

Directions for use
MACH 120F/120
Stand model



Mach 120F model with swivel arm _____ Order no. 1202 2012 00
Mach 120 model with swivel arm _____ Order no. 1201 1012 00

Dr. Mach GmbH u. Co., Flossmannstrasse 28, D-85560 Ebersberg
Tel.: +49 (0)8092 2093 0, Fax +49 (0)8092 2093 50
Internet: www.dr-mach.com, E-mail: info@dr-mach.de

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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 MPG
(law for medical products).**

The lamp may be connected to mains only after the complete mounting of the stand and the lamp.

Repairs to the lamp and special installation work on the reflector or at the transformer 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 and the stand 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 or the stand is misappropriately or incorrectly operated or misused.

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

The lamps Mach 120F May not be used without the dielectric filter disk.

The dielectric filter disk between reflector and protective disk prevents a damaging heating of the illuminated area.

General instructions

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.

The lamp is supplied with integrated connection lead and earthed plug.

The socket to be used for the lamp must be installed according to the requirements stipulated by the IEC or VDE 0107.

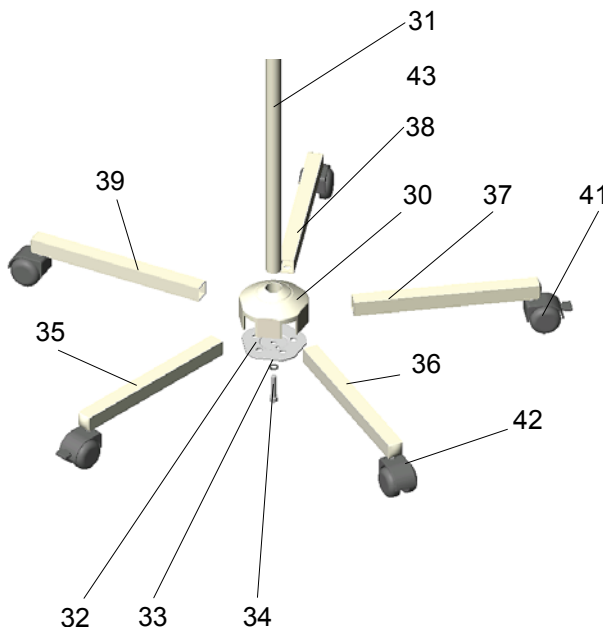
Please check that the earthed socket is available within the working area of the lamp.

2. Mounting instructions

Extent of supply

- 1x 5-footed plastic central base
- 2x extension arms with blocking rollers
- 2x extension arms with electrically conductive rollers
- 1x extension arm with roller
- 1x cam catch plate
- 1x cheese head screw M8 with lock washer
- 1x stand tube
- Lamp head with arm
- Mounting instructions/Instructions for use – lamp head and stand

2.1 Mounting the stand



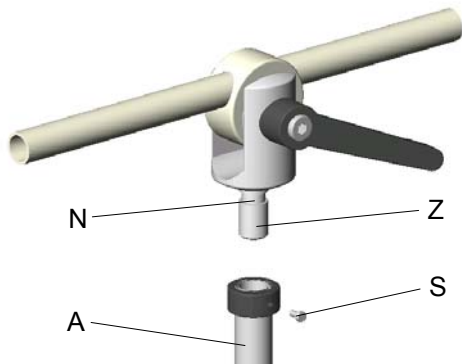
For mounting the stand proceed as follows:

- Place the central base **30** onto the stand tube $\text{Ø}25$ **31**. The stiffness is to ensure a tight fit that is free from any movement.
- Pre-mount the cam catch plate **32** (cams point inwards), with the lock washer **33** and cheese head screw M8 **34**, so that the extension arm **35** can still fit easily into the central base. Insert the extension arm **35** into the central base from above holding the cam catch plate **32** against from the opposite side.
- Insert the other 4 extension arms **36-39** 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 40 and 41, and the two electrically conductive rollers 42 and 43 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.

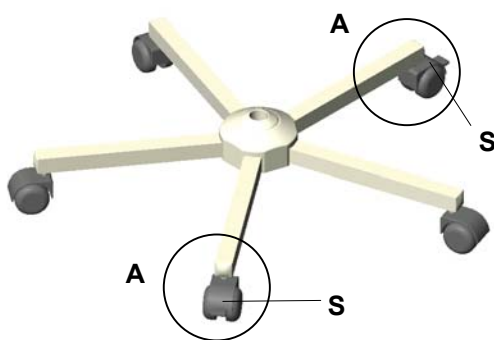
2.2 Mounting the lamp



Tighten screw **S** in the stand tube after the lamp has been attached. This prevents the lamp from being unintentionally removed.

Make sure that joint **Z** is fully inserted into tube **A**, so that the safety screw **S** engages properly in the provided groove **N**.

3. Directions for use



3.1 Stand foot

The five-foot stand is equipped with two opposing braked wheels **A**.

Set the brake by pressing the pedal **S** on the roller. Unlock by lifting the pedal again.



3.2 Stand tube

The stand tube can be adjusted continuously in height and fixed in the precisely required position, needing only one hand.

The height is adjusted by lifting the slip button **44**. The position is automatically fixed on letting go.

As long as the slip button **44** is raised, the extension tube can be pulled off or inserted into the stand tube.

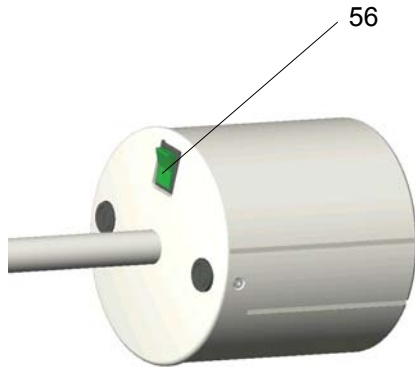
3.3 Operating the lamp

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 available as:

- Mach 120F/120, new-type four-feet stand, voltage 22,8V / external transformer.
- Mach 120F/120, swivel arm with transformer as counter-balance / 230V mains voltage



3.3.1 ON/OFF switch

The 2-pole illuminated **ON/OFF** switch **56** at the transformer housing switches the lamp on and off.

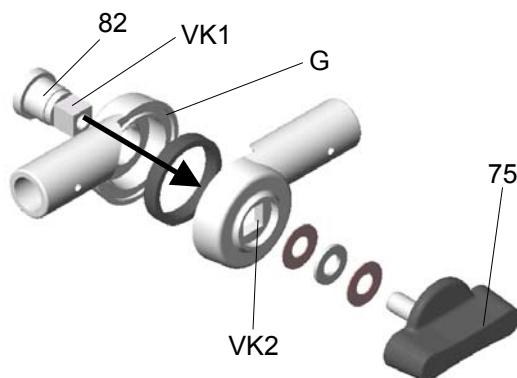
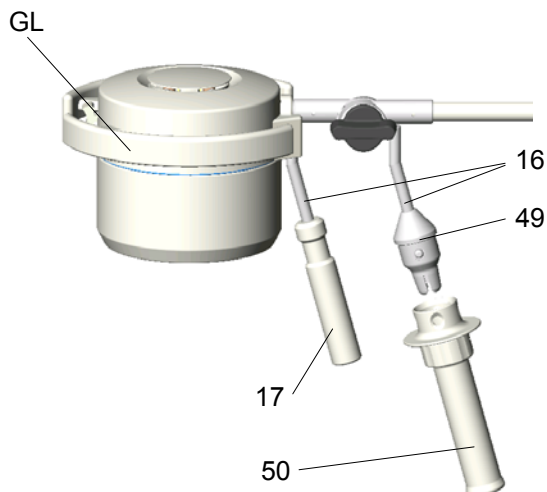
At designs with new-type four-feet stand and external transformer, a two-pole switch **ON/OFF** must be provided by the customer.

3.3.2 Positioning

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

There are two handle types available:

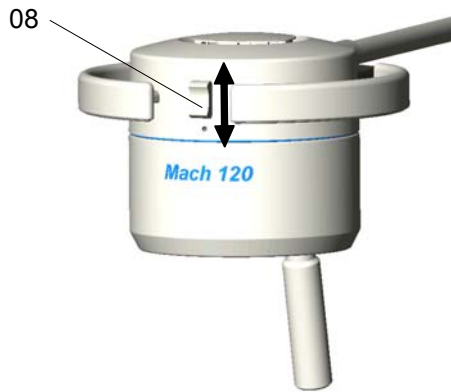
- Handle **17**
The handle **17** is fixed to the handle bar **16** and can be removed.
- Sterilizable handle **50**
The sterilizable handle can be removed for sterilisation. It is fixed by the coupling to the handle bar **16**.



In case the t-handle **75** has been loosened more than necessary, it is possible, that cap nut **82** no longer fit in the guidance of the joint **G**.

Before tightening the t-handle **75** again, always make sure that square **VK1** of cap nut **82** fits with square **VK2** of the joint **G**.

Notice the mounting order of the washers: plate spring, washer, plate spring, t-handle 75.



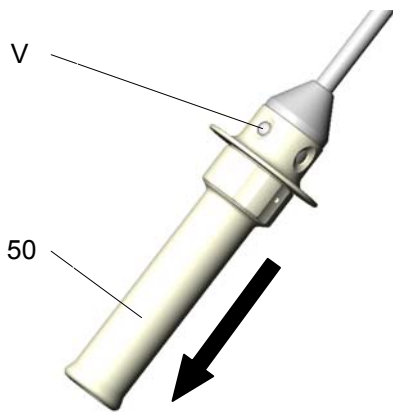
3.3.3 Light field adjustment - focusing (Mach120F only)

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).

4. Cleaning

4.1 Stand

The surface of the stands can be easily kept clean by simply wiping with a damp cloth. You can use conventional cleaning agents. In case of disinfection only use disinfectants with less than 20% alcohol.



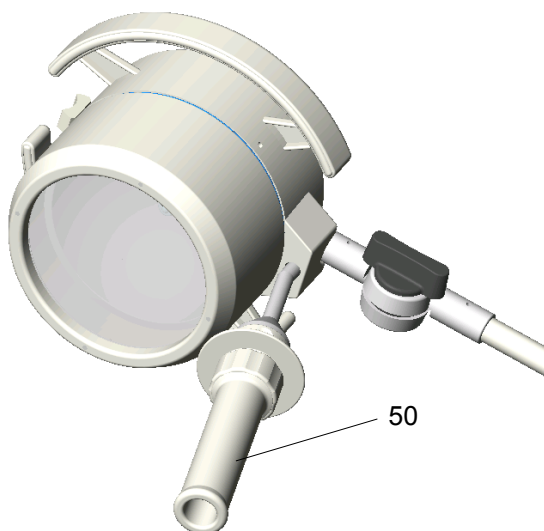
4.2 Sterilisable handle

At delivery the lamp is equipped with the **handle sleeve 50**. The handle sleeve is removable and sterilisable. Before using the first time and before every use the handle sleeve must be cleaned, disinfected and sterilised.

The handle sleeve must be removed for sterilisation:

- To remove press the **lock V** and pull off the sterilisable handle sleeve **50** while keeping the lock pressed.
- To attach, push on and slightly twist the handle until the **lock V** engages securely.

Handles often become unsterile during an OP; therefore always keep additional handles available for exchange.



Cleaning / disinfection and sterilisation

Basics

Efficient cleaning/disinfection is an essential requirement for effective sterilisation of the handle. Within the scope of responsibility for the sterility of the products it should be noted that only sufficiently validated equipment and product specific processes are used for cleaning/disinfection and that the validated parameters are complied with in every cycle. In addition, the hospital/clinic hygiene regulations must be observed.

Cleaning/disinfection

Cleaning and disinfection must be carried out immediately after use.

A mechanised process (disinfector) should be used for cleaning/disinfection. The efficiency of the process used must be recognised and validated in principle (e.g. listed under disinfectants and disinfection procedures tested and recognised by Robert Koch-Institut/DGHM).

When using other procedures (e.g. a manual procedure), proof of process efficiency in principle must be provided within the scope of validation.

Proof in principle of the suitability of the handles for efficient cleaning/disinfection was provided using a cyclic cleaning system (Netsch-Bellmed T-600-IUDT/AN, Programme 2 for Small Parts; Code B).

No cleaning agents/disinfectants must be used, which contain the following substances, as these may cause changes in the material:

- high-concentration organic and inorganic acids
- chlorinated hydrocarbons
- 2-ethoxyethanol

When cleaning/disinfecting, the following procedures must be followed:

	Process	Time (sec.)
Zone 1	Pre-rinse, external, cold, 10 – 15°C Washing, acidic, external, 35°C Draining time Re-rinse, external, ca. 80°C Draining time Re-rinse, external, ca. 80°C Draining time	45 120 10 *10 *15 *15 15
Zone 2	Washing, alkaline, external, 93°C Draining time Re-rinse, external, acidic, 90°C Draining time Re-rinse, external, 90°C Draining time	135 10 10 15 15 15
Zone 3	Drying, external, 100 – 120°C	200
Zone 4	Drying, external, 100 – 120°C	200
	Door open/close & transport (sluice discharge)	60
	Cycle time overall ca.	290 ≈ 5 minutes

- When occupying the disinfection zone (Washing Zone 2), the re-rinse and draining times will depend on the respective objects being washed therein!

Sterilisation

Only previously cleaned and disinfected handles may be sterilised.

The handles are placed in a suitable sterilisation pack (one-way sterilisation pack, e.g. foil/paper sterilisation bags, single or double pack) in accordance with DIN EN 868/ISO 11607 for steam sterilisation and are ten sterilised.

Use only the sterilisation procedure listed below for sterilisation. Other sterilisation procedures (e.g. ethylene oxide, formaldehyde and low-temperature plasma sterilisation) are not permissible.

- **Steam sterilisation procedure**

Validated in accordance with DIN EN 554/ISO 11134
Maximum sterilisation temperature 134°C

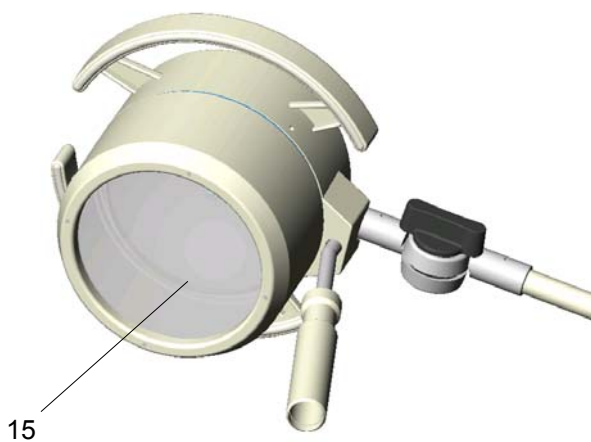
Proof in principle of the handles' suitability for effective sterilisation was provided using a fractional vacuum process (Euroselectomat 666 by MMM Münchner Medizin Mechanik GmbH, sterilising temperature 134°C, holding time 7 min).

When using other sterilisation procedures, proof of suitability and effectiveness in principle of the process must be provided within the scope of validation.

Inspection/durability

The handles should be inspected for damage and changed before re-use, if required.

The handles may be cleaned/disinfected, sterilised and re-used for a maximum of 1000 times. If respiration hoses are re-used more than 1000 times, then this will be the responsibility of the hospital/clinic.



4.3 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.

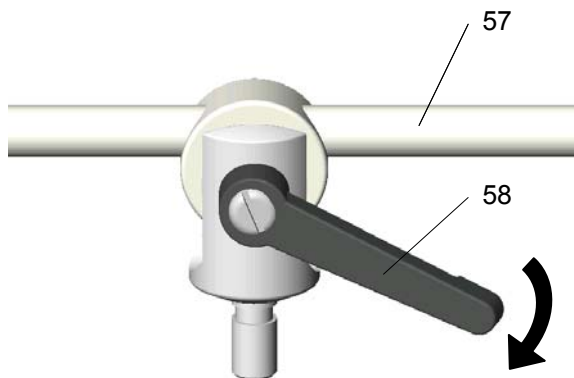


Alc. ≤ 20 %

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

5. Maintenance

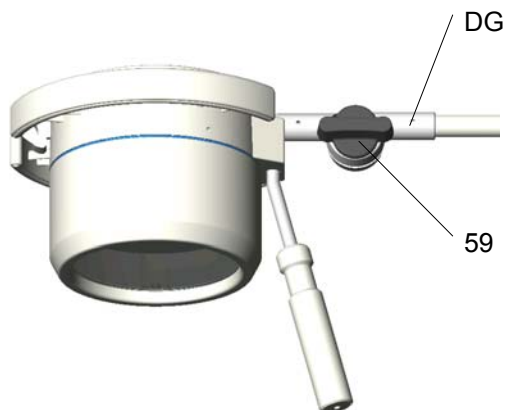
The lamp has been designed and built so that regular maintenance intervals are not necessary. In order to keep the system easy running throughout its life span we recommend that the hinges be greased once a year with an acid-free grease.



5.1 Adjustments at the stand

◆ Adjustments at the swivel arm

You can fasten the move of the swivel arm **57** by adjusting lever **58**.



5.2 Adjustments at the lamp head

◆ Manipulating the lamp

The hinge **DG** enables a perfect movability and positioning of the lamps Mach 120F/120.

Fix the position of the lamp with screw **59**.

5.3 Changing of spare parts

5.3.1 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.

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.

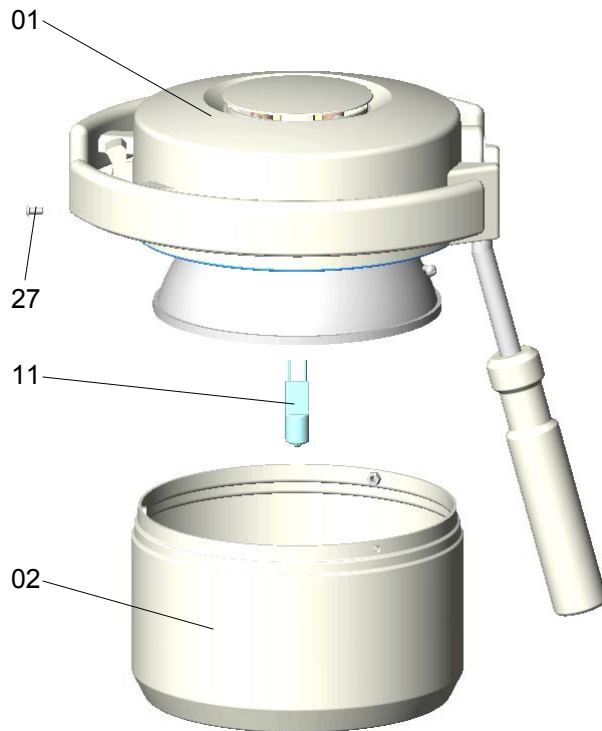
Attention! If the bulb is changed immediately after operating the lamp, some parts of the lamp may be hot.

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.



5.3.2 Changing the fuses

The fuses **63** in the transformer housing **60** (models swivel arm and counter balance) prevent the transformer burning through in the event of a short circuit.

Visible type 5x20/0,63A/250V/T for 230 V

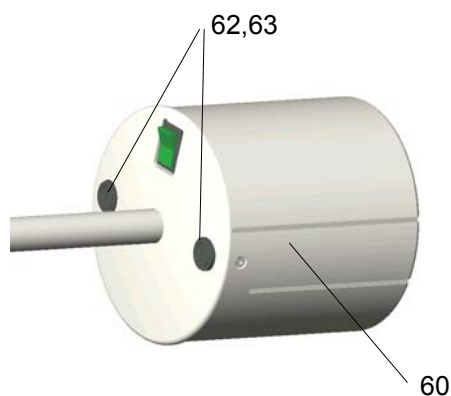
If the bulb is no longer on, check the bulb first, then the fuses.

To change the fuses, proceed as follows:

- **Attention!! Turn off the lamp!**
- Turn the black fuse holder **62** $\frac{1}{4}$ of a rotation anticlockwise with a screwdriver, change fuse **62**, insert fuse holder under slight pressure and rotate in a clockwise direction (bayonet catch).

In the case of designs with new-type four-feet stand, the necessary fuses are provided by the customer.

Pay attention to the instructions from the local installer.



5.3.3 Changing the filter disk

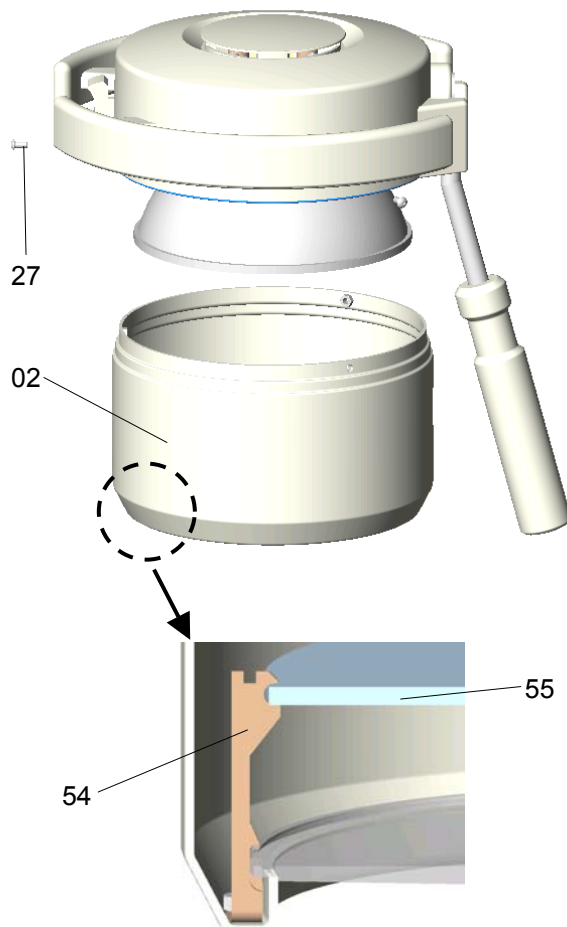
The filter disk between reflector and protective disk (Mach 120F only) prevents a damaging heating of the illuminated area.

ATTENTION!

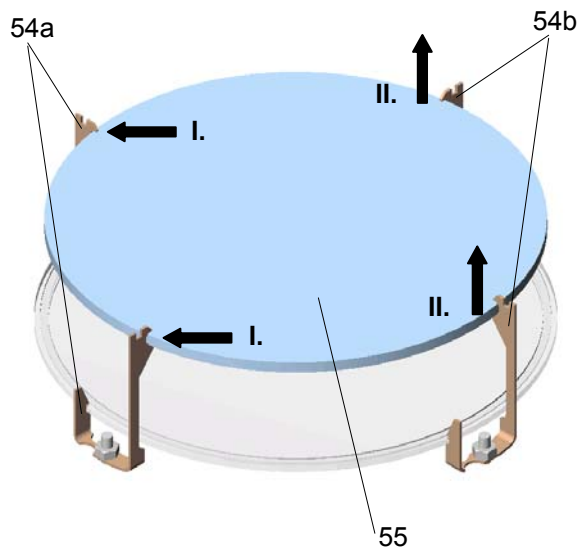
The lamps may not be used without this filter.

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

- **Attention!! Turn off the lamp!**
- Remove housing lower part **02** as described at point 5.3.1.



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



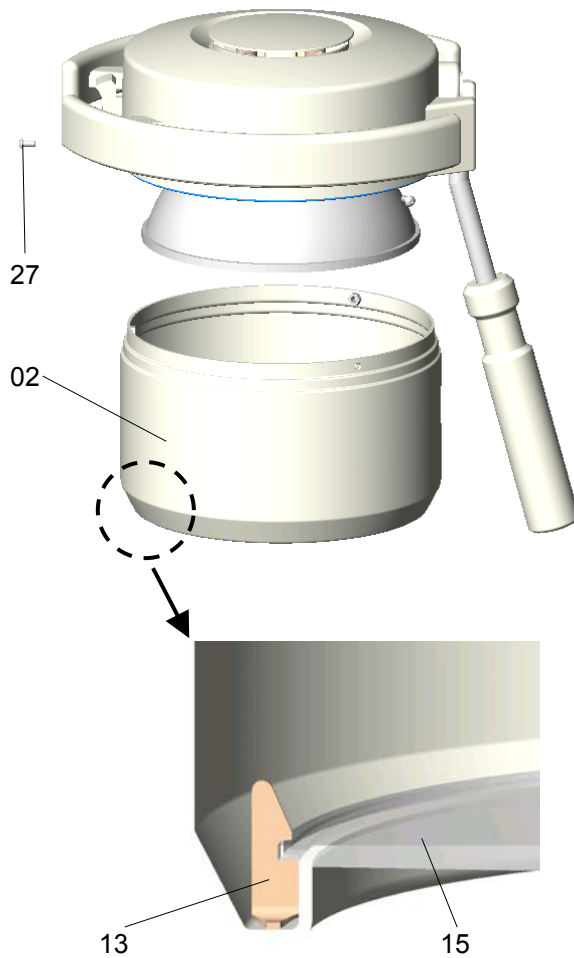
- Press the filter disk **55** carefully against 2 springs **54a** (I.) and lift it off the other springs **54b** (II.).
- Insert the new filter disk in reverse order.
- **Only use filter disks that have been cleaned properly.**
- Fix the housing lower part **02** as described at point 5.3.1.

5.3.4 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.

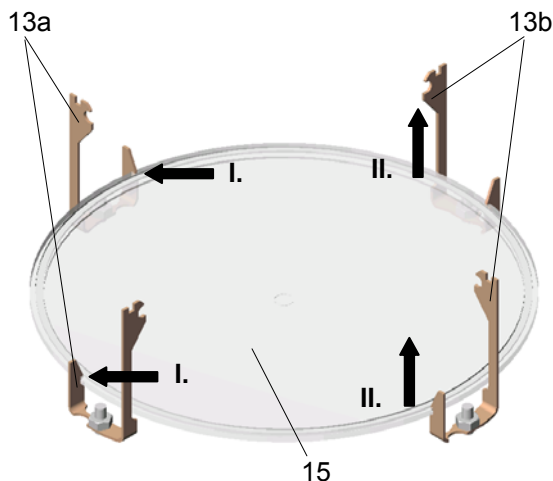
To change the disk proceed as follows:

- **Attention!! Turn off the lamp!**
- Remove the housing lower part **02** as described at point 5.3.1.



The protective disk **15** is held by the 4 springs (holders) **54**.

Remark:
In case of Mach 120 –models the protective disk **15** is held by 4 springs **13**.

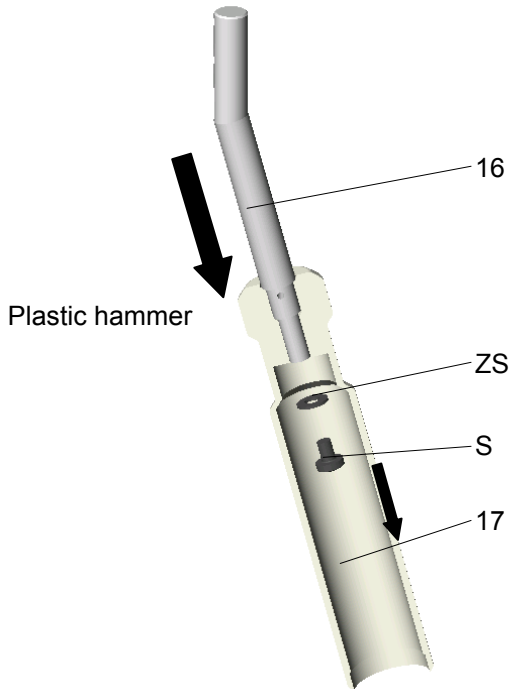


- Remove filter disk **55**, as described at point 5.3.3 (**Mach 120F only!**)
- Press the protective disk **15** against 2 springs **54a/13a** (I.) and lift it off the other two springs **54b/13b** (II.).
- Insert the new protective disk in reverse order.
Attention: Only use protective disks, that have been cleaned accordingly.
- Fix the housing lower part **02** as described at point 5.3.1.

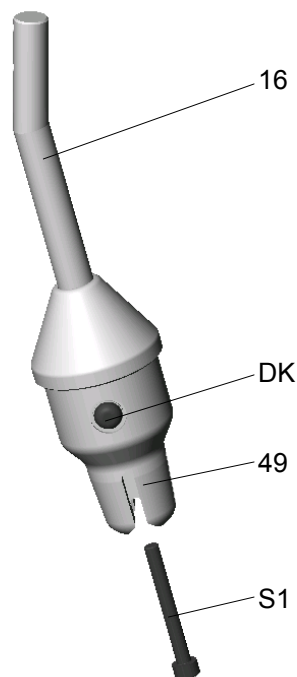
5.3.5 Conversion to sterilisable handle

Extent of supply:

- sterilizable handle sleeve
- coupling
- one screw M4x35 DIN 912:A2 with safety lake



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

6. Data

6.1 Technical data

Five-foot stand

Lamp type		Mach 120 / 120F
Data		
Stand foot	Number of extension arms	5
	Length of extension arms	310mm
	Rollers \varnothing	50mm
Stand tube	Approx. length	95cm – 145cm
	Diameter	25mm
	Extension	yes
	Cable connection	no
	Suitable for article no.	1202 2012 00 1201 1012 00
Swivel arm + Lamp head	Mounting	<ul style="list-style-type: none"> Swivel arm and lamp head pre-mounted Swivel arm mounted to stand

Lamp head Mach 120F/120 swivel arm / mains voltage 230 Volt

~ Wechselstrom

Pr Primärseitig

Sek Sekundärseitig

Leistungsaufnahme

Hz Hertz-Frequenz

□—□ Sicherung

⚡ Schutzgrad

230V / 0,22A

22,8V / 1,65A

40VA

50 / 60Hz

5x20/0,63A/250V/T

Type „B“

Alternating current

Pr Primary side

Sek Secondary side

Power consumption

Hz Hertz-frequency

Fuse

Class of protection

6.2 Environmental conditions

Operation

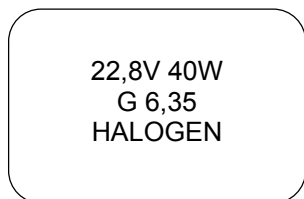
	Min.	Max.
Temperature	+10°C	+40°C
Relative atmospheric humidity	30%	75%
Air pressure	700 hPa	1060 hPa

Transport / storage

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

7. Characteristics

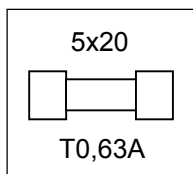
7.1 Specification of bulb



Voltage, power
Socket
Mode of operation

7.2 Specification of fuse

Design with swivel arm / mains voltage 230 Volt



Visible fuse 5x20
Delay action 0,63A
250V AC/t

7.3 CE-mark



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

8. Disposal

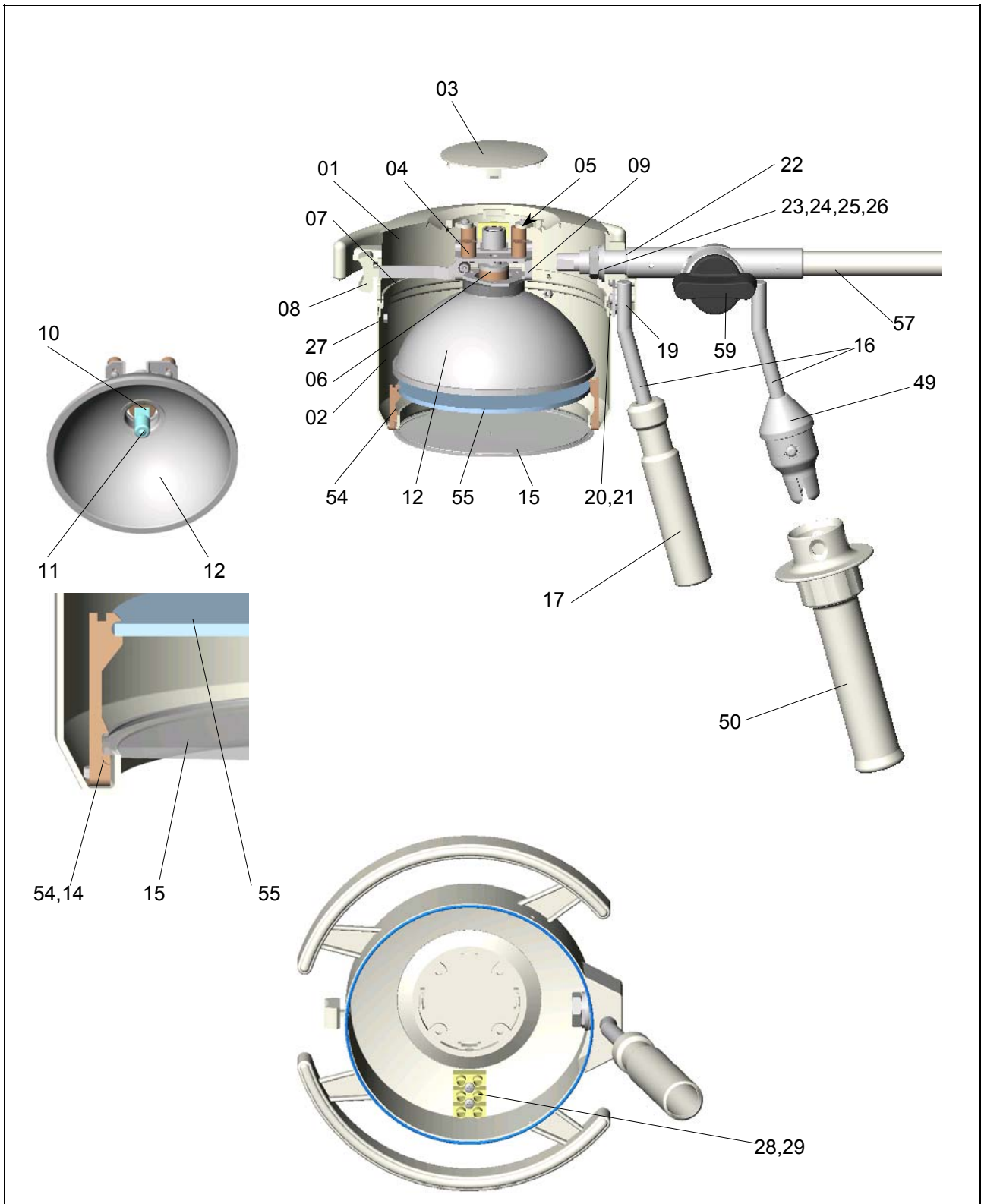
The components of the lamp and stand should be properly disposed at the end of their shelf-life.

Make sure, that the materials are carefully separated.

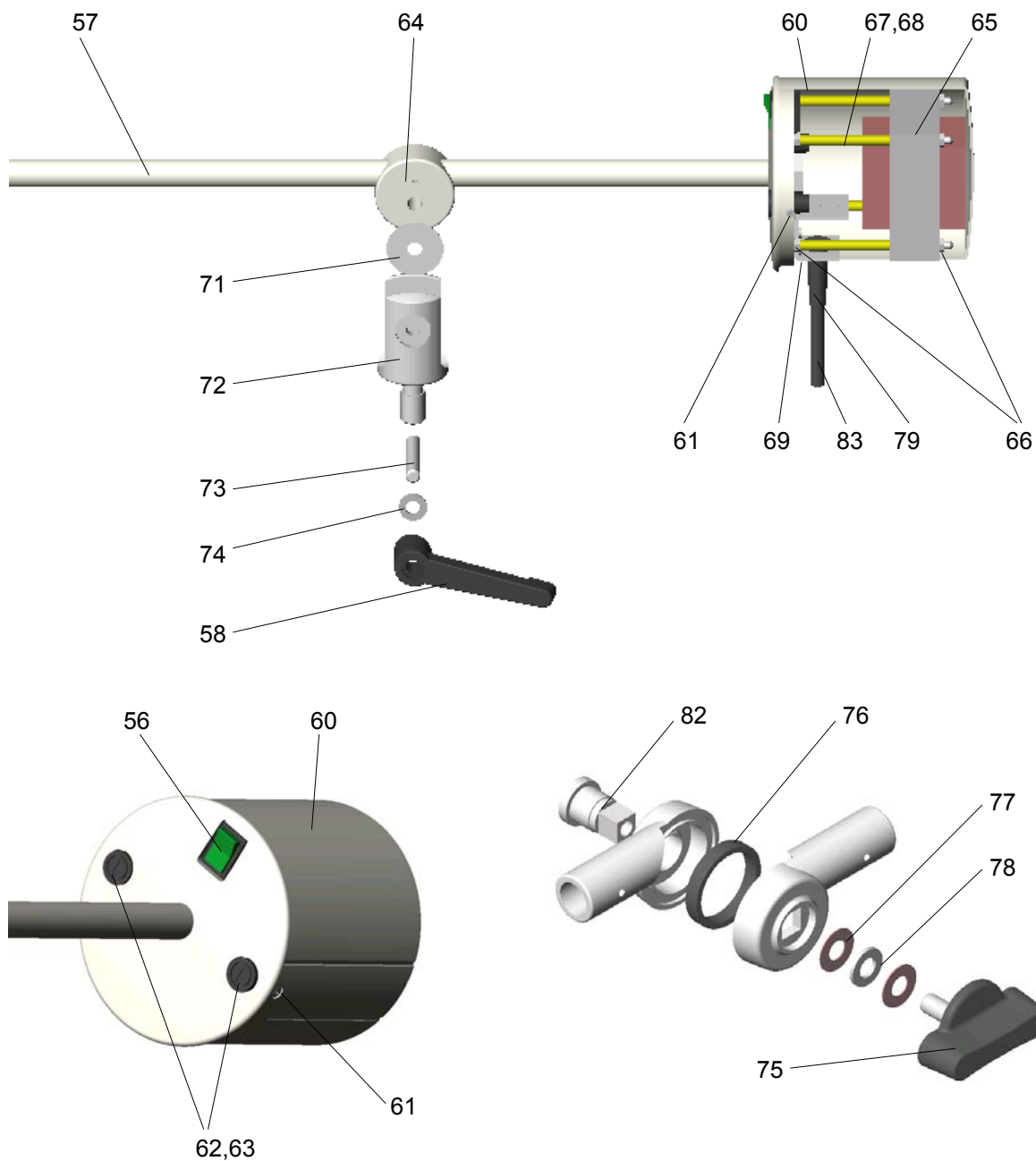
The lamp and the stand do not contain any danger goods. The components should be disposed according to the contained materials.

9. Spare parts

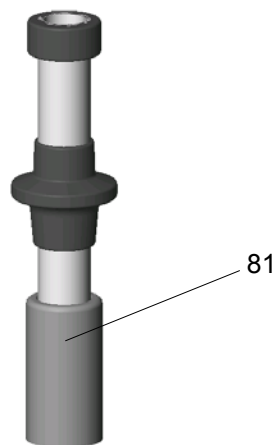
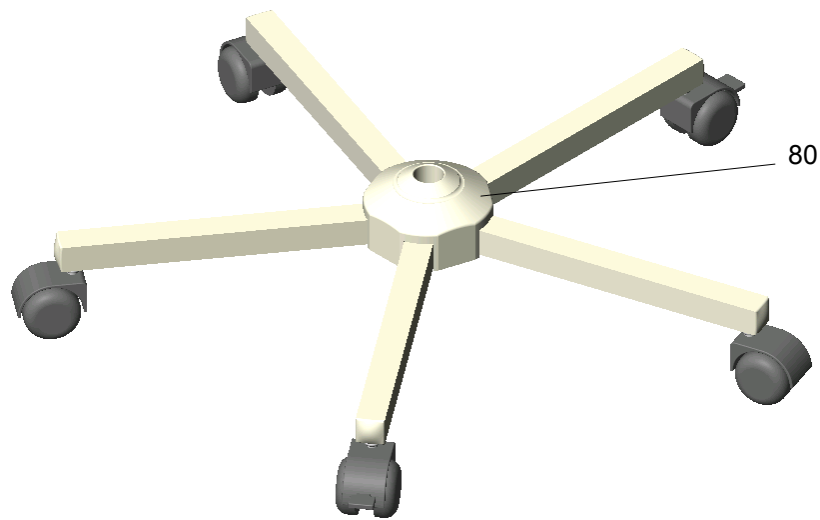
9.1 Mach 120F stand model



9.3 Swivel arm with transformer as counterbalance



9.4 Stand foot, stand tube



9.5 Spare parts list

Item	Qty.	Name	EDVNO	Remark
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				
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	
30-48 not occupied				
49	1	Coupling for sterilisable handle sleeve	10152001	
50	1	Sterilisable handle sleeve	21150002	
51	1	Reflector unit Mach 120 (metal sheet reflector)	08060001	Mach 120 only
52	1	Holding plate	08062002	Mach 120 only
53	1	Cover	08030303	Mach 120 only
54	4	Holder	08012202	Mach 120F only
55	1	Conversion filter D130 Borofloat	67390202	Mach 120F only
56	1	2-pole ON/OFF switch (illuminated)	67340002	
57	1	Swivel arm	08140001	
58	1	Adjusting lever	74503001	
59	1	Heat protection filter	07250201	Mach 120 only
60	1	Transformer housing	08000201	
61	2	Countersunk screw M2,5x6 DIN 965	65102012	
62	2	Fuse holder	74551008	
63	2	Fuse 5x20/0,63A/250V AC/t	67370011	
64	1	Joint	05140208	
65	1	Transformer 40VA	67010206	
66	8	Nut M4 DIN 934	65332006	
67	4	Spacing tube	05000209	
68	4	Threaded bar	53220204	
69	1	Angle	05000212	
70	2	Oval head screw M3x5 DIN 7985	65152006	

Item	Qty.	Name	EDVNO	Remark
71	2	Washer	05140209	
72	1	Fork	05000209	
73	1	Threaded bolt	05000210	
74	1	Washer A 8,4 DIN 125	65512008	
75	1	T-handle	74501003	
76	1	Brake ring	74581001	
77	2	Plate spring	65982018	
78	1	Washer	04080208	
79	1	Strain relief	67700002	
80	1	Five-foot stand	74905003	
81	1	Stand tube Ø25mm with extension tube	74953001	
82	1	Cap nut	74581002	
83	1	Power cord, length 4m	67200201	