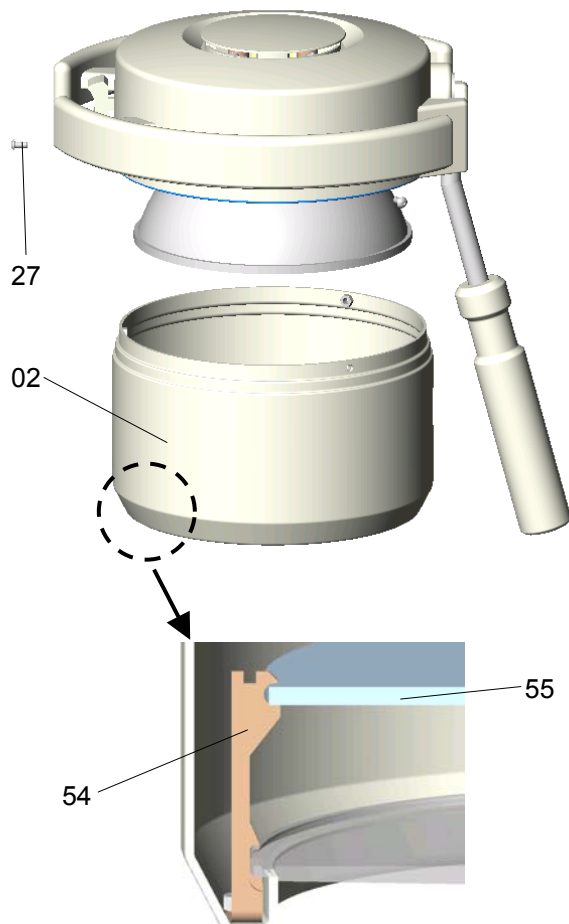
The filter disk between reflector and protective disk (Mach 120F only) prevents a damaging heating of the illuminated area.

ATTENTION!

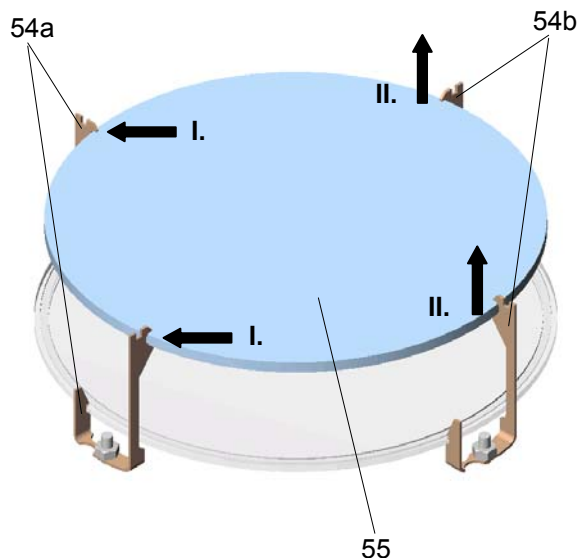
The lamps may not be used without this filter.

To change the filter disk **55** proceed as follows:

- **Attention!! Turn off the lamp!**
- Remove housing lower part **02** as described at point 4.3.1.



The filter disk **55** is held by the 4 springs (holders) **54**.



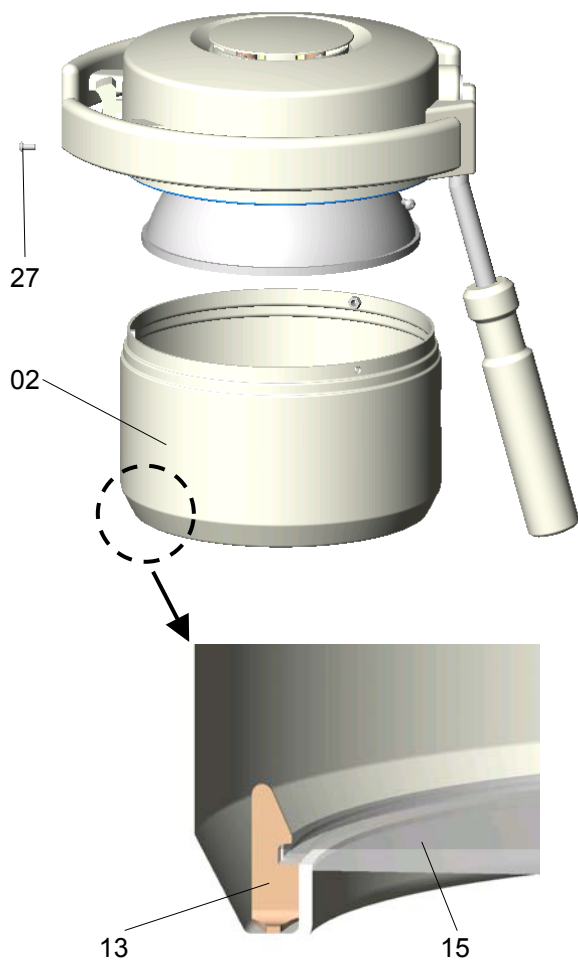
- Press the filter disk **55** carefully against 2 springs **54a** (I.) and lift it off the other 2 springs **54b** (II.).
- Insert the new filter disk in reverse order.
- **Only use filter disks that have been cleaned properly.**
- Fix the housing lower part **02** as described at point 4.3.1.

4.3.4 Changing the protective disk

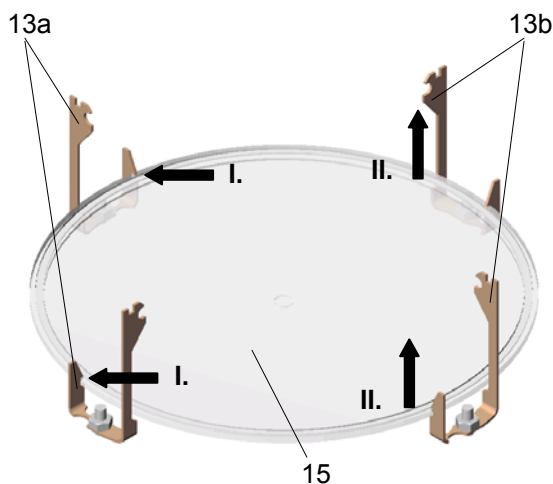
In case you notice a impediment of the light quality because of a dull protective disk, it may be necessary to change the disk.

To change the disk proceed as follows:

- **Attention!! Turn off the lamp!**
- Remove housing lower part **02** as described at point 4.3.1.



The protective disk **15** is held by the four springs (holders) **13**.

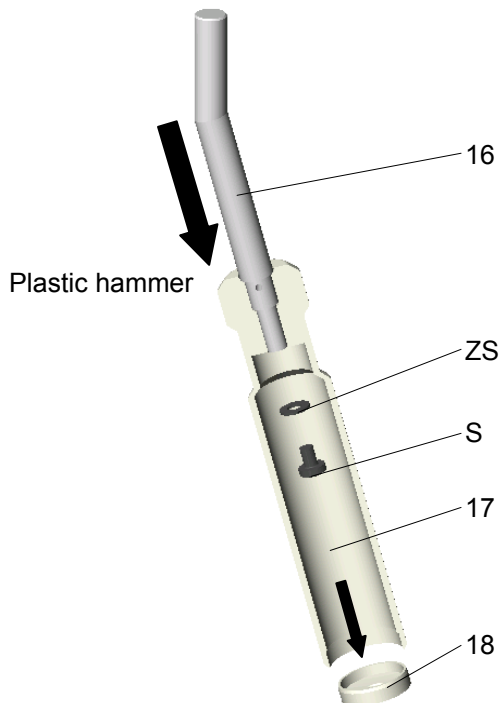


- Press the protective disk **15** against 2 springs **13a** (I.) and lift it off the other two springs **13b** (II.).
- Insert the new protective disk in reverse order. **Attention: Only use protective disks, that have been cleaned properly.**
- Fix the housing lower part **02** as described at point 4.3.1.

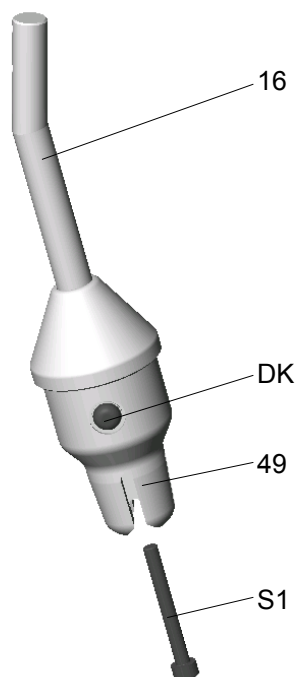
4.3.5 Conversion to sterilisable handle

Extent of supply:

- sterilisable handle sleeve
- couple
- one screw M4x35 DIN 912:A2 with safety lake



- Turn off the lamp.
- Remove covering cap **18** with a screw driver.
- Loosen the screw **S** M4x6 DIN 7985 with a cross screw driver.
- Remove screw **S** M4x6 DIN 7985 and lock washer **ZS** Ø4,3 DIN 6797.
- Hold the handle, while removing the screw and the lock washer, to ensure no damaging in the lamp housing.
- Remove handle **17** by using a plastic hammer (see arrow in figure).





- Put couple **49** on the handle bar **16**.
- Fix couple **49** with the screw **S1** M4x35 DIN 912:A2 with safety lake.
- Push the sterilizable handle sleeve on the couple **49**, so that it is secured by push-button **DK**.

5. Data

5.1 Technical data

Mach 120F/120 design with 22,8 Volt

~ Wechselstrom		alternating current
Pr Primärseitig	230V / 0,22A	primary side
Sek Sekundärseitig	22,8V / 1,65A	secondary side
Leistungsaufnahme	40VA	power consumption
Hz Hertz-Frequenz	50 / 60Hz	frequency Hertz
 Sicherung		fuse
 Schutzgrad	Type „B“	class of protection

5.2 Environmental conditions

Operation

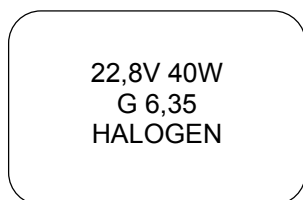
	Min.	Max.
Temperature	+10°C	+40°C
Relative atmospheric humidity	30%	75%
Air pressure	700 hPa	1060 hPa

Transport / storage

	Min.	Max.
Temperature	-10°C	+50°C
Relative atmospheric humidity	20%	90%
Air pressure	700 hPa	1060 hPa

6. Characteristics

6.1 Specification of bulb



voltage, power
socket
mode of operation

6.2 Specification of fuse

Design with 22,8 Volt

Because of the external transformer there are no fuses in the lamp head. When installing the lamp, the fuses must be provided by the customer.

6.3 CE-mark



The products Mach 120F/120 comply to the standards 93/42/EEC for medical products of the European Community's Council.

7. Disposal

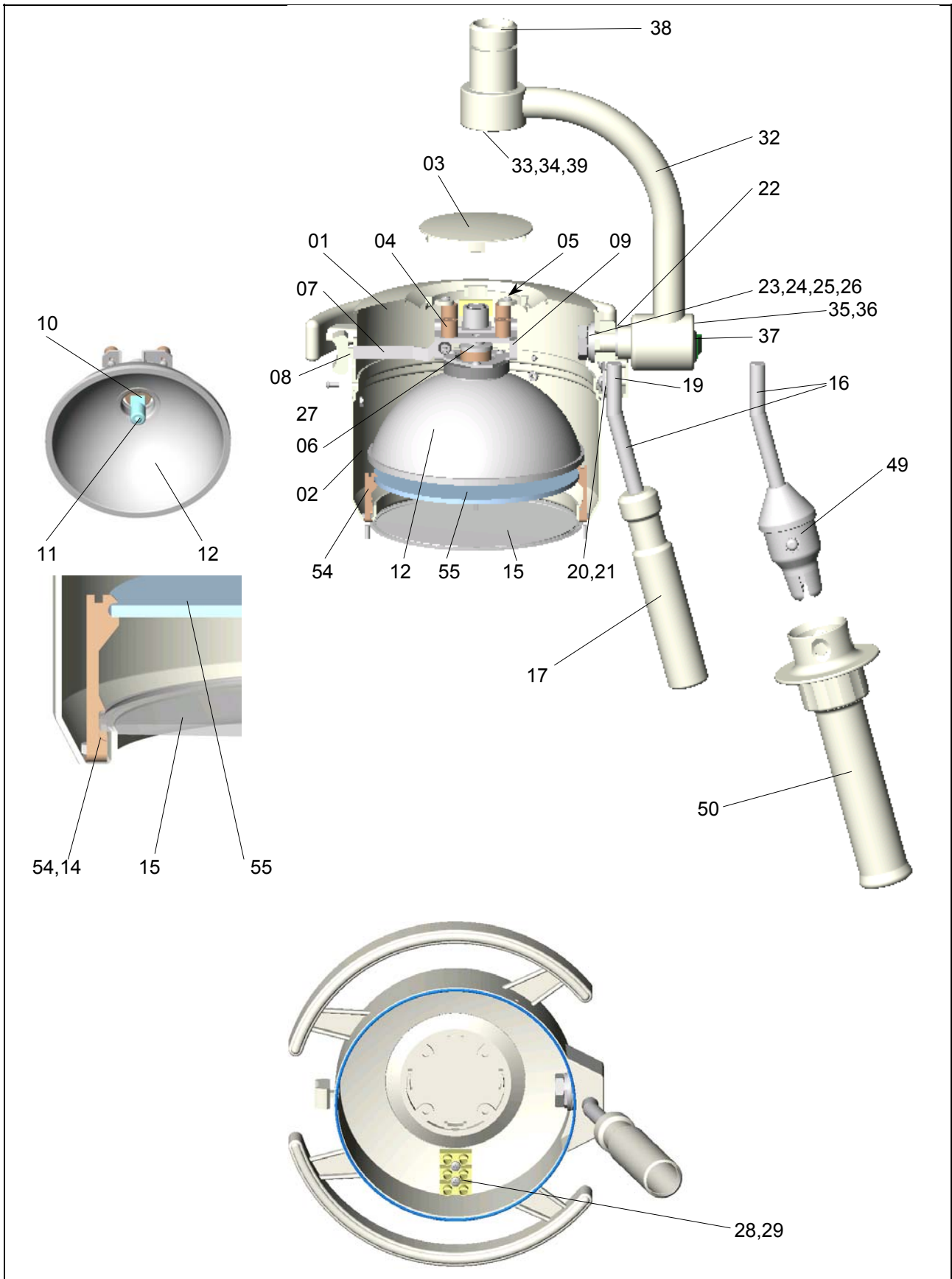
The components of the lamp should be properly disposed at the end of its shelf-life.

Make sure, that the materials are carefully separated.

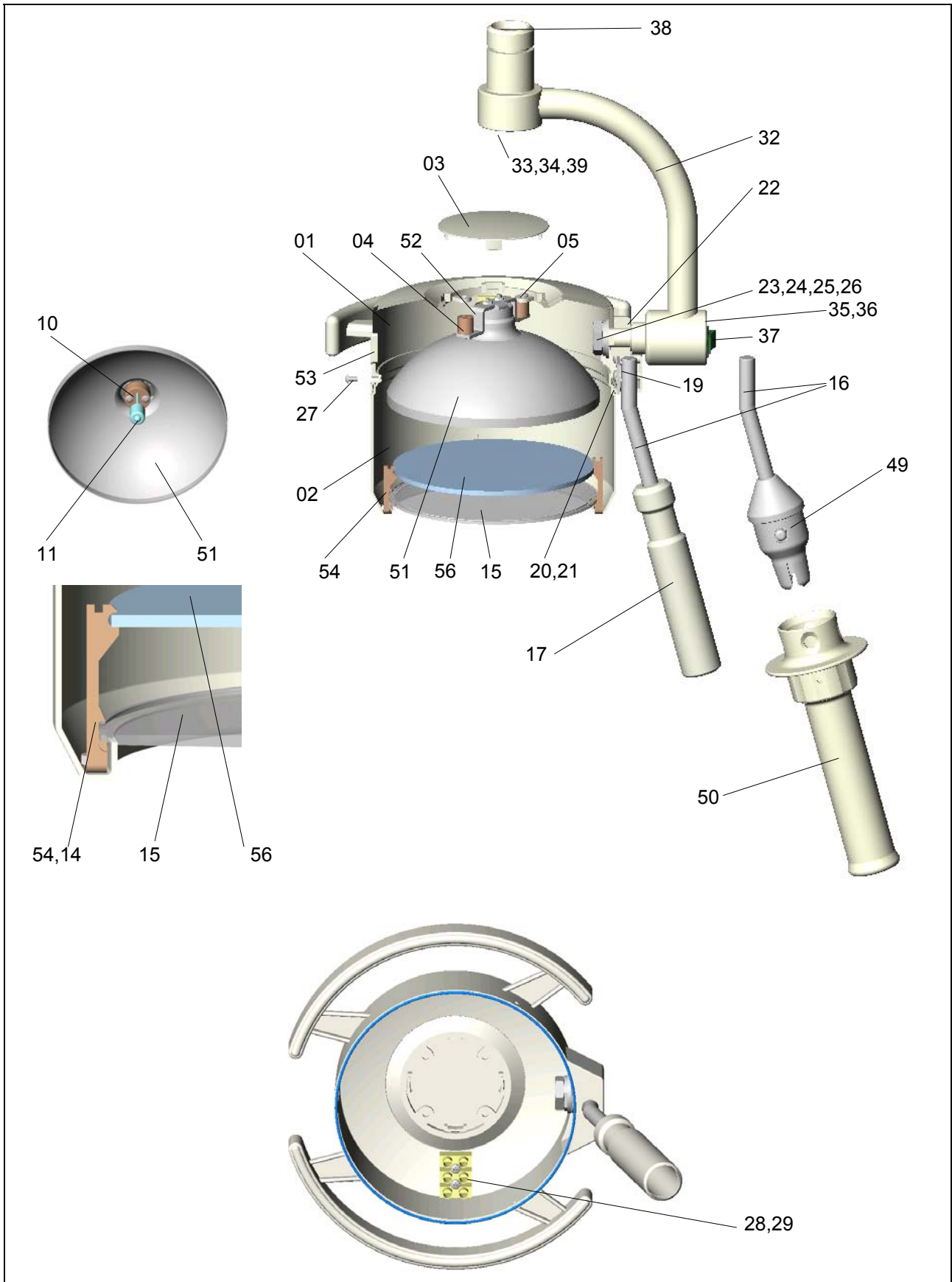
The lamp does not contain any danger goods. The components should be disposed according to the contained materials.

8. Spare parts

8.1 Mach 120F ceiling/wall model



8.2 Mach 120 ceiling/wall model



8.3 Spare parts list

Item	Qty.	Name	EDVNO	Remarks
01	1	Base frame	08030201	
02	1	Bottom part of lamp housing	08012003	
03	1	Cover	08030304	
04	4	Spacer sleeve	08062201	
05	8	Self-tapping screw M2,9x9,5 DIN 7981	65132005	
06	1	Saddle	08051202	Mach 120F only
07	1	Adjusting lever for focusing	08051201	Mach 120F only
08	1	Lever cap	74012012	Mach 120F only
09	1	Socket for reflector	08051203	Mach 120F only
10	1	Lamp holder	67320001	
11	1	Halogen bulb 22,8V/40W	67100202	
12	1	Reflector unit Mach 120F (glass reflector)	08060002	Mach 120F only
13	4	Holder	08012204	
14	4	Nut M3 DIN 934	65332002	
15	1	Protective disk	07200201	
16	1	Handle bar	08000204	
17	1	Handle	08030305	
18	1	Covering cap	08030306	
19	2	Screw M3x6 ULF with safety lake	65902003	
20	1	Holding plate	08000205	
21	4	Self-tapping screw M3,5x13 DIN 7981	65132007	
22	1	Brake disk	08000202	
23	1	Washer	10030210	
24	1	Plate spring DIN 2093 25x12,2x1	65982006	
25	1	Rotation block	08000203	
26	1	Nut M12x1	67900002	
27	3	Screw M3x6 ULF	65902001	
28	1	Line clamp 2-pole	07053202	
29	2	Self-tapping screw M2,9x16 DIN 7981	65132008	
30				
31				
32	1	Lamp bow	08100001	
33	1	Cover	07100201	
34	2	Screw M3x8 DIN 966	65112013	
35	1	Cover	08100201	
36	2	Screw M2,5x6 DIN 966	65112001	
37	1	2-pole ON/OFF switch (illuminated)	67340002	
38	1	Sliding contact with cable	08102001	
39	1	Insulating washer	74012001	
40				
41				
42				
43				
44				
45				
46				
47				
48				
49	1	Couple for sterilizable handle sleeve	10152001	
50	1	Sterilizable handle sleeve	21150002	
51	1	Reflector unit Mach 120 (metal sheet reflector)	08060001	Mach 120 only
52	1	Holding plate	08062002	Mach 120 only

Pos.	Stck	Benennung	EDVNR	Bemerkung
53	1	Cover	08030303	Mach 120 only
54	4	Holder (spring)	08012202	Mach 120F only
55	1	Conversion filter D130 Borofloat	67390202	Mach 120F only
56	1	Heat protection filter	07250201	Mach 120 only