

Operating Instructions

POLYMAT

LABORATORY EQUIPMENT IN
STAINLESS STEEL



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Dear Customer!

The POLYMAT is designed for polymerisation of common synthetic materials. The curing process is adaptable to the specific material within a temperature range up to 100°C / 212°F (120° / 248°F temperature extension optionally available), pressure up to 6 bar and time up to 120 min. The corrosion resistant stainless steel tank is easy to clean and free from oxidation and efflorescence. Additionally the heating outside the stainless steel tank is free from wear and ensures durability.

Any other use or usage beyond this scope is considered unintended use. The manufacturer shall not be responsible for any damages that may result thereby.

Prior to installation of the device operating instructions and especially the safety instructions must be read and followed by all personnel who use this device.

After having unpacked the device, please check carefully whether transportation damages of any kind have occurred. If that is the case, the carrier or manufacturer must be notified within 3 days. The company will not be responsible for any damages found after that.

These operating instructions must be read and followed by all personnel who use this device. To ensure quick access we recommend to keep it at a safe place near the device. In case of loss it can be ordered from the manufacturer.

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1 Technical Description

1.1 Basic Equipment

- POLYMAT Polymerisation unit with pressure regulator, tap and drain hose
- Grease for maintenance (see chapter 6) of the o-ring, bottle of 10 g
- Swivelling lever (16) for screwing into the lid (1)
- Insert (perforated plate), available as spare part, on request

1.2 Special Accessories

- Order-No.: 28300000 120°C / 248°F temperature extension

1.3 Device Components

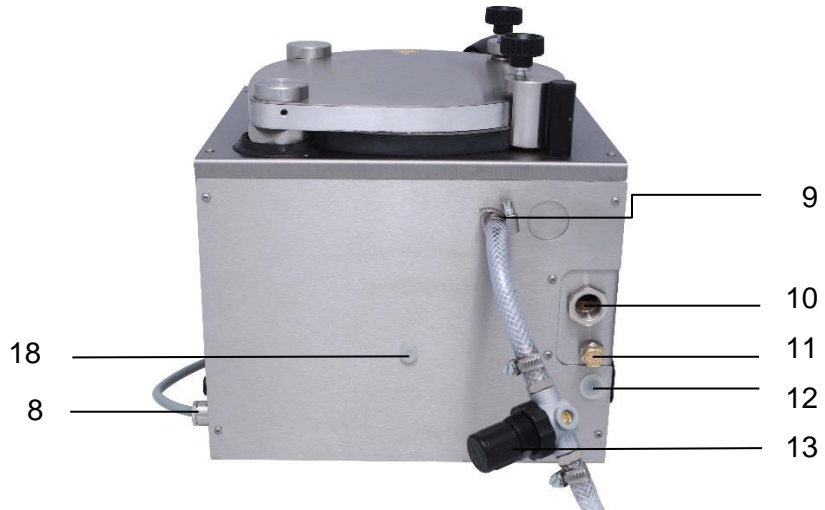
- 1 Lid
- 2 Power switch
- 3 Pressure gauge
- 4 Display „pressure build-up“
- 5 Display „heating on“
- 6 Timer
- 7 Digital temperatur controller
- 8 Power cord
- 9 Compressed air connection
- 10 Safety valve
- 11 Pressure relief valve
- 12 Water outlet
- 13 Pressure control
- 14 Ball valve
- 15 Knurled screws
- 16 Swivelling lever
- 17 Temperature sensor inside the tank
- 18 Temperature limiter



Fig.: Device view



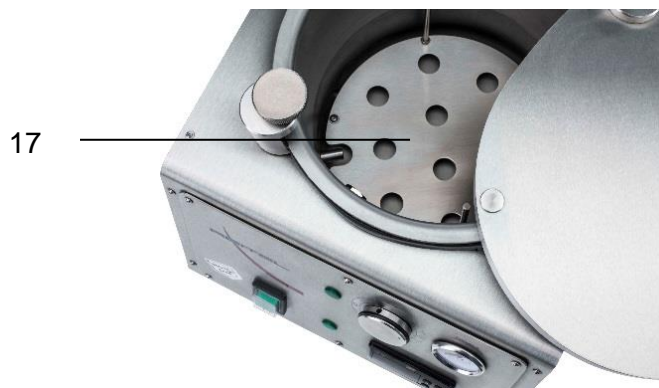
Digital temperature controller



Rear side



Lateral view



Stainless steel tank

1.4 Technical Data

Line voltage	230 V/50-60 Hz
Current consumption	1.100 W
Weight	22 kg
Height(+lever)/Width(+lever)/depth	330/330+290/380 mm
Inner tank dimensions D/H	220/190 mm
Volume	7 l
Filling	0-120 min.
Variable pressure	0-6 bar
Temperature	up to 100°C / 212°F, Option: 120°C / 248°F temp. extension
Sound level	≤ 70 dB(A)
Housing	Stainless steel
Order-No.:	18301000
Made in Germany (Subject to modifications)	

2 Safety Notes

2.1 General Safety Notes

- All equipment undergoes final inspection and testing before leaving our factory. However, if equipment is damaged during shipping or through any other circumstances, it must not be used in service. Please check the device regularly for damages. Damaged parts should be replaced immediately.
- All power/air/water/gas sources should be rated for the demands of the device as listed in the technical data sheets. Maximum ratings must not be exceeded. All VDE (Verein Deutscher Elektro-Ingenieure) standards should be followed. Equipment should be grounded according to standards.
- Adherence to valid regulations regarding necessary checks (e.g. according to Accident Prevention & Insurance or electrical equipment) is exclusively taken over by the buyer/user of this product.
- This device has been designated to be used only for its intended purpose. All other applications must be prohibited for safety reasons as otherwise the manufacturer's warranty expires.
- The device should be set-up in a clean, well-ventilated room, if necessary under a hood.
- Supporting surfaces should be straight, flat and adequately stable.
- Don't place anything on top of the machine.
- To avoid injury, appropriate protection should be worn (e.g. gloves, safety glasses, safety shoes, hearing protection etc.)
- If the machine is defective or working improperly it must be taken out of service. In case of further use of the machine the owner will be held responsible for any consequential damage.
- To prevent accidents from water, fire or explosion, all power/air/water/gas sources should be turned off after working hours and during breaks, and secured against unauthorized access.
- When carrying out maintenance works or repairs or when opening the device always turn off the main power switch and unplug the whole unit.
- Repairs should be carried out only by the manufacturer or by qualified and certified personnel appointed according to chapter 7 – warranty.
- In case of leaking water out of housing or tank shut down device and call service.
- Check all hose connections for leak tightness, if necessary tighten hose clamps again

2.2 Specific Safety Notes

Note:

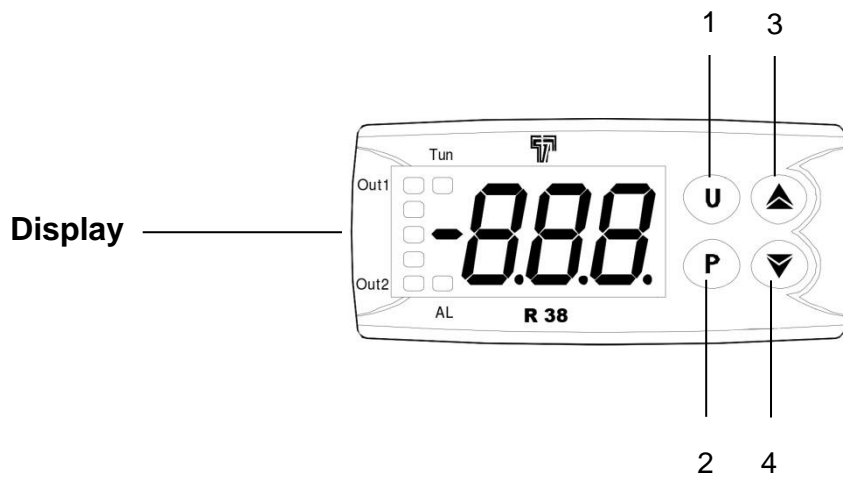
- Do not open the ball valve (14) when the appliance is hot. Attach drain hose to water outlet for drainage into a basin. Don't place the device with its back towards the room, so that the safety valve is not directed towards any persons in case of disturbance.
 - For dry operation (without water), deactivate the heating by pressing the timer button U for 3 seconds. If required, reactivate the heating by pressing again the timer button U for 3 seconds.
 - The minimum distance between the device and the wall must not be less than 20 cm.
 - Keep the housing clean and dry.
-
- Never open the machine under pressure. Check the gauge readings (3). Danger of splashing water, hot steam or parts inside the unit.
 - Be careful when handling hot water - risk of scalding. The machine is continuously heating when it's turned on (100°C / 212°F). Risk to suffer damage from running dry.
 - It is prohibited to fill in aggressive or harmful materials.
 - Maximum operating pressure: 6 bar.
 - At temperatures higher than 100°C / 212°F, steam pressure prevents the lid from opening. Wait until temperature drops considerably below 100°C / 212°F, if necessary switch off the device. The device must be pressureless! (Check the gauge readings or the valve on the rear of the device!)
 - The open lid must not be subjected to load. (Don't lean or rest on it!)

3 Installation

The electrical equipment is ready for immediate use. The sealed plug can be connected directly to the mains supply 230 V/16 A. For installation please refer to safety notes in chapter 2.

3.1 Control panel

After switching on, the device performs a self-test and the display indicates „r1.5“. It flashes approx. 5 seconds, followed by display of the current temperature (°C / °F).



Control panel

Program keys

- 1 Only for factory settings
- 2 Program key
- 3 Increase temperature
- 4 Decrease temperature

3.2 Installation

1. Screw the swivelling lever (16) into the lid (1).
2. Electrical connection according to specifications on the rating plate.
3. Establish compressed air connection in the range between 3-6 bar according to regulations.
4. Attach the drain hose tightly and put it into a basin.
5. Clean the o-ring and the sealing rim, using temperature-resistant grease (see maintenance notes).

3.3 Preparation

1. Open the lid (1).
2. Fill the tank with water, to at least 2 cm above the temperature sensor (17).
3. Turn on the device with the power switch (2). (After switching on, the device performs a brief self-test and heats to the last set temperature.)

4 Operation

4.1 Installation

1. Connect the unit plug to establish power supply. The power switch (1) for switching on the device is located at the front of the polymerisation unit. After finishing work, use the power switch (1) to switch off the device.

4.2 Programming

1. Press button 4 to program, SP1 and the target temperature flash alternately in the display.
2. Set the target temperature on the programming field: You can use key 3 (temperature up) or key 4 (temperature down) to set the desired target temperature.
3. Press the P button – the target temperature is saved. This value remains stored even after the device is switched off or in the event of a power failure until a new setpoint is entered.

After approx. 15 seconds without user activity programming is left for returning to heating mode.

4.3 Polymerisation below 100° Celsius / 212°F

Note:

The heating runs permanently. Please prevent dry run.

1. Place object (articulator, model or others) in the stainless steel tank.
2. Check to make sure that the o-ring fits tightly. Close the lid until it locks in place and fasten knurled screws (15) handtight.
3. Set polymerisation time:
 - use the timer (6) to set required polymerisation time;
 - the set pressure builds up (green lamp (4) shines);
 - after pre-set time has elapsed, the green lamp goes off and pressure drops back to 0 bar.
4. Open the lid only when the device is not under pressure (0 bar). Remove the knurled screws (15) and use the swivelling lever to open the lid.
5. Take out the model.
6. Switch off the device.
7. Open the ball valve (14) to drain water.

4.4 Polymerisation above 100°C / 212°F – Option

Note:

The heating switches off after the timer has elapsed. When the heating is activated again, temperature might change over to the set value. However, within the holding time of 30-60 min. temperature is balanced. Insert the object as soon as temperature is correct.

1. Place object (articulator, model or others) in the stainless steel tank.
2. Check to make sure that the o-ring fits tightly. Close the lid until it locks in place and fasten knurled screws (15).
3. Set polymerisation time. Open lid at a temperature below 100° C / 212°F and insert object to be polymerised. Then close the lid to continue heating until the final temperature is reached:
 - use the timer (6) to set required polymerisation time;
 - the set pressure builds up. (Green lamp (4) shines. Steam pressure at temperatures above 100°C / 212°F might increase pressure.);

- after pre-set time has elapsed, the green lamp goes off and pressure drops back to 0 bar (Cooling time is longer compared to polymerisation at temperatures below 100°C / 212°F.)
4. Open the lid only when the device is not under pressure (0 bar). Remove the knurled screws (15) and use the swivelling lever to open the lid.
 5. Take out the model. Switch off the device which then stops heating. Open the ball valve (14) to drain water.
 6. Polymerisation below 100°C according to chapter 4.3. The heating stops after timer has elapsed, however immediate switching on and off maintains the temperature.

The target temperature settings can be modified at any time during the heating process, without interrupting the control process.

5 Troubleshooting

Device doesn't turn on.	<ol style="list-style-type: none"> a. Check fuses in the building. b. Check device's fuse
Untight lid (o-ring might be broken, dry or slipped out of groove).	<ol style="list-style-type: none"> a. Clean o-ring. b. Grease o-ring and sealing rim (see chapter maintenance for information on appropriate grease). c. Check if o-ring fits tightly. d. Replace o-ring.
Untight lid (tank pressure too high).	Pressure regulator (11) adjusted too high → max. 6 bar.
Untight lid (knurled screws not tight enough).	Fasten knurled screws (15) on top of the lid handtight.
Untight lid (locking pin was set too high).	Remove Allen screw, turn locking pin to the right to reduce the gap.
Device doesn't heat or too slowly.	Temperature limiter (18) has switched off. Remove rubber cover and press in temperature limiter after approx. 15 min. → If the problem occurs frequently, please inform customer service.
Device heats, although it was not filled with water and controller was set to temperature below 30 °C / 86°F.	Fill in water or deactivate heating by pressing key „U“ of the controller for 3 seconds. Don't activate the heating during dry operation (without water).
Lid doesn't open.	Temperature above 100°C / 212°F → pressure prevents lid from opening. Please wait until temperature drops considerably below 100°C / 212°F. If necessary, switch off device. Device must be pressureless! (Check the gauge readings or the valve on the rear of the device!)
Wrong temperature unit	The temperature unit can be factory set from ° C to ° F or vice versa

6 Maintenance

- Regularly check the device. Pay attention to visible damage to housing our power cord.
- Clean the o-ring inside the lid as well as the rim regularly and lubricate it, using a temperature-resistant silicone-lubricant (food safe), e.g. OKS 1110 (sample enclosed). Silicone lubricant OKS 1110 available on request.
- Replace the o-ring (inside the lid) semi-annually.
- Change the water once a week.
- Clean the housing regularly with a damp cloth.

Note

Clean and protect your device regularly with the REITEL stainless steel care spray (order-no.: 90405000) to remove lime, plaster and dust as well as other contaminants from the surface of equipment and to prevent corrosion. The spray creates a water repellent protective film which helps keep the equipment clean.

7 Warranty

We, REITEL Feinwerktechnik GmbH, offer a 1 year's warranty beginning from the proven date of purchase. This warranty covers all defects traceable to materials, design or workmanship. The following warranty regulations are applicable:

Within the warranty period Reitel Feinwerktechnik GmbH or an authorized distributor agrees at its sole option, to perform repair or replace this product at no charge covering all defects traceable to materials, design or workmanship. Warranty only applies to appropriate use and regular maintenance of this product according to the operating instructions. Claims under warranty are restricted to complementary performance. Additional claims, especially claims for indemnifications, are not covered by this warranty.

1.

Warranty claims have to be addressed to the distributor the product was purchased from or directly to our service department.

Contact:

REITEL Feinwerktechnik GmbH

Senfdamm 20

49152 Bad Essen

Germany

Phone: +49(0)5472-9432-32 (Service Department)

Phone: +49(0)5472-9432-0 (Reception)

Fax-No: +49(0)5472-9432-40

2.

In case of warranty claim application the sales receipt or your purchase invoice showing the date of purchase of the product and the serial number must be furnished. Securely pack and ship the device, freight charges prepaid, at your own risk to us, along with a report describing the defect. We reserve the right to decline warranty if this information has been removed or modified after purchase of the product or if they are not included in case of warranty claims.

3.

Warranty repairs have to be performed by REITEL Feinwerktechnik GmbH or by authorised distributors. Repairs performed by non-authorised companies will void the claim for refund since damages to the product resulting hereof are not covered by warranty.

4.

If the unit sent in for repair or replacement is still under the original warranty then warranty is to the end of the original 1 year warranty.

5.

If the unit is destined to be operated in another country than originally intended and manufactured for, modifications to the product might be necessary to comply to special technical and /or safety standards of that specific country. Such modifications are no defects traceable to materials, design or workmanship. and are therefore expressly excluded from warranty claims.

Modification costs or damages arising from operation of the product under deviating conditions are not covered by warranty.

6.

Exclusions from warranty:

- Service and maintenance work as well as repair and replacement of consumables according to our consumables' list
- Transportation cost of the machine or installation and dismounting expenses incurred
- Damages due to use of the product other than for its intended purpose
- Damages due to faulty installation or insufficient maintenance of the product (e.g. decalcification)
- Damages due to natural disaster e.g. lightning, water, fire, act of nature beyond control, war, inadequate line voltage, insufficient ventilation, no decalcification, insufficient care and cleaning or non-adherence to operation and maintenance instructions according to the accompanying operation guide.
- Damage due to use of the product other than in accordance with the instructions provided by REITEL Feinwerktechnik GmbH;
- The warranty does not cover the cost of removal and replacement of parts and accessories, unless supplied as original equipment by REITEL Feinwerktechnik GmbH
- All kind of damages occurred not directly at the device as well as consequential damages (e.g. damages to furniture due to a lack of water, downtime of the machine, material, lost working hours, wages and other consequential damages).

This warranty shall be rendered null and void if:

- the product has been subject to any modification, repair or replacement other than as authorised by REITEL Feinwerktechnik GmbH
- the product is continued to be operated despite a functional defect

7.

The warranty is device specific and may be claimed, within the warranty period, by any person who has legally acquired the device.

8.

Consumables are excluded from warranty. Spare parts are subject to a warranty coverage of 6 months against all defects traceable to materials, design or workmanship according to these warranty regulations.

9.

Legal default claims on the part of the purchaser remain unaffected by this warranty.

10.

We reserve the right to charge a fee if repair of the device is rejected and the device is destined to be sent back unrepaired.

11.

Please note:

Upon repair or replacement of this unit, personal data and settings might get lost or damaged. We don't accept liability for all kind of data loss. The customer is advised to backup essential programs and data before sending for service.

12.

This warranty shall be interpreted in accordance with German law to the exclusion of UN sales law. Place of jurisdiction is our business location.

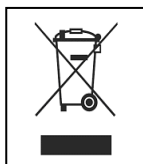
13.

If any provisions of this warranty are judged to be illegal or unenforceable, the continuation in full force and effect of the remaining provisions will not be prejudiced. The provisions of this warranty judged to be illegal or unenforceable shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable and to give effect to section 13 hereof.

14.

Should you need to borrow a device while your device is being repaired, please contact Messrs. REITEL or your distributor. These loans are a service for which availability cannot necessarily be guaranteed. After the warranty period, a fee may be charged for loan equipment as well as for shipping and packaging.

8 Disposal Regulations



According to valid regulations our devices are properly disposed of according to B2B – Regulations for proper disposal. Please contact your local dealer for further information.

9 Spare Parts List

Best.Nr Ref.	Polymat 83 Ersatzteilliste / Spare Parts List 03/2019	Stck. Qty.	ME Unit
E7209800	Deckel- Mikrotaster (Taster für Luftentnahme) Lid micro switch (for ventilation)	1	Stck piece
E6212910	Deckel-O-Ring (217x5) O-ring for lid (217 x 5)	1	Stck piece
E7059610	Dichtfett Sealing grease	1	Stck piece
E7406920	Dichtring Regler O-ring controller	1	Stck piece
E7146300	Moosgummiprofil Sponge rubber profile	1	m
E7851800	O-Ring 34x3 mm für Drehknopf Timer O-ring 34x3 mm for timer rotary knob	1	Stck piece
E6096500	Rändelschraube M10x20 mit Ku-Griff (120°- Version) Knurled screw M10x20 with plastic knob (120°- Version)	1	Satz set
E7816120	Rändelschraube VA M10x20 (100° Version, ab Nr. 83078181) Knurled screw, stainless steel M10x20 (100° Version, from No. 83078181)	1	Satz set
E6064800	Schalter beleuchtet grün Green illuminated switch	1	Stck piece
E7853900	Schlauch, Heißwasser 90° Typ Multifixx 10X3.5-20bar-100 Hose	1	Stck piece
E6227800	Sicherheitsventil 6 bar Safety valve, 6 bar	1	Stck piece
E7407010	Temperaturfühler mit Hülse Temperature sensor	1	Stck piece

10 EC Conformity Declaration

EG-Konformitätserklärung EC-Conformity Declaration CE-Déclaration de Conformité

im Sinne der EG-Richtlinie 2006/42/EG über Maschinen (Anhang II A)
according to Machinery Directive 2006/42/EC (Appendix II A)
au sens de la Directive Machines 2006/42/CE (Annexes II A)

Name und Anschrift des Herstellers/Name and address of manufacturer/Nom et adresse du fabricant:

Reitel Feinwerktechnik GmbH
Senfdamm 20
49152 Bad Essen

Diese Erklärung bezieht sich nur auf die Maschine in dem Zustand, in dem sie in Verkehr gebracht wurde; vom Endnutzer nachträglich angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt. Die Erklärung verliert ihre Gültigkeit, wenn das Produkt ohne Zustimmung umgebaut oder verändert wird./This declaration relates exclusively to the machinery in the state in which it was placed on the market and excludes components which are added and/or operations carried out subsequently by the final user. This declaration will become invalid if any unauthorised modification is made to the product./Cette déclaration concerne exclusivement les machines dans l'état dans lequel elles ont été mises sur le marché et exclut des composants ajoutés et/ou les opérations effectuées par la suite par l'utilisateur final. La présente déclaration perd sa validité si des modifications non-autorisées ont été apportées à la machine.

Hiermit erklären wir, dass die nachstehend beschriebene Maschine/**We hereby declare** that the machine described below/**Nous déclarons** que la machine ci-dessous

Produktbezeichnung/Product name/Nom du produit: Druck-Polymerisationsgerät/
Polymerization Unit/
Système de Polymérisation

Typenbezeichnung/Type/Type: POLYMAT

allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG entspricht. Die Schutzziele der Richtlinie 2014/35/EU über elektrische Betriebsmittel sowie 2011/65/EU (RoHS 2) werden eingehalten./is in conformity with all applicable requirements of the Machinery Directive 2006/42/EC. The safety objectives of the Directive on Electrical Equipment 2014/35/EU as well as the Directive 2011/65/EU (RoHS 2) are adhered to./est conforme aux dispositions applicables de la Directive Machines 2006/42/CE. Les objectifs de sécurité de la Directive sur les Matériels Electriques 2014/35/EU ainsi que de directive 2011/65/EU (RoHS 2) sont respectés.

Angewandte harmonisierte Normen/Harmonised standards applied/Normes harmonisées appliquées:

EN 12100:2010
EN 60204-1:2006
EN 61010-1:2001

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen:
Representative authorised to compile the relevant technical documentation:
Personne autorisée à constituer la documentation technique pertinente:

Daniel Reitel
Reitel Feinwerktechnik GmbH
Senfdamm 20
49152 Bad Essen

06.02.2018

Ort, Datum
Place, Date
Lieu, Date

Daniel Reitel, Geschäftsführender Gesellschafter/Managing Director/
Directeur Général



Unterschrift/Signature/
Signature

We manufacture in compliance with Quality Management ISO 9001:2015 incorporating established standards.



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