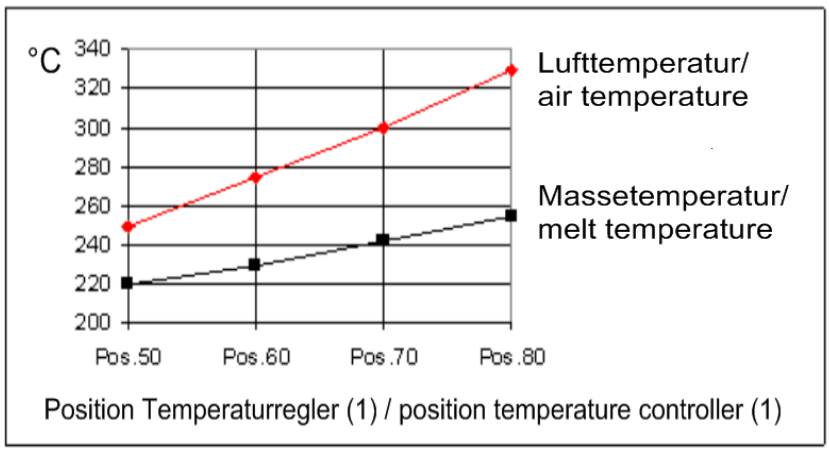
Set/operate temperature controller (1) - Function/description of LEDs

LED **GREEN**	LED **RED**	**Operating mode**
FLASHES	**OFF**	Heating element is being checked.
FLASHES	**FLASHES**	Temperature setting on temperature controller (1) is below the minimum temperature, controller position approx. 20. The drive is blocked – cold start protection.
ON	**FLASHES**	Temperature setting on temperature controller (1) is above the minimum temperature. On the minimum temperature being reached, a timer is activated. Preheat time: 10 minutes.
ON	**OFF**	Ready for operation: timer has timed out, drive has been released for operation.
OFF	**FLASHES**	Air failure: Allow machine to cool, pull mains connector, plug in mains connector and heat up to just above the minimum temperature, i.e. approx. position 30. On a renewed air failure, check the heating element and replace, if necessary. For M**E**K hand extruders, check the air rate and reduce, if necessary.
OFF	**ON**	Current draw too high. RESET by pressing the controller switch. Check air temperature; if necessary, select a higher temperature and/or speed on the drive.

Guide values for air temperature / melt temperature



Check temperatures **on the running extruder** with an external thermometer after about 5 minutes.

Prior to prolonged work interruptions (approx. 15-30 minutes), set the temperature controller (1) back by about 2 positions (risk of melt overheating in the melt chamber). Set temperature controller to welding position approx. 5 minutes before restarting the machine.

6 Maintenance/Inspection

Pull mains connector before carrying out any maintenance and repair work on the hand extruder.

Maintenance and repair work on electrical tools may only be carried out by qualified electricians.

The hand extruder together with the hot air hood must have cooled down to safe-to-touch temperature.

Observe the instructions under section “Safety“.

Maintenance and repair work may only be carried out by qualified personnel or by our service staff.

To ensure the proper function of the hand extruder over its entire service life for its intended service, we recommend:

- to have all maintenance, inspection and mounting work carried out by authorized and qualified personnel who are familiar with the operating instructions,
- to always shut off the unit before carrying out any work on it,
- to remount and reactivate all safety and protective devices immediately after completion of the maintenance/repair work.

During maintenance and repair work, make sure that the hand extruder and its individual components are firmly positioned.

In addition to the operating instructions and the national and local accident prevention regulations applicable at the place of use, the acknowledged technical rules for safe and proper working practices must be observed.

Any working practices posing a safety risk are prohibited.

Activities other than those described in this section may only be performed at the Manufacturer’s workshops!

6.1 Maintenance/inspection of MEK/MAK hand extruder

- CAUTION After approx. 500 operating hours, the hand extruder including drive unit must be thoroughly cleaned and inspected. This work may only be carried out at the manufacturer’s workshops.
- CAUTION Cables, switches, plug-in connections must be inspected by qualified staff every three months (requirement according to VBG4); the inspection results must be documented..

6.2 Dismantling

Prior to dismantling the hand extruder, pull the mains connector.

The hand extruder must be at ambient temperature.

Damaged mains connection cables must be completely replaced. “Mended” power cables pose a hazard to life and limb. Cable replacement is to be carried out by qualified electricians only.

The safety precautions described under sections “Safety“ and “Malfunctions, Causes and Remedies“ must be strictly adhered to.

6.2.1 Overview of spare parts/attachments

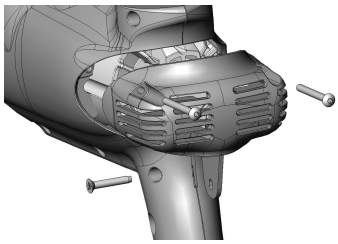
When ordering spare parts, always indicate the serial number of the extruder.

Make sure to use original spare parts only.

For spare parts supply, contact MUNSCH Kunststoff-Schweißtechnik GmbH.

Drive unit UX1 – Replacement of carbon brushes:

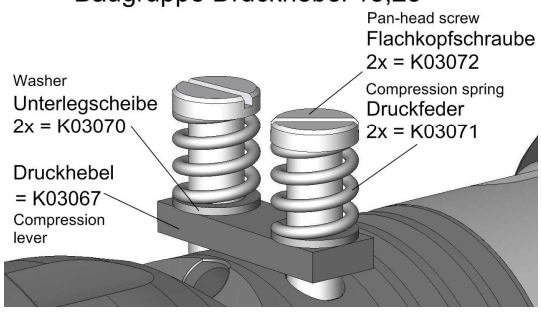
Remove the 3 screws and pull off the cap. Remove dirt / carbon dust using compressed air, for instance. Replace carbon brushes (2 x K04886) and screw the cap in place again.

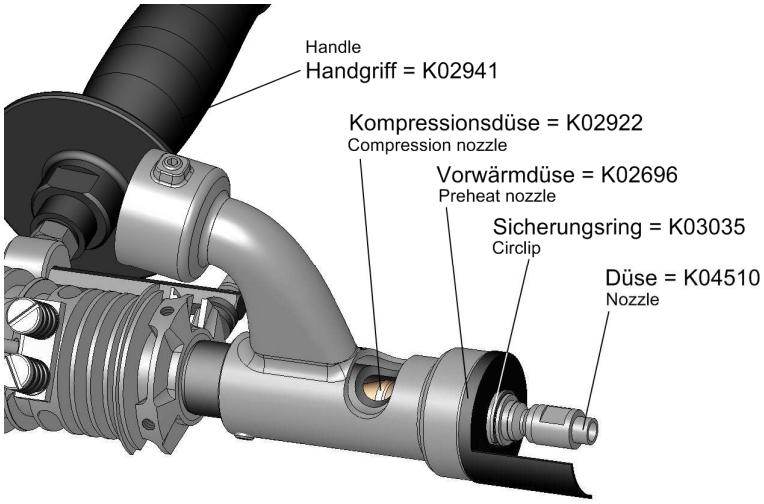


Extruder screw bearing:

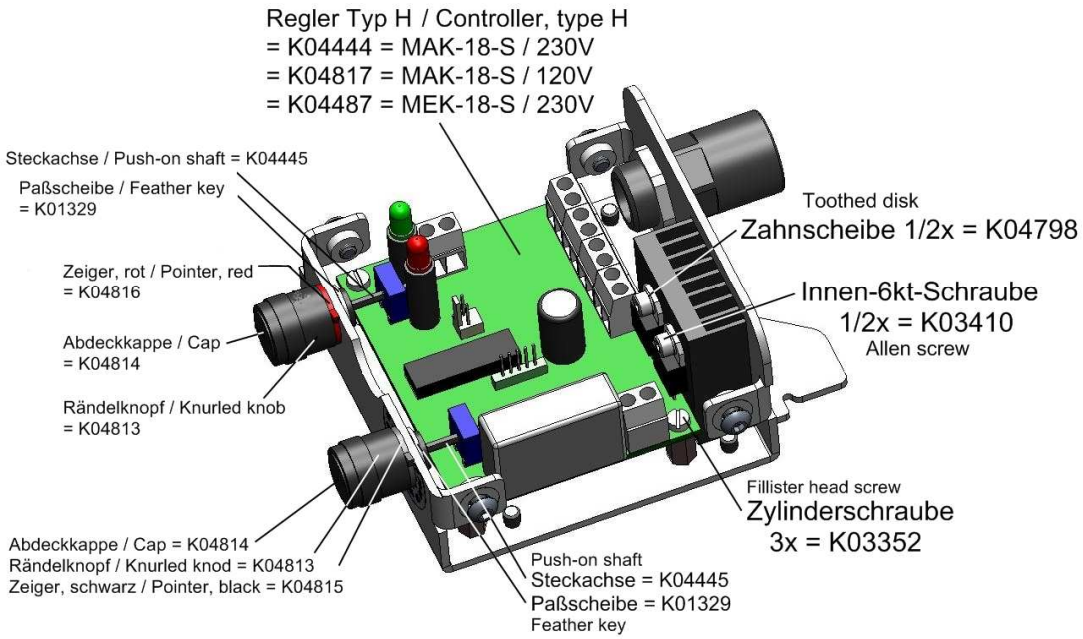
K02669 = Axial bearing (replace)
K04361 = Ball bearing (replace)
K04362 = Circlip (replace, if necessary)
K02965 = Seal ring (replace)
K02698 = Spacer ring (replace, if necessary)

Compression lever assembly
Baugruppe Druckhebel 18,25

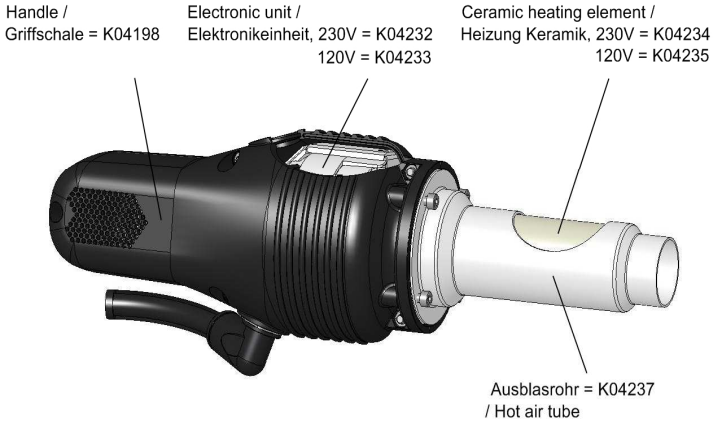




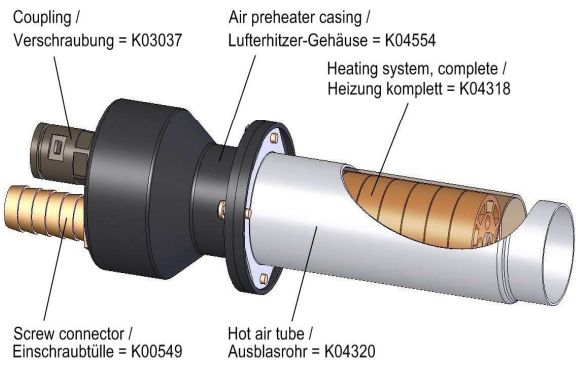
Schaltgehäuse-Unterteil mit Regler Typ H / Control box-bottom part with controller type H



On-board blower
Eigenluftgebläse; MEG-23, 230 V = K04202
Eigenluftgebläse; MEG-17, 120V = K04203



Lufterhitzer / Air preheater
MLE-23, 230V = K04552



7 Malfunctions, Causes and Remedies

7.1 Trouble-shooting

The following table lists potential operating upsets of the hand extruder, possible causes and their remedies (fault diagnosis chart).

Should malfunctions occur which are not covered here or which cannot be traced back to the cause stated, please contact MUNSCH Kunststoff-Schweißtechnik GmbH.

Malfunction	Fault No.
Drive motor does not start	5, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 23
Drive motor switches off	5, 8, 9, 14, 15, 16, 17, 18, 19, 23
No welding rod feed	1, 16, 17, 20
No extrudate conveyed out of welding shoe	1, 16
Extrudate output decreases during operation	1, 14, 16
No air supply	6, 7, 13
Integrated air supply without function	5, 22
No hot air	2, 3, 4, 5, 6, 18, 22
Extruder does not heat up	2, 3, 22
Temperature above preset range	2, 3, 18, 19
Controller fluctuates	3, 13,19

7.2 Fault diagnosis

Fault No.	Possible causes	Remedies
1	Smaller or too small a welding rod diameter	Use larger welding rod diameter, if necessary
2	Temperature sensor defective	[1]
3	Temperature controller defective	[1]
4	Air rate too high	Reduce air rate to specified level[3]
5	Cable connections defective	Check cable connections[1]
6	External air supply not connected[3]	Connect external air supply
7	External air supply without function[3]	Switch on external air supply Check the external air supply system for malfunctions using the separate manual, or have it checked.
8	Hot air temperature below start interlock temperature	Allow hand extruder to heat up Air rate too high → reduce air rate [3]

1) Consult MUNSCH Kunststoff-Schweißtechnik GmbH
2) Only for MAK
3) Only for MEK

Fault No.	Possible causes	Remedies
9	Melt temperature below start interlock temperature	Allow hand extruder to heat up
10	Preheat time for hot air too short	Allow hand extruder to heat up
11	Preheat time for melt too short	Allow hand extruder to heat up
13	Air supply not constant	- External air supply: - Check air supply unit[3)] - Integrated air supply: [1)]
14	Wrong rated voltage	**Rated voltage > permissible voltage** Check mains voltage **Rated voltage < permissible voltage** Check mains voltage [1)]
15	Extension cable heats up	- Unroll cable reel - Check cable cross-section (see also section “Safety“)
16	Extruder nozzle plugged with foreign matter	Clean extruder ⚠ **Extruder nozzle – left-hand thread**
17	Drive unit defective	[1)]
18	Electronic control defective	[1)]
19	Controller programming error	[1)]
20	Welding rod feed	Remove welding rod. ⚠ Observe instructions in section “Maintenance“. Observe instructions for operation!
22	Hot air unit defective	[1)]
23	No mains voltage	Check voltage supply

1) Consult Barnes Plastic Welding Equipment Limited
2) Only for MAK
3) Only for MEK

8 Technical Data

Type designation	**MEK**	**MAK**
Welding materials	PP, PE, PVDF	PP, PE, PVDF
Welding rate, approx.	**18-S** = ∅ 3 mm: 1.1 kg/h PP/PE **18-S** = ∅ 4 mm: 1.8 kg/h PP/PE	**18** = ∅ 3 mm: 1.1 kg/h PP/PE **18** = ∅ 4 mm: 1.8 kg/h PP/PE
Welding rod	Welding rod ∅ 3 and 4 mm	Welding rod ∅ 3 and 4 mm
Application range	**18-S** = Wall thicknesses 4-15 mm and film/sheeting welds	**18-S** = Wall thicknesses 4-15 mm and film/sheeting welds
Weight	**18-S** = 4.5 kg	**18-S** = 4.8 kg
Drive	230 V AC with speed control	230 V or 120 V AC with speed control
Air preheater	2100 W / 230 V	2300 W / 230 V 1750 W / 120 V
Air supply	External air source	Integrated air supply
Air rate	max. 300 l/min at 0.4 bar	----------
Cold start protection	Start temperature interlock and startup timer for melt and preheat air	Start temperature interlock and startup timer for melt and preheat air

Warranty Certificate

.....

.....

.....
Name and address of Purchaser

Type of unit: Hand extruder

Type designation:

Serial No.:

P.O. date:

Your warranty

MUNSCH Kunststoff-Schweißtechnik GmbH hereby warrants the unit to be free from defects in materials and workmanship from the date of its first acquisition. Should deficiencies resulting from defects in materials or workmanship be identified during the warranty period, the dealers will, in accordance with the following terms and conditions, repair the unit or, at their discretion, replace either the complete unit or the defective components without charging labour or material costs.

.....
Dealer's stamp and signature

Warranty

1 The Manufacturer warrants freedom from defects in materials and workmanship and state-of-the-art performance of the purchased article for a period of six (6) months from the date of delivery.

2 The Purchaser shall check the article delivered for completeness and freedom from defects immediately after receipt.

3 The Purchaser shall be entitled to the making good of defects and any resulting damage to other parts of the purchased article (remedial work).
The procedure for claims under this warranty shall be as follows:

3.1 The Purchaser may assert claims under this warranty either with his dealer or with a company authorized by the Manufacturer to provide services for the purchased article. The Purchaser shall give written notice of defects to the respective company promptly after such defects have been identified or shall have such defects registered by the respective company.

3.2 Defects shall be promptly remedied in accordance with the technical requirements by either replacement or repair of the defective parts, the cost of the remedial work being for the account of the Manufacturer. Replaced parts shall become the property of the Manufacturer.
If, as a result of the remedial work, additional maintenance measures are prescribed by the Manufacturer, the resulting costs including the costs of materials and lubricants shall be for the Manufacturer's account.

3.3 For replacement parts installed within the scope of the remedial work, a warranty will be provided under the purchase contract, the warranty period for such parts ending on expiry of the warranty period of the object purchased.

3.4 For the warranty to become effective, this warranty certificate must be produced for each repair.

4 If the defect cannot be remedied or if the Purchaser cannot be reasonably expected to accept any further attempts at making good the defect, the Purchaser may demand annulment (cancellation of the contract) or a price reduction (reduction of compensation) in lieu of remedial work. In such a case, the Purchaser shall not be entitled to any replacement.

5 Manufacturer's warranty obligations shall not be affected by a change in ownership of the purchased article.

6 Any damage incurred through the following acts or omissions of Purchaser shall be **expressly excluded** from this warranty:

6.1 Purchaser's failure to report a defect pursuant to subsection 3.1 or to promptly provide an opportunity to remedy the defect following Manufacturer's request, or

6.2 improper handling or overload operation of the purchased article, or

6.3 prior repair, maintenance and servicing of the purchased article by a company not authorized by the Manufacturer, if the Purchaser can be reasonable expected to have known that such company was not authorized, or

6.4 the installation of parts into the purchased article without having obtained Manufacturer's prior approval for such parts or the modification of the purchased article in a way not approved by the Manufacturer, or

6.5 Purchaser's failure to observe the instructions given in the user's manual accompanying the purchased article (e.g. operation, maintenance and care), or

6.6 Purchaser having removed the serial number or made it illegible.

7 Natural wear and tear shall be expressly excluded from this warranty.

8 Accidents, force majeure or other circumstances beyond the control of the Manufacturer, in particular damage caused by lightning, overvoltage, water, fire, etc. shall be excluded from this warranty.

9 All rights under this warranty shall become null and void on expiry of the warranty term pursuant to Section 1. For claims asserted within the warranty term but no settled by its expiry, the warranty shall remain effective until the respective defect has been remedied. The period of limitation shall be suspended for such claim.

MUNSCH Kunststoff-Schweißtechnik GmbH
Im Staudchen • D-56235 Ransbach-Baumbach
P.O. Box 142 • D-56221 Ransbach-Baumbach
Germany
Phone: +49 (0) 26 23-8 98-80
Telefax: +49 (0) 26 23-8 98-85
Internet: http://www.munsch.de
Email: munsch@munsch.de