Operating manual

Original operating manual

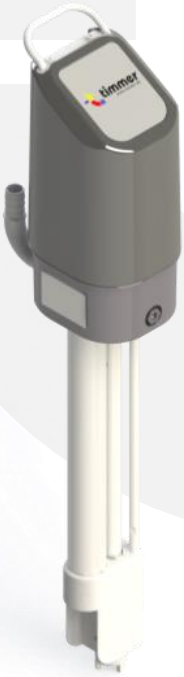
Article No.: 999988076E

Rev. 03 / 04.2019

Glue pump

PTI-D3-O-400

Year of construction: 2020



We reserve the right to make technical changes relative to the presentations and information in this manual, that are necessary for improvement of the product characteristics.

Contents

1 EU Declaration of Conformity

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

The glue pump has been designed and manufactured in accordance with the EC/EU directives:
2006/42/EC Machinery 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
DIN EN 809: 2012-10 Pumps and pump units for liquids – Common safety requirements
DIN EN ISO 4414:2010 Pneumatic fluid power – General rules and safety requirements for systems and their components

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

Neuenkirchen, August 2016 — Managing Director
Place, date

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

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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

- 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.

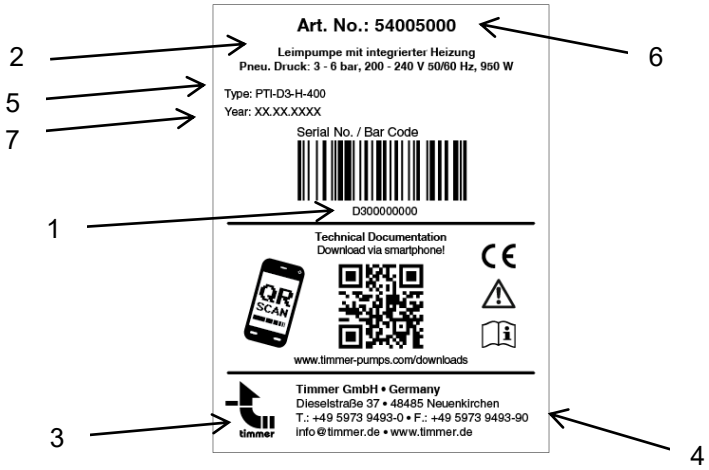


Fig. 1: Rating plate

1	Serial number	5	Type key
2	Product designation	6	Article number
3	Logo	7	Date
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.

⚠ WARNING

The signal word **WARNING** indicates a possible danger.
Failure to comply with the instruction can result in severe or fatal injury.

⚠ CAUTION

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.

▶ Note

- 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 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.

3.12.3 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.

3.12.4 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.

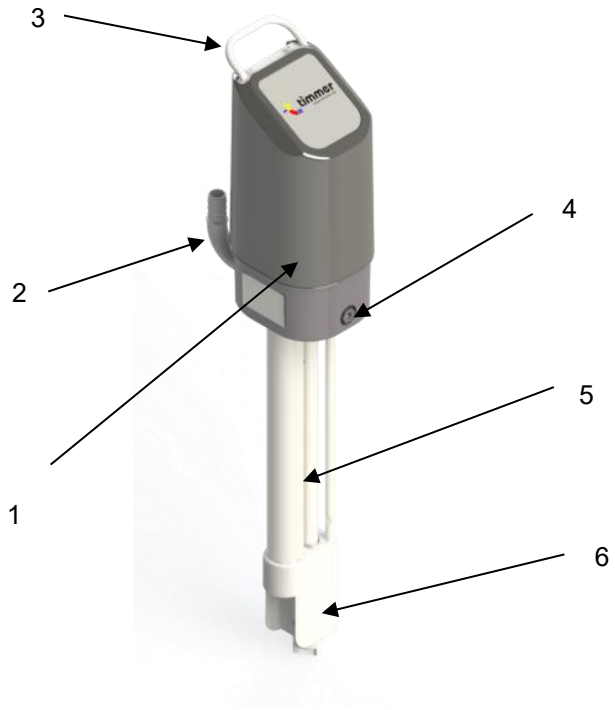


Fig. 2: Device overview

1	Compressed air inlet (concealed)	4	Exhaust air throttle valve
2	Glue outlet	5	Riser pipe
3	Handle	6	Suction unit

7 Installation

7.1 Safety

⚠ WARNING

Personnel are in danger due to improper installation!

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

⚠ CAUTION

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:
  - 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 Mounting in the container

⚠ CAUTION

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 must be fixed in place so that it is stable on the glue bucket (Timmer accessories clamp ring and glue lid), and adjusted to the proper height.

Fig. 3: Mounting on the container

1. Place the pump with the stainless steel cover and the height adjustment element on the glue container.
   The height should be adjusted in such a manner that the suction pipe touches the floor of the container.
2. Ensure that the pump is firmly seated.
3. Mount the delivery hose.
   The delivery hoes must have an inner diameter of at least 3/4" to convey high-viscosity media. If the delivery hose is longer than 1 m, the inner diameter of the hose must be at least 1" or 1¼“.

▶ 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 pneumatic connection as described in the chapter 7.3 on page 18 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 Regulating the delivery rate

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

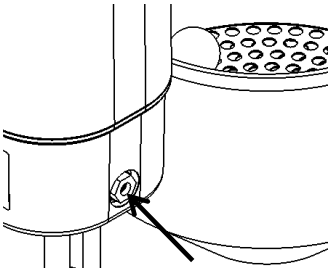


Fig. 4: Exhaust air adjustment

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

▶ Note

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

10 Fault rectification

Note

- Detailed descriptions concerning the procedure are given in chapter 14 on page 30.
- An overview of the position of the components is provided in chapter 14.2 on page 32.
- Contact Timmer-Service if there are any questions. See chapter 2.2 on page 6 for the contact details.

10.1 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
	Wrong exhaust air throttle setting	Set the speed with the exhaust air throttle
	Fluid piston jams	Check resistance
	Pneum. Control valve defective	Test and, if necessary, replace the pneum. control valve
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	Pneum. Control valve clogged	Clean pneumatic 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

11 Cleaning

11.1 Safety

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 approx. 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
4. 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

1. 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

⚠ 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.

⚠ WARNING

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.

⚠ WARNING

Personnel are in danger due to improper installation!

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

⚠ CAUTION

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 22.
- Send the pump to Timmer for repair.

The remaining service life until the next necessary maintenance is shown in the display. See chapter **Fehler! Verweisquelle konnte nicht gefunden w erden.** on page **Fehler! Textmarke nicht definiert.** 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 system.

Timmer offers a comprehensive service concept in this regard.

13 Decommissioning

13.1 Safety

⚠ WARNING

Personnel are in danger due to improper installation!

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

⚠ CAUTION

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 compressed air supply line to the pump.
2. Execute the necessary cleaning tasks as described in chapter 11 on page 25.

▶ Note

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

14 Replacing components

14.1 Safety

⚠ WARNING

Personnel are in danger due to improper installation!

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

⚠ WARNING

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.

⚠ 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.

⚠ CAUTION

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.

14.2 Position of the parts

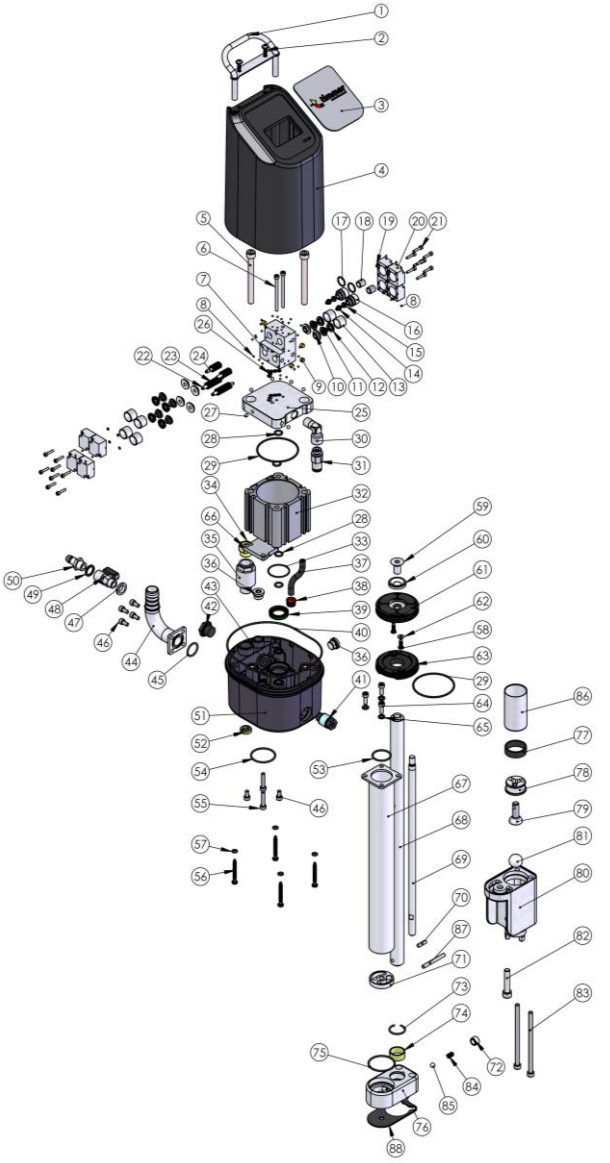


Fig. 5: Parts

	Designation	Article	Pcs.	Parts package no. / replacement part no.	
28	O-ring 9x2	79010014	4	54000184 Wearing part package liquid and pneumatic section	54000185 Wearing parts package pneumatic section
29	O-ring 59x2	79010381	2		
39	Rod seal	70030056	1		
33	O-ring 30x1.5	70019135	1		
58	O-ring 5x1.5	70010032	2		
61	Complete piston	70010810	1		
40	O-ring 133x2	79010909	1		
57	PTFE sealing ring	54000244	4		
26	O-ring 3x1,5	70010031	5		
78	Glue piston	54000091	1		54000186 Wearing parts package liquid section
75	O-ring 37x2	70011239	1		
53	O-ring 25x2	70011046	1		
54	O-ring 34x2	70011195	1		
45	O-ring 19x2	70011201	1		
74	Slide bearing bushing	70010590	1		
77	Guide band	70030005	1		
88	Sealing plate	54000208	1		
80	Suction base	54000188	1	54000179 Wearing part package suction base	
81	Ball	70050015	1		
86	Cylinder pipe	54000207	1		
83	Fillister head screw M6	79011310	2		
82	Fillister head screw M8	79010128	1		
87	Dowel pin	79011311	1		
1	Handle	54000125	1	Spare part no. same item number	
2	Fillister head screw	70011417	2		
3	Film cover	79010914	1		
4	Cover	54000221	1		
5	Fillister head screw M8x85	79010910	2		
6	Fillister head screw M4x60	70060085	2		
7	Valve block	60018341	1		
8	Ball	79010153	33		
9	Silencer	15027227	4		
10	Packing ring (oscillating valve)	60018345	6		
11	Valve piston (oscillating valve)	60018344	6		
12	Piston seal	70020012	6		

	Designation	Article	Pcs.	Parts package no. / replacement part no.
13	Slide bush (oscillating valve)	60018350	6	
14	Piston (oscillating valve)	60018351	2	
15	Piston seal	70020012	6	
16	Insert for spring	60018346	2	
17	O-ring 13x1.5	70010270	2	
18	Slide bearing bushing	70011113	2	Spare part no. same item number
19	O-ring 2x1	70010164	8	
20	Valve cover (oscillating valve)	60018342	8	
21	Fillister head screw M3x14	70011017	16	
22	Valve piston 5/2	60018348	2	
23	Valve seal kit 3/2	25111002	4	
24	Valve piston 3/2	60018347	2	
25	Cylinder plate (oscillating valve)	60018343	1	
27	Ball Ø 4.762	79010352	6	
30	Angle piece	12367507	1	
31	Non-return valve	03170373	1	
32	Cylinder pipe	54000089	1	
34	Silencer	15018207	1	
35	Non-return valve	21150401	1	
36	Lock screw	12779007	2	
37	Exhaust air hose	54000154	1	
38	Push-in fitting	03908018	1	
41	Exhaust air throttle valve	21128602	1	
42	Blind plug M16	79020024	1	
43	Lock nut M16 x 1.5	79020011	1	
44	Bushing flange	54000085	1	
46	Fillister head screw M5x10	70060005	6	
47	Manometer gasket	18300016	7	
48	2/2-way miniature ball valve	20060417	1	
49	PA sealing ring	15030503	1	
50	Barbed fitting	21380261	1	
51	Lower part of the housing	54000129	1	
52	Silencer	15027206	1	

	Designation	Article	Pcs.	Parts package no. / replacement part no.
55	Fillister head screw M5x25	70010268	2	
56	Fillister head screw Ø5 x 40	70011427	4	
59	Countersunk head screw M10x20	70060104	1	
60	Conveyor piston disc	54000101	1	
62	Countersunk screw M5x14	70011418	2	
63	Cylinder cover	54000137	1	
64	Fillister head screw M5x14	70060081	3	
65	Washer	79010166	3	
66	Cover	54000205	1	
67	Riser pipe	54000143	1	Spare part no. same item number
68	Piston rod	54000098	1	
69	Tie rod ø 10	54000093	1	
70	Dowel pin	79010771	1	
71	Threaded bridge	54000206	1	
72	Pressure relief valve	54000218	1	
73	Circlip	70011250	1	
76	Suction base cover	54000189	1	
79	Pressure valve tappet	54000099	1	
84	Compression spring	79011381	1	
85	Ball	79010241	1	

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.

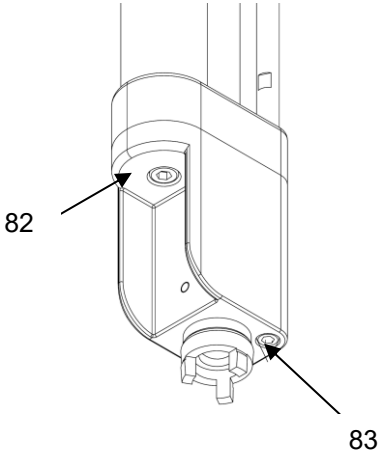
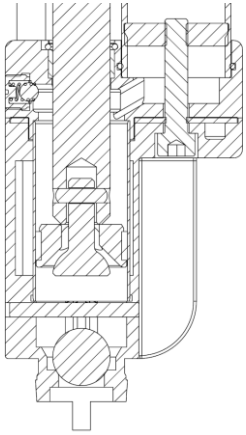


Fig. 6: Suction base



Suction base – cross section

3. Unscrew the screws (item 82, 83).
4. Unplug the suction base (item 80).
5. Remove the gasket (item 88).
6. Clean the suction base or replace the suction base with an original Timmer spare part.

Note

For installation, proceed in the reverse sequence.

14.4 Replacing the oscillating valve

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

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

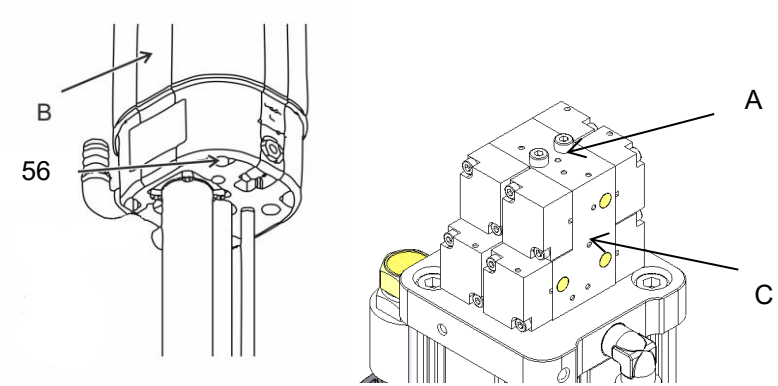


Fig. 7: View from below

3. Unscrew the four screws in the housing (item 56).
4. Take off the upper part of the housing (B).
5. Remove the oscillating valve (C).
6. Install a new oscillating valve (original Timmer spare part).
7. Mount the upper part of the housing.

   Ensure that the O-ring between between the upper part and lower part is seated 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 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.

14.5 Seal kit package

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

1. Disconnect the pump from the compressed air supply.
2. Take the pump out of the medium.
3. Proceed as described in chapter 14.4.
   After the pump is dismounted, the lower parts (G) can be dismounted.

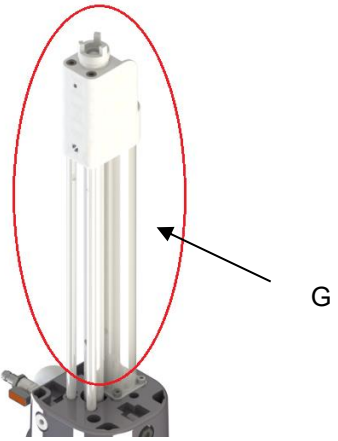


Fig. 8: Lower parts (riser pipe with suction base)

4. Remove the suction base as described in chapter 14.3.

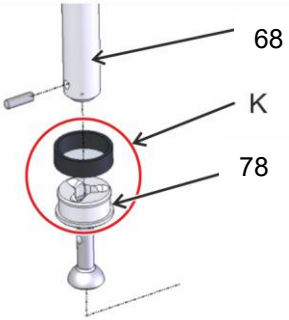


Fig. 9: Glue piston with guide band (K)

5. Dismount the piston rod (item 68).
6. Dismount the glue piston (item 78).

Note

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

7. Dismount the suction base cover (item 76).
8. Dismount the riser pipe (item 67).
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 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.

Note

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

Note

- 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 cm³ 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	¼" thread
Operating pressure	3 to 6 bar compressed air, filtered particle size max. 40 µm, max. supplemental oiling 25 mg/m³

Material of the parts that come into contact with medium	
Suction and pressure valves	Stainless steel
Drive housing	POM
Fluid housing	POM/stainless steel
Suction pipe	Stainless steel
Fluid ball	Stainless steel
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 54000184

Item	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	70011046	1	Complete piston
007	70011155	1	O-ring 25x2
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	70010031	5	O-ring 3x1,5
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 54000185

Item	Article number	Quantity	Description
001	79010014	4	O-ring 9x2
002	79010381	2	O-ring 59x2
003	70030056	1	Rod seal
004	70019135	1	O-ring 30x1.5
005	70010032	2	O-ring 5x1.5
006	70010810	1	Complete piston
007	79010909	1	O-ring 133x2
008	54000244	4	Sealing ring
009	70010031	5	O-ring 3x1,5

VP liquid section 54000186

Item	Article number	Quantity	Description
001	54000091	1	Glue piston
002	70010108	1	O-ring 37x2
003	70011046	1	O-ring 25x2
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

Index

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