

Operating manual original operating manual Article No.: 99988077E **Rev. 03 / 04.2019**

Glue pump PTI-D3-H-Cont Year of construction: 2019



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1 EU Declaration of Conformity

DESIGN: Glue pump Type: PTI-D3-H-400

The glue pump has been designed and manufactured in accordance with the EC/EU directives:

2006/42/EC Machinery Directive 2014/30/EU EMC Directive

under the sole responsibility of (manufacturer):

Timmer GmbH Dieselstrasse 37 D-48485 Neuenkirchen, Germany www.timmer.de

The following harmonised standards have been applied:

DIN EN ISO 12100:2010 Safety of machinery -

General principles of design - Risk assessment and risk reduction

<u>DIN EN 809: 2012-10</u> Pumps and pump units for liquids – Common safety requirements

<u>DIN EN ISO 4414:2010</u> Pneumatic fluid power – General rules and safety requirements for systems and their components

<u>DIN EN 61000-2-2</u> Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – immunity standard for industrial environments

<u>DIN EN 61000-2-3</u> Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments

Person authorised to compile the documentation: Herbert Timmer Address: See Manufacturer

<u>Neuenkirchen, October 2016</u> Place, date

Vi la leser

Managing Director



2 About this manual

2.1 Use and safekeeping

Please note the following points:

- The pump can only be appropriately and safely placed in service, operated and maintained with the aid of this operating manual.
- This operating manual refers only to the product that is specified on the cover sheet.
- This operating manual is a component of the scope of delivery.
- Consequently, always keep this operating manual in legible condition, on hand for the operator in the vicinity of the pump. Leave this document with the pump if the pump is resold or loaned out.
- This operating manual is intended only for instructed and authorised specialists.
- The section on safety provides an overview of all important safety aspects for optimal protection of personnel, and for safe and trouble-free operation of the pump.
- The manufacturer is not liable for damage resulting from failure to comply with the instructions in this operating manual.
- Reprints, translations and duplications in any from, including excerpts, requires the written consent of the publisher.
- The copyright remains with the manufacturer.

2.2 Manufacturer information

Timmer GmbH

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www.timmer.de



2.3 Areas of applicability

This product complies with the directives of the European Union.

In this regard, please note:

- This EU Declaration of Conformity
- The intended use
- The non-intended use

2.4 Guarantee and warranty

For all Timmer pumps, we grant the initial purchaser a one year warranty on workmanship and material starting from the date of purchase; provided that the pump is used as intended. Normal wear is excluded from the warranty. The warranty is invalidated automatically if the parts that are not original Timmer spare parts are installed in the Timmer pump.

In compliance with applicable law, Timmer GmbH excludes all liability for consequential damage. In all cases the liability of Timmer GmbH shall be restricted to and in no case shall exceed the equivalent value of the purchase price. Prior to purchasing and shipment of the Timmer pump, the customer should review the national and local laws and regulations to ensure that the product, the installation and the application are in compliance with the applicable regulations.

- Notify the manufacturer immediately of warranty claims after defects or faults are detected.
- In all cases the warranty shall be invalidated where liability claims cannot be legally asserted.
- Claims for modification of systems and components that have already been delivered cannot be asserted from the information, illustrations and descriptions in this operating manual.
- No liability is accepted for damage or malfunctions that occur as described below:
 - Disregard of the operating manual
 - Unauthorised modifications of the system
 - Operator error
 - Failure to perform maintenance tasks



3 Safety

3.1 Basic information concerning safety

The Safety chapter provides an overview of all important safety aspects for optimal protection of personnel, as well as for safe and trouble-free use of the pump, from transport to operation and extending to disposal.

Failure to comply with the instructions and safety notices cited in this operating manual can result in considerable hazards for personnel and material damage of pump.

The pump is operationally safe.

Nevertheless under the following circumstances residual risks can arise from the pump, if

- The pump is not used as intended.
- The pump is used improperly operated by untrained or uninstructed personnel.
- The pump is not properly maintained or serviced.
- The safety instructions, notices and warnings specified in this operating manual are not complied with.
- The pump is improperly modified or converted.
- The prescribed maintenance is not performed in a timely manner.

3.2 Compliance with the instructions in the operating manual

Every person who is assigned to perform tasks on the pump must have read and under this operating manual, particularly the "Safety" chapter.

Knowledge of and compliance with the content of this manual is the prerequisite for protecting personnel from danger and avoiding error.

Consequently, all safety instructions must always be complied with, compliance is in the interest of your safety.

The operating manual is a component of the pump and must always be available in the vicinity of the product. The instructions in the operating manual must be complied with. If content of this operating manual is not clear or not understandable, contact the manufacturer without delay, see the paragraph "Manufacturer information".

In addition to the safety instructions in this operating manual the following guidelines and regulations must also be complied with:

- The intended use
- The applicable accident prevention regulations (UVV)
- Occupational medical health guidelines

Safety



- Generally accepted rules for safety
- Country-specific regulations
- The manufacturer information (safety data sheets) for operating materials and auxiliary materials, chemical substances

Moreover, these directives and regulations can be supplemented with work instructions that take into account plant-internal regulations or operational particularities.

In supplementation to this operating manual, company-internal instruction of the appropriate persons must be provided with due consideration of the technical qualifications.

3.3 Operational prerequisites

Dependence on other systems and equipment must be tested by the owner separately.

Moreover, since they are not in our area of responsibility, the following prerequisites must be in place for regular operation of the pump:

- Properly concluded installation.
- Successful trial run with all required adjustment tasks.
- Instruction of operating personnel concerning operation of the pump and the applicable safety regulations.
- If hot or cold machine parts result in additional danger, then the customer must safeguard these parts from being touched.
- The possibility of hazards due to electrical energy must be excluded (for details in this regard see VDE guidelines or guidelines issued by the electrical utility, for example).
- The pump must be easily accessible.
- Designation of a person who is mainly responsible for proper operation.

3.4 Intended use

- The pump and the operating manual are designed exclusively for commercial use.
- The pump must only be used to pump glues that are customary in the market for labelling machines. Use of a different medium can only occur with the permission of Timmer.
- The pump must only be operated within the limits specified for intended use (see the chapter "Technical data").
- The pump must only be operated in closed rooms.
- The pumped medium must be compatible with the materials of the pump (see the chapter "Technical data").
- The owner of the pump is responsible for selection of the medium to be pumped.

3.5 Non-intended use

A use other than the use described in the paragraph, "Intended use" and in this operating manual, and any use that extends beyond the specified intended use, shall apply as non-intended use. The manufacturer shall not be liable damage resulting from non-intended use. This risk is borne solely by the user / owner.

- The pump must not be used or placed in service by private users.
- The pump must not be operated without medium.
- Modification of the pump in any form is prohibited.
- Operating the pump with bypassed safety devices is prohibited.

3.6 Foreseeable misuse

The following points describe foreseeable misuse of the pump:

- Setup on uneven, slippery, or unstable substrates
- Attachment of transport aids on the housing
- Failure to comply with the operating data
- Failure to comply with the maintenance intervals

3.7 Plates/labels on the pump

The data on the rating plate affixed on the pump must always be complied with. The rating plate must not be removed, and it must be kept in completely legible condition.



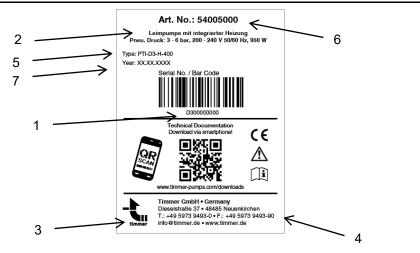


Fig. 1: Rating plate

- 1 Serial number
- 2 Product designation
- 3 Logo

- Type key
- 6 Article number
 - Date

5

7

4 Manufacturer address

3.8 Personnel qualifications

Tasks on the pump must only be performed in accordance with existing rules and statutory regulations, by personnel who have been instructed and are qualified in this regard, in compliance with due diligence obligations.

The following requirements must be fulfilled:



- Personnel must have special skills and experience in the respective technical area. This particularly applies for maintenance and repair tasks on mechanical and pneumatic fixtures of the pump.
- Personnel must have knowledge of applicable standards, directives, accident prevention regulations and operating conditions.
- Personnel must have been authorised by the person responsible for safety to perform the respectively required tasks.
- Personnel must be capable of recognising and avoiding possible dangers.

The required personnel qualifications are subject to different statutory regulations depending on the implementation site. The owner must ensure compliance with the applicable laws.

3.9 Personal protective equipment

Failure to wear the personal protective equipment can result in severe injury or death.

• Wear the plant prescribed protective equipment, e.g. hearing protection, eye protection, safety footwear, hard hat, protective clothing, and protective gloves for all tasks on the pump.



- Long hair must be tied back and covered; do not wear loose clothing or jewellery. Danger of injury through entrapment, being pulled in or entanglement due to moving parts.
- Ensure that there are no unauthorised persons in the danger zone.

3.10 Warnings in the operating manual

Warnings warn of general, as well as specific situational dangers. Compliance with the warnings prevents personal injury and material damage and this is mandatory.



The warning symbol below warns of dangers to life and limb. All warnings that include this symbol indicate a danger for personnel.

Residual risks are referred to through appropriate warnings in the manual and through warning signs on the machine.



A DANGER

The signal word DANGER indicates an imminent threatening danger.

Failure to comply with the instruction results in severe or fatal injury.

The signal word **WARNING** indicates a possible danger.

Failure to comply with the instruction can result in severe or fatal injury.

The signal word **CAUTION** indicates a possible danger.

Failure to comply with the instruction can result in minor to moderate injury.

ATTENTION

The signal word *ATTENTION* indicates possible material damage. Failure to comply with the instruction can result in machine damage.

3.11 Other notices

Environmental protection notice

Indicates information concerning environmental protection.



Indicates additional information for the machine or its use.

3.12 Safety instructions



3.12.1 General dangers

- Comply with the safety notices and warnings listed in this operating manual, the existing national accident prevention measures, as well as any internal occupational health and safety regulations, plant regulations and safety regulations issued by the owner.
- When pumping hot medium, the pump always takes on the temperature of the pumped medium. In this case only touch the pump with suitable protective gloves.
- As owner, ensure that all maintenance, inspection, and installation tasks are performed by authorised and qualified specialists who have sufficiently informed themselves through thorough study of the operating manual.
- Only perform maintenance, inspection and installation tasks on the pump, after you have disconnected the pump from all supply networks (e.g. electricity, compressed air).
- Remove leaked hazardous conveyed substances (e.g. explosive, toxic, hot) in such a manner that neither personnel nor the environment are endangered. Comply with statutory regulations.

3.12.2 Danger due to electrical voltage

- Attach electrical plug connections in an area that is protected against flooding, and protect electrical plug connections from moisture. Caution if water levels rise in flood areas.
- Exclude the possibility of hazards due to electrical energy. (Details in this regard are provided in the VDE regulations and in the materials issued by the local electrical utility.)

3.12.3 Danger due to pneumatic equipment

 In pump operation strong suction occurs in the intake area of the pump. During pump operation ensure that hands, feed, clothing worn loosely on the body (e.g. neck ties) or jewellery (e.g. necklaces) do not get into the pump inlet side (suction side) or pump outlet (pressure side). There is a shearing or entanglement hazard.

3.12.4 Dangers associated with handling hazardous substances

- Decontaminate pumps or pump units that pump harmful media.
- Only perform cleaning, repairs, troubleshooting and fault rectification in which the possibility of contact with the medium cannot be excluded, if beforehand you have put on the appropriate personal protective



equipment PSA (at least protective clothing, protective gloves, protective goggles). Comply with the safety data sheets of the manufacturers and the national laws and directives.

3.12.5 Pump damage due to improper handling

- Check the chemical compatibility of the media that will be pumped with the materials used to construct the pump. A list of the materials used is provided in the Technical data.
- Only store the pump in dry rooms, after it has has been completely dried.
- Ensure that the implementation site of the pump is protected against freezing temperatures.
- Always transport the pump using the carrying handles intended for this purpose. Do not, under any circumstances, carry the pump by the cable or by a connected hose.
- Operate the pump with the operating pressure specified in the Technical data; do not exceed the specified operating pressure.

4 Transport

ATTENTION

Transport damage to the pump due to improper packing!

• Only transport the pump in the original packaging.

After receipt of the pump execute the following steps:

- 1. Remove the transport packaging of the pump.
- 2. Properly dispose of the packaging material.
- 3. Examine the pump for transport damage.
 - Immediately notify the transport company and the manufacturer of transport damage.
 - Protect the pump from further damage.
- 4. Check the delivery for completeness based on the delivery ticket.

5 Storage

• The storage conditions influence the service life of the pump.



- The pump must only be stored for safekeeping if it has been thoroughly cleaned beforehand.
- Extreme storage conditions accelerate the ageing process.
- We recommend a storage temperature between +10°C and +25°C.
- Exclude the possibility of influence of ozone or ionising radiation.

6 Product description

The glue pump is a self-priming, pneumatically-powered fluid pump. Fluid is displaced by an oscillating delivery piston in the interior of the intake pipe. A reversing valve ensures that a pneumatic drive piston is alternately charged with compressed air.

The glue pump is used wherever labels are glued on when filling bottles, jars, etc.

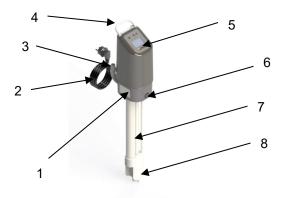


Fig. 2: Device overview

- 1 Compressed air inlet (concealed)
- 2 Connection power supply
- 3 Glue outlet
- 4 Handle

- 5 Input and display
- 6 Exhaust air throttle valve
- 7 Riser pipe
- 8 Suction unit

6.1 LED display during operation

During operation there are various operating states that are shown in the display.





Fig. 3: Display

- 1 The green LED "ON" is illuminated: The pump is functional.
- 2 The green LED "HEATING" is flashing:

The heater is active. The length of the switch-on time symbolises the required heating power.

The heater cannot be used for cooling.

3 The LED "Warning" is flashing:

An operating error is present. The error can be identified and rectified as described in the chapter 10 on page 28.

4 The LED "Error" is illuminated:

A system error is present. The error can be identified and rectified as described in the chapter 10 on page 28.



6.2 Maintenance display

During operation the maintenance status is shown in the display.

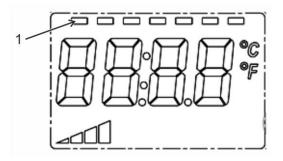


Fig. 4: Maintenance display

The number of maintenance bars (1) in the display depends on the number of strokes previously performed by the pump. If all bars are black, maintenance is required.

- 7 Installation
- 7.1 Safety

Personnel are in danger due to improper installation!

- Installation tasks must only be executed by trained personnel.
- Wear personal protective equipment (PSA).

Personnel are in danger due to inadequate lighting!

• Only perform installation tasks on the pump in an adequately illuminated and air-conditioned environment.



7.2 Preparations

- 1. Connect the pump to the outlet hose and the system components without mechanical tension.
- 2. Ensure that the system components are properly supported to prevent loading of the pump parts.

Note

- The following connections are required:
 - Electrical connection.
 - Pneumatic connection with 3 to 6 bar.
- The pump is self-priming.

7.3 Pump connection

7.3.1 Compressed air connection

The pump is operated with compressed air from 3 to 6 bar.

- 1. Install a hose (outer diameter 8 mm) from the compressed air source to the pump.
- 2. Ensure that a 1/4" filter/regulator with shut-off valve is installed upstream of the pump.
- 3. Ensure that the access to the shut-off device for the compressed air supply is always freely accessible. If necessary you must install a separate shut-off device.

7.3.2 Electrical connection

1. Establish a connection to an earth contact electrical connection with the voltage and frequency specified on the rating plate.



7.3.3 Mounting in the container

Health impairment due to contact with harmful media!

- All tasks for which the possibility of contact with the medium cannot be excluded, must only be executed if the appropriate personal protective equipment PSA (at least protective clothing, protective gloves, protective goggles) has been put on beforehand.
- Comply with the safety data sheets of the manufacturers and the national laws and directives.
- All pipe connections and hose connections on the pump must be sealed tight.

The pump is designed for use on IBC containers. The supplied mounting kit must be used for mounting. To do this, cut out the screw cap of the IBS container and install the adapter plate for the bayonet adjusting ring with the supplied screws. The cut-out in the screw cap of the IBC container must have a diameter of 125 mm.

During installation of a throttle, bypass or ball valve in the glue output, the compressed air must be limited to 4 bar.

In addition, it has to be ensured that the medium pressure does not exceed 18 bar.



Fig. 2: Adapter plate for bayonet adjusting ring with screws

Mount the clamping ring on the pump.

The height should be adjusted in such a manner that the suction pipe just touches the floor of the container.

Ensure that the container glue pump is firmly seated.

The mounting set with the outlet tap is to be mounted with the opening facing downwards (hose connector facing upwards). The mounting height of the outlet tap depends on the hobbock to be filled.





Fig. 3: Outlet tap

The supplied delivery hose must be installed between the pump and the outlet tap. Use the supplied hose clamps! Incorrect installation may cause injury.

Note

When attaching throttles or shut-off devices in the glue outlet, the compressed air must be limited to 4 bar, so that media pressure of 18 bar is not exceeded.

8 Commissioning

ATTENTION

Destruction of the pump due to excessive air pressure!

Excessive air pressure can destroy the pressurised components and cause the pump to burst.

- Operate the pump with compressed air pressure of maximum 6 bar.
- Ensure that the exit point of the pumped medium is not clogged or sealed.
- When attaching throttles or shut-off devices in the glue outlet, the compressed air must be limited to 4 bar, so that media pressure of 18 bar is not exceeded.
- 1. Establish the electric and pneumatic connection as described in the chapter 7.3 on page 20 and install the pump as described there.
- 2. Set the compressed air to 3 ... 6 bar. The pump is ready for operation.
- 3. Open the ball valve for the compressed air supply. The pump starts pumping.

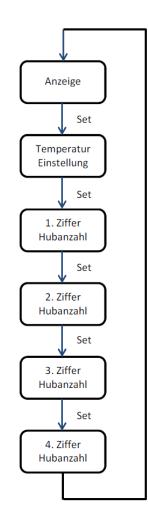


9 Operation

9.1 Settings, menu navigation

You can set the temperature and a preselected number of strokes.

The settings menu has the following structure:



Set

- timmer

Operation

9.2 Setting the temperature – setpoint adjustment

• The setpoint of the glue temperature is adjusted in degrees Celsius. All values specified for temperature in this operating manual are specified in degrees Celsius (°C).

Proceed as follows to set the desired setpoint of the glue temperature:

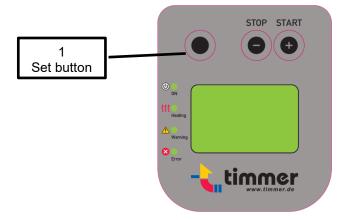


Fig. 4: Adjusting the display

Pressing the set button (1) will activate the temperature adjustment (temperature display flashes). The plus/minus key can be used to increase/decrease the set temperature in increments of 0.5 °C. If the display values stop flashing, the setting is saved. The actual temperature and the remaining number of strokes are displayed alternately.

If the set temperature needs to be adjusted again, repeat the procedure.

9.3 Setting the number of strokes

The container glue pump is designed to fill the glue from an IBC container into a hobbock and to simultaneously preheat it. The number of strokes of the pump can be adjusted in such a way that the pump shuts off automatically. A flow rate of approximately 24.5 ml is pumped per set stroke. If used for the first time, the pump and piping system must be filled first.

The number of strokes is set as follows:

Pressing the set button (1) twice will activate the stroke adjustment, the first digit flashes. The plus/minus key can be used to set the first digit of the stroke number. You can press the "Set" button to go to the setting of the second digit.



Overall, 4 digits can be set. (0 - 9999 strokes). Pressing the set button again will save the stroke number setting.

The pump can be started and stopped with the "START" or "STOP" button. If the stroke number needs to be reset to the set value, press the minus key again after stopping. The remaining number of strokes and the actual temperature are displayed alternately in the display.

If the stroke number is to be adjusted again, repeat the procedure.

9.4 Regulating the delivery rate

 Ensure that the pressure is set to a value between 3 ... 6 bar. The works and pumps the medium.

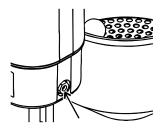


Fig. 5: Exhaust air adjustment

2. Adjust the exhaust air throttle with an Allen key (see arrow) to regulate the delivery rate.



Viscous media are pumped with a slower piston speed at initial intake.



9.5 Conversion of units of measure

To switch from degrees Celsius (°C) to Fahrenheit (°F) proceed as follows:

1. Disconnect the pump from the power supply.

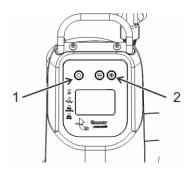


Fig. 6: Set the unit

- 2. Press and hold the Set button (1) and restore the power supply.
- 3. Wait until four vertical lines are shown in the display.
- 4. Release the Set button.
- 5. Press and hold the Plus button (2) until the temperature is displayed.

Note

Repeat the process to convert the unit back to °C.

9.6 Setting the temperature – setpoint adjustment

Note

- The setpoint of the glue temperature is adjusted in degrees Celsius (°C).
- All values specified for temperature in this operating manual are specified in degrees Celsius.
- A temperature differential of 1°C corresponds to a temperature differential of 1°K.
- The temperature is set during operation.



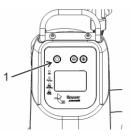


Fig. 7: Adjusting the display

Proceed as follows to set the desired setpoint of the glue temperature:

- Press and hold the Set button (1) for 3 seconds. Temperature adjustment will be activated.
- 2. Use the Plus/Minus buttons to increase or decrease the temperature in $0.5 \text{ }^{\circ}\text{C} / 0.5 \text{ }^{\circ}\text{F}$ increments.
- Release the Set button.
 The temperature setting is saved.
 The display changes back to the existing actual temperature.

Note

Repeat the procedure to set the target temperature again.

9.7 Frequency display



Fig. 8: Adjusting the frequency

 During operation activate the Plus button (1) for 3 seconds. The actual set frequency will appear in the display.

Note

To change the frequency follow the instructions in chapter 9.1 on page 23.



10 Fault rectification

Note

- Detailed descriptions concerning the procedure are given in chapter 14 on page 39.
- An overview of the position of the components is provided in chapter 14.2 on page 41.
- Contact Timmer-Service if there are any questions. See chapter 2.2 on page 7 for the contact details.

Error message (display)	Cause of the error	Error rectification
F001	Pump runs too slow \rightarrow throttle closed	Open exhaust air throttle
F002	Pump runs too fast / no compressed air	Close exhaust air throttle / check compressed air supply
F003	Temperature sensor open or < 0°C	Replace temperature sensor or convey medium above 0°C
F004	Temperature sensor short circuit or > 80°C	Replace temperature sensor or convey medium below 80°C

10.1 Error messages (display)



10.2 Faults

Fault	Cause of the error	Error rectification
Pump not running or is running too slow	Insufficient compressed air pressure	Set pressure at 3 to 6 bar
	Cross section of the hose is too small	Use a hose with a larger cross section
	Electrical control valve is defective	Test and if necessary replace the electrical control valve
	Wrong exhaust air throttle setting	Set the speed with the exhaust air throttle
	Fluid piston jams	Check resistance
	Defective electronics	Repair the pump
	Defective fuse	Replacing the fuse
Pump runs too sluggish	Icing on the silencer	Remove icing
	Fluid piston or drive piston is damaged	Repair the pump



Fault	Cause of the error	Error rectification
Pump runs but it does not deliver any medium	Elect. control valve is clogged	Clean elect. control valve and check function
	Delivery hose is clogged	Clean delivery hose
	Suction valve is contaminated	Clean and check valves
	Suction base has leaks	Check the seal and replace if necessary
	Excessive viscosity of the glue	High-viscosity media in excess of 100,000 mPas cannot be pumped
	Delivery hose has cracks or has holes the size of pin holes	Replace conveyor hose
	Counter pressure at the injection point is too high	Reduce the counter pressure at the injection point.
	Threaded fittings, ball valve or non-return valve have no passage or reduced passage	Restore the passage by cleaning or replacing



Fault	Cause of the error	Error rectification
	Guide band worn	Replace the complete fluid piston
	Defective piston rod	Check whether the piston rod moves
	Connection of the piston rod on the pneumatic cylinder	Check the connection
	No suction effect	Check the O-ring in the suction section under the suction ball
	Exit point of the fluid is lower than the fluid level in the container	Place the fluid container lower or the exit point higher
Fluid container runs empty autonomously	Exit point of the fluid is lower than the fluid level in the container	Place the fluid container lower or the exit point higher



Fault	Cause of the error	Error rectification
Electronics fault	Electronic components defective due to transport damage or fall of the pump	Replace printed circuit board
	Wrong voltage applied	Check whether 200-240 VAC is applied.
		If the voltage is wrong send the pump back to the factory
	Defective cable on the pump	Replace cable
Heater does not heat	Heating spiral or electronics are defective	Send the pump back to the factory or request suitable spare parts
	Pump runs too fast or too slow.	Change the setting on the exhaust air throttle
No function display	Defective electronics	Send the pump back to the factory or request suitable spare parts
Heater does not turn off	Heating spiral is defective	Send the pump back to the factory or request suitable spare parts



11 Cleaning

11.1 Safety

A DANGER

Life-threatening danger due to electric current!

Life-threatening danger due to contact with energised components. Switched on electrical components can execute uncontrolled movements.

- Cleaning tasks must only be executed by trained personnel.
- Disconnect the pump before wet cleaning of the outside parts of the power supply.

ATTENTION

Pump damage due to hardening, crystallising media!

- When pumping fluids that contain solids that harden, crystallise, or that can corrode pump materials due to chemical or physical properties, the pump must be cleaned before longer standstill periods.
- A longer standstill period is defined depending on the previously pumped medium and the change of its aggregate state from fluid to solid.
- The definition is the responsibility of the owner and must be complied with in any case to avoid pump damage.

ATTENTION

Pump damage due to cleaning with agents that are chemically incompatible!

- Only clean the pump with a cleaning agent that is suitable for the pump material and the conveyed material.
- Liquid and solid cleaning agents must not exceed a temperature of 50°C.
- If in doubt use water for cleaning.



11.2 Cleaning prior to a standstill period

- 1. Place the pump and glue lid on a suitable container with water.
- 2. Connect the media outlet to the container so as to ensure a circulation in the circuit
- 3. Feed the water at a temperature of 50°C and a frequency of 2 Hz until all residues have been removed from the pump. After about 30 minutes, the pump should be cleaned, if not repeat this process
- Completely empty the pump.
 To do this, pull the suction pipe out of the water far enough that air is suctioned in.
- 5. Turn the pump upside down so that the media outlet of the pump is the lowest point and the water flows out.
- 6. Alternatively you can manually activate the non-return valve in the suction base so that the water can flow out completely.
- 7. Clean the outside parts of the pump with a damp sponge.

11.3 Cleaning before decommissioning

 Clean and empty the pump as described in the preceding paragraph. *ATTENTION* - Device damage to the cleaning fluid residues. Cleaning fluid residues that remain in the pump for a long time can shorten the service life of the pump. Ensure that the pump is completely emptied when decommissioning and storing the pump.

Note

Additional information on storage is provided in chapter 5 on page 16.



12 Maintenance

12.1 Safety

A DANGER

Life-threatening danger due to electric current!

Life-threatening danger due to contact with energised components. Switched on electrical components can execute uncontrolled movements.

- Cleaning tasks must only be executed by trained personnel.
- Disconnect the pump before wet cleaning of the outside parts of the power supply.

WARNING

Personnel are in danger due enclosed compressed air and pressurised medium!

- Do not service or clean the pump, hoses and the outlet valve for the compressed air while the system is pressurised.
- Before performing tasks on the pump de-pressurise the pneumatic section and the liquid section.
- Shut off the compressed air supply and wait until the residual pressure is dissipated via the outlet valve for the compressed air.
- Empty the pump before replacing components.



Hazard for personnel due to spraying fluids (media)!

- Ensure that the material hoses and other components can withstand the fluid pressure generated by this pump.
- Check the pump for damage or wear on a regular basis.
- Ensure that the pneumatic valve, the outlet area for the compressed air and the suction side and pressure side are clean and functioning effectively for the medium.
- Depressurise the pump before dismounting. Under some circumstances there can still be a low residual pressure in the pressure chamber that causes medium to spray out.
- Before any dismantling task at the pump, refer to the safety data sheets of the previously pumped chemicals.

Personnel are in danger due to improper installation!

- Installation tasks must only be executed by trained personnel.
- Wear personal protective equipment (PSA).

Personnel are in danger due to inadequate lighting!

• Only perform installation tasks on the pump in an adequately illuminated and air-conditioned environment.

12.2 Maintenance tasks

The pump is almost wear-free. The quality of the compressed air supply, the characteristics of the pumped media (such as abrasiveness, viscosity, etc.) and the operating conditions can negatively influence the service life of the pump.

Consequently we recommend regular inspection of the pump.

Nevertheless, should a fault occur, or if the delivery capacity decreases, you can perform the following tasks:

- Eliminate any malfunctions as described in chapter 10 on page 28.
- Send the pump to Timmer for repair.



The remaining service life until the next necessary maintenance is shown in the display. See chapter 6.2 on page 19 for details.

12.3 Maintenance schedule

Execute maintenance after 15 million double strokes.

- The maintenance tasks to be executed depend on the implementation conditions in operation.
- Contact Timmer Service if there are any questions.

12.4 Timmer Service

We recommend having Timmer Service perform all recurring maintenance tasks, particularly for the entire pneumatic unit and electrical unit.

Timmer offers a comprehensive service concept in this regard.

13 Decommissioning

13.1 Safety

Personnel are in danger due to improper installation!

- Installation tasks must only be executed by trained personnel.
- Wear personal protective equipment (PSA).

Health impairment due to contact with harmful media!

- Only perform cleaning, repairs, troubleshooting and fault rectification in which the possibility of contact with the medium cannot be excluded, if beforehand you have put on the appropriate personal protective equipment PSA (at least protective clothing, protective gloves, protective goggles).
- Comply with the safety data sheets of the manufacturers and the national laws and directives.

13.2 Execution

- 1. Disconnect the electrical connection of the pump from the supply network.
- 2. Disconnect the compressed air supply line to the pump.
- 3. Execute the necessary cleaning tasks as described in chapter 11 on page 33.



Information on storage is provided in chapter 5 on page 16.

timmer



14 Replacing components

14.1 Safety

A DANGER

Life-threatening danger due to electric current!

Life-threatening danger due to contact with energised components. Switched on electrical components can execute uncontrolled movements.

- Tasks on the pump must only be executed by trained personnel.
- Disconnect the pump from the power supply before performing other tasks.

Personnel are in danger due to improper installation!

- Installation tasks must only be executed by trained personnel.
- Wear personal protective equipment (PSA).

Hazard for personnel due to spraying fluids (media)!

- Ensure that the material hoses and other components can withstand the fluid pressure generated by this pump.
- Check the pump for damage or wear on a regular basis.
- Ensure that the pneumatic valve, the outlet area for the compressed air and the suction side and pressure side are clean and functioning effectively for the medium.
- Depressurise the pump before dismounting. Under some circumstances there can still be a low residual pressure in the pressure chamber that causes medium to spray out.
- Before any dismantling task at the pump, refer to the safety data sheets of the previously pumped chemicals.



Personnel are in danger due enclosed compressed air and pressurised medium!

- Do not service or clean the pump, hoses and the outlet valve for the compressed air while the system is pressurised.
- Before performing tasks on the pump de-pressurise the pneumatic section and the liquid section.
- Shut off the compressed air supply and wait until the residual pressure is dissipated via the outlet valve for the compressed air.
- Empty the pump before replacing components.

Personnel are in danger due to inadequate lighting!

• Only perform installation tasks on the pump in an adequately illuminated and air-conditioned environment.

ATTENTION

Pump damage due to incorrect tightening torque of the housing screws!

- The prescribed tightening torque for the fillister head screws of the housing cover is 2 Nm.
- To prevent damage and leaks of the pump, do not exceed this value.
- Use a calibrated torque wrench.

ATTENTION

Material damage on electrical components due to electrostatic discharge!

- Comply with ESD protective measures for tasks on electronic components (e.g. replacing fuses or printed circuit board).
- Contact Timmer Service if there are any questions. See chapter 2.2 on page 7 for the contact details.



14.2 Position of the parts

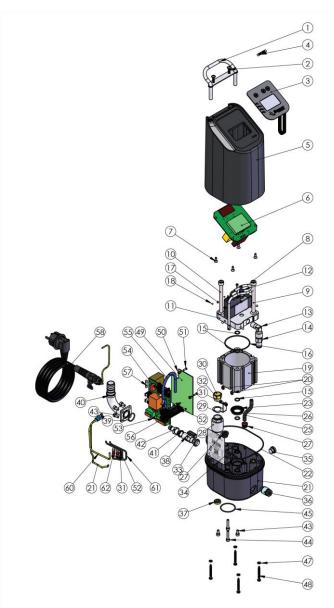
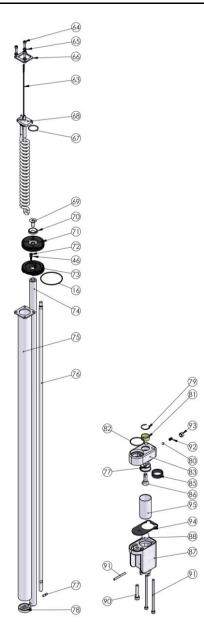
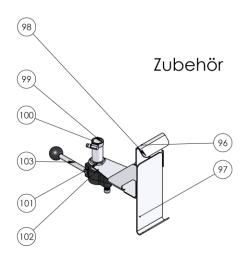


Fig. 9: Upper parts











Replacing components



	Designation	Article	Pcs.	Parts packa replacement	
15	O-ring 9x2	79010014	4		
16	O-ring 59x2	79010381	2		
22	O-ring 133x2	79010909	1		54000181
23	Rod seal	70030056	1		Wearing parts
26	O-ring 30x1.5	70019135	1		package pneumatic
46	O-ring 5x1.5	70010032	2		section
47	PTFE sealing ring	54000244	4	F4000470	
71	Complete piston	70010810	1	54000178	
84	Glue piston	54000091	1	Wearing parts	
82	O-ring 37x2	70010108	1	package liquid and	
81	Slide bearing bushing	70010590	1	pneumatic section	54000182
67	O-ring 25, 12x1.78	70011155	1		Wearing parts
45	O-ring 34x2	70011195	1		package liquid section
39	O-ring 19x2	70011201	1		3001011
94	Sealing plate	54000208	1		
85	Guide band	70030005	1		
87	Suction base	54000188	1		
88	Ball Ø 20	70050015	1		
91	Dowel pin	79011311	1	54000	179
95	Cylinder pipe	54000207	1		
89	Fillister head screw	79010128	1	Wearing part pac base	
90	Fillister head screw	79011310	2		
68	Heater	54000152	1	54000 ⁻	150
63	Temperature sensor	79020016	1	Wearing part packa item 6	ge heating incl.
1	Handle	54000125	1		
2	Fillister head	70011417	2		
3	Membrane keyboard	79010730	1		
4	Cover sticker	54000217	1	Spare part no.	same item
5	Cover	54000221	1	numb	
6	Temperature controller	54000134	1		
7	Countersunk head screw M4x12	70011014	4	<u> </u>	



	Designation	Article	Pcs.	Parts package no. / replacement part no.
8 9	Control cable valve	79020022	1	
	Base plate valve	AZ851ME01	1	
10	Fillister head	79010910	2	
	screw M8x85			
11	Cylinder cover	54000140	1	
12	Straight screw-in	03016008	1	
	threaded fitting			
13	Angle piece	12367507	1	
14	Non-return valve	03170373	1	
17	Ball Ø4,762	79010352	7	
18	Ball Ø3,175	79010046	2	
19	Cylinder pipe	54000089	1	
20	T-slot nut	31601303	2	
21	Lower part of the	54000129	1	
	housing			
24	Push-in cartridge	03908018	1	
25	Exhaust air hose	54000154	1	
27	Screw plug	12779013	1	
28	Non-return valve	21150401	1	
29	Earthing plate	54000151	1	Spare part no. same item
30	Silencer	15018207	1	number
31	Spring washers	70060047	2	
32	Fillister head screw M4x10	79010308	1	
33	Manometer sealing	18300016	1	
34	Lock nut M16 x 1.5	79020011	1	
35	Screw plug	12779007	1	
36	Exhaust air throttle	21128602	1	
00	valve	21120002	1	
37	Silencer	15027206	1	
38	Mini ball valve	20060417	1	
40	Bushing flange	54000085	1	
41	PA sealing ring	15030503	1	
42	Plug-in nipple NW7.2	21380261	1	
43	Fillister head screw M5x10	70060005	6	
44	Fillister head screw M5x25	70010268	2	

Replacing components



	Designation	Article	Pcs.	Parts package no. / replacement part no.
48	Fillister head screw M5x45	70011427	4	
49	Holding plate	54000146	1	
50	Spacer	54000147	3	
51	Countersunk screws M3x10	70060134	3	
52	Fillister head screw M4x6	79010616	3	
53	Hex nut M3	70011734	3	
54	Control board	54000133	1	
55	Sensor hose	54000155	1	
56	Ribbon cable	54000150	1	
57	Fuse	79010926	1	
58	Connection cable PUR	79020014	1	
59	Earthing cable	54000156	1	
60	Earthing cable	54000197	1	
61	Connection cable – heater	54000170	2	
62	Protective cap	79010941	2	
64	Fillister head screw M5x16	70060023	3	Spare part no. same item number
65	Washer M5	79010166	3	namber
66	Holding plate – heater	54000145	1	
69	Countersunk head screw M10x20	70060104	1	
70	Delivery piston disc	54000101	1	
72	Countersunk head srew	70011418	2	
73	Cylinder cover bottom	54000137	1	
74	Piston rod	54000098	1	
75	Riser pipe	54000143	1	
76	Tie rod	54000093	2	
77	Dowel pin	79010771	1	
78	Threaded bridge	54000206	1	
79	Circlip	70011250	1	
83	Suction base cover	54000189	1	



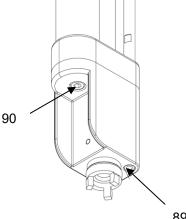
	Designation	Article	Pcs.	Parts package no. / replacement part no.
86	Pressure valve tappet	54000099	1	
92	Compression spring	79011381	1	
93	Pressure relief valve	54000218	1	
80	Ball	79010241	1	
96	IBC container plate	54000171	1	
97	IBC container plate 2	54000175	1	
98	Wing nut	79010944	1	
99	Hose	14023417	1	
100	Hose connector	15087116	1	
101	Screw-in nozzle	10202154	1	Spare part no. same item
102	Sleeve	12170160	1	number
103	Tube closure	5202007	1	
104	Assembly clamping ring	55002010	1	
105	Adapter plate	54000166	1	
106	Oval-head tapping screw	79019510	6	

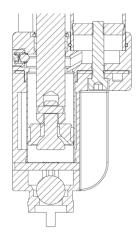


14.3 Replacing the suction base

If the suction base is damaged or clogged it can be replaced or dismounted.

- 1. Disconnect the pump from the power supply and the compressed air.
- 2. Take the pump out of the medium.





89

Fig. 11: Suction base

Suction base - cross section

- 3. Unscrew the screws (item 90, 89).
- 4. Unplug the suction base (item 86).
- 5. Remove the gasket (item 94).
- 6. Clean the suction base or replace the suction base with an original Timmer spare part.



For installation, proceed in the reverse sequence.

14.4 Replacement of the heater

If the heater is damaged or defective, it must be replaced.



- 1. Disconnect the pump from the power supply and the compressed air.
- 2. Take the pump out of the medium.

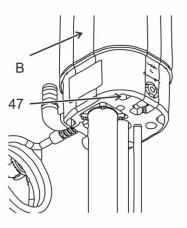


Fig. 12: View from below

- 3. Unscrew the 4 screws in the housing (item 48).
- 4. Take off the upper part of the housing (B).

Note

The following item numbers refer to the exploded drawing in chapter 14.2 on page 41.

- 5. Unscrew the screws (item 10).
- 6. Dismount the exhaust air hose (item 25) and the valve connection cable (from item 8).
- 7. Disconnect the cables from the printed circuit board (item 54) (circuit diagram in the Appendix).
- 8. Remove the complete component.
- Take out the cylinder pipe (item 19).
 When mounting the pipe, pay attention to the proper position of the air slot that is on the lower edge.
- 10. Unscrew the piston (item 71).



To counter the screw use the bore in the piston rod.

- 11. Dismount the cylinder bottom (item 73).
- 12. Remove all connection cables and earthing cable of the heater.
- 13. Remove the holding plate (item 66) with the screws.
- Take an M4 screw and screw it into the heater.
 Now you can pull out the heater with the aid of a pull-out weight.
- 15. For the new heater mount the O-ring.
- 16. Clean the area and re-insert the heater.
- 17. Fix the holding plate in place again with the screws.

Note

- For installation proceed in the reverse sequence.
- Then ensure that all screws, cables and seals are installed.
- Ensure that the O-ring (H) is seated between the upper part and lower part on the correct edge.
- max. torque of screws for fixing the upper part is 1 Nm.

С

D



14.5 Replacing the display

If the display / controller is damaged or defective it must be replaced.

- 1. Disconnect the pump from the power supply and the compressed air.
- 2. Take the pump out of the medium.

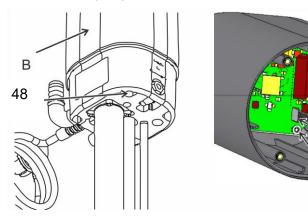


Fig. 13: View from below

View:printed circuit board

F

- 3. Unscrew the four screws in the housing (item 48).
- 4. Take off the upper part of the housing (B).
- 5. Disconnect the connecting cable (C) between printed circuit board and upper part of the housing.
- 6. Disconnect the cable (D) from the printed circuit board in the upper part of the membrane keyboard, by detaching the slider.
- 7. Unscrew the screws (E).
- 8. Take out the printed circuit board.
- 9. Insert a new printed circuit board.

ATTENTION – danger of damaging the surface of the printed circuit board. The existing screws can scratch the printed circuit board when it is being inserted. Carefully insert the printed circuit board.



Note

- For installation proceed in the reverse sequence.
- Then ensure that all screws, cables and seals are installed.
- Ensure that the O-ring (H) is seated between the upper part and lower part on the correct edge.
- max. torque of screws for fixing the upper part is 1 Nm.

14.6 Replacing the fuse

If the fuse is damaged or defective it must be replaced.

- 1. Disconnect the pump from the power supply and the compressed air.
- 2. Take the pump out of the medium.

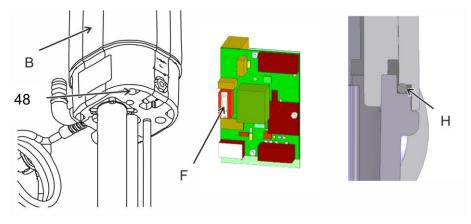


Fig. 14: View from below

Printed circuit board O-ring

- 3. Unscrew the four screws in the housing (item 47).
- 4. Take off the upper part of the housing (B).
- 5. Take out the fuse (F).
- 6. Insert a new fuse (original Timmer spare part).



Mount the upper part of the housing.
 Ensure that the O-ring (H) is seated between the upper part and lower part on the correct edge.

Note

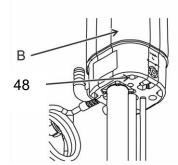
- For installation proceed in the reverse sequence.
- Then ensure that all screws, cables and seals are installed.
- Ensure that the O-ring (H) is seated between the upper part and lower part on the correct edge.
- max. torque of screws for fixing the upper part is 1 Nm.

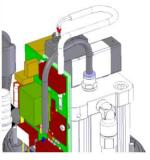
14.7 Replacing the 5/2 directional control valve

If the valve is damaged or defective then it must be replaced.



- 1. Disconnect the pump from the power supply and the compressed air.
- 2. Take the pump out of the medium.





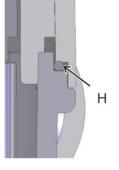


Fig. 15: View from below

5/2 directional control valve

```
O-ring
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- 3. Unscrew the four screws in the housing (item 48).
- 4. Take off the upper part of the housing (B).
- 5. Remove the connection cable and the screws of the valve.
- 6. Replace the valve with the original Timmer spare part.
- 7. Reconnect the cable.
- Mount the upper part of the housing.
 Ensure that the O-ring (H) is seated between the upper part and lower part on the correct edge.

Note

- For installation proceed in the reverse sequence.
- Then ensure that all screws, cables and seals are installed.
- Ensure that the O-ring (H) is seated between the upper part and lower part on the correct edge.
- max. torque of screws for fixing the upper part is 1 Nm.



14.8 Seal kit package

The seals must be replaced at the intervals specified in the maintenance schedule.

- 1. Disconnect the pump from the power supply and the compressed air.
- 2. Take the pump out of the medium.
- Proceed as described in chapter 14.4 on page 48.
 After the heater is dismounted, you can continue dismounting the lower parts (G).

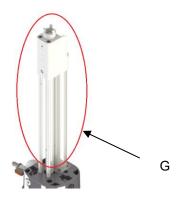


Fig. 16: Lower parts (riser pipe with suction base)

4. Remove the suction base as described in chapter 14.3 on page 48.

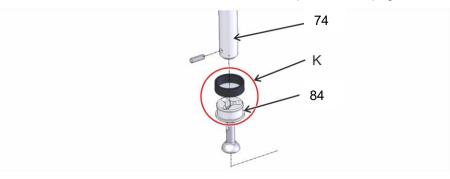


Fig. 17: Glue piston with guide band (K)

5. Dismount the piston rod (item 74).



6. Dismount the glue piston (item 84).



The following item numbers refer to the exploded drawing in chapter 14.2 on page 41.

- 7. Dismount the suction base cover (item 83).
- 8. Dismount the riser pipe (item 75).
- 9. Replace the O-ring.
- 10. Replace all seals with the new seals from the sealing kit package.

Note

- For installation proceed in the reverse sequence.
- Then ensure that all screws, cables and seals are installed.
- Ensure that the O-ring (H) is seated between the upper part and lower part on the correct edge.
- max. torque of screws for fixing the upper part is 1 Nm.



You can get the glue piston with the guide band as spare part in the sealing kit package, from Timmer.



15 Disposal

15.1 Return shipment

Please send the pump to the following address:

Timmer GmbH

Dieselstrasse 37 D-48485 Neuenkirchen, Germany Germany



- Please send the pump in the original packaging, to avoid transport damage.
- The pump must be rinsed out and the surface must be clean.
- If rinsing out is not possible, then the media connections must always be tightly sealed to prevent the medium from running out.
- Always enclose a safety data sheet of the last pumped medium or cleaning agent with the returned pump.



16 Technical data

General data		
Operating conditions	+5 +35°C at maximum 80% relative humidity	
Drive	Pneumatic	
Delivery rate with water	33 cm ³ per double stroke (4 l/min, 240 l/h at 2 Hz)	
Flow rate per piston stroke	Upward approx. 50% – downward approx. 50%	
Stroke count	max. 120 strokes/min. adjustable via exhaust air throttle	
Viscosity (pumped medium)	up to approx. 100,000 mPa/s	
Delivery side connection	Hose connector 19 mm	
Temperature – medium	max 50°C	
Weight	approx. 6.9 kg	
Sound pressure level	85 dB(A)	

Pneumatic data		
Compressed air connection	1⁄4" thread	
Operating pressure	3 to 6 bar compressed air, filtered particle size max. 40 μm, max. supplemental oiling 25 mg/m³	



Electrical data		
Electrical connection	200V-240 V 50/60 Hz	
Electrical cable	H07 BQ-F 3G1,5	
Variable regulation of the heating capacity	0 to 900 W	
Temperature regulator	Electronic	
Temperature adjustment	via display and membrane keyboard	
Temperature range	Adjustable 0-50°C	
Protection class	IP 66	
Power consumption	approx. 950 W	
Integrated electrical controller	Electrical 5/2 directional control solenoid valve	

Material of the parts that come into contact with medium		
Suction and pressure valves	Stainless steel	
Drive housing	РОМ	
Fluid housing	POM/stainless steel	
Suction pipe	Stainless steel	
Fluid ball	Stainless steel	
Electrical housing	ABS	
Suction base	Stainless steel	
Fluid valve seat	FPM	



17 Spare parts

Note

Spare parts are only available in the wear parts packages. The packets vary depending on the selected variant. In this case the spare parts numbers are provided separately.

Use only original Timmer spare parts.

VP sealing kit 54000178

ltem	Article number	Quantity	Description
001	54000244	4	Sealing ring
002	54000091	1	Glue piston
003	70010032	2	O-ring 5x1.5
004	70010108	1	O-ring 37x2
005	70010590	1	Plain bearing bush
006	70010810	1	Complete piston
007	70011155	1	O-ring 25, 12x1.78
008	70011195	1	O-ring 34x2
009	70011201	1	O-ring 19x2
010	70019135	1	O-ring 30x1.5
011	70030005	1	Guide band
012	70030056	1	Rod seal
013	79010014	4	O-ring 9x2
014	79010381	2	O-ring 59x2
015	79010909	1	O-ring 133x2
016	54000208	1	Sealing plate



VP suction base 54000179

Item	Article number	Quantity	Description
001	54000188	1	Suction base
002	70050015	1	Ball Ø20
003	54000207	1	Cylinder pipe
004	79011310	2	Fillister head screw M6x110
005	79010128	1	Fillister head screw M8x40
006	79011311	1	Dowel pin

VP pneumatic section 54000181

ltem	Article number	Quantity	Description
013	79010014	4	O-ring 9x2
014	79010381	2	O-ring 59x2
012	70030056	1	Rod seal
010	70019135	1	O-ring 30x1.5
003	70010032	2	O-ring 5x1.5
006	70010810	1	Complete piston
015	79010909	1	O-ring 133x2
001	54000244	4	Sealing ring



VP liquid section 54000182

ltem	Article number	Quantity	Description
001	54000091	1	Glue piston
002	70010108	1	O-ring 37x2
003	70011155	1	O-ring 25, 12x1.78
004	70011195	1	O-ring 34x2
005	70011201	1	O-ring 19x2
006	70010590	1	Plain bearing bush
007	70030005	1	Guide band
008	54000208	1	Sealing plate



18 Appendix

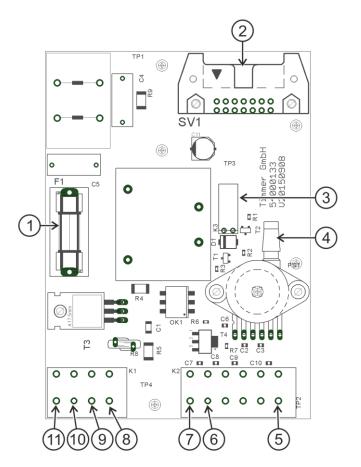


Fig. 18: Circuit diagram

- 1 Fuse
- 2 Controller membrane keyboard
- 3 Valve
- 4 Pressure sensor
- 5 Equipotential bonding
- 6 Temperature sensor

- 7 Temperature sensor
- 8 Heater
- 9 Heater
- 10 N
- 11 L1



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