

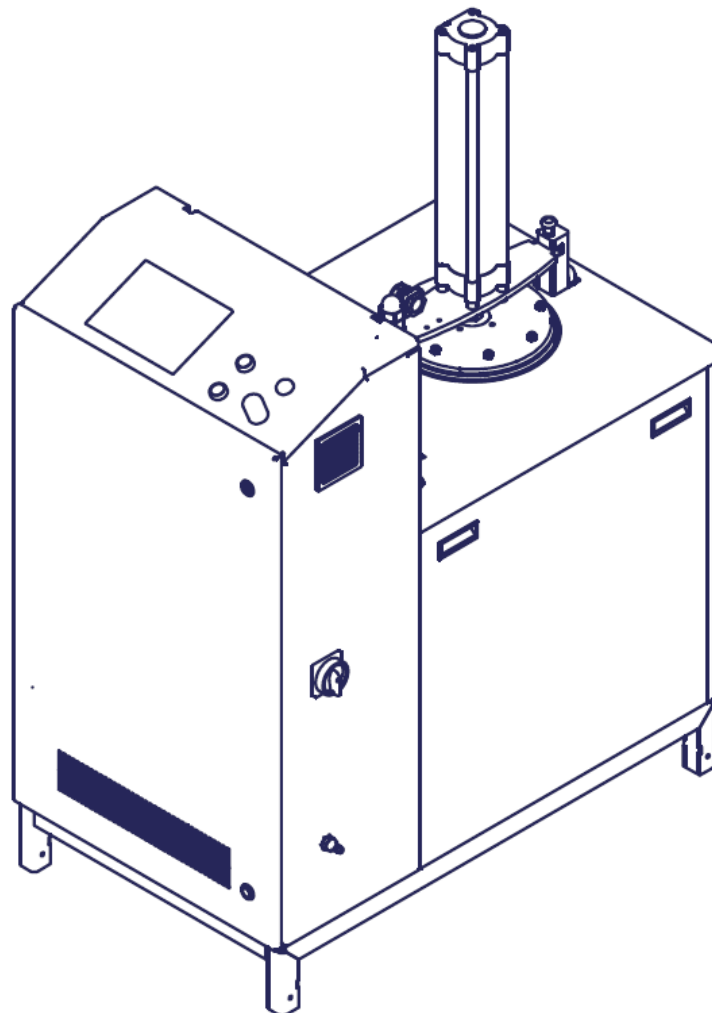


Adhesive Application Solutions | ISO 9001 certified

Dynamelt PUR20 Bag Melter

with Siemens TP700 Controller

Technical Documentation, No. 20-79, Rev.10.25
English - Translation of the original instructions (German)



Information about this manual



Read all instructions before operating this equipment!

It is the customer's responsibility to have all operators and service personnel read and understand this information. Contact your ITW Dynatec customer service representative for additional copies.



NOTICE:

Please be sure to include the serial number of your application system each time you order replacement parts and/or supplies. This will enable us to send you the correct items that you need.

NOTICE:

Most common screws, nuts and washers called out in the manual are not for sale and they can be obtained locally at your hardware Store. Specialty fasteners are available by contacting ITW Dynatec's Customer Service.

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Chapter 1

Declaration of incorporation and conformity

EC declaration of conformity

according to the EU Machinery Directive 2006/42/EC, Annex II 1. A

Translation

Manufacturer

ITW Dynatec GmbH
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40822 Mettmann

Person established in the Community authorised to compile the relevant technical documentation

Andreas Pahl
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Description and identification of the machinery

Product / Article	Bagmelter
Type	Dynamelt PUR, BS, BM
Project number	025_Dynamelt PUR
Function	Melting and supplying of PUR adhesive

It is expressly declared that the machinery fulfils all relevant provisions of the following EU Directives or Regulations:

2006/42/EC	Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) (1) Published in L 157/24 of 09.06.2006
2014/30/EU	Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast) Published in 2014/L 96/79 of 29.03.2014
2014/35/EU	Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits Published in 2014/L 96/357 of 29.03.2014

Reference to the harmonised standards used, as referred to in Article 7 (2):

EN 60204-1:2006-06	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN 349:1993+A1:2008	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN ISO 13850:2008	Safety of machinery - Emergency stop - Principles for design (ISO 13850:2006)
EN ISO 12100:2010-11	Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)

Mettmann, 04.03.2019

Place, Date

S Shirgaonkar

Signature
Shishir Shirgaonkar
Engineering Director

Chapter 2

Safety Instructions

2.1 General Considerations



- All operators and service personnel must read and understand this manual before operating or servicing equipment.
- All maintenance and service on this equipment must be performed by trained technicians.



Read and adhere to the manual!

1. Read and follow these instructions.
Failure to do this could result in severe personal injury or death.
2. Keep the binding rules for accident prevention valid for your country and the place of installation. Also keep the approved qualified technical rules for safety-conscious and professional work.
3. Additional safety instructions and/ or symbols are located throughout this manual. They serve to warn maintenance personnel and operators about potentially hazardous situations.
4. Inspect the machine for unsafe conditions daily and replace all worn or defective parts.
5. Keep work area uncluttered and well lit. Remove all material or things not needed for the production from the workspace of the equipment!
6. All covers and guards must be in place before operating this equipment.
7. Subject to technical modifications without notice!
8. To ensure proper operation of the equipment, use specified electrical and/ or air supply sources.
9. Do not attempt to alter the design of the equipment unless written approval is received from ITW Dynatec.
10. Keep all manuals readily accessible at all times and refer to it often for the best performance from your equipment.

2.2 Warning Labels

1. Read and obey all of the warning labels, signs and caution statements on the equipment.
2. Do not remove or deface any of the warning labels, signs and caution statements on the equipment.
3. Replace any warning labels, signs and caution statements which have been removed or defaced. Replacements are available from ITW Dynatec.

2.3 Safety Symbols in this Manual

Mandatory signs

	General mandatory sign		Wear foot guard!
	Read and adhere to the documentation!		Wear protective gloves!
	Switch the unit voltage-free before working! Main switch OFF!		Wear protective clothing!
	Wear headgear, protective goggles and ear protection!		

Warning signs

NOTE: The dangers and risks exist if the corresponding instructions are not heeded and the precautionary measures are not taken!

	Caution, danger spot! This sign points to possible dangers for life and physical condition or to possible risks for machine and material or to possible risks for environment. The word “DANGER” in addition with this points to possible dangers of life The words “WARNING” and “CAUTION” in addition with this sign point to possible risks of injury. The word “ADVICE” in addition with this sign points to possible risks for machine, material or environment.		Danger, high voltage! This sign points to possible dangers for life and physical condition caused by electricity. Risk of injury, mortal danger!
			Caution, hot surface! This sign points to possible risks of burns. Risk of Burns!
			Caution, high pressure! This sign points to possible risks of injury caused by high pressure. Risk of injury!
			Caution, rotating rolls! This sign points to possible risks of injury caused by inrunning nip (at rolls). Risk of injury!

Prohibition signs

	Fire danger! Smoking prohibited!		Fire danger! Fire and open flames prohibited!
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2.4 Safe Installation and Operation



Read and adhere to the manual!

1. Read this manual before applying electrical power to the equipment. Equipment may be damaged by incorrect electrical connections.
2. To avoid possible failure of hoses, make sure all hoses are routed to avoid kinking, tight radius turns (8" or less) and abrasive contact. Hot-melt hoses should not have prolonged contact with heat-absorbing surfaces such as cold floors or metal troughs. These heat-absorbing surfaces can alter adhesive flow and cause incorrect calibration. Hoses should never be covered with materials that prevent heat dissipation, such as insulation or sheathing. Hoses should be spaced apart from each other, not making direct contact.
3. Do not use adhesive that is dirty or that may be chemically contaminated. Doing so can cause system clogging and pump damage.
4. When adhesive hand-held applicators or other movable applicators are used, never point them at yourself or at any other person. Never leave a hand-held applicator's trigger unlocked when not actually in use.
5. Do not operate the hopper or other system components without adhesive for more than 15 minutes if the temperature is 150° C (300° F) or more. To do so will cause charring of the residual adhesive.
6. Never activate the heads, hand-held applicators and/ or other application devices until the adhesive's temperature is within the operating range. Severe damage could result to internal parts and seals.
7. Never attempt to lift or move the unit when there is molten adhesive in the system.
8. In case of an emergency or exceptional incident, press the emergency stop button in order to stop the unit quickly.
9. Use the unit only as it is intended to.
10. Never let the unit run unattended.
11. Operate the unit only in a faultless and fully functional condition. Check and make sure that all safety devices work in proper form!

Two red circular prohibition signs. The first shows a lit cigarette with a red 'X' over it. The second shows a lit match with a red 'X' over it.	Smoking, fire and open flames prohibited! Fire danger! Make absolutely sure that there is no smoking and no fire being lit in the work area!
--	---

2.5 Explosion/ Fire Hazard

1. Never operate this unit in an explosive environment.
2. Use cleaning compounds recommended by ITW Dynatec or your adhesive supplier only.
3. Flash points of cleaning compounds vary according to their composition, so consult with your supplier to determine the maximum heating temperatures and safety precautions.

2.6 Choice of Adhesive



DANGER! HARMFUL FUMES!

Substance(s) being processed (e.g., melted, pumped, applied) by ITW equipment is at the discretion of the user and beyond ITW Dynatec's control. Any health effects or other safety-related concerns arising from the melting of those particular substances (e.g., hazardous fumes) is the responsibility of the user to identify and mitigate.

2.7 Use of PUR (Polyurethane) Adhesives

1. PUR adhesives emit fumes (MDI and TDI) that can be dangerous to anyone exposed to them. These fumes cannot be detected by the sense of smell. ITW Dynatec strongly recommends that a power-vented exhaust hood or system be installed over any PUR system.
2. Consult with your adhesive manufacturer for specifics about required ventilation.



CAUTION

Because of the nature of PUR adhesives to strongly bond in the presence of moisture, care must be taken to prevent them from curing inside ITW Dynatec equipment.

If PUR adhesive solidifies in a unit, the unit must be replaced. Always purge old PUR adhesive from the system per your adhesive manufacturer's instructions and timetable.

ALLOWING PUR ADHESIVE TO CURE IN A UNIT OR ITS COMPONENTS VOIDS ITW DYNATEC'S WARRANTY.

2.8 Special Considerations When Using Reactive Hot Melt Adhesives

Reactive hot melt (RHM) adhesives are known for superior adhesion to numerous substrates and their exceptional heat, cold and moisture resistant qualities. They are an excellent choice for difficult-to-bond substrates used in a wide range of environments. RHM adhesives chemically cross-link (i.e., cure or thermal-set) to reach maximum bond strength, typically over a period of 24 to 48 hours after being exposed to moisture and/or high temperatures.

The advantages of using RHMs, however, come with special handling requirements. The adhesive must remain sealed from the environment and maintained at low temperatures until it is dispensed, otherwise there is a risk that it will cross-link within the glue application equipment, rendering it impervious to melting when it is re-heated. Most importantly, when over-heated, many RHMs release gases that can be hazardous to humans. These gas emissions are minimized when using the bag melter, however additional ventilation should be considered, depending upon the specific circumstances of the equipment installation.

The following is a list of general operational considerations for the use of RHMs in ITW Dynatec equipment. In addition, it is important to contact your adhesive manufacturer to discuss and verify precautions that must be implemented to prevent damage to equipment and injury to personnel who are working with their products.

1. Assure the workspace has adequate ventilation.
2. Assure the entire adhesive delivery system is sealed from the environment to the greatest extent possible to prevent moisture related adhesive cross-linking.
3. Assure all air is evacuated from the adhesive delivery system as soon as possible after it has been introduced (i.e., when changing hoses, replacing filters, changing adhesive supplies, etc.) to prevent moisture related cross-linking.
The melt equipment should not be left dormant (sealed at ambient temperature) with PUR inside it for longer than recommended by your adhesive manufacturer. This is typically five to seven days for adhesives used in the bag melter, but is chemistry dependent.

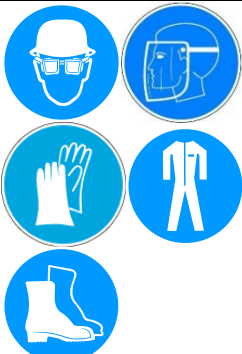
The ITW Dynatec system, especially applicators and nozzles, should be thoroughly purged of adhesive using a PUR neutralizing material if the system will be left dormant for extended time periods.

4. RHM viscosity increases the longer it remains molten within a system and can cross-link due to temperature exposure. Assure the molten adhesive does not sit within the ITW Dynatec equipment at operating temperature for more time than is necessary. Utilization of the Temperature Standby feature will ensure a temperature drop occurs automatically after pre-determined periods of pump inactivity.
5. Turn off any gear pumps in the system if it will not be used for a period of five minutes or more except in circumstances where glue recirculation is necessary. Doing so will reduce potential glue degradation.
6. When using spray applicators, the nozzles must be thoroughly cleaned on a regular basis to prevent the adhesive from cross-linking inside or on the surface of the air passageways.
7. The adhesive applicators must be either fully sealed or thoroughly cleaned with PUR neutralizing material if the system is to be idle for extended time periods. Otherwise, RHM adhesive present in the exposed orifices of the applicator could cross-link, clogging them.
8. Recommended adhesive application temperatures should never be exceeded. Higher application temperatures may result in higher adhesive viscosities and thermal related cross-linking.
9. The use of air dryers such as ITW Dynatec PN 117944 or 117974 can be very helpful in preventing moisture from infiltrating the melt system via the compressed air supply.
10. There are many advantages to using RHMs. However, the proper handling of these unique adhesives is imperative to assure success without damage to equipment or injury to personnel.

ITW Dynatec equipment has been engineered to minimize the effort required to assure safe and proper handling of RHMs.

ALLOWING PUR ADHESIVE TO CURE IN A UNIT OR ITS COMPONENTS VOIDS ITW DYNATEC'S WARRANTY. Please consult with your ITW Dynatec representative to discuss these topics in further detail, if necessary.

2.9 Eye Protection & Protective Clothing



WARNING
EYE PROTECTION REQUIRED
PROTECTIVE CLOTHING REQUIRED

1. It is very important that you **PROTECT YOUR EYES** when working around hot melt adhesive equipment!
2. Wear a face shield conforming to ANSI Z87.1 or safety glasses with side shields which conform to ANSI Z87.1 or EN166.

3. Failure to wear a face shield or safety glasses could result in severe eye injury.
4. It is important to protect yourself from potential burns when working around hot melt adhesive equipment.
5. Wear protective gloves and long-sleeved, protective clothing to prevent burns that could result from contact with hot material or hot components.
6. Always wear steel-reinforced safety shoes.

2.10 Electrical



DANGER **HIGH VOLTAGE**

1. Dangerous voltages exist at several points in this equipment. To avoid personal injury, do not touch exposed connections and components while input power is on.
2. Disconnect, lockout and tag external electrical power before removing protective panels.
3. A secure connection to a reliable earth ground is essential for safe operation.
4. An electrical disconnect switch with lockout capability must be provided in the line ahead of the unit. Wiring used to supply electrical power should be installed by a qualified electrician.
5. Notify the maintenance personnel immediately, if cables are damaged. Provide for exchanging the defective components immediately.

2.11 Lockout/ Tagout



Switch the unit voltage-free before working! **Main switch OFF!**

1. Follow OSHA 1910.147 (Lockout/ Tagout Regulation) for equipment's lockout procedures and other important lockout/tagout guidelines.
2. Be familiar with all lockout sources on the equipment.
3. Even after the equipment has been locked out, there may be stored energy in the application system, particularly in the capacitors within the panel box. To ensure that all stored energy is relieved, wait at least one minute after removing power before servicing electrical capacitors.

2.12 High Temperatures



WARNING HOT SURFACE

1. Severe burns can occur if unprotected skin comes in contact with molten adhesive or hot application system parts.
2. Face shields (preferred) or safety glasses (for minimum protection), gloves and long-sleeved clothing must be worn whenever working with or around adhesive application systems.

2.13 High Pressure



WARNING HIGH PRESSURE PRESENT

1. To avoid personal injury, do not operate the equipment without all covers, panels and safety guards properly installed.
2. To prevent serious injury from molten adhesive under pressure when servicing the equipment, disengage the pumps and relieve the adhesive system's hydraulic pressure (i.e. trigger the heads, hand-held applicators, and/or other application devices into a waste container) before opening any hydraulic fittings or connections.
3. **IMPORTANT NOTE:** Even when a system's pressure gauge reads "0" psi, residual pressure and trapped air can remain within it causing hot adhesive and pressure to escape without warning when a filter cap or a hose or hydraulic connection is loosened or removed. For this reason, always wear eye protection and protective clothing.
4. Either of the two High Pressure symbols shown may be used on ITW Dynatec equipment.
5. Keep the given operating pressure.
6. Notify the maintenance personnel immediately, if hoses or components are damaged. Provide for exchanging the defective components immediately.

2.14 Protective Covers



WARNING DO NOT OPERATE WITHOUT GUARDS IN PLACE

1. Keep all guards in place!
2. To avoid personal injury, do not operate the application system without all covers, panels and safety guards properly installed.
3. Never get your extremities and/or objects into the danger area of the unit. Keep your hands away from running parts of the unit (pumps, motors, rolls or others).

2.15 Servicing, maintenance

1. Only trained personnel are to operate and service this equipment.
2. Before any service work disconnect the external power supply and the pressure air supply! See 7.3 and 7.4.
3. Never service or clean equipment while it is in motion. Shut off the equipment and lock out all input power at the source before attempting any maintenance.
4. Follow the maintenance and service instructions in the manual.
5. Keep the maintenance rates given in this documentation!
6. Any defects in the equipment that impact safe operation have to be repaired immediately.
7. Check screws that have been loosened during the repair or maintenance, if they are tight again.
8. Replace the air hoses in preventive maintenance regularly, even if they have got no viewable damages! Adhere to the manufacturers` instructions!
9. Never clean control cabinets or other houses of electrical equipment with a jet of water!
10. Adhere to the current safety data sheet of the manufacturer when using hazardous materials (cleaning agents, etc.)!

2.16 Cleaning Recommendation

- Filters are disposable and need to be replaced regularly. DO NOT boil in mineral oil, solvents or water; the sealant used in filter assembly may become brittle and very likely disintegrate when boiled.
- When cleaning other components in mineral oil, remove all non-metallic items (O-rings, seals, filter cartridge, etc.) away from chemicals before components are subjected to hot mineral oil cleaning.
- If there is not a specific rebuild kit available or directions on how to clean a part, please treat it as a replacement item and do not attempt to clean/rebuild.

2.17 Secure transport

1. Examine the entire unit immediately after receipt, if it has been delivered in perfect condition.
2. Let damages in transit certify by the carrier and announce them immediately to the ITW Dynatec.
3. Use only lifting devices that are suitable for the weight and the dimensions of the equipment (see drawing of the equipment).
4. The unit has to be transported upright and horizontally!
5. The unit has to cool down to room temperature before packaged and transported.
6. If your unit is a Dynamelt™ PUR Bag Melter, swivel the pneumatic cylinder in and lower the platen down in the feed tube.

2.18 Treatment for Burns from Hot Melt Adhesives

Measures after being burned:

1. Burns caused by hot melt adhesive must be treated at a burn center. Provide the burn center's staff a copy of the adhesive's M.S.D.S. to expedite treatment.
2. Cool burnt parts immediately!
3. Do not remove adhesive forcibly from the skin!
4. Care should be used when working with hot melt adhesives in the molten state. Because they rapidly solidify, they present a unique hazard. Even when first solidified, they are still hot and can cause severe burns.
5. When working near a hot melt application system, always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothes that cover all vulnerable parts of the body.
6. Always have first-aid information and supplies available.
7. Call a physician and/or an emergency medical technician immediately. Let the burns medicate by a medic immediately.

2.19 Measures in case of fire

1. Please heed that not covered hot parts of the engine and molten hot melt may cause heavy burns. Risk of burns!
2. Work very carefully with molten hot melt. Keep in mind that already jelled hot melt can be very hot, too.
3. When working near a hot melt application system, always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothes that cover all vulnerable parts of the body!

Measures in case of fire:

Wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothes that cover all vulnerable parts of the body.

Fire fighting burning hot melt:

Please keep attention to the safety data sheet given by the adhesive manufacturer.

	EXTINGUISHING FIRE <i>Appropriate extinguishing agents:</i> Foam extinguisher, Dry powder, Spray, Carbon dioxide (CO₂), Dry sand. <i>For safety reasons not appropriate extinguishing agents:</i> None.
---	---

Fire fighting burning electrical equipment:

Appropriate extinguishing agents:
Carbon dioxide (CO₂), Dry powder.

2.20 Keep attention to environmental protection standards

	1. When working on or with the unit, the legal obligations for waste avoidance and the duly recycling / disposals have to be fulfilled. 2. Keep attention, that during installations, repairs or maintenance matters hazardous to water, like adhesive / adhesive scrap, lubricating grease or oil, hydraulic oil, coolant and cleaner containing solvent do not pollute the ground or get into the canalization! 3. These matters have to be caught, kept, transported and disposed in appropriate reservoirs! 4. Dispose these matters according to the international, national and regional regulations.
---	---

Chapter 3

Description and Technical specifications

3.1 Intended conditions of use

3.1.1 Intended conditions of use

The Dynamelt PUR Bag Melter may be used only to melt and supply suitable materials, e.g. adhesives. When in doubt, seek permission from ITW Dynatec.

The unit is individually limited by a mechanical over temperature protection going with the adhesive that will be worked with; (see type plate "over temperature protection"). The maximum working temperature is 190°C (374°F).



If the unit is not used in accordance with this regulation, a safe operation cannot be guaranteed.

The operator - and not ITW Dynatec - is liable for all personal injury or property damages resulting from unintended use!



To the intended conditions of use also belongs, that you

- read this documentation,
- heed all given warnings and safety advices,
- do all maintenance within the given maintenance rates.

Any other use is not intended.

3.1.2 Unintended Use, Examples

The Bag Melter may not be used under the following conditions:

- In defective condition.
- In a potentially explosive atmosphere.
- With unsuitable operating/processing materials.
- When the values stated under Specifications are not complied with.

The Bag Melter may not be used to process the following materials:

- Toxic, explosive and easily flammable materials.
- Erosive and corrosive materials.
- Food products.

3.1.3 Residual Risks

In the design of the Bag Melter, every measure was taken to protect personnel from potential danger. However, some residual risks cannot be avoided.

Personnel should be aware of the following:



- Risk of burns from hot material.
- Risk of burns from hot Bag Melter's components.
- Risk of burns when conducting maintenance and repair work for which the system must be heated up.
- Risk of burns when attaching and removing heated hoses.
- Material fumes can be hazardous. Avoid inhalation. If necessary, exhaust material vapors and/or provide sufficient ventilation of the location of the system.
- Risk of pinching parts of the body at running parts of the Bag Melter (pumps, motors, rolls or others).
- The safety valves may malfunction due to hardened or charred material.

3.1.4 Technical changes

Any kind of technical changes having impact to the security or the operational liability of the unit should only be done by written agreement of ITW Dynatec. Suchlike changes made without given a corresponding written agreement will lead to immediate exclusion of liability granted by ITW Dynatec for all direct and indirect subsequent damages.

3.1.5 Using components of foreign make

ITW Dynatec takes no responsibility for consequential damages caused by using components or controllers of foreign make that have not been provided or installed by ITW Dynatec.

ITW Dynatec does not guarantee that components or controllers of foreign make used by the operating company are compatible to the ITW Dynatec -unit.

3.1.6 Start-up operation

We recommend asking for an ITW Dynatec technician for the start-up operation, to ensure a functioning unit. Let yourself and the people working with or working on the unit be introduced to the unit on this occasion. ITW Dynatec takes no responsibility for damages or faults caused by any self-contained start-up.

3.2 Technical specifications

Environmental:

Storage/ shipping temperature	-40°C to 70°C (-40°F to 158°F)
Ambient service temperature (operation)	-7°C to 50°C (20°F to 122°F)
Noise emission.....	the acoustic pressure level measured according to EN 13023 does not exceed the value of 80 dB (A).
Exposure to fumes.....	Fumes of the melting adhesive might come out of the warm tank when opening it.

Physical:

Dimensions.....	see dimensional layouts in Ch.9
Tank capacity.....	10 kg/ 22 lbs
Adhesive bag reserve, bag size:.....	20 kg
Feed tube -Ø:.....	EU: Ø 282 mm or US / Japan: Ø 288 mm
System	Adhesive circulating (supply and return), or not circulating (only supply)
Number of heads/ hoses	max. 4 (supply) / max. 4 (return)
Number of internal temperature zones	3
Pump sizes	0.6 to 20 cm³/rev
Number of pumps.....	max. 2 single or dual pumps
Number of motors.....	max. 2 three phased gear motor, power: 0.5 kW
Hose connections.....	max. 4, screwed DN 8, 10 or 16 (for supply and/or return)
Proximity switch on pneumatic cylinder (Level control).....	1x indication "bag empty", or 2x indications "bag almost empty" and "bag empty"
Adhesive filter	Filter cartridge in filter block
Pneumatic pressure relief valve.....	max. 4 (for supply and/or return, with or without regulation)
Pressure Transmitter	max. 4
Weight, empty	ca. 250 kg/ 552 lb.
Adhesive type	PUR Polyurethane adhesives

Electrical:

Power supply	see wiring diagram 230 VAC 3ph 50/60 Hz, or 400 VAC 3ph Y 50/60 Hz
Tank wattage	8 kW
Power consumption, system maximum	9 Zones: 15 kW, 32A 17 zones: 52KW, 50A
Temperature sensor	Pt 100
Electrical connectors.....	If 9 zones: max. 2 Hoses + Applicators and 2 AUX If 17 zones: max. 4 Hoses + Application heads and 6 Hoses or AUX

Pressurized Air:

Air pressure supply.....	6 bar (87 psi)
--------------------------	----------------

Performance:

Operating temperature	up to max. 190°C (374°F)
Over temperature protection:.....	190°C (374°F)
Adhesive temperature control range	40°C to 190°C (100°F to 374°F)
Adhesive viscosity	500 to 50,000 Centipoise
Warm-up time	ca. 1 hour (adhesive dependent)
Adhesive pressure.....	up to max. 96 bar (1392 psi)
Adhesive delivery rate.....	Pump dependent (e.g. 0,27 kg/min (0,60 lb./min), at 4,5 cm³ gear pump)
Adhesive melt rate (depends on adhesive used).....	adhesive dependent
Recommended maximum pump speed	70 revolutions per minute

Controller:

Controller	SPS SIEMENS S7 with/without Touch Panel
Display languages	English, German
Operating temperature control range	up to max. 190°C (374°F)
Accuracy of the temperature control.....	± 1°C (1°F)
Standby-temperature adhesive (factory setting / adjustable on site).....	80°C (176°F)
Limits for high and low temperature, relating to the set value (factory setting / adjustable on site)	± 10°C (Δ18°F)
Temperature control zones.....	max. 9 / 17
Zones names	freely selectable
Temperature Standby.....	yes
High and low temperature alarms	yes
Sensor open alarm	yes
Interlock / ready function.....	yes
Password protection	yes
Sequential heating.....	yes (heating priority tank, hose, head)
Weekly timer / Seven-day Scheduler	yes
Measuring system	metric / imperial system

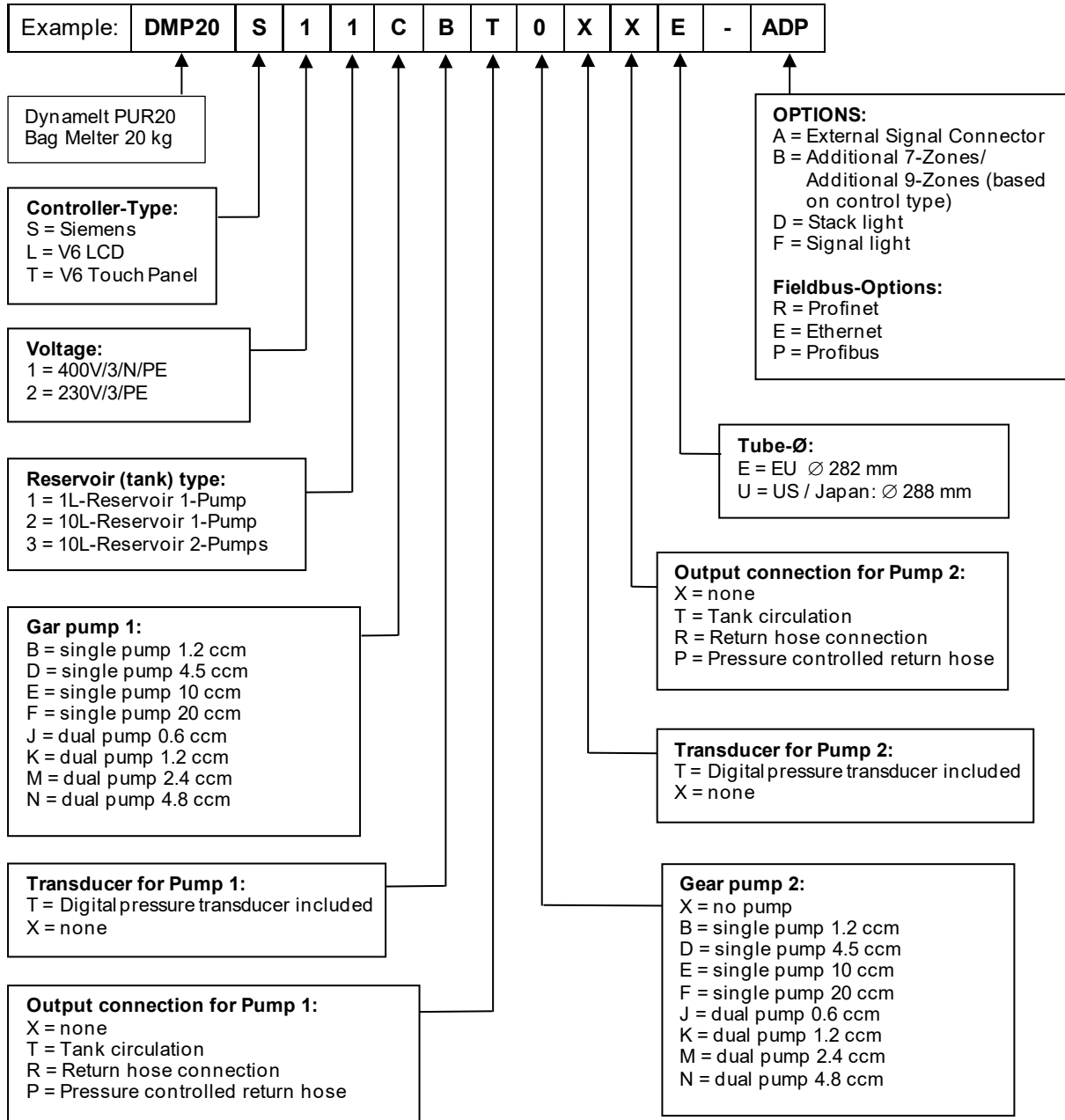
Other:

CE- Conformity.....	yes
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3.2.1 Model Designation Guide

Smart-
Number:

DMP20	X	X	X	X	X	X	X	X	X	X	-	XXX
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3.3 Description Dynamelt PUR Bag Melter

The Dynamelt PUR Bag Melter is part of an adhesive application system, which consists usually of a melter with control, heated hoses and applicators. Within the Bag Melter, the adhesive will be molten and the melt will be fed.

The adhesive application system can be used as a circulating or non-circulating system. This depends on the application type respectively type of the application head.

Circulating system

In the circulating system the Bag Melter and the application head will be interconnected with supply and return hoses. The excess amount of adhesive will be returned via the return hose into the tank. During the operation an adhesive-circulation takes place, because the gear pump feeds the adhesive continuously.

Non-circulating system

In the non-circulating system, the Bag Melter and the application head will be interconnected only with supply hoses. An adhesive-circulation does not take place.

Feed tube, Pneumatic cylinder, Platen, Melting plate

The adhesive bag will be put into the feed tube. The pneumatic cylinder is mounted on a pivoting frame and will be arrested over the opening of the feed tube. A control valve activates the pneumatic cylinder. The pneumatic cylinder presses with the platen the adhesive bag on the heated surface of the melting plate. The melting temperature of the used adhesive will be set according to the manufacturer's information by using the Touch Panel. The contact pressure will be adjusted by using the pressure regulator. The higher pressure, the higher melting capacity and vice versa. The contact pressure has to be adapted to the needed melting capacity. The adhesive melts steady going. See chapter "Pneumatic cylinder, Pneumatics for platen".

Proximity switch

There are one or *optional* two proximity switches at the pneumatic cylinder, who switch at the lower position of the pneumatic cylinder. The magnetic switches send a signal to the controller and this indicates a message "bag empty" and / or "bag almost empty" (*optional*) to the operator. A stack light and a horn can be mounted *optionally*. See chapter "Level control in the feed tube, proximity switch".

Basic tank, Filter block

The molten adhesive flows through boreholes of the melting plate into the subjacent basic tank. Depending on the version, the Bag Melter is equipped with one or two filter blocks under the basic tank. Each filter block is equipped with heating cartridges, temperature sensors, pneumatic pressure relief valve and adhesive filter. A melting aid is installed in the basic tank as an additional heating. The basic tank and all parts that have contact with the adhesive are non-stick coated to make cleaning easy and to avoid sticking of adhesive. The tank is equipped with a mechanical over temperature protection. See chapter "Over temperature protection".

Gear pump

At each filter block a single or dual pump is mounted. Gear motor drives the pump. The speed of the gear pump / gear motor can be regulated manually or automatically in relation to the machine speed. The adhesive pressure will be built through feeding of the gear pump. See chapter "Gear Pump".

Adhesive filter

At each filter block for single pump an adhesive filter and at each filter block for dual pump two adhesive filters are mounted. The molten adhesive flows through the bottom hole of the basic tank to the gear pump and will be fed from the pressure side of the pump into the appropriate filter. The filtered adhesive will be fed through heated hoses to the application head.

Pneumatic pressure relief valve (pprv)

At the Dynamelt PUR Bag Melter pneumatic pressure relief valves (pprv) are used to offer different functionality. In general, the main function is always identical. The air pressure that is supplied to the short stroke cylinder defines by a ratio of approx. 1:16 the adhesive pressure that causes the pprv to open and to relief the adhesive over pressure back to the tank.

These different functions are possible:

- Standard over-pressure relief function
- Tank circulation, option
- Pressure controlled return, option (Circulating system using return hoses and pneumatic pressure relief valves)

Refer to chapter "Pneumatic pressure relief valve".

Adhesive pressure

The adhesive pressure in the system depends on following aspects:

- Temperature and viscosity of the adhesive
- Speed and size of the gear pump
- Diameter (size) and length of the heated hoses
- Size and number of the application modules
- Pressure setting of pprv for supply / return

Pressure sensor

Pressure sensors can be mounted depending on the version. A pressure sensor measures respectively monitors the adhesive pressure respectively the supply pressure. The measured value will be displayed on the Touch Panel.

Adhesive bag, PUR-adhesive:

The whole bottom of the adhesive bag has to be removed up to 2 cm edge (a template is recommended) and put in the feed tube.

The PUR-adhesive is optimal protected during the melting process. It stays in its original bag and is thereby not exposed to air humidity. Untimely cross-linking will thereby be avoided. The thermal impact of adhesive is very low and the viscosity is very constant, because not more adhesive will be molten as adhesive is taken off. Thereby a constant application quality is ensured.

If the unit is off, the adhesive is separated from the air humidity because the packaging foil is pressed on the sidewalls of the feed tube and that hinders entering air.

PUR-adhesives react with air humidity. To avoid blocked nozzles, slot dies or applicators, these parts have to be protected airtight with PUR cleaner immediately after production stop.

Nozzles could be protected e.g. with protection caps filled with PUR-cleaner, mounted immediately after production stop. Slot dies could be protected by a pan filled with PUR-Cleaner. Immediately after production stop you dunk the slot die into this pan.

The adhesive bag within the feed tube stays clean and so it could be reused several times or purged problem-free. After being pressed out completely, only the pressed package is left over and can be purged problem-free.

Exhaust-Kit (optional)

An exhaust-kit can be mounted on the cover of the Bag Melter, allowing the vapors escaping during the adhesive bag change to be exhausted. The exhaust unit will be provided by the customer.

Pressure switch (mounted on the rear side of the control cabinet) (optional)

Depending on the version, pressure switches can be installed, which monitor the air inlet pressure and generate an alarm message if the inlet pressure falls below the defined inlet pressure.

Hose connections

At each filter block, you can connect two heated hoses for supplying the application heads with adhesive.

Depending on the version the heated hoses for the return will be connected to the tank either at the standard return hose connections or at the return regulating valve that is regulated by pressure regulator. Refer to chapter "Pneumatic pressure relief valve".

Applicator

The Applicator applies the adhesive to the substrate. See Applicator's manual.'

NOTE: The pictures and illustrations in this manual are partially sample pictures!

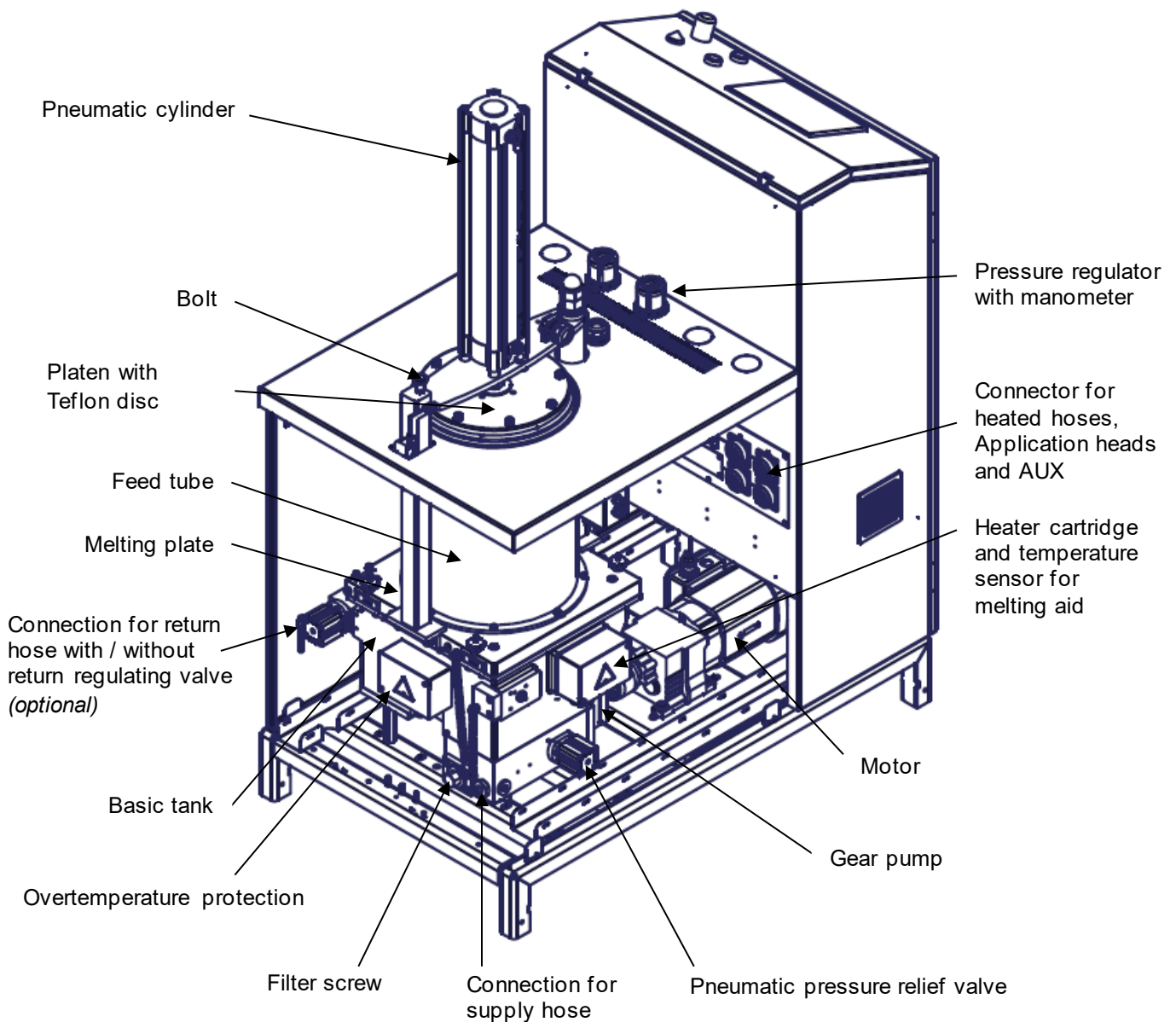


Illustration: Dynamelt™ PUR Bag Melter - components

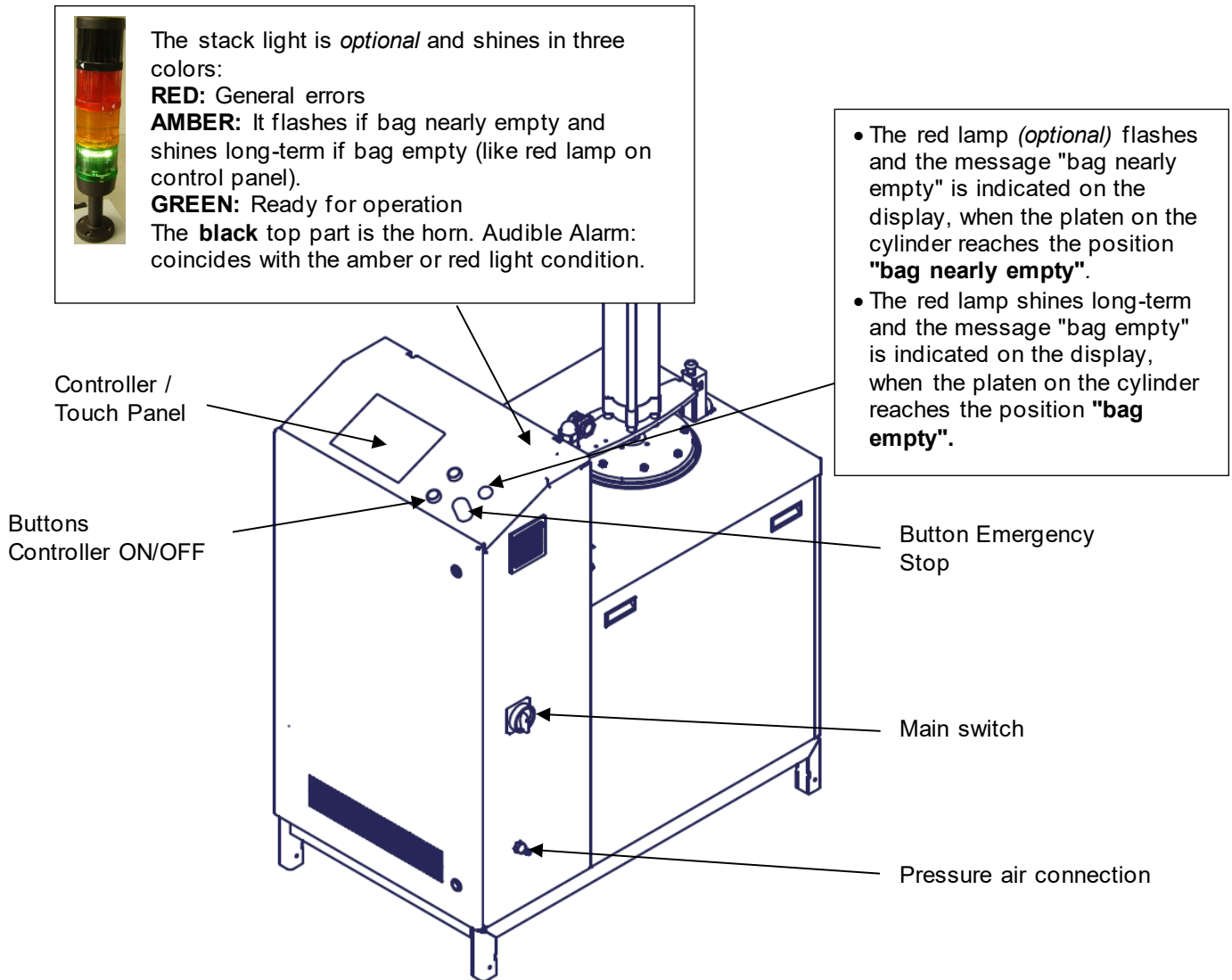


Illustration: Dynamelt™ PUR Bag Melter – components

3.3.1 Function Description of the components, switches and buttons on the control cabinet

Component	Function Description
Main switch	The main switch switches the power on and off. Perhaps not all circuits (such as signals, reference voltage, etc.) are switched off by the main switch. Refer to wiring diagram.
Controller / Touch Panel	All settings and controls are performed over the Controller respectively the Touch Panel. See chapter 6 "Controller".
Button Controller ON	By pressing this button, the power contactor will be released.
Button Controller OFF	By pressing this button, the power contactor will be switched off.
Button Emergency Stop	By pressing this button, all power circuits will be turned off and the unit will be stopped immediately. This button must be unlocked in order to start-up the unit again.

Frequency inverter (optional):	The frequency inverter times the number of revolution of the pump-motor according to the line speed. The number of revolution affects the application volume / weight of the adhesive and is adjustable 1 to 70 rpm (see calculating application volume or weight under chapter "gear pump"). In case of perturbation of the frequency inverter, please act in accordance with the instruction manual (to be found on the CD of the documentation) and save the changes by pressing the reset-button FN.
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3.4 Gear pump

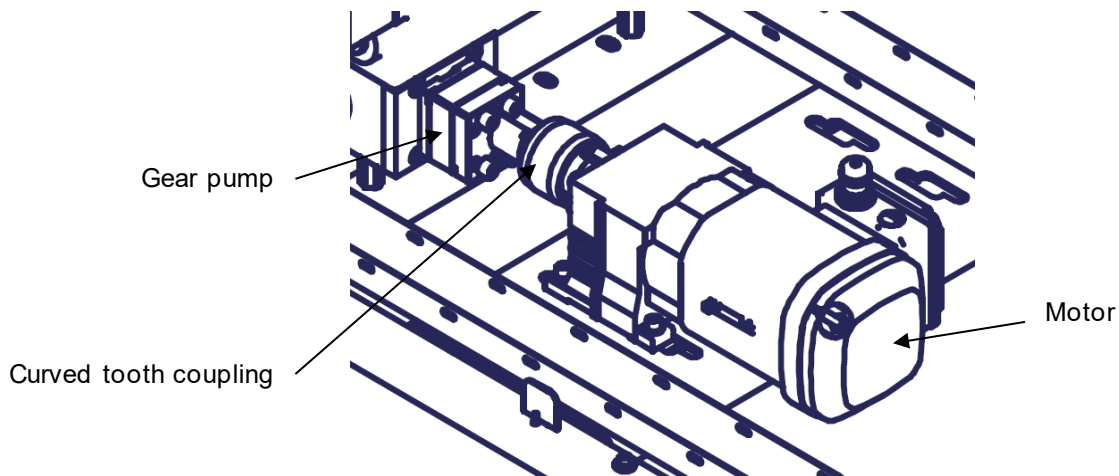


Illustration: Gear pump

At the filter block a gear pump is mounted.

The molten adhesive flows through the bottom hole of the tank to the gear pump. There it is fed from the pressure side of the pump into the appropriate filters. The adhesive pressure will be built through feeding of the gear pump.

A gear motor drives the gear pump. You can adjust the speed regulation of the gear pump / motor manually or automatically in relation to the machine speed.

The speed - rpm - will be adjusted at and displayed on the Touch Panel.



CAUTIONS

- Gear pump is not corrosion-resistant! Do **NOT** run gear pump with water or other corrosive media! Danger of corrosion! No guarantee!
- Never run the gear pump without a suitable medium (like adhesive), but always with adhesive or suitable cleaner only! Adhere to the current safety data sheet of the manufacturer when using hazardous materials (cleaning agents, etc.).
- The rotating direction of the pump has to be compellable clockwise (right).
- Do not exceed the gear pump speed over 70 rpm!
- Due to normal wastage, the pumps could get leaky at the shaft sealing.
- Check weekly visual the shaft sealing of the gear pump.
If it's leaky, send the gear pump to ITW Dynatec for repair.
- We recommend stocking a gear pump for replacement!

Type and size of gear pumps

Single pumps: 0.6 / 1.2 / 2.4 / 4.5 / 10.0 / 20.0 cm³/rev.

Dual pumps: 2 x 0.6 / 1.2 / 2.4 / 4.8 cm³/rev.

Single pump, feed rate

A single pump has a suction hole and an outlet hole.

Example: 10 cm³/rev. = the pump feeds 10 cm³ per revolution.

Dual pump (optional), feed rate

A dual pump has two suction holes and two outlet holes.

Example: 2 x 1.2 cm³/rev. = the pump feeds 2 x 1.2 cm³ per revolution.

Calculation of volume

Example (when a pump 10 cm³/rev. is mounted):

If you multiply 10 cm³ per revolution with the displayed speed you get the volume of the adhesive per minute cm³/rev. (and per outlet if multiple pump).

Formula: feed volume cm³/rev. x speed r/min = volume per minute

Example: 10 cm³/rev. x 5 r/min = 50 cm³/min.

Calculation of weight

When you multiply the volume with the unit weight of the adhesive you will get the weight of the adhesive per minute.

Formula: Volume/min x unit weight of the adhesive = weight of adhesive per minute.

3.5 Curved tooth coupling, coupling sleeve

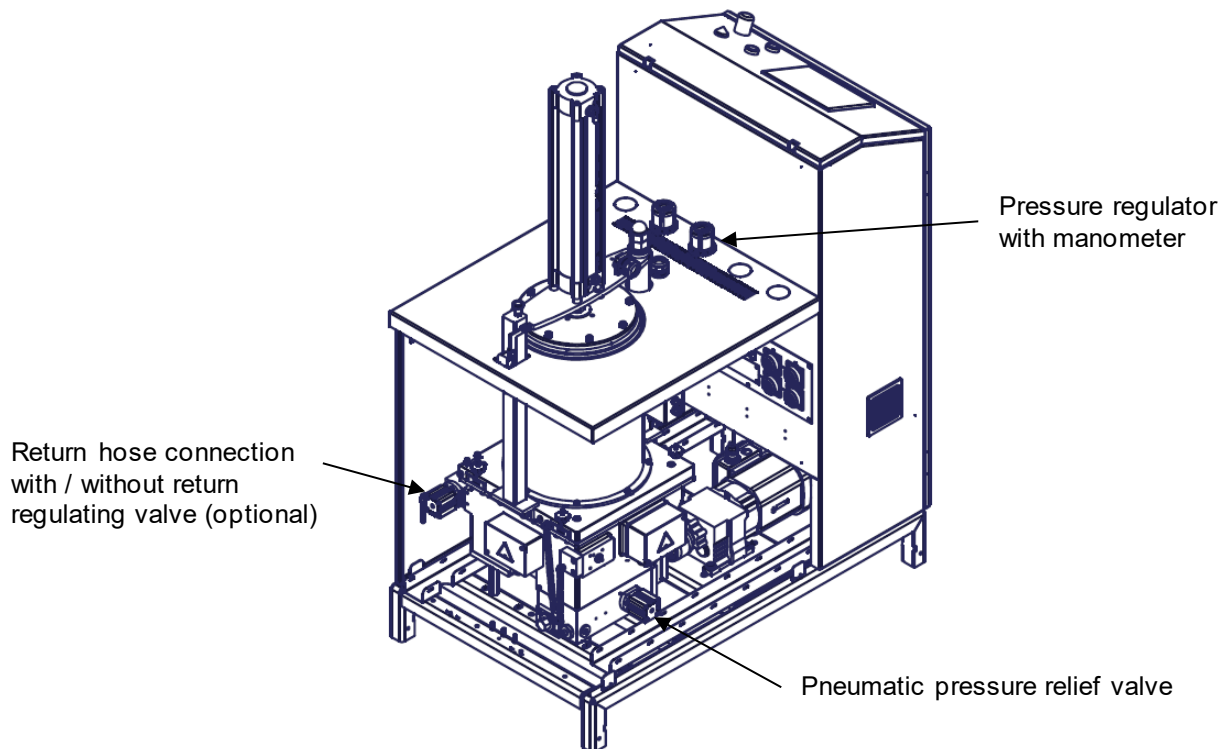
The power transmission from the gear motor to the gear pump works with a curved tooth coupling.

The curved tooth coupling is composed of a coupling sleeve and two coupling hubs. The coupling hubs are made of steel and the coupling sleeves of heat stabilized polyamide.

Due to this combination of materials the coupling is maintenance-free.

3.6 Pneumatic pressure relief valve, Adjustment of pressure regulator

3.6.1 Pneumatic pressure relief valve



At the Bag Melter pneumatic pressure relief valves (pprv) up to theoretical max. 96 bar (1392 psi) will be mounted in order to relief the adhesive over-pressure and to protect the operator from injuries and the system from damages. Depending on the installed option the pprv can be regulated by pressure regulators. At the pprv the transmission ratio between the adjusted air pressure to the adhesive pressure is approx. 1:16. The required air pressure is 6 bar (87 psi).

The air pressure max. 6 bar (87 psi) multiplied with the transmission ratio 1:16 makes the theoretical adhesive pressure of 96 bar (1392 psi), depending on the viscosity and operation temperature of the adhesive.
See pneumatic plan for the pneumatic connection under chapter "Pneumatic plans"

Standard Over-Pressure Relief Function:

This function is for safety reason always installed. The main max. 6 bar (87 psi) air connection is directly connected to the pprv. The pprv will open at a theoretical adhesive pressure of 96 bar (1392 psi) and will relief the adhesive over pressure back to the tank. This function will limit the max. operating adhesive pressure to 96 bar (1392 psi).



ATTENTION

Please make sure that the connected air pressure to the Dynamelt PUR bag melter is not higher than 6 bar (87 psi).

Option Tank circulation:

Using the tank circulation option the supply air pressure to the pprv can be switched between the full max. 6 bar (87 psi) air pressure and an adjusted air pressure. When the applicator is opened typically full air pressure is supplied to the pprv to completely close it and to operate in this case only as safety valve. When the applicator is closed, for example at production stop, a controlled air pressure is applied to the pprv adjusted to give the needed adhesive pressure for the application at next production start. The tank circulation option will typically be used in combination with "dead end" applicators.

Option Pressure controlled return (Circulating system using return hoses and pneumatic pressure relief valves)

The return hose is connected to the connection fitting at the optional pressure controlled return hose assembly. The adhesive is passing the pprv, which is supplied with an adjusted air pressure. This air pressure will be regulated using a manually pressure regulator mounted on the top cover. By adjusting the supply air pressure to the pprv the adhesive return pressure can be set to a value that covers the needs of the application. The pressure controlled return is typically used in combination with circulating applicators (using no pprv on the applicator).

Automated flushing of the pressure relief valve:

In order to ensure a permanently faultless function, the pprv has to be maintained regularly. This process would be atomized to make it easier for the operator. Each time the pump motor will be switched on, the pprv is flushed with adhesive for about 10 seconds. Approx. 10 seconds after switching on the pump motor the solenoid valve in the unit gets an electrical signal (e. g. by the controller), thus the solenoid valve will open and let pass the compressed air. Thus, the pprv will be closed through the connected compressed air supply only after approx. 10 seconds. The adhesive pressure will be built up. Thus, the pprv will be flushed for 10 seconds with adhesive. During this process, no production is possible. Production can start only 10 seconds later.

3.6.2 Adjusting the pressure regulator

The display of the manometer takes place in bar/psi.

At the pressure relief valve up to theoretical max.96 bar (1392 psi) the transmission ratio between the adjusted air pressure to the adhesive pressure is $i = 1:16$, depending on the viscosity and operation temperature of the adhesive.

Calculating the adhesive pressure

Formula: adjusted value at the manometer in bar/psi x 16 = adhesive pressure

Example: adjusted value is 3 bar (43,5 psi) air pressure x 16 = 48 bar (696 psi) adhesive pressure

Adjusting a required adhesive pressure

Formula: required adhesive pressure : 16 = value to adjust at the manometer in bar/psi

Example: required adhesive pressure is 30 bar (435 psi) : 16 = value to adjust at the manometer 1,88 bar (27,26 psi)

Adjusting the pressure regulator:

1. Pull up the pressure regulator.



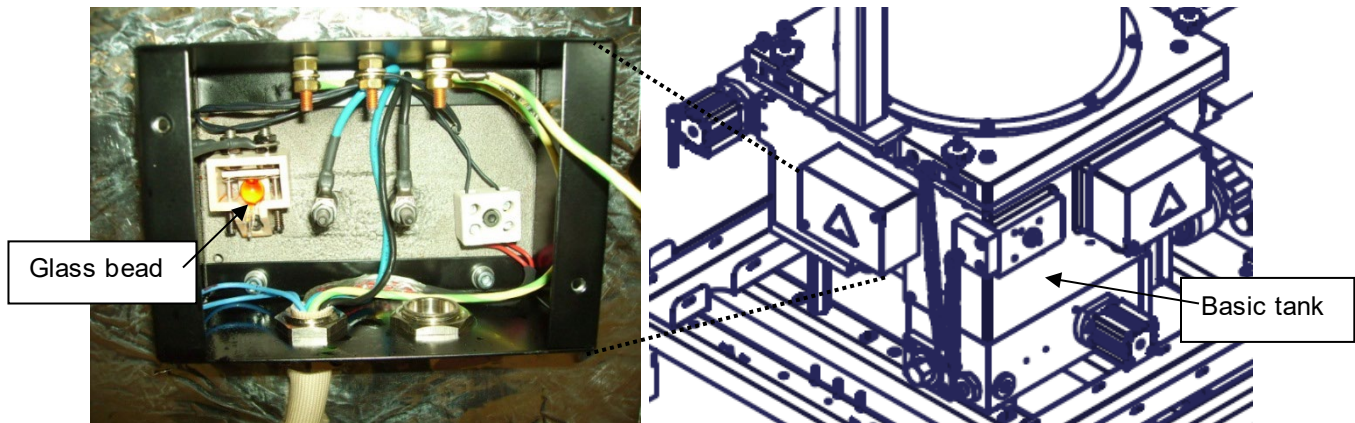
2. Adjust the pressure value.



3. Push down the pressure regulator.

The adjusted pressure respectively the indication of the manometer keeps in this position. To change the adjustment, repeat steps 1 to 3.

3.7 Over temperature protection, glass bead



The adapter of the tank is provided with a mechanical over temperature protection. This over temperature protection consists of a glass bead filled with a liquid. This bead is held by a ceramic support.

By means of contacts, the lines to the appropriate heaters are closed on these ceramic supports. If an over temperature occurs, the bead will break and open the circuit of the appropriate heating.



CAUTION

If the glass bead within the ceramic socket is damaged caused by over temperature, carry out **necessarily** the following:

- The defect, e.g. a damaged temperature sensor or solid-state relay, etc., has to be located and corrected.
- Remove the residual of the damaged glass bead and insert a new one.

3.8 Level control in the feed tube, proximity switch, stack light, horn

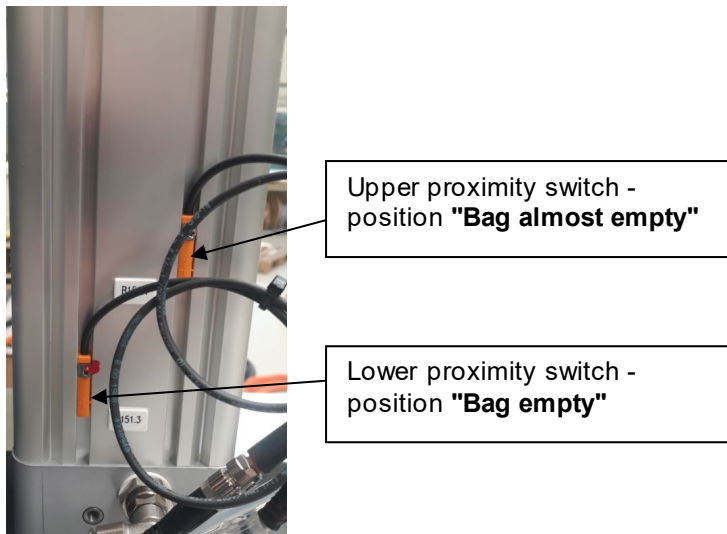


Illustration: Proximity switches for level control on pneumatic cylinder

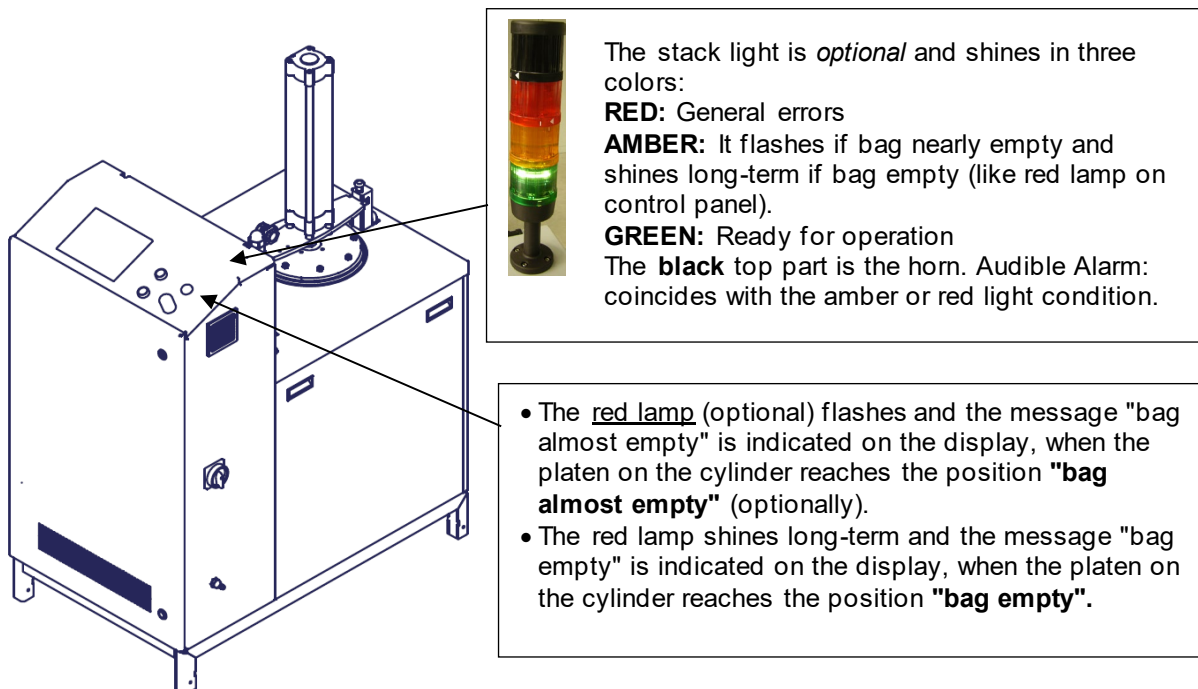


Illustration: Control Cabinet

Level control in the feed tube

Up to two proximity switches are integrated to control the position of the pneumatic cylinder respectively the remaining quantity of the bag within the feed tube.

Proximity switch Position "bag almost empty" (optionally)

The amber lamp (and the optional red lamp on control panel) flashes, when the platen on the cylinder reaches the position "**bag almost empty**" (upper proximity switch, optionally).

Position “bag empty”

The amber lamp (and the optional red lamp on control panel) shines long-term, when the platen on the cylinder reaches the position **“bag empty”** (lower proximity switch).

The messages “bag almost empty” and “bag empty” are indicated on the Touch Panel.



CAUTION

If the position “Bag empty” has been reached, a new bag has to be inserted immediately, in order to avoid emptying the feed tube totally and thereby pumping air into the system.

Stack light

Stack light with horn can be mounted *optionally*. The stack light shines in three colors: RED: General errors, AMBER: It flashes if bag almost empty and shines long-term if bag empty (like red lamp on control panel), GREEN: Ready for operation. The BLACK top part is the horn.

Horn

When the adhesive bag is empty, an acoustic signal will sound (optional). If you press on the message on the display of the Touch Panel, the acoustic signal is switched off for a minute. Then, the signal sounds again. The signal is switched off only when you change the adhesive bag.

If a second sensor for low bag (bag almost empty) is available, the signal sounds as well, just in a different interval:

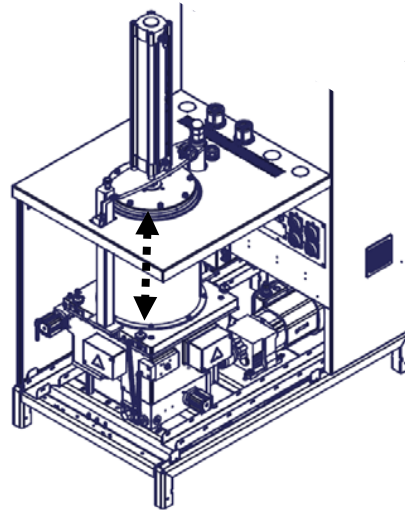
- Low bag (bag almost empty): 1s on / 3s off
- Empty bag: 1s on / 1s off

3.9 Pneumatics for platen

The double-acting pneumatic cylinder presses with the platen the adhesive bag on the melting plate. The pneumatic cylinder is switched according to the pneumatic plan under chapter "Pneumatic plans".

Cylinder pressure

Depending on the kind of hot melt, the air pressure has to be adjusted manually between 0 and 6 bar (3 bar recommended). The pressure regulator remains in this position, see point 3.9.1. The pressure regulator is located on the cover panel of the Bag Melter.



Arresting the cylinder

After inserting the bag according to the description, the pneumatic cylinder has to be turned over the bag and then located in position with the **bolt**. The **limit switch** mounted at the swivel bar will be unlocked then and lowering the cylinder is enabled.

Lowering the platen

Now you can switch the cylinder to "**lower**" at the Controller (see Chapter 6) in order to lower the platen onto the bag. The adjusted pressure remains as long as the adhesive bag is not emptied, see point 3.8 "Level control".



CAUTION

The platen has always to be lowered on the adhesive bag to ensure exclusion of air.

Without this exclusion of air, the shrinking of the melting adhesive bag will intake ambient air. The adhesive may react with the air resp. the air humidity and that may cause contamination or even blockage within the tank or the whole adhesive circular flow.

Lifting the platen

When the platen reaches the lowest point - the PUR bag is empty then - a message on the Touch Panel will be displayed that a new bag is needed.

To remove the empty bag, press the button "**lift**" at the Controller. The platen will be lifted out of the feed tube. After that, release the bolt by lifting the black button and turn away the complete cylinder.

Inserting a new adhesive bag

Remove the old bag. Take a new one and cut out the bottom. Insert the new bag into the feed tube. See chapter "Start-up operation".

3.9.1 Adjusting the pressure regulator

The air pressure at the pneumatic cylinder (for platen) between 0 - 6 bar (0 bis 87 psi) has to be adjusted manually with the pressure regulator. The pressure may be readjusted according to the used adhesive.

Adjustment of pressure regulator:

The display of the manometer takes place in bar/psi.

Adjusting the pressure regulator:

1. Pull up the pressure regulator.



2. Adjust the pressure value.



3. Push down the pressure regulator.

The adjusted pressure respectively the indication of the manometer keeps in this position. To change the adjustment, repeat steps 1 to 3.

3.10 Control cabinet

The control cabinet contains the complete electrical equipment for controlling the unit.

The control cabinet contains usually a controller for controlling all functions.

For more information see the following chapters:

- Ch. 3.3 Description and pictures,
- Ch. 3.3.1 Function Description of the components, switches and buttons on the control cabinet,
- Ch. 6 Controller,
- Ch. 13 Wiring diagram.

Chapter 4

Installation



CAUTION

- Before start-up, please read this documentation carefully.
- Attend to and execute according to all the installation and connecting advices.
- Heed all safety instructions mentioned in chapter 2.
- All Installation work must be carried out by qualified and skilled technical personnel.

4.1 Conditions for installation and mounting

Place requirement

The unit has to be installed in such way, that the employee working with or on it is able to work on all sides for adjusting, preparing, maintaining, repairing, cleaning, etc. See drawing of the unit for dimensions under chapter 9 "Drawings".

There has to be sufficient space, so that

- the pneumatic cylinder can be turned in order to exchange the bag;
- the pneumatic cylinder can be swiveled together with the feed tube in order to clean the basic tank;
- the sidewalls can be taken off for maintenance or repair.
- the door of the control cabinet can be opened if applicable.

Mounting and alignment

- The complete unit has to be installed on solid, stable and flat ground.
- The alignment in height of the complete system has to be considered.
- The alignment of the machine has to be considered.

Electrical connection

- Necessary electrical and pneumatic connections have to be provided. See wiring diagram.
- Install a potential equalization according to EN 60204-1 8.2.8, because the earth leakage current of the unit exceeds 10 mA. See wiring diagram.

Pneumatic connection

Provide the necessary pneumatic connection.

- 6 bar air pressure are required.
- If the unit works with an applicator, the compressed-air supply to the unit has to be DN 15 at least.

CAUTION: In any case the air has to be clean and dry! See advice in chapter 4.4 „Quality of compressed air“.

- If the unit works without an applicator, the compressed-air supply to the unit has to be DN8 at least.
- Please heed that units with high air demand may not be used at the same time with the same air supply.



ADVICES

- Check all screw connections at the unit and torque them down if necessary.
- Install all cables and the heated hoses in a manner that there will be no risk or at least the minimal risk of stumbling.

4.2 Installation guideline



CAUTION

- All work on or with this unit is only permitted for skilled personnel!
- Pay attention to the wiring diagram!
- Only with an air pressure of 6 bar a perfect performance is secured!
- All motors have to be attached according to the data sheet of the manufacturer.
- All heating elements have to be mounted and operated secured and according to the valid regulations.

Proceed as follows to interconnect the unit components according to the wiring diagram:

1. Install the applicator (if existing) into the machine at the place foreseen for the adhesive application.

Heed the instructions given in the Applicator's manual.



WARNING

While installing the applicator, use an appropriate protection device to avoid unintended contact with heated parts.
Risk of injury and burns!

2. Connect the compressed-air supply to the unit and the applicator.
Refer to the Applicator's manual.



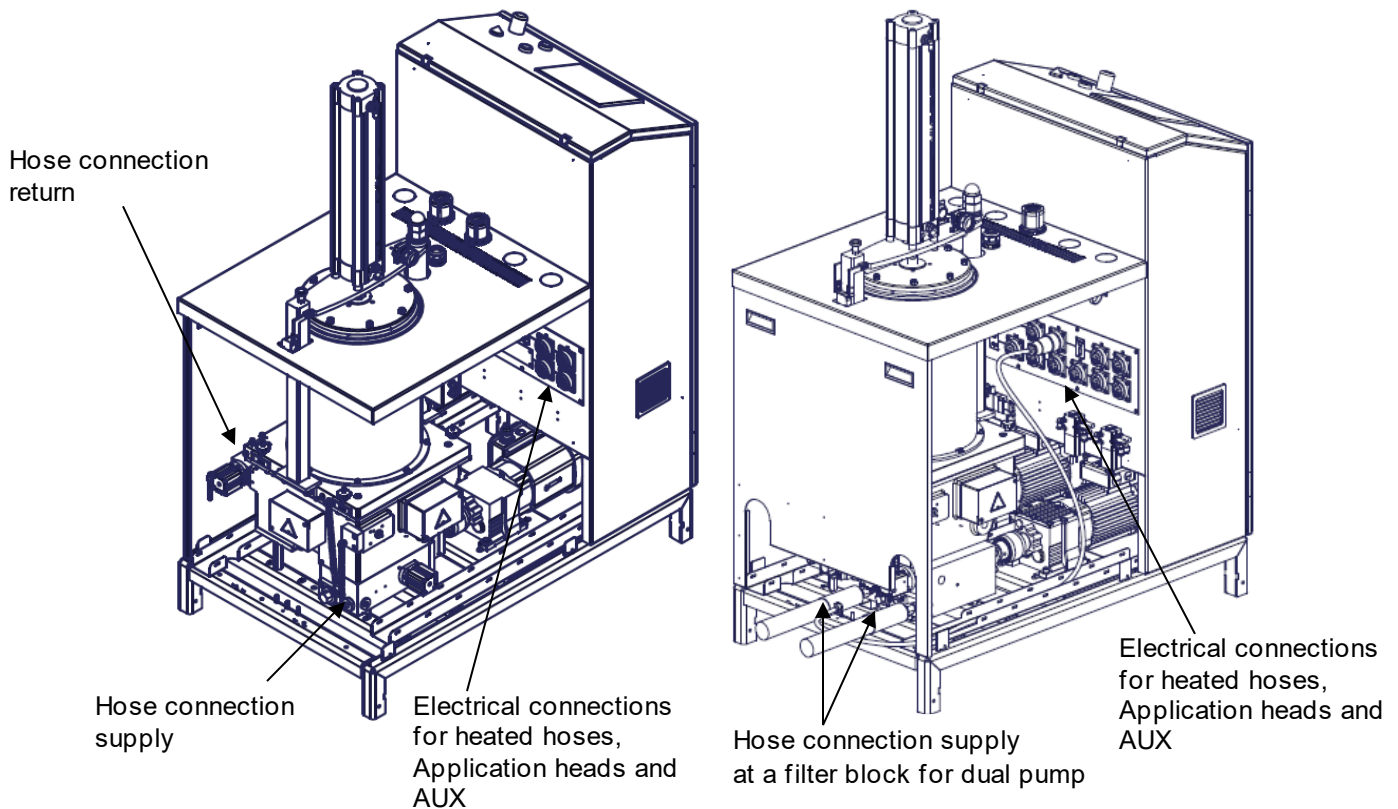
ADVICE

6 bar air pressure are required.

- Lower air pressure causes uneven adhesive application.
- The modules do not switch or switch with delay, resp. open and close again, if the air supply is uneven.
- Only permanent pressure and sufficient volume flow leads to reproducible application accuracy regarding position and amount.

3. Interconnect the Bag Melter and the Application head (or roller tray, etc.) with the heated hoses.
See manual Application head.

The Bag Melter is equipped with either one or two filter blocks. At each filter block, you can connect two heated hoses for the supply of the application heads. The heated hoses for the return will be connected to the tank.



The connection nipples for the heated hoses are located at the filter block of the unit. Depending on where the machine is situated, straight or angled screw joints can be fitted.

The angled screw joints are swiveling fittings and can be locked in any desired position. The screw joints have to be insulated or heated, if necessary.



CAUTION

Heed the following for the installation of the heated hoses:

- Heated hoses may be damaged by overheating, if they are laid faulty.
- The heated hoses may not be stacked one on the other!
- The heated hoses may not be pressed together and / or bound.
- Put the hoses separated next to each other!
- **The connections for supply resp. return hoses may not be mixed up.**
- It is essential that the hoses will be laid **without twisting!**
- Heated hoses may not be fastened with binders or similar.
- Heated hoses may not be laid on a sharp edge.
- When using a balancer, a hose support with a radius of 400mm has to be mounted.
Reason: The sensor cables and heating cables within the hoses can be damaged. As they cannot be repaired the hose would have to be changed completely.
- Refer to Hoses manual.

4. Connect all cables of Bag Melter, Applicator and heated hose (according to the wiring diagrams and the cable marking).



CAUTIONS

- Install a potential equalization according to EN 60204-1 8.2.8, because the earth leakage current of the unit exceeds 10 mA. See wiring diagram.
- The unit has to be connected according to the attached wiring diagrams. The regulations of the VDE or local power supply organizations have to be observed in all cases!
- The supply line for the control cabinet has to be adapted to the output of the unit. The input lead has fused accordingly.
- Never connect or disconnect plug-and-socket connections under load!

5. If an exhaust kit has been mounted on the cover of the Bag Melter, connect the exhaust hose of the exhaust unit (provided by the customer) to the exhaust hood.

Heed the following advices given in chapter 4.3. "Alarm and machine contacts".

4.3 Alarm and machine contacts



CAUTIONS

- The alarm contacts will be released, if the unit has over- respectively under-temperature.
The motors have an automatic electrical lock in the case of over- and under-temperatures.
All the heatings will be immediately switched off in the case of over-temperature.
- The alarms and machine contacts are located on the terminal strip X01. See wiring diagram in the appendix.
- Take the interfaces you have to use from the wiring diagram in the appendix.
- Install a potential equalization according to EN 60204-1 8.2.8, because the earth leakage current of the unit exceeds 10 mA. See wiring diagram.
- **ADVICE:** A preparation of exchanging the bag and / or refilling shortens the time that is pending when the message "bag empty / level min. fallen below" appears.

4.3.1 Reference voltage

The control of the pump between 1 to 70 rev./min. works with the reference voltage of 0 to 10 V DC depending on the line speed of the customers machine. It is absolutely necessary to keep attention to polarity and to connect according to the wiring diagram.

4.3.2 Proximity switch at the pneumatic cylinder

There are one or two proximity switches at the pneumatic cylinder. These switches operate at the lower position of the pneumatic cylinder. The switches send a signal to the controller and then a message will be displayed to the operator that the "bag is almost empty and/or bag is empty".

4.3.3 Platen at the pneumatic cylinder

The platen at the pneumatic cylinder presses the adhesive bag down. A limit switch hinders the platen to be lowered outside the allowed area when the pneumatic cylinder has been turned sideward.

4.4 Quality of compressed Air



CAUTION

- In any case, the air has to be clean and dry!
- The min. requirement for compressed air supply to solenoids to control automatic Applicators is ISO 8573-1:2010 class 2:4:3.
- The min. requirement for compressed air supply to solenoids to control Adhesive Supply Unit is ISO 8573-1:2010 class 7:4:3.

Compressed air quality classes according to ISO 8573-1:2010 class 7:4:3:

ISO 8573-1: 2010	Solid particles				Water		Oil
Class	Maximum number of particles per m ³			Mass concentration	Vapor pressure dew point	Liquid	Total oil content (liquid, aerosol and mist)
	0.1-0.5 µm	0.5-1 µm	1-5 µm	mg/m ³	°C	g/m ³	mg/m ³
0	As stipulated by the equipment user, stricter requirements than class 1.						
1	≤ 20,000	≤ 400	≤ 10	-	≤ -70	-	0.01
2	≤ 400,000	≤ 6,000	≤ 100	-	≤ -40	-	0.1
3	-	≤ 90,000	≤ 1,000	-	≤ -20	-	1
4	-	-	≤ 10,000	-	≤ +3	-	5
5	-	-	≤ 100,000	-	≤ +7	-	-
6	-	-	-	≤ 5	≤ +10	-	-
7	-	-	-	5-10	-	≤ 0.5	-
8	-	-	-	-	-	0.5 - 5	-
9	-	-	-	-	-	5 - 10	-
X	-	-	-	> 10	-	> 10	> 10

Chapter 5

Start-up operation, daily operation

5.1 Advices for the start-up operation



CAUTIONS

Start with start-up operation only if

- the functioning of the unit is known, and
- all preparations for start-up operation have been done according to the details given in the previous chapter. That means all unit components are operable.

Read the documentation thoroughly to avoid breakdowns caused by faulty handling.

We recommend asking for an ITW Dynatec-service technician for the start-up operation, to ensure a functioning unit. Let yourself and the people working with or working on the unit be introduced to the unit on this occasion.

ITW Dynatec takes no responsibility for damages or faults caused by any self-contained start-up.

Heed all safety instructions mentioned in chapter 2.



Allow only skilled expert staff to do the start-up operation!

Always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothing that cover all vulnerable parts of the body when working on or with the unit. Risk of burns and risk of injury!



Risk of electric shocks! Risk of injury, Mortal danger!



The unit components are getting very hot during operation! Risk of burns!



The adhesive is very hot and pressurized! Risk of burns and risk of injury!
At working temperature, molten adhesive could cause heavy burns. Let spilled out adhesive cool down first, before removing it!

**During operating the unit, heed the following:**

- Heed all safety instructions mentioned in chapter 2.
- Set the working temperatures strictly within the temperature range given by the adhesive manufacturer. Do not exceed this temperature range.
- Switch the unit off during longer production breaks.
- Switch the unit to standby during shorter production breaks
- Avoid voltage fluctuation.
- The air supply has to be clean and dry.
- In case of an emergency or exceptional incident, press the emergency stop button in order to stop the unit quickly.

**The unit is ready for operation, if**

- all temperatures are within the tolerances, and
- the adhesive within the tank is molten.

**WARNING**

Risk of stumbling on cables and heated hoses!



Keep your hands away from running parts of the unit (pumps, motors, rolls or others).

5.2 Start-up operation / Daily operation

Start-up operation / Daily operation:

1. Check the complete unit and the traverse paths for safety. Fix visible damages immediately.
2. Before switching the unit on, make sure that the starting unit could hurt no one!
3. Remove all material or other things not needed for the production from the workspace of the unit!
4. Check and make sure that all safety devices are working in proper form!
5. Switch the main switch ON and press the (optional) "Controller ON" button. The controller will be switched on.

See pictures under Description, point 3.3.



ADVICES

After starting the controller, the heaters that have been switched on at last, will be started automatically. Refer to Ch. 6 Controller.

After the unit has reached the release temperature, all other switched on heatings start to heat.



Caution! Risk of burns and risk of injury!

- This unit operates with very high temperatures and high adhesive pressure.
- Hot adhesive comes out of the applicators!
- Always wear heat-resistant protective gloves and safety goggles! Molten adhesives at operating temperature could cause heavy burns.
- Do not touch the hot surfaces or parts without wearing heat-resistant protective gloves!

Temperature settings

6. Set the operating temperatures.



CAUTION

The maximum operating temperature is 190°C (374°F)!

Set the temperatures of the particular heating zones on the Touch Panel according to the adhesive that is in use. Always keep the temperature range given by the adhesive manufacturer.

Wrong temperature settings could cause the burning of the adhesive within the system and unsatisfactory adhesion.

The unit is ready for operation, if

- all temperatures are within the tolerances, and
- the adhesive within the tank is molten.

Switch the motors/gear pumps only if enough adhesive is molten! Factor in the heat-up phase of the adhesive!

Untimely start of the motors could cause the following risks:

- Deficient adhesive supply for the pumps. The pumps intake air and that causes foam formation within the adhesive system and reactions with PUR adhesives.
- The pumps run dry and may block.
- Solid adhesive could block the intake port and cause in this way overheating or even destruction of the pump or the motor.

Insert the adhesive bag

7. Put in respectively exchange the adhesive bag.

**CAUTION**

While exchanging the adhesive bag, always wear heat-resistant protective gloves and safety goggles.



Use only adhesives recommended by the adhesive manufacturer!
Before changing from one type of adhesive to another (even within the same product line of one manufacturer), the unit has to be cleaned (respectively flushed) to avoid possible chemical reactions.

After the first melting of adhesive, it is essential to vent the basic tank. The venting has to be done at least once a week.



Dirt particles (foil residues, dust) may not get into the adhesive system, because the consequences would be:

- higher contamination of the filter(s),
- the adhesive film formation will be disabled,
- the adhesive film contains those dirt particles,
- the adhesive film tends to tear open.

When taking out the pressed bag, dirt could get into the feed tube. Therefore, it is absolutely necessary to clean the walls of the feed tube immediately with a cold cleaner and a lint-free cloth.

Remove adhesive residues from the walls of the feed tube obligatory, because otherwise the slipping of the bag will be prevented while pressing the bag. Then the bag can move over the platen, be filled with adhesive and burst.

No measurable vapors injurious to health while changing the bag.

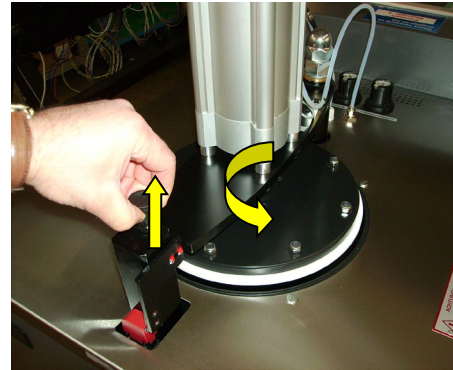
- 7.1 Take the adhesive bag out of the outer package and cut it on the smooth bottom side.



- 7.2 The whole bottom has to be removed up to 2 cm edge using a template.

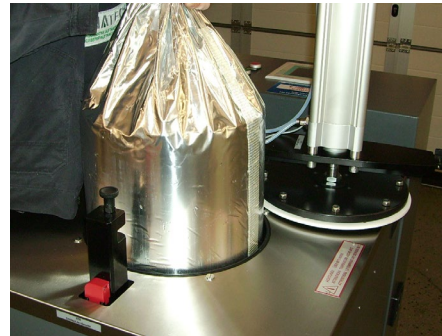


- 7.3 Pull up the bolt and turn the pneumatic cylinder with the platen aside.

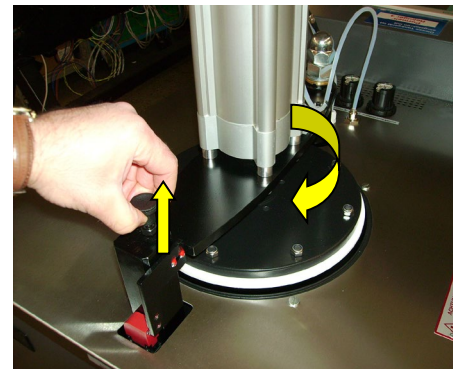


- 7.4 Place the adhesive bag with the adhesive side downward into the feed tube.

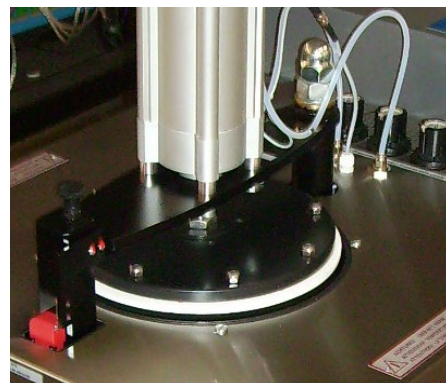
(Before that step the old bag has to be removed. See point **Removing the adhesive package** on next page).



- 7.5 Pull up the bolt, turn the pneumatic cylinder with the platen over the bag and arrest at the bolt again.



- 7.6 Adjust the necessary air pressure for the pneumatic cylinder (between 0 and 6 bar) (3 bar recommended) at the pressure regulator. Lower the pneumatic cylinder with platen.



Ensure exclusion of air**CAUTION**

To avoid air within the adhesive system, always put in a new adhesive bag immediately, lower the pneumatic cylinder and surface-fuse it.

Without this exclusion of air, the shrinking of the melting adhesive bag will intake ambient air. The adhesive may react with the air resp. the air humidity and that may cause contamination or even blockage within the basic tank or the whole adhesive circular flow.

The adhesive within the feed tube stays clean and so it could be fused several times or purged problem-free. If the unit is off, the adhesive is separated from the air humidity because the packaging foil is pressed on the sidewalls of the feed tube and that hinders entering air.

After being pressed out completely, only the pressed package is left over and can be disposed problem-free.

Whilst the adhesive is molten on the bottom side (supported by the pressure of the pneumatic cylinder) the package will be compressed. After melting the adhesive completely, the package lies flat as a disk on the bottom of the basic tank. Turn the pneumatic cylinder aside and remove the compressed package with a suitable gripping device.

Removing the adhesive package

To avoid soiling the sidewalls of the feed tube when removing the empty adhesive package:

- Always wear heat-resistant protective gloves, protective clothes and safety goggles!
- Grab the empty adhesive bag in the middle by hand and press it slightly downwards by turning it at the same time in one direction several times. The empty adhesive bag will be crimped to a spiral.
- Take the empty package out of the adhesive tank and purge it according to the effective regulations.

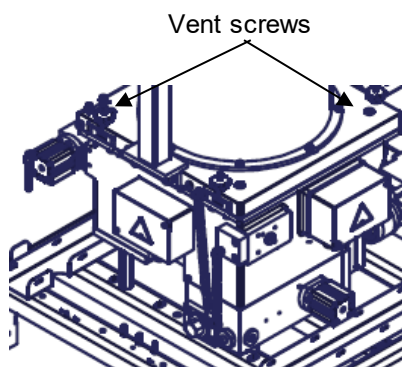
Venting of the basic tank

ADVICE: Venting absolutely the basic tank immediately after the first melt of the adhesive bag and/or after each changing of the adhesive bag!

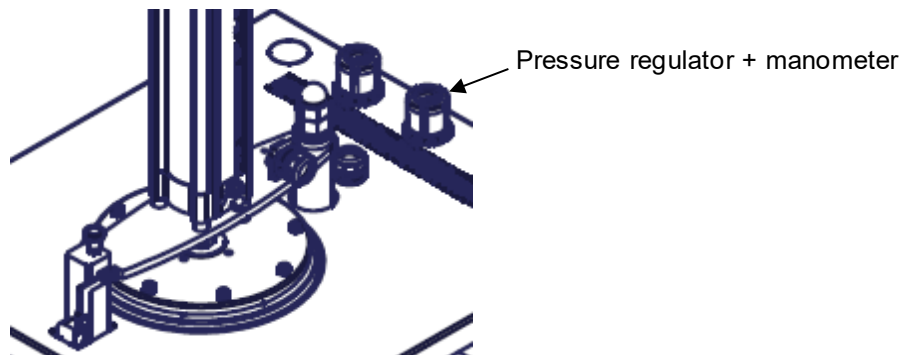
Thus, it is ensured that no air is enclosed and does not circulate in the system. Otherwise, the PUR adhesive would react with the humidity!

After you have inserted a new adhesive bag, vent the tank as follows:

1. Melt on the adhesive in the tank and surface-fuse the new adhesive bag.
At first melt of the adhesive bag, wait approximately 20 minutes to allow molten adhesive to partially fill the tank.
2. Remove two vent screws on the melting plate, which are diagonal to each other.
3. Wait until adhesive comes out from both holes (i.e. then is the air escaped).
4. Lubricate the vent screws with copper paste and tighten them again.



8. Adjust the air pressure by using the regulators for the adhesive pressure (optionally) and for the cylinder pressure.
See chapter Description / "Adjusting the pressure regulator".



9. If an exhaust kit has been mounted on the cover of the Bag Melter and connected to the exhaust unit (provided by the customer) via the exhaust hose, switch the exhaust unit on.

After reaching the operating temperature

10. Switch on over the Touch Panel the pump / motor at Bag Melter and the adhesive. Adhesive will be applied.
Edit the machine parameters or assure yourself about their accuracy. See the description of the controller.



NOTE

After starting the pump, the adhesive is available after 10 seconds, because the pressure relief valves will be flushed first.

Optional: If an Application Head without circulation is used, proceed as follows in order to purge it before production with adhesive respectively in order to fill the system with adhesive:
Follow all instructions in the manual "Application Head".

- Switch off all pumps/motors.
- Put a heat-resistant catchment tank under the application head.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!
- Switch on the adhesive.
- Let the adhesive come out as long as it is clean, bubble free and satisfying.
- Switch off the adhesive.
- Clean the nozzle from adhesive residues.
- Remove the catchment tank.

Optional: If an Application Head with circulation is used, proceed as follows in order to purge it before production with adhesive respectively in order to fill the system with adhesive:
Follow all instructions in the manual "Application Head".

- Switch off all pumps/motors.
- Loosen the return hose from the unit.
- Put the open end of the return hose into a heat-resistant catchment tank to collect the adhesive.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!

- Let the pumps run as long as the adhesive comes out of the return hose clean and bubble free.
- Switch all pumps off and mount the return hose again to the return hose connection of the unit.
- Put a heat-resistant catchment tank under the application head.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!
- Switch on the adhesive.
- Let the adhesive come out as long as it is clean, bubble free and satisfying.
- Switch off the adhesive.
- Clean the nozzle from adhesive residues.
- Remove the catchment tank.

Optional: If a Circulating Slot Die Applicator with slot nozzle is used, proceed as follows in order to purge it before production with adhesive respectively in order to fill the system with adhesive:

Follow all instructions in the manual "Circulating Slot Die Applicator".

- Switch off all pumps/motors.
- Loosen the return hose from the unit.
- Put the open end of the return hose into a heat-resistant catchment tank to collect the adhesive.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!
- Let the pumps run as long as the adhesive comes out of the return hose clean and bubble free.
- Switch all pumps off and mount the return hose again to the return hose connection of the unit.
- Mount the cleaned slot nozzle to the slot applicator, if necessary.
- Put a heat-resistant catchment tank under the slot nozzle.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!
- Switch on the adhesive.
- Let the adhesive come out as long as it is clean, bubble free and satisfying.
- Switch off the adhesive.
- Clean the slot nozzle from adhesive residues.
- Remove the catchment tank.

5.3 Switching the unit off

Carry out the following steps for switching the unit off

1. Switch off all the motors / pumps.
2. Switch the controller off by pressing the button "Controller Off" (if existing).
3. Switch the main switch OFF.



Caution! Risk of burns and risk of injury!

- Parts of the unit can be hot long after switching off.
- Always wear heat-resistant protective gloves and safety goggles! Molten adhesives at operating temperature could cause heavy burns.
- Do not touch the hot surfaces or parts without wearing heat-resistant protective gloves!



ADVICES

Do not switch off the controller and the main switch, if the unit should be operated by weekly timer.

PUR-adhesives react with air humidity. To avoid blocked nozzles, slot nozzles or applicators, these parts have to be protected airproof with PUR cleaner immediately after production stop.

Protection caps for nozzles

Nozzles could be protected e.g. with protection caps filled with PUR-cleaner, mounted immediately after production stop.

Protection pan for slot nozzles

Slot nozzles could be protected e. g. by a pan filled with PUR-Cleaner. Immediately after production stop you dunk the slot nozzle into this pan.

Removing dirt

Remove dirt from the melter and the applicator immediately.
Wooden scrapers, lint-free cloth with cleaner may only be used for cleaning.

WARNING: Metallic scrapers or other tools made from steel, like knife or blades, may not be used under any circumstances.

5.4 Safety Instructions Adhesives

5.4.1 Instructions for processing of application materials

Definition

Application materials are here e.g. thermoplastic hot melt adhesives, adhesives, sealants and similar application materials, referred to in the text as materials.

Manufacturer information

Materials may be processed only in accordance with the product descriptions and safety data sheets of the manufacturer. They inform you among other things about the processing, transport, storage and disposal of the product. Also, information about working temperature, reactivity and potentially hazardous decomposition products, toxic properties, flash points, etc. can be found there.

Liability

ITW Dynatec is not liable for hazards and damages caused by materials.

Risk of burns

When handling with heated materials exists risk of burns.

When refilling, be aware that no hot material injects from the tank. Work carefully and wear appropriate protective equipment such as safety goggles and heat-resistant protective gloves.

In case of burns cool the skin immediately with cold water for several minutes. Never attempt to remove the material from skin, but consult a physician.

Smokes and gases

Ensure that smokes and gases do not exceed the prescribed limits. Possibly exhaust smokes and gases by means of suitable devices and / or provide sufficient ventilation of the workplace.

Substrate

The substrate should be free of dust, grease and moisture. Select the appropriate material by tests, determine the optimum working conditions and determine the possibly required pretreatment for the substrate.

Processing (working) temperature

Keep the prescribed working temperature when working with tempered material; this is crucial for the quality of the application. This may not be exceeded! Overheating can cause coking or cracking of the material and this can cause malfunctions or equipment failure.

The material should generally be melted gently. A longer, unnecessary temperature load should be avoided. When work is interrupted, the temperature should be lowered.

If the working temperature is set too high, this will cause a longer wet life and a longer conditioning time. Thereby the bonding may open again. The product quality will be derogated.

If the working temperature is set too low, the wet life will shorten. The adhesive will get pasty and the adhesive application will get patchy. This has a negative effect on the bonding.

Melter Unit

At Gear Pump Melter: Keep the adhesive tank always filled. To avoid adhesive-coking, refill continuous small quantities of adhesive. Keep the tank always closed.

At Bag Melter: Keep the adhesive tank always closed respectively the pneumatic cylinder always lowered.

Aerial oxygen affects the polymeric chains of the adhesive, which causes oxidation.

5.4.2 Safety instructions for processing of Polyurethane (PUR)-Adhesives

The PUR-adhesives show improved characteristics. The strength of PUR-adhesives also increases when it cools down. In addition, these adhesives contain reactive substances. The reactive substances (isocyanate groups) react with moisture and cross-link to an infusible adhesive. The PUR-adhesive reacts from fusible thermoplastic to an infusible thermosetting adhesive.

The PUR-adhesive has to be protected from any moisture during production, stocking and use to avoid preliminary reaction.

Heed the following additional instructions when processing of PUR adhesives:



ADVICE

Before processing of PUR adhesives read and follow all instructions given in the safety data sheets and product information of the manufacturer.

- Do not exceed the prescribed processing (working) temperature.
- Do not use PUR adhesives, as long as uncertainties in the implementation of all security measures exist.
- The isocyanates in PUR-adhesives are among the dangerous substances and irritate the skin, mucous membranes of the eyes and respiratory tracts.
- Persons with asthmatic complaints may have a shortness of breath.
- Since isocyanates occur in different concentrations in PUR adhesives from different manufacturers, it is imperative to read and follow the safety data sheets and product information of the manufacturer before using. Note especially the indication of toxicity, health hazards and reaction behavior.
- Use suitable respiratory protective equipment if the risk of inhalation of isocyanates or other hazardous substances exist, which were used in the polyurethane production and are present in concentrations above the limits.
- At very high pollutant concentrations or unclear circumstances, use respiratory protective equipment independent of the ambient air.
- Exhaust the adhesive smokes with suitable exhaust and ventilation devices.
- When spraying an efficient exhaustion is imperative because of the smokescreen-risk.
- Nevertheless, it is advisable to exhaust the vapors, to encapsulate the machine or to reduce the temperature.
- If evaporating of isocyanates cannot be avoided while changing or removing the bag or while cleaning the basic tank, use a respiratory protective with gas filter type A, color brown or type B, color grey. The mask has to be always in good and hygiene condition.
- During production interruptions or breaks lower the temperature and dunk the nozzles of the applicators into suitable cleaner.
- Before longer shutdown, flush the application system with a suitable cleaning agent. Use only a cleaning agent recommended by the material manufacturer.

**ADVICE**

When using cleaners, heed the instructions given in the safety data sheets and product information of the manufacturer.

- Lock the open material connections airtight.
- Always wear heat-resistant protective gloves and long-sleeved protective clothing when handling PUR adhesives.
- Always wear suitable protective goggles to prevent eye contact.
- Keep ready devices for eye wash (eye wash bottles or eye showers) and a cold-water source (with washing possibilities in the work area) for the treatment of burns and spraying PUR-adhesive.
- As preventative skin protection, use regularly skin protection cream for hands and face.
- In working rooms where PUR adhesive is processed, do not eat, drink, smoke and do not store food.
- Wash hands thoroughly after end of work, before breaks and after any contact with PUR adhesives.
- Change clothes contaminated with adhesive immediately.
- Temperature reduction, standby: If longer repair or maintenance work is necessary, we recommend switching the Application Unit off or at least switch to "stand-by" in order to protect the adhesive. Ask the adhesive manufacturer for accurate times and information.
- Protection of the applicator: During longer production breaks the applicators should principally be protected against penetrating moisture. Suitable means of protection are produced and recommended by the adhesive manufacturers.
- Protection caps for nozzles: Nozzles could be protected e.g. with protection caps filled with PUR-cleaner, mounted immediately after production stop.
- Protection pan for slot nozzles: Slot nozzles and applicators could be protected by a pan filled with PUR-Cleaner. Immediately after production stop you dunk the slot nozzle or the applicator into this pan.

- **Cleaning**



CAUTION

During start-up operation or during maintenance work all parts that are soiled with adhesive should be thoroughly cleaned before reassembling, since a reaction of the adhesive occurs, because it was in contact with air humidity. Therefore breakdowns, blocked nozzles and in particular malfunction of movable parts could be the possible causes.

Dismounted and contaminated parts should be cleaned immediately if possible, because a delayed cleaning will be difficult because of the immediately incipient cross-link reaction.

- **Filter**



CAUTION

Filters used during the work with PUR-adhesive cannot be respectively can hardly be cleaned. Therefore, we recommend renewing soiled filters (filter cartridges).

Air usually contains moisture that could cause a reaction of the adhesive within the filter. After replacement the filter, the filter housing has to be de-aerated immediately!

Venting of the filter housing:

At Gear Pump Melter: Lower air pressure to 0 bar. Start the pump and let circulate the adhesive in the Melter until the air stops coming out of the pressure release hole at the bottom of the basic tank. This ensures that the air which has penetrated into the filter housing during the filter change is discharged into the tank and the housing is filled with adhesive.

At Bag Melter: Lower air pressure to 0 bar. Remove the heated hose from tank. Place a heat-resistant catchment tank under the hose connection. Start the pump and let flow the adhesive until it comes out free of air bubbles. This ensures that the air which has penetrated into the filter housing during the filter change is discharged and the housing is filled with adhesive. Stop the pump. Connect the heated hose. Start the pump and adhesive on the Applicator (modules) and let flow the adhesive until it comes out of Applicator free of air bubbles. This ensures that the air which has penetrated into the heated hose respectively Applicator during the filter change is discharged.

- **Disposal**



Dispose the adhesives according to the instructions in the safety data sheets and product information of the manufacturer and in accordance with applicable international, national and local rules and regulations.

5.4.3 Useful hints for adhesive-users

1. Adhesive degradation / coking respectively cracking



ADVICE

Adhesives degrade or coke if not used correctly.

You can detect adhesive degradation by one or more of the following effects:

- darker color
- black particles within the adhesive
- swelling or gelation
- formation of smoke

Possible cause	Solution
Temperature settings too high	• Check the adhesive-temperature with a calibrated thermometer. • Set the temperatures according to the manufacturers' instructions.
Standby-temperature settings too high	• Set the standby temperature. • Switch the unit to standby during shorter production breaks. • Switch the unit off during longer production breaks.
Coked adhesive residues and disposal within the basic tank	• Empty the basic tank and clean it with an appropriate cleaning agent. After that, fill up new adhesive. • You will find deposit of coked adhesive basically on the wall and in the corners of the basic tank – see that the basic tank is always closed and that the filling quantity is constant and enough. • If adhesive-degradation occurs repeatedly, please contact the responsible sales representative from ITW Dynatec or the adhesive-manufacturer.
Incompatible types of adhesive mixed within the basic tank / the system	• Mixing incompatible types of adhesive may cause gelation – never mix different types of adhesive!

2. Blocked nozzles

Possible cause	Solution
The adhesive is coked.	• See adhesive-degradation / coking respectively cracking.
The filters are blocked / burst.	• Replace filters.
Pollutants got into the basic tank.	• Clean respectively flush the complete adhesive system. • Keep the basic tank and the adhesive-package always closed.
The nozzle is blocked by burned particles or damaged.	• Clean the nozzle or replace it.
The applicator is dirty on the outside.	• Clean it.

3. Adhesive threads / cobwebs



NOTE

Adhesive threads / cobwebs could cause drop head halts. Furthermore, they can cause fouling on your products and machines.

Possible cause	Solution
Application temperature is too low.	Check the temperature and increase it if necessary, in steps of 5°C.
The substrate is too cold	Warm the substrate up to room temperature.
The adhesive has begun to coke.	See adhesive-degradation / coking respectively cracking.
The spray-application system is defective	Please contact ITW Dynatec.
The distance between the spray-application system and the substrate is too high	Decrease the distance.
The adhesive viscosity is too high	Get a new product suggestion.
The application-weight is too high	Decrease the application-weight.

4. Deficient adhesion (not pressure sensitive adhesives)

Problem 1: The adhesive-bead is not pressed out and there is only adhesive on the application-side.

Possible cause	Solution
The applied quantity is too little, very narrow beads.	Increase the applied quantity by e.g. increase the pressure and/or use bigger nozzle.
The application temperature is too low to reach the needed wet life.	Adjust the needed application temperature (see technical data sheet).
The adhesive-beads are not pressed out holohedral.	- Adjust the contact pressure-station. - Search for reasons that may cause a cooling down of the adhesive and eliminate them.

Problem 2: The adhesive is on both sides, but the surface is irregular and potentially there are adhesive threads (cohesion fracture).

Possible cause	Solution
Applied adhesive quantity too high.	Reduce the applied quantity.
Application temperature is too high.	Check the temperature and lower it if necessary, in steps of 5°C.
Contact pressure is too low.	Increase the contact pressure.

Problem 3: There is only adhesive on one side (adhesive fracture). The adhesive-bead is pressed out but the substrates are not adhered together.

Possible cause	Solution
Application temperature is too high.	Check the temperature and lower it if necessary, in steps of 5°C.
The applied quantity is too little.	Increase the applied quantity to increase the wet life
Maybe the adhesive is not suitable for the substrate.	Get a new product suggestion.

5. Deficient adhesion (pressure sensitive adhesives)

Possible cause	Solution
The substrate is too cold.	Warm the substrate up to room temperature.
Application temperature is too low.	Check the temperature and increase it if necessary, in steps of 5°C.
The applied quantity is too little	Increase the applied quantity.
The application pattern is misaligned	Check the application pattern of the adhesive.

6. "Rails" with roller application (optional)

Explanation: "Rails" means, that two thick adhesive beads on the left and on the right of a thin adhesive film in the middle are applied. The adhesion looks stable on first sight, but in tests you will see, that it is unstable and will break on the transport or in further processing.

Possible cause	Solution
Scraper misaligned / applied quantity too little	Change the scraper adjustment to increase the applied quantity.
Dirt particles on the scraper blade	Remove all dirt particles.
Pressure of the roll on the substrate too high	Lower the pressure of the roll on the substrate.
Contact pressure of the roll on the substrate too low	Increase the contact pressure, so adhesive beads will be all pressed out.

Chapter 6

Controller Siemens TP700

6.1 Security advice



CAUTION

- Do not damage Touch Panel with sharp edged tools or similar!
- Do not besprinkle Touch Panel!
- Keep the Touch Panel always clean!

The Controller and the Touch Panel start automatically when switching on the main switch and pressing the button „Controller ON“.

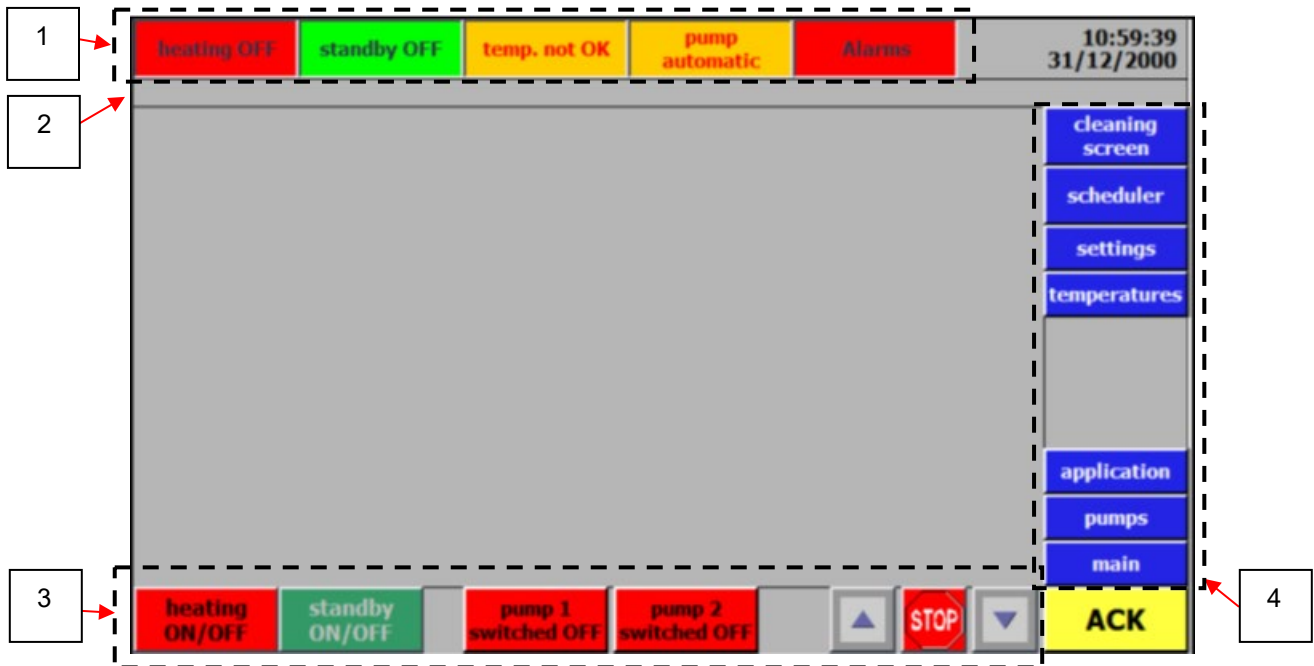
The Touch Panel is self-explanatory.

- Press the particular function field and the appropriate function will be activated.
- Press the desired function and the value can be entered or changed.

All settings and controller can be done using the Touch Panel; e.g. for

- temperatures,
- times,
- speed, etc.

6.2 Main Controls

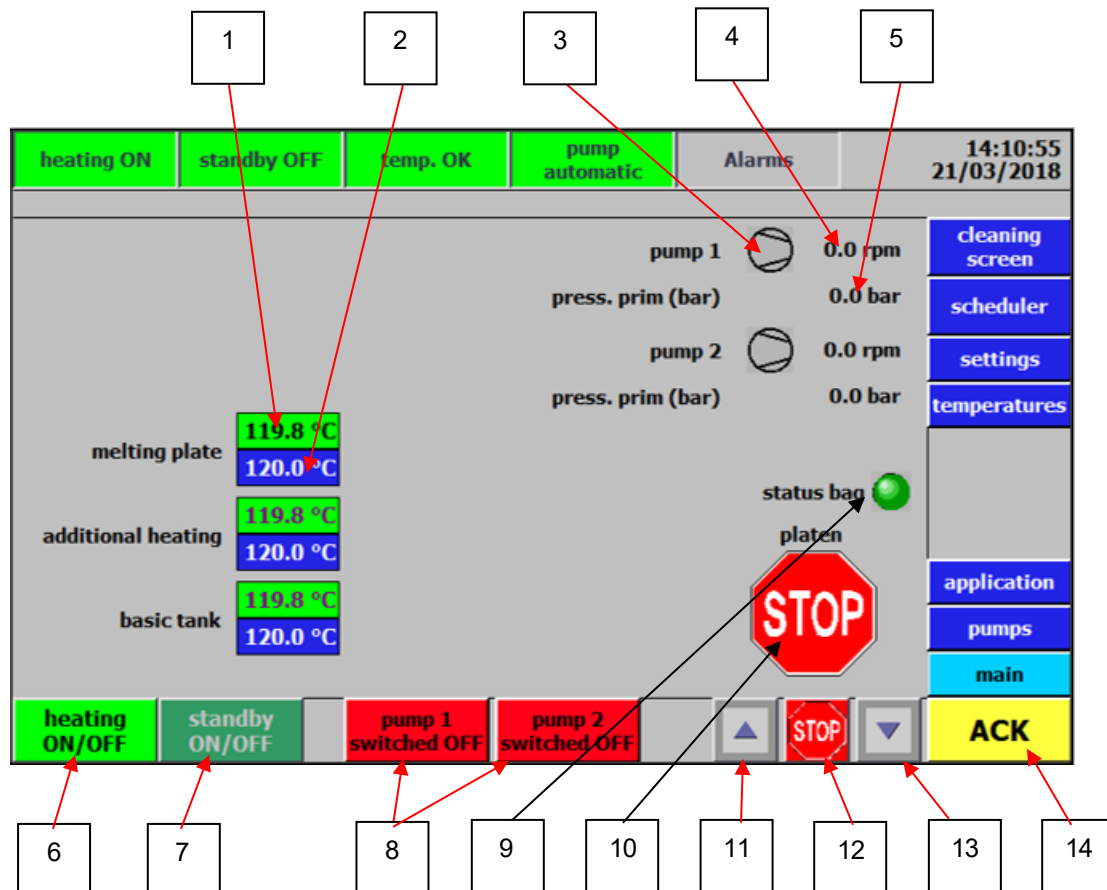


	Description
1	Status bar In this area, the current status of each section is indicated.
2	Message line for error messages, warnings, information and indications • Errors will be displayed red. • Warnings will be displayed yellow. • Information/Indications will be displayed green.
3	Switch bar In this area, the switches for the operation of the system are located.
4	Navigation In this area, the control elements for the navigation in the operation of the system are located.

6.3 Overview, main screen



- The heating zone 1 (tank) has always to be switched on.
- The buttons/switches show the as-is-state of the particular function.
- By pressing the input boxes a numeric keypad will open. Enter the desired value and confirm by pressing ENTER.
- *NOTE: The pictures and illustrations in this manual are partially sample pictures!*



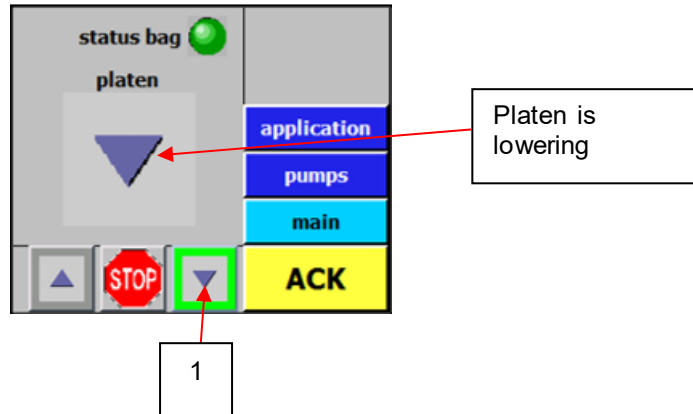
	Description
1	Display: Actual temperature / heating zone The actual temperature of the heating zone is displayed. By pressing on these fields, you will go to the screen of the particular heating zone, where you can edit the temperatures.
2	Display: Setpoint temperatures - The setpoint temperature of the heating zone is displayed, depending on the actual operation mode. - The max. value for working temperature is by default limited to 190°C (374°F). - The standby (setback) temperature is preset by default to 50°C (122°F).
3	Display: Status of the Pump Drive The status of the pump drive is indicated: - Grey: Pump is turned off. - Green: Pump is running. - Red: There is an error on the pump drive.
4	Display: Actual Speed The actual speed of the pumps is displayed.

5	Display: Actual Adhesive Pressure The actual adhesive pressure will be displayed in bar.
6	Display: Heating turned On / Off This is the heating main switch. By pressing this switch, the heating of the whole unit will be switched on or off.
7	Switch: Standby On / Off By pressing this switch, the standby mode (setback temperature) will be switched on or off.
8	Switches: Pump/motor 1 and 2 is On / Off • By pressing this switch, the pump/motor will be switched on or off. • This switch is only visible if the working temperatures have been reached and the message "Temperatures OK" appears in the "Status bar".
9	Display: Status adhesive bag The status of the adhesive bag is displayed: • Green: Adhesive bag is full. • Yellow: Adhesive bag is almost empty (option). • Red: Adhesive bag is empty.
10	Display: Status platen The status of the platen (STOP, arrow lower (downward), arrow lift (upward)) is displayed (see illustration under point 6.3.1).
11	Button: Lift platen By pressing this button, the platen of PUR20 will be lifted.
12	Button: Stop platen By pressing this button, the platen of PUR20 will be stopped. This step is always necessary when changing the movement direction of the cylinder.
13	Button: Lower platen By pressing this button, the platen of PUR20 will be lowered. To do this, the transverse traverse must be in the correct position and locked.
14	Button: ACK With the button "ACK" you have to acknowledge any faults after their elimination. Execute following steps: • Correct and clear the faults / disturbances. • Press the button "ACK" to turn the main contactor on and to start the system again.

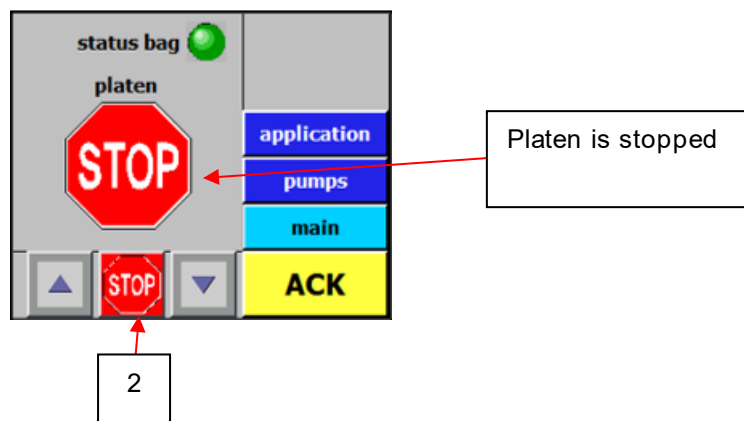
6.3.1 Operation of the platen



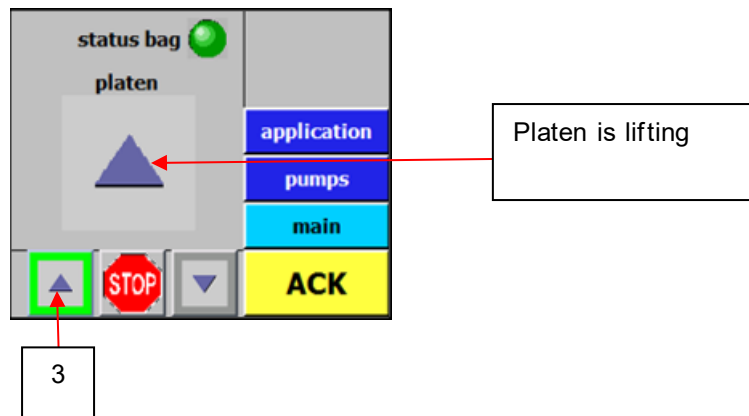
While one action is in progress (lift or lower), the button for the other action is locked.



	Description
1	Button: Lower platen By pressing this button, the platen of the PUR20 will be lowered. To do this, the transverse traverse must be in the correct position and locked. If this movement direction has been selected, the button is highlighted in green; in addition, the selected direction is indicated by a downward arrow.

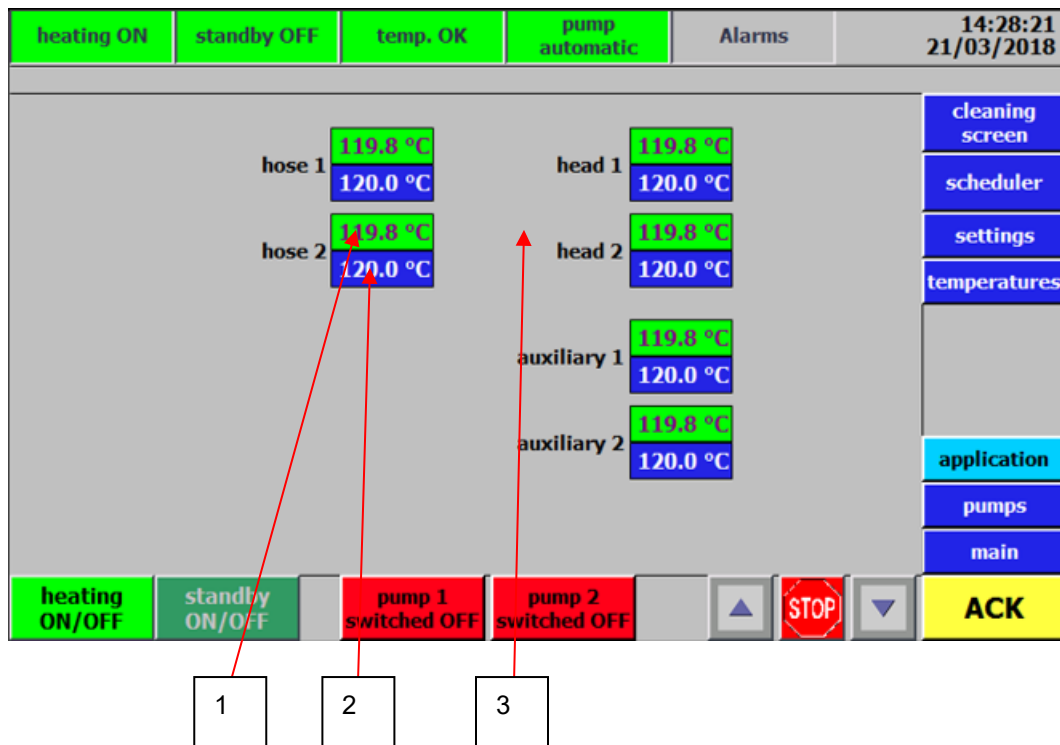


	Description
2	Button: Stop pressing plate By pressing this button, the platen of the PUR20 will be stopped. This step is always necessary when changing the movement direction of the cylinder. If the pressing plate has been stopped, the button is highlighted in red, in addition a "stop sign" appears.



	Description
3	Button: Lift platen By pressing this button, the platen of the PUR20 will be lifted. If this movement direction has been selected, the button is highlighted in green; in addition, the selected direction is indicated by an upward arrow.

6.4 Periphery Hoses / Applicators / Auxiliary



	Description
1	Display: Actual temperature / heating zone The actual temperature of the heating zone is displayed. By pressing on these fields, you will go to the screen of the particular heating zone, where you can edit the temperatures.
2	Display: Setpoint temperatures - The setpoint temperature of the heating zone is displayed, depending on the actual operation mode. - The max. value for working temperature is by default limited to 190°C (374°F). - The standby (setback) temperature is preset by default to 50°C (122°F).
3	Button: Heatings By clicking in the center of the screen, you will go to the temperature settings.

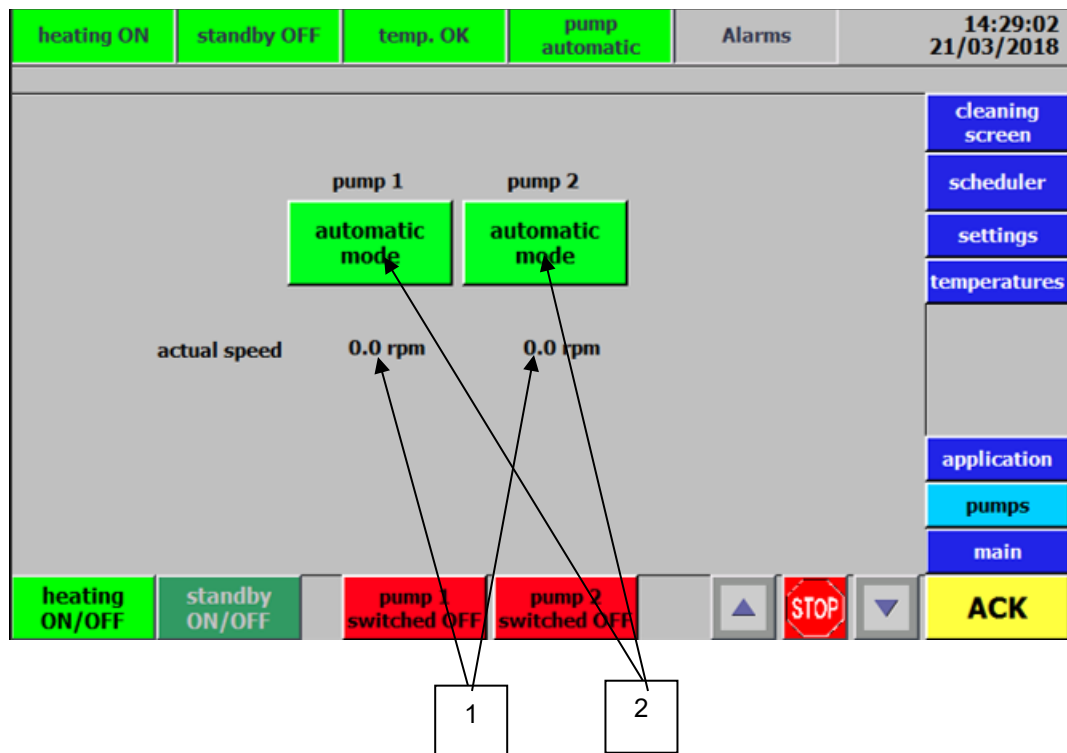
6.5 Heatings

zone	name	set temp.	curr. temp.	sequence
1	basic tank	120.0 °C	119.8 °C	1 ▾
2	additional heating		119.8 °C	1 ▾
3	melting plate	120.0 °C	119.8 °C	1 ▾
4	hose 1	120.0 °C	119.8 °C	1 ▾
5	head 1	120.0 °C	119.8 °C	1 ▾
6	hose 2	120.0 °C	119.8 °C	1 ▾
7	head 2	120.0 °C	119.8 °C	1 ▾
8	auxiliary 1	120.0 °C	119.8 °C	ON ▾
9	auxiliary 2	120.0 °C	119.8 °C	ON ▾

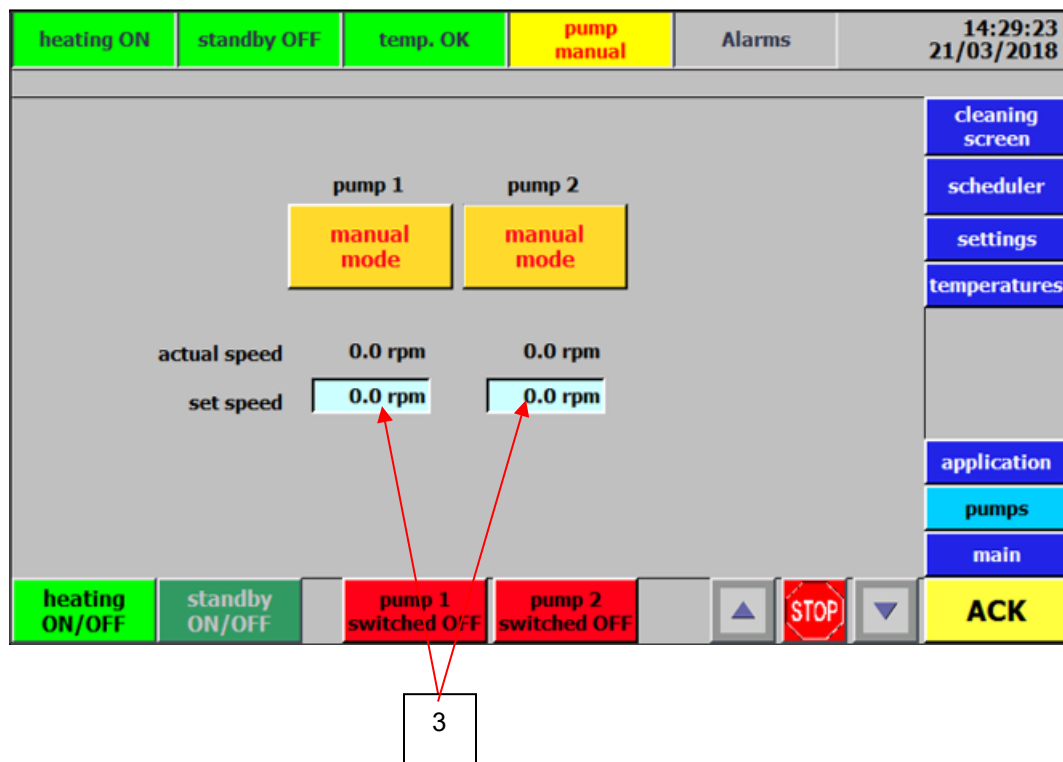
	Description
1	Display: Heating zone number The heating zone number is displayed.
2	Input and Display: Heating zone name Here, the heating zone name will be entered and displayed. The names of the heating zones from number 4 you'll find also on the "Application" screen.
3	Input: Operation temperature Set here the temperature for the particular heating zone. - By touching the input box, you can set or change the temperature value for the operation temperature according to the data sheet given by the adhesive manufacturer. A numeric keypad will open. Enter the desired value and confirm by pressing ENTER. - The operation temperature of the AUX-heating is always equal to the operation temperature of the basic tank.
4	Display: Current temperature The current temperature is displayed.
5	Selection: Sequence of the heating zones By pressing the input field, a drop-down opens, where you can select the heating sequence of the heating zones: - OFF: Heating zone is switched OFF. 1 – 5: Heating hierarchy of the heating zones. The sequences are processed in the Controller in sequence; i.e. sequence 1 first, then sequence 2, etc. When the temperatures of sequence 1 are reached, the temperatures of sequence 2 start to heat, etc. - It is recommended to turn on the unit (bag melter) with the first sequence.

6.6 Pump / Motor Screen

6.6.1 Automatic mode

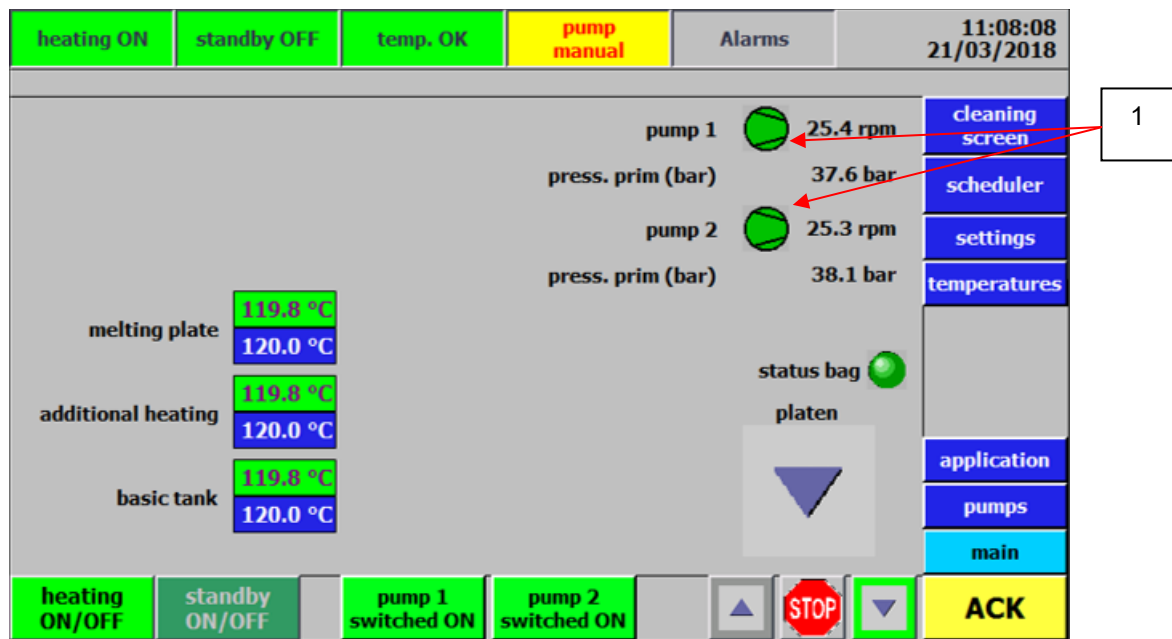


	Description
1	Display: Current speed in rpm The current speed of the pump is displayed.
2	Switch: Operation mode of the pump Automatic / Manual mode By pressing this switch, you switch the automatic or the manual mode of the pump. • If the manual mode is set, enter the required speed in the appropriate input box. • If the automatic mode is set, the setpoint speed is controlled by the main machine. For this, a line/reference voltage of 0 - 10V is necessary depending on the machine speed.

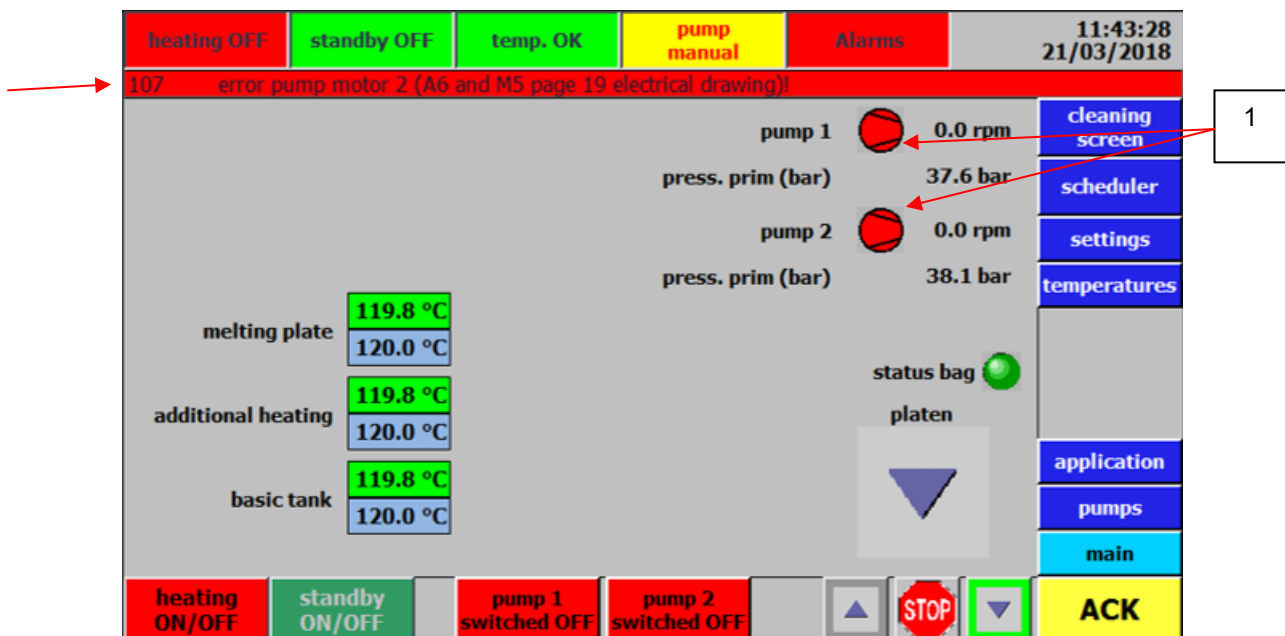
6.6.2 Manual mode

	Description
3	Input: set speed in rpm This input box is visible only in manual mode. For this, switch to manual mode. By pressing the input boxes a numeric keypad will open. By means of that, the values can be edited. Enter the value and confirm by pressing ENTER.

6.6.3 Status of the pump motors

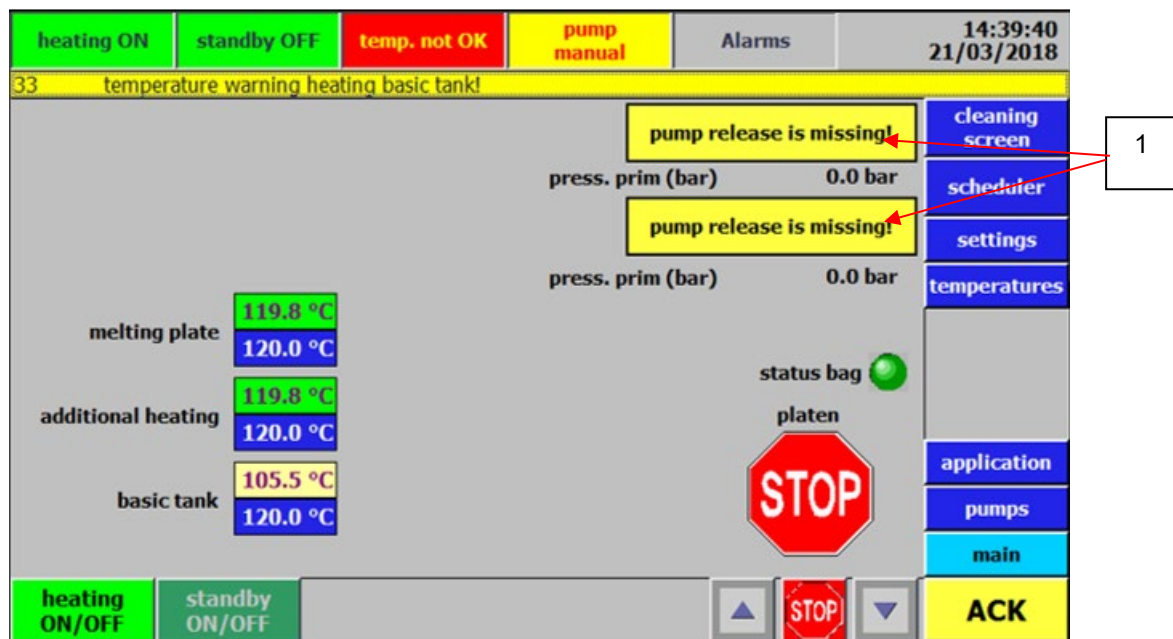


	Description
1	The pump is switched on and rotates at the specified speed.

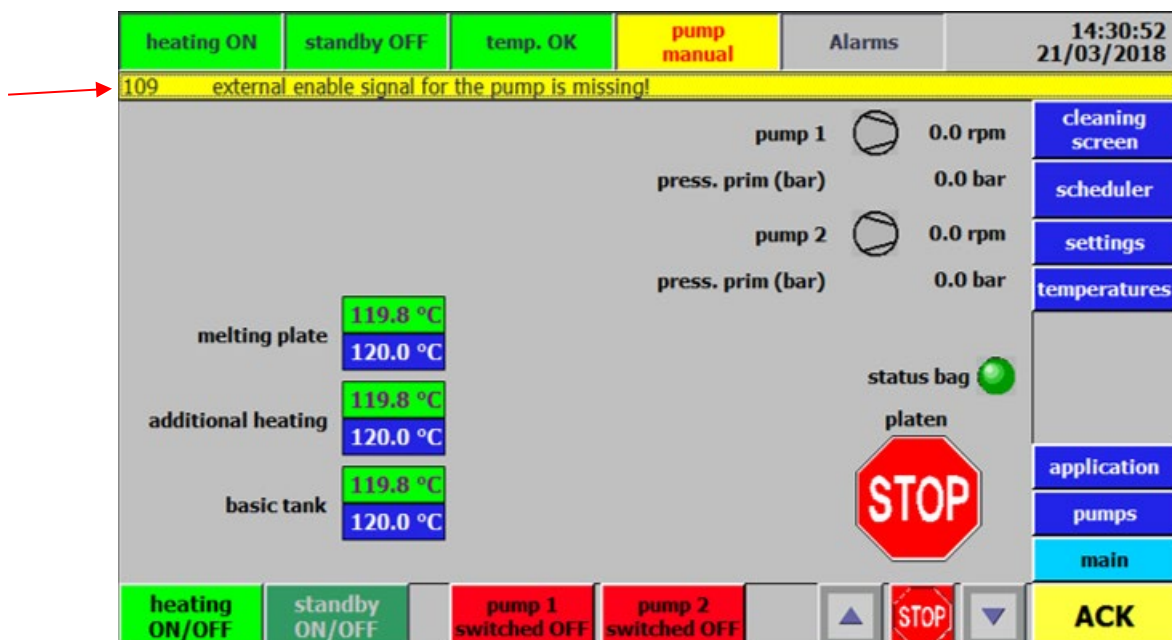


	Description
1	There is an error/fault in the pump motors.

6.6.4 Pump release

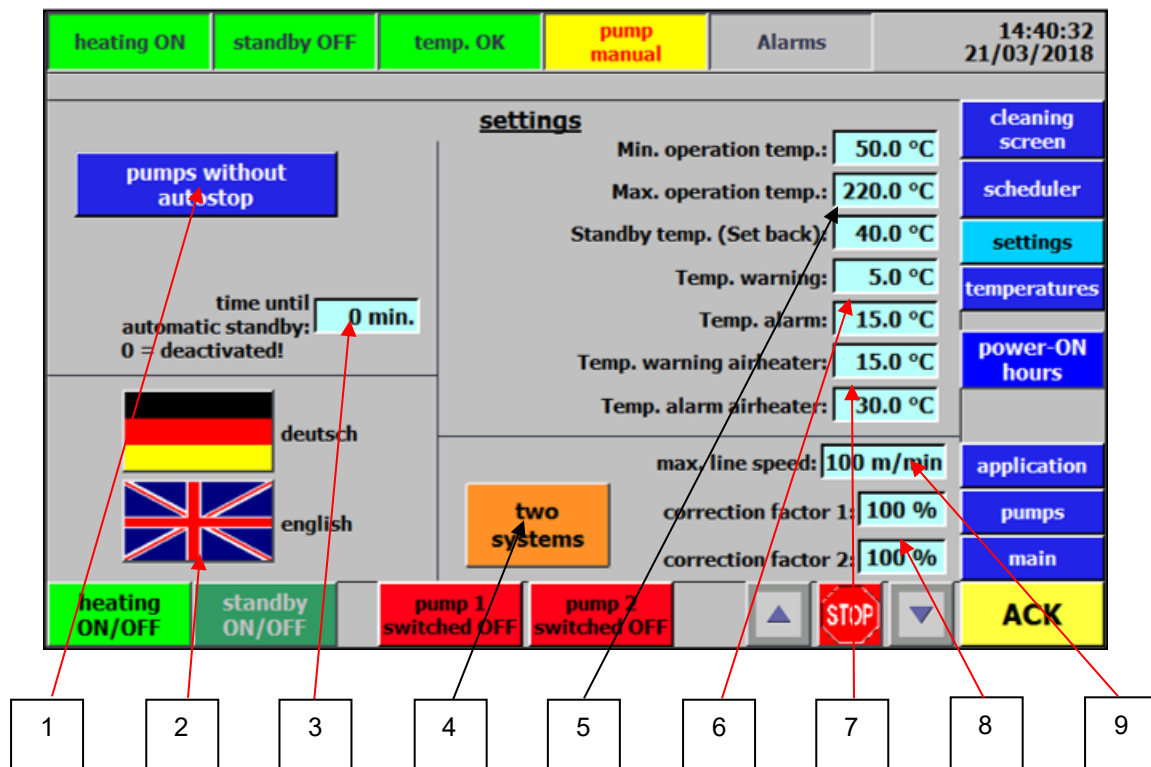


	Description
1	- The yellow indication "pump release is missing!" will appear, if the pump switch-on conditions are not given and disappear, as soon as the pump release is given. - The Switch "Pump/Motor ON/OFF" will automatically be reset (i.e. the pump remains or will automatically be switched off), as long as the pump switch-on conditions are not given (i.e. the operation temperatures must be reached and the pump release must be available by customer-contacts or fieldbus).



	Description
	The message appears if an external release from the main machine is missing.

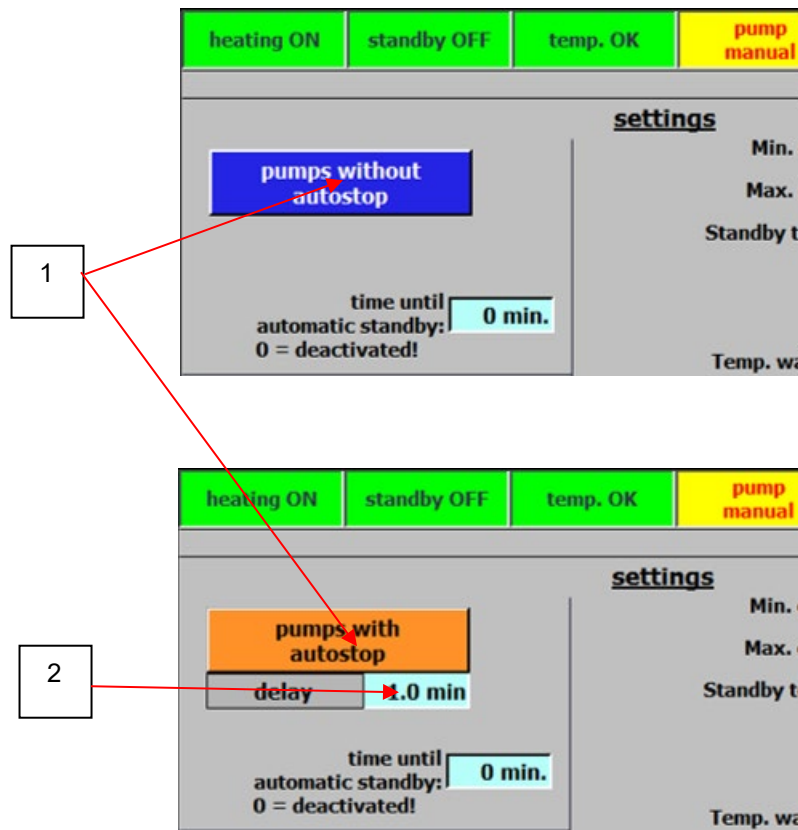
6.7 Settings



	Description
1	Switch: Pumps with/ without autostop See function description under point 6.10.
2	Selection: Deutsch (German) / English By pressing the appropriate button, you can select the desired language.
3	Input: Time until automatic standby in minutes - Enter here the time, after which the unit will automatically be switched to standby-mode (setback temperature) when the unit pumps do not run. - The standby-mode can manually be switched off again by pressing the button "Standby Mode ON/OFF". 0 = Deactivated: If you enter "0" min. this function will be switched off.
4	Selection: One or two systems (see picture below) With this switch, you can set whether the bag melter is to be installed on two systems or only on one system, if it is equipped with two pumps. If two systems, each motor receives the line/reference voltage separately from the respective system. In the case of one system, both motors receive the same line/reference voltage.
5	Input: min. operation temperature - Here, you enter the minimum setpoint for the operation temperature of all heating zones. The operation temperature (production temperature) must be at least at this set value. Input: max. operation temperature - Here, you enter the maximum setpoint for the operation temperature of all heating zones. The operation temperature (production temperature) can be set maximum at this value. Input: Standby temperature (set back) - Here, you enter the desired value by which the working temperature should be lowered. This value applies to all heating zones. - The set back temperature is factory set to 50°C.

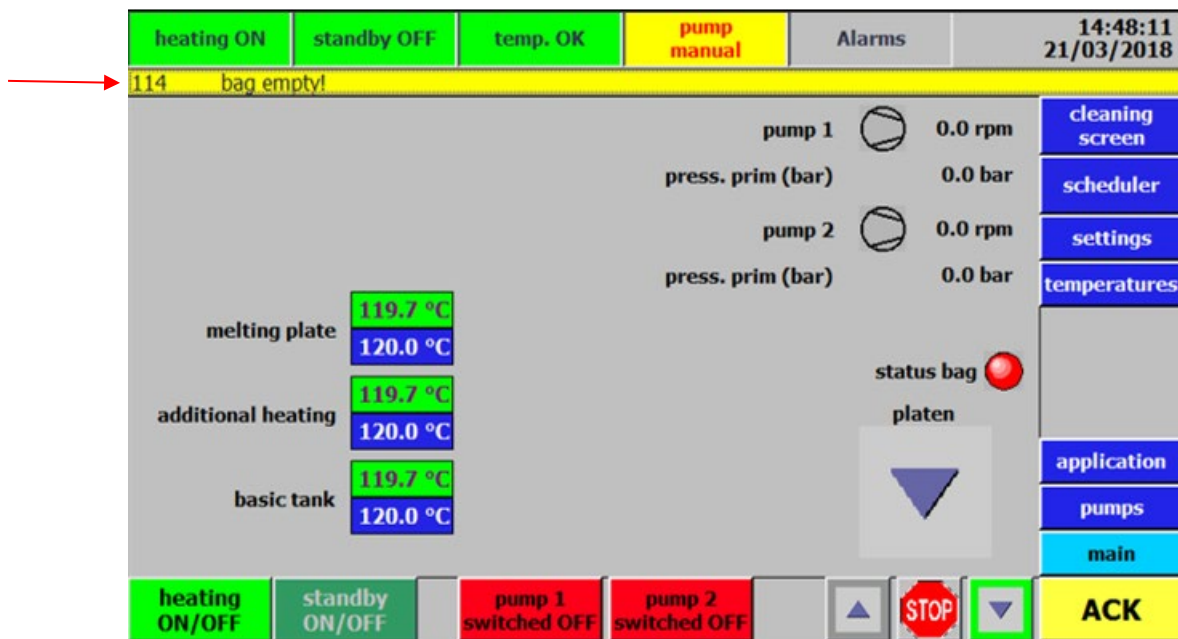
6	Input: Temperature warning PUR20 - If the temperature of a heating zone falls below or exceeds this value, a warning message will be displayed. This value applies to all heating zones except the auxiliary zones. Input: Temperature alarm PUR20 - If the temperature of a heating zone exceeds this value, an error message will be displayed and the system will be stopped. This value applies to all heating zones except the auxiliary zones.
7	Input: Temperature warning air heater - If the temperature of a heating zone falls below or exceeds this value, a warning message will be displayed. This value applies only to the auxiliary zones. Input: Temperature alarm air heater - If the temperature of a heating zone exceeds this value, an error message will be displayed and the system will be stopped. This value applies only to the auxiliary zones.
8	Input: Correction factor Enter here a factor which corrects the pump speed in automatic mode. This is necessary e.g. when a line/reference voltage is available and two different pump speeds are required. 100% corresponds to the full speed according to the line/reference voltage.
9	Input: max. line speed Enter the max. line speed of the main system. This speed corresponds to 10V from the 0-10V signal for the automatic regulation of the pump speed and it corresponds to the maximum speed set at the frequency converter.

6.8 Automatic Pump Stop



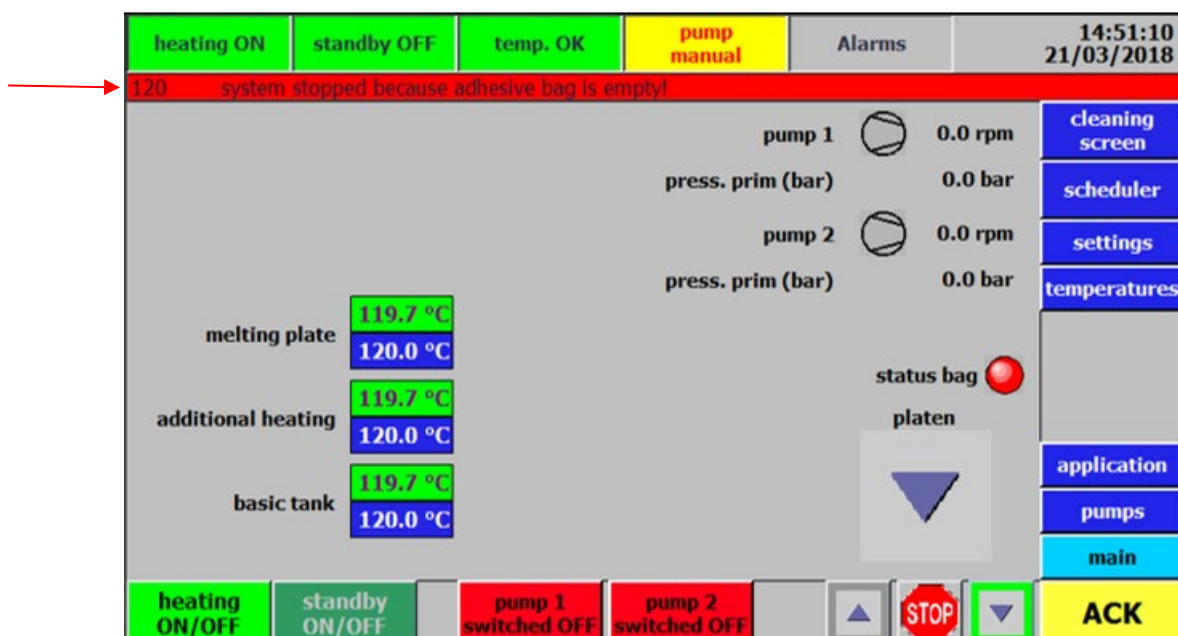
	Description
1	Switch: Pump with/ without autostop By pressing this switch, the automatic pump stop when adhesive bag is empty will be switched on or off. • Pumps without autostop: The pumps continue to run even when the adhesive bag is empty. • Pumps with autostop: The pumps will stop automatically after a set time when adhesive bag is empty. After this, the pumps can be restarted only after lifting of the platen. • The factory default setting is "pumps without auto-stop".
2	Input: Delay-Time Here you can set the time after its expiration the pumps stop automatically.

6.8.1 Messages for automatic pump stop



Description

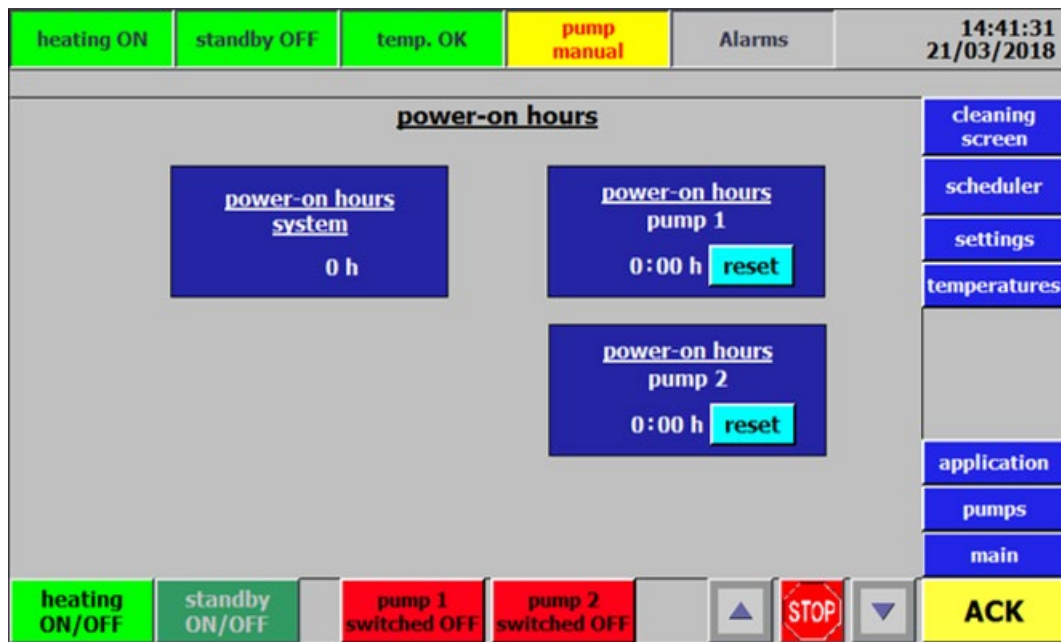
When the automatic pump stop is switched off, this message appears if the glue bag is empty and the pump continues to run.



Description

When automatic pump stop is activated, the pump stops after the set time and this message appears in the display. This message can only be reset by changing the adhesive bag.

6.9 Power-on hours



Access only for authorized personnel with password.

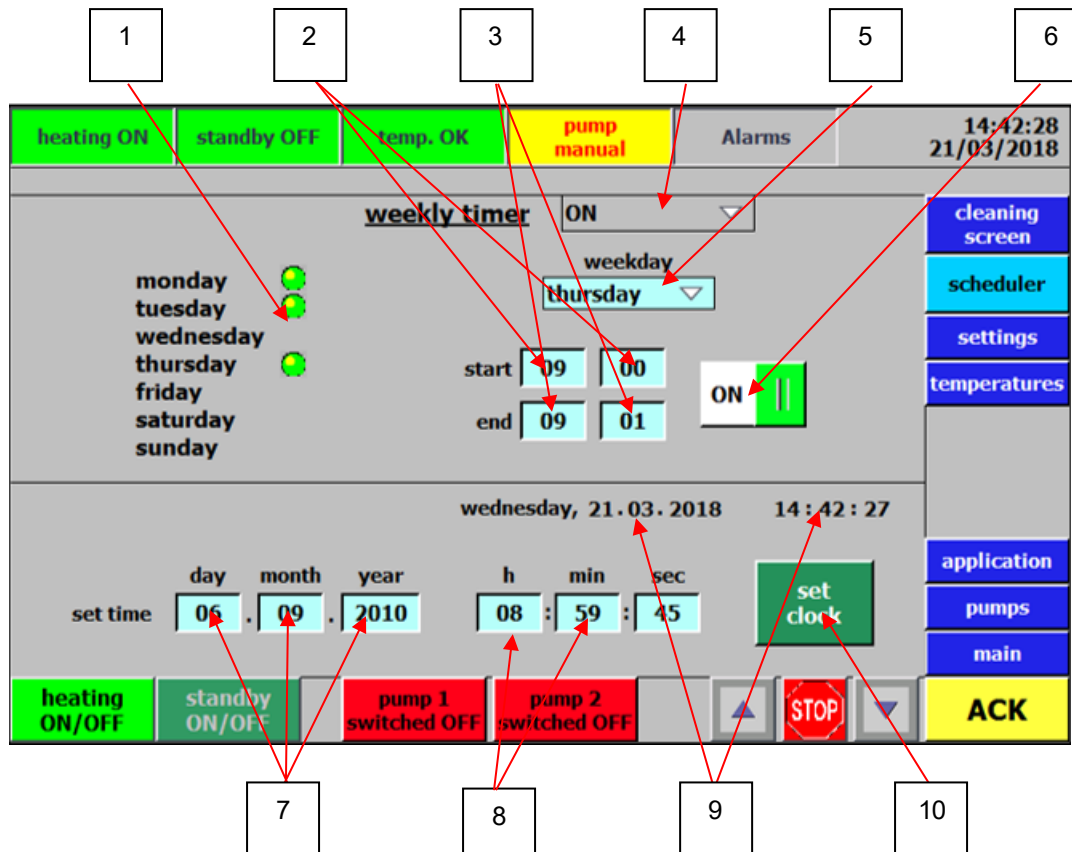
	Description
	- The power-on hours (operating hours) of the unit and the pumps are recorded for statistical interpretations, e. g. the runtime of pump shaft sealings. - The counters can be reset by the service personal if necessary, e. g. after replacement a pump shaft sealing or a pump.

6.10 Weekly timer / Clock



The unit will be switched on and off over the weekly timer, only if:

- the main switch of the unit is switched "ON",
- the controller is switched "ON", and
- the operation mode "ON" of the weekly timer has been chosen.



	Description
1	Display: "switched-on" weekday • The unit will be switched off according the break time (end time) of a day and switched on again according the closing time (start) of an activated day. Example: The unit will be switched off on Friday at 16.00 o'clock and switched on again on Monday at 6.00 o'clock. • A small virtual LED displays the weekdays, on which the clock timer will control the unit. • The LED does not shine, if a day has been not activated. Example: The unit produces only from Monday till Friday. These days will be activated and thus the LED for the 5 days will shine. The unit does not produce on Saturday and Sunday. These days get deactivated and thus the LED for the 2 days will not shine.
2	Input: Start (Closing time) • By pressing the input boxes a numeric keypad will open. Enter the desired value and confirm by pressing ENTER. • Set the start time in hour and minute. The weekly timer will switch on the unit automatically at this time.
3	Input: End (Break time) • By pressing the input boxes a numeric keypad will open. Enter the desired value and confirm by pressing ENTER. • Set the end time in hour and minute. The weekly timer will switch off the unit automatically at this time.

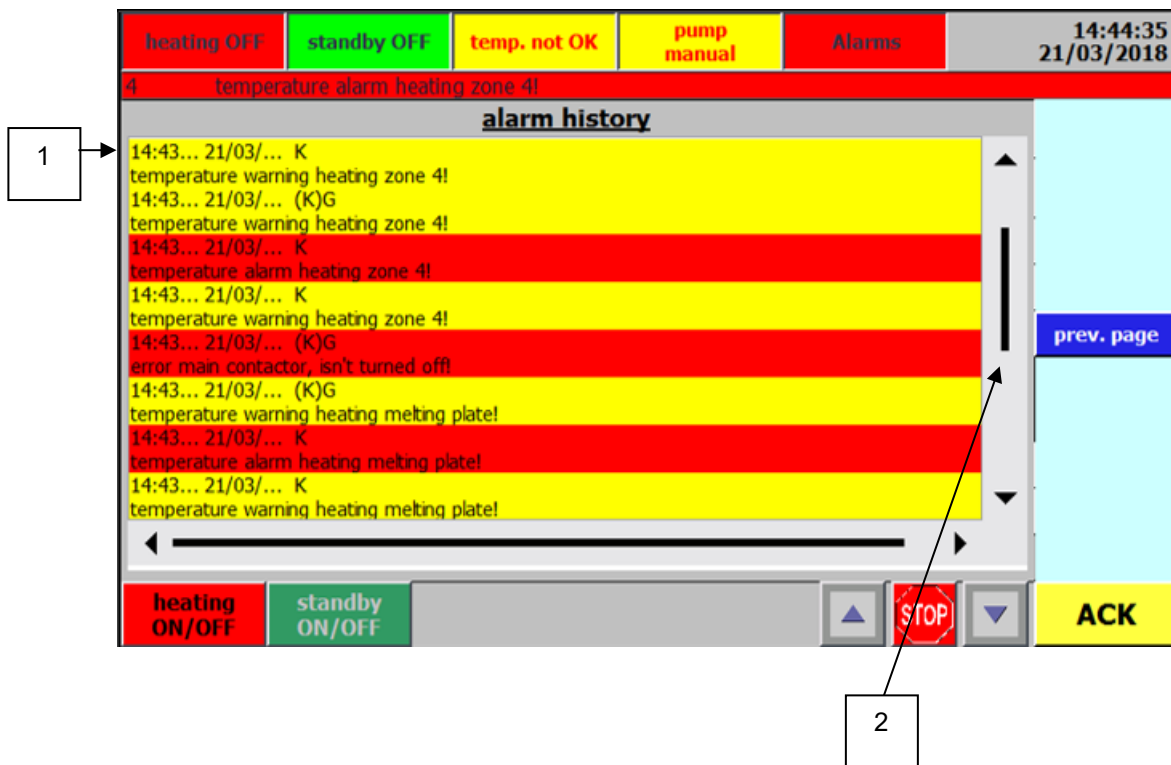
4	Mode-of-operation-switch: Operation mode of weekly timer Choose the operation mode of weekly timer by drop-down-menu. • Unit OFF: The unit will be always switched off. • Timer OFF: The unit will always be switched on and is operated without weekly timer. • Timer ON: The unit will be switched on and off by the weekly timer.
5	Drop down menu: Weekday • Choose the weekday by drop down menu. • Set for this day the start and end time. Press the switch "Timer function On/Off" in order to activate and deactivate the chosen day.
6	Switch: Timer function On/Off By pressing this switch, the timer function for the displayed day will be activated or deactivated.
7	Input: Date • By pressing the input boxes a numeric keypad will open. Enter the desired value and confirm by pressing ENTER. • Input the new date in day, month and year.
8	Input: Time • Touching the input boxes will open a numeric keypad. By means of that, the values can be edited. Confirm the values by pressing ENTER. • Input the new time in hour and minute.
9	Display: Date and time Display of the actual set day and time.
10	Button: Set clock By touching this button, the fed values will be set.

6.11 Pending Alarms



	Description
1	Display: Alarms and warnings - You go to this screen over the system screen. - All pending warnings and alarms are displayed

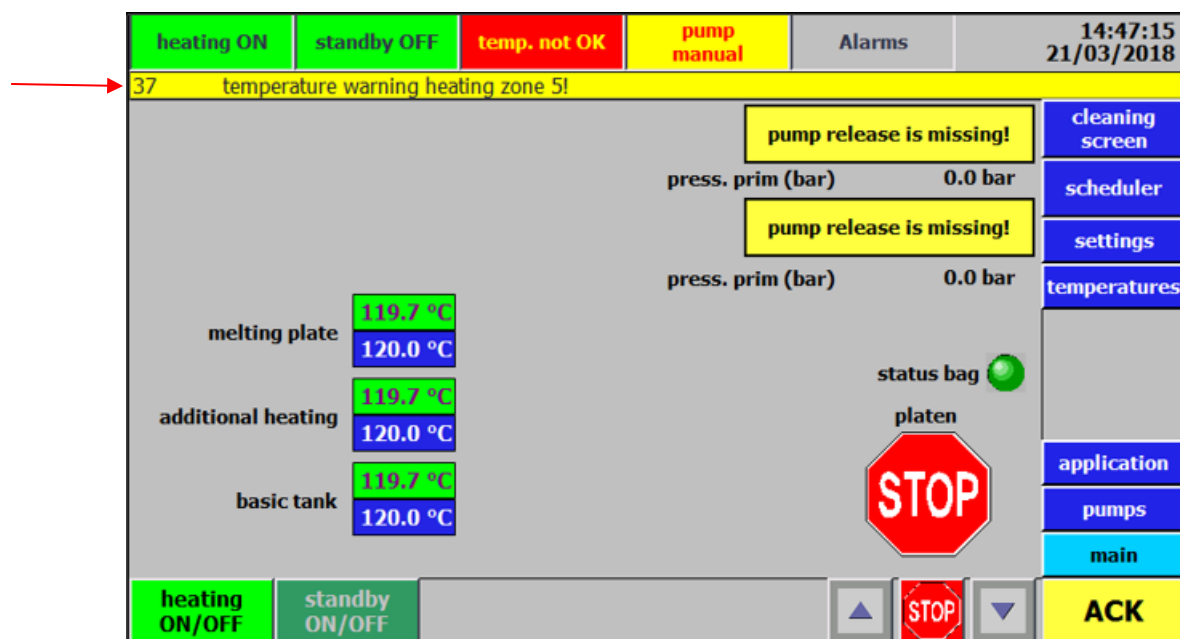
6.12 Alarm history



	Description
1	Display: Message text All warnings and alarms of the last time are displayed here with time stamp. If the message memory of the display is full, the oldest messages will be overwritten.
2	Button: Scroll keys By pressing the buttons, the reports will be scrolled.

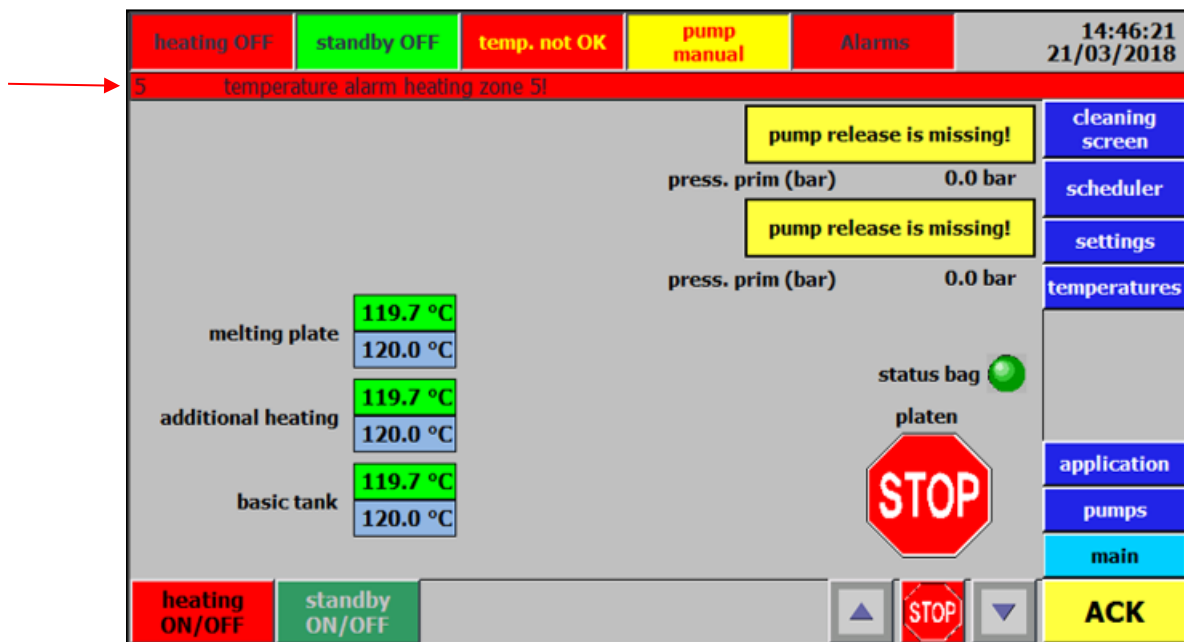
6.13 Trouble indication and information

6.13.1 Warnings



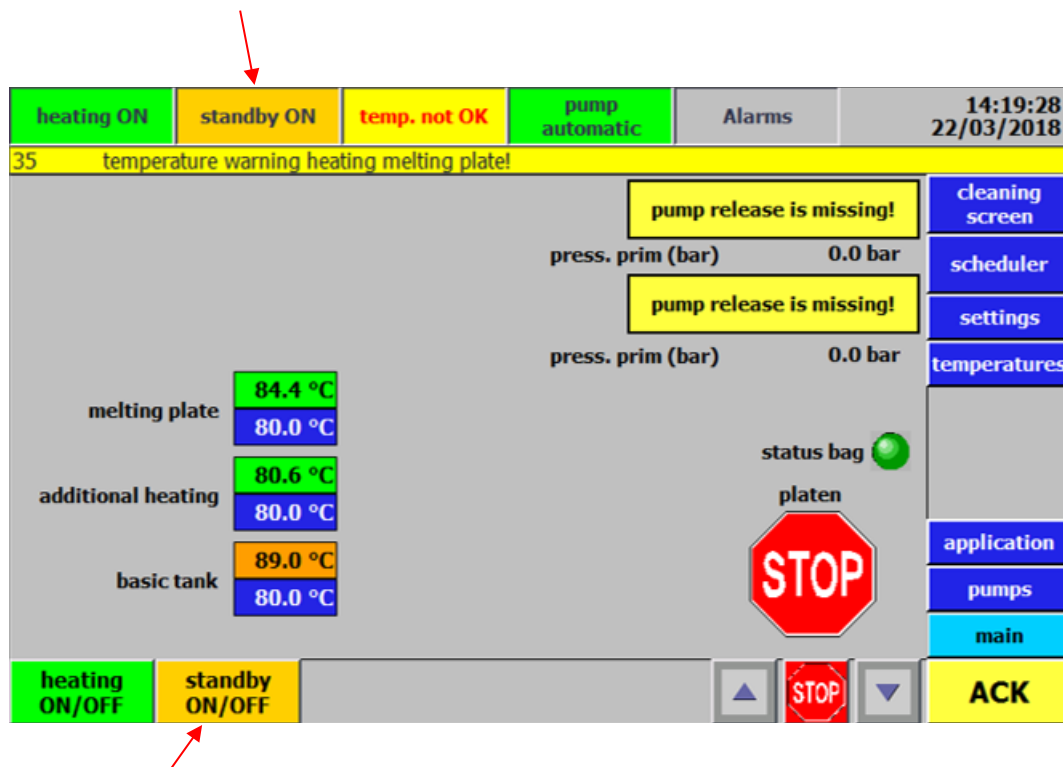
	<i>Description</i>
	Warnings The warnings are displayed yellow in the status displays.

6.13.2 Alarms



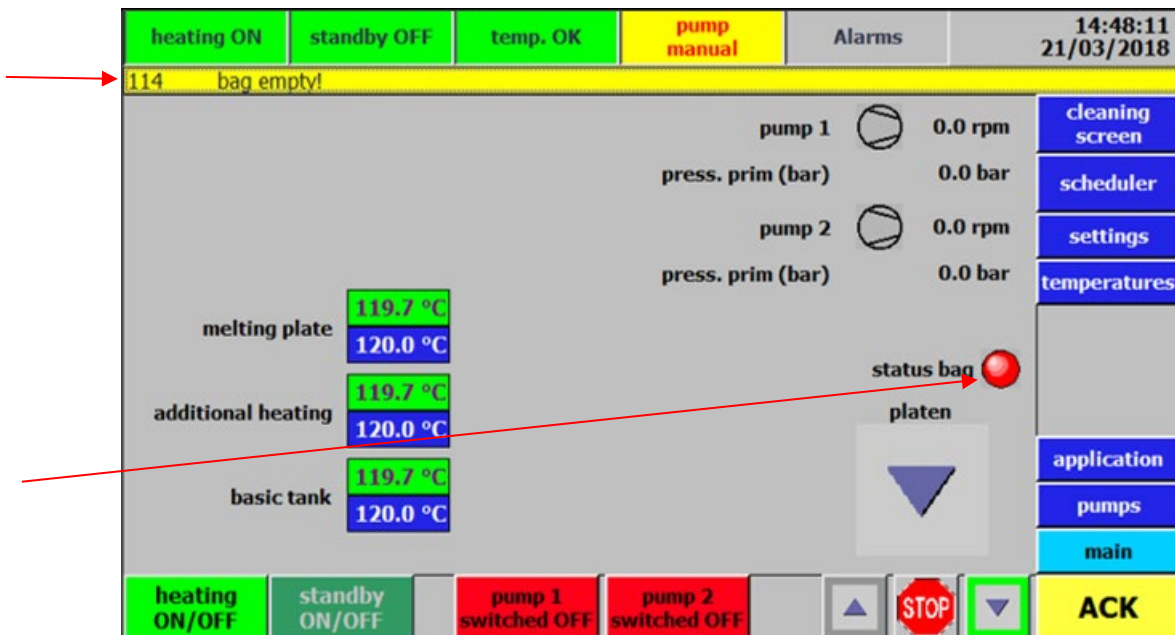
	Description
	Alarms The alarms are displayed red in the status displays. When an alarm is present, the unit will be stopped. After eliminating the causes, alarms must always be acknowledged with the ACK key.

6.13.3 Standby

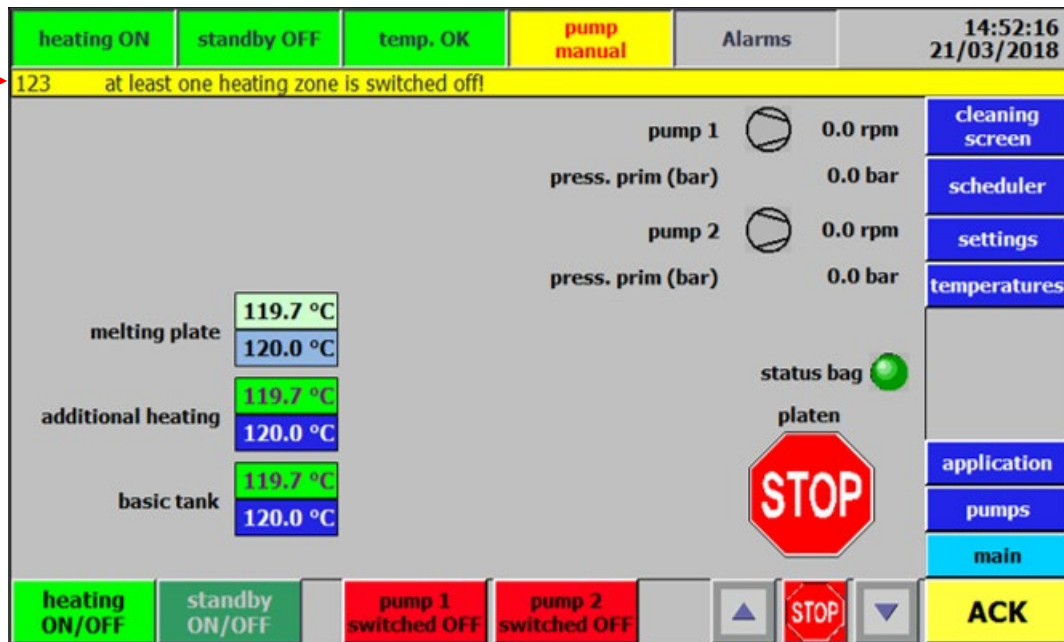


	Description
	Display: Standby When the standby-mode (setback temperature) is switched on, the display of "operation temperature" changes to "standby" and the pump release is disabled; the pump switch is no longer visible. If the pumps have run, they will stop automatically.

6.13.4 Bag empty

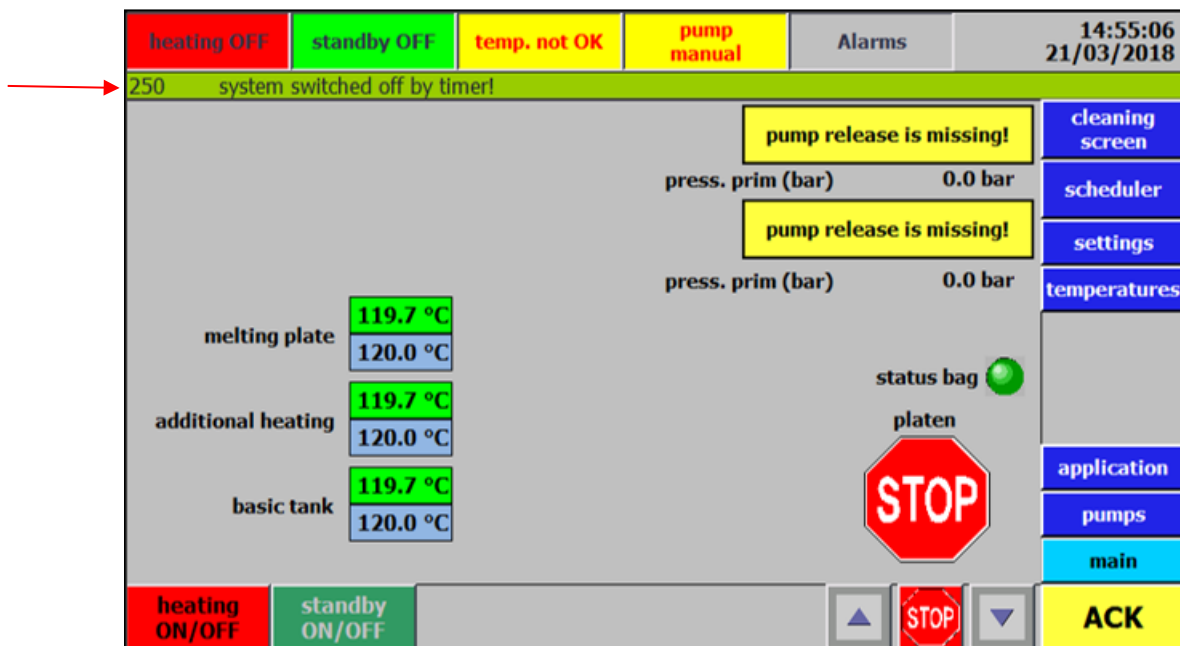


	Description
	Display: Bag empty • This message appears, if the adhesive bag is empty. • This message is visible on every screen in the upper area of the display. • Additionally, the “status bag” LED lights red.

6.13.5 At least one heating zone switched off

	Description
	Display: At least one heating zone is switched off • This message appears, if at least one heating zone has been accidentally switched off. • For a smooth production flow, switch on all heating zones. • This message is visible on every screen in the upper area of the display.

6.13.6 System switched off by timer



	<i>Description</i>
	Display: System switched off by timer This message appears, if the system is switched off by weekly timer.

6.14 Access-Code

Use only by authorized personnel!

User:	Dynatec
Password:	dynacode

Activity	DYNATEC
Work temperature	x
Heating zones on/off	x
Coating weight adjustment	x
System on/off	x
Scheduler on/off	x
Density adjustment	x
Scheduler adjustment	x
Time adjustment	x
Language changes	x
Max. line speed adjustment	x
Change name of heating zones	x
Metric/imperial setting	x

Chapter 7

Maintenance and repair notes

7.1 Security advices for maintenance and repair

Heed all security advices given in Chapter 2.

Use only original parts from ITW Dynatec, otherwise ITW Dynatec's warranty is void!

Maintenance and repair work is only permitted for skilled personnel!

Always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothing that cover all vulnerable parts of the body while working on the heated unit! Risk of injury or heavy burns!



High Voltage! Risk of injury and mortal danger!

- All electrical connections must be made by qualified electrical personnel.
- Care must be taken to assure proper grounding prior to any disassembly.
- Lockout and tag the electrical sources as required.
- Make sure there is no electrical power on the leads you will be connecting.
- When covers are removed, high voltage sources create an electrocution hazard.
- Wear appropriate safety equipment when working with high voltage sources.



Parts and surfaces of the unit get very hot. High temperatures! Risk of heavy burns!



High adhesive temperature and adhesive pressure! Risk of injury or heavy burns!

Always assume that the system is under pressure, proceed with caution.

Keep a cool-pack, or bucket of clean water near the work area.



Place a heat-resistant catchment container/underlay under the components.
Hot adhesive may come out.

CAUTION: At working temperature, molten adhesive could cause heavy burns. Let spilled out adhesive cool down first, before removing it!



CAUTION: Use only lint-free cleaning cloth and suitable cleaner for cleaning! Do not damage surfaces! Do not scratch above them with sharp-edged tools, otherwise the components will get leaky and inoperable!



CAUTION: All maintenance and repair work has to be done at working temperature, except as noted otherwise. Else there is a risk of damaging the unit components!



Before any service work disconnect the external power supply and switch the unit voltage-free. See point 7.3.

CAUTION: The main switch switches the power on and off. Perhaps not all circuits (such as signals, reference voltage, etc.) are switched off by the main switch. Refer to wiring diagram.

Before any service work the adhesive pressure must be relieved throughout the system.

- Relieve the adhesive pressure of the Bag Melter by disconnecting the pressure air supply. See point 7.4.
- Additionally relieve the adhesive pressure of the Applicator by disconnecting the pressure air supply and after switching off the gear pump let escape the residual adhesive from the module. See manual of the Applicator.

7.1.1 Equipment Preparation for Maintenance & Repair

- Adhesive processing equipment must be worked on while hot enough to soften any material residue within the assembly. This depends on the type of adhesive used with the equipment. This may require the system to be up to operating temperature before disassembled, to prevent damage to fasteners and components.
- Once disassembled, the individual parts may be cleaned by immersion in approved solvent. Surface deposits may be removed by lightly scrapped with a brass device or scrapper. Care must be taken not to damage sealing surfaces with sharp objects or sandpaper.
- Components such as O-rings, fasteners and relief valves should be discarded and replaced by certified ITW Dynatec replacement parts.

7.1.2 Re-Assembly Procedures and General Cautions

Unless noted, the re-assembly is simply the reverse sequence of the disassembly procedures. However, the following "cautions" should be followed (whenever they apply) for proper re-assembly:



CAUTION

In general, all O-RINGS AND SEALS must be replaced whenever hot-melt equipment is re-assembled. All new O-rings must be lubricated with O-ring lube (PN 001V078).

SOME FITTINGS used for adhesive on hot melt equipment have straight threads and O-ring seals. Use of thread sealant is not necessary with these parts, but the O-ring seals should be clean and lubricated. Tighten straight-threaded parts and fittings until their shoulders are firmly seated. Excessive torque may damage straight-threaded parts and the use of power wrenches is not recommended.

HOT-MELT RESIDUE must be cleaned from parts before they are re-assembled, particularly from threaded parts. As a precaution against adhesive residue preventing proper re-assembly, threaded parts must always be re-tightened at operating temperature.

7.1.3 Cleaning Recommendation

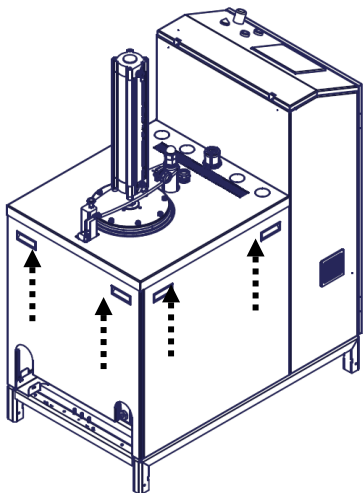
- Filters are disposable and need to be replaced regularly. DO NOT boil in mineral oil, solvents or water; the sealant used in filter assembly may become brittle and very likely disintegrate when boiled.
- When cleaning other components in mineral oil, remove all non-metallic items (O-rings, seals, filter cartridge, etc.) away from chemicals before components are subjected to hot mineral oil cleaning.
- If there is not a specific rebuild kit available or directions on how to clean a part, please treat it as a replacement item and do not attempt to clean/rebuild.

7.2 Mounting / demounting the sidewalls



ADVICE

Heed all security advices given in chapter 7.1.



Demount:

- Lift the sidewalls at both grips.
- Pull the wall out of the bottom side of the base frame and pick it downwards.

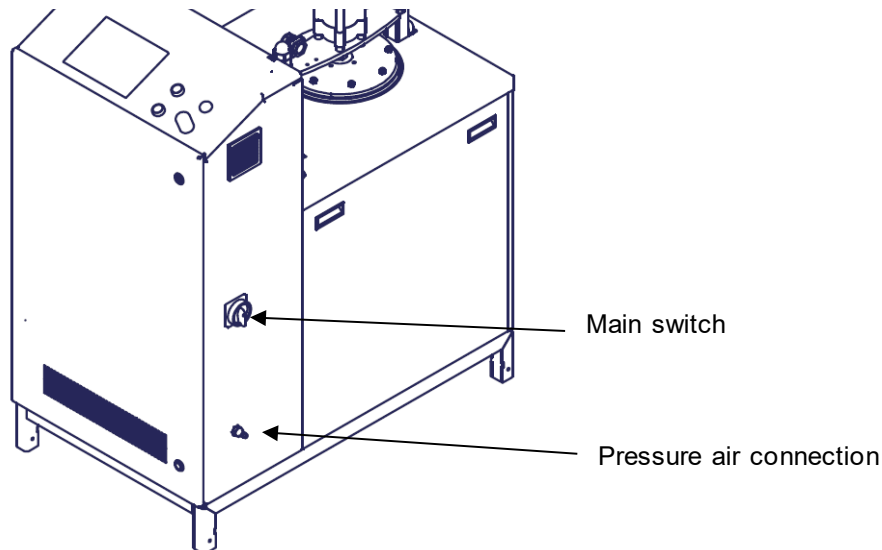
Mount:

- Insert the side panel upwards in the cover.
- Place it at the bottom side on the base frame and arrest it.

Illustration: Demounting, mounting the sidewalls

7.3 Switch the unit voltage-free

1. Switch the main switch off.
2. Disconnect the power supply respectively remove the plug / cable.
3. Guard the unit against unauthorized restarting!



CAUTION: The main switch switches the power on and off. Perhaps not all circuits (such as signals, reference voltage, etc.) are switched off by the main switch. Refer to wiring diagram.

7.4 Switch the unit pressureless respectively relieve the adhesive pressure

1. Disconnect the pressure air supply.
2. Turn the pressure regulator to zero bar, if necessary. Wait approximately 1 minute until the pressure is relieved.
3. Open the purge valve of the applicators or open the modules by activating the solenoid valves to release the adhesive pressure.

7.5 Controlling and replacement of the filter



ADVICE

ADVICE: Heed all security advices given in chapter 7.1.

If the filter is contaminated with PUR, it cannot be cleaned and reused!

MAINTENANCE:

The filters need to be checked depending on the use **every 6 to 8 weeks** and replaced if necessary.

The filter screw is located in the backside of the filter block.

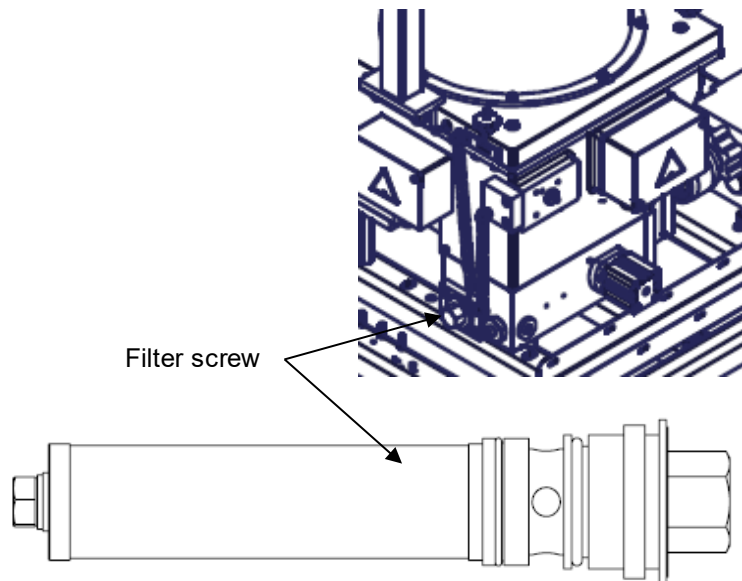


Illustration: Filter screw

Dismounting the filter screw



1. Stop the motors.
2. Switch the unit voltage-free and pressureless. See points 7.3 and 7.4.
3. Guard the unit against unauthorized restarting!
4. Demount the sidewalls. See point 7.2.
5. Place a heat-resistant catchment tank under the filter screw. Hot adhesive may come out!
6. Screw and pull the filter screw with the filter out of the tank/filter block
7. Clean the chamber of the filter screw with a wooden scraper. Then it will be easy to reinstall.

8. Check if the filter is contaminated and dirty and if it has to be renewed or not.
If there is any major soiling, the filter has to be changed.

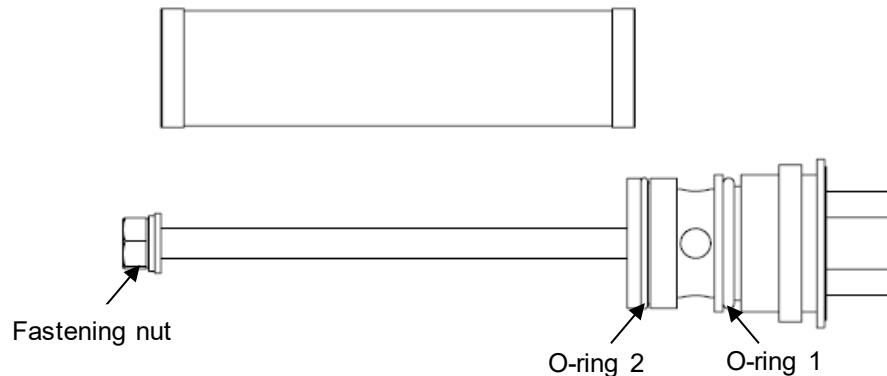


Illustration: Filter screw

Replacement of the filter cartridge

- Disconnect the fastening nut and take out the washer.
- Pull the filter cartridge out of filter screw. ATTENTION: Depending on design, on the inside is a spring to stabilize the filter cartridge.
- Install a new filter cartridge (optionally with spring) onto the filter screw and fasten it with disk and fastening nut.



CAUTION

Before screwing in the filter screw, check the two O-rings on the filter screw for damage!

If the O-rings are damaged, they have to be changed as follows:

- Remove the damaged O-rings.
- Grease O-ring 1 with silicone grease and install it.
- Grease O-ring 2 with silicone grease and install it.

9. Screw-in the filter screw with filter into the tank.

Screw-in the filter-screw only a little bit, and then wait 1... 2 minutes. This is necessary to warm up the filter. After that, you can screw-in the filter screw totally.

10. After inserting the filter, it is necessary to vent the filter chamber immediately:

- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
- Switch on the pumps and let the adhesive circulate for about 5 minutes within the unit. The air that penetrated into the filter chamber while changing the filter can be carried off therewith into the tank and the chamber of the filter screw will be filled with adhesive. Bubbles in the hoses and mistakes in the application will be avoided.
- Stop the pumps.

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Continue production.

7.6 Controlling and cleaning the basic tank / swiveling the feed tube



ADVICE

Heed all security advices given in chapter 7.1.

Adhere to the safety data sheet of the manufacturer when using cleaning material!

MAINTENANCE:

- Check the basic tank regularly for soiling or disposals. This soiling or disposals could be caused by e.g. burned or fully cured adhesive.
- For the right cleaning intervals, the adhesive manufacturer has to be asked for because of the different kinds of adhesive (e.g. monthly).

Swiveling the feed tube



1. Stop the motors.
2. Switch the unit voltage-free and pressureless. See points 7.3 and 7.4.
3. Guard the unit against unauthorized restarting.
4. Demount the sidewalls. See point 7.2.
5. Loosen the four star-handles at the melting plate.



WARNING: There is a **risk of burns** while removing the sidewalls and swiveling the feed tube!

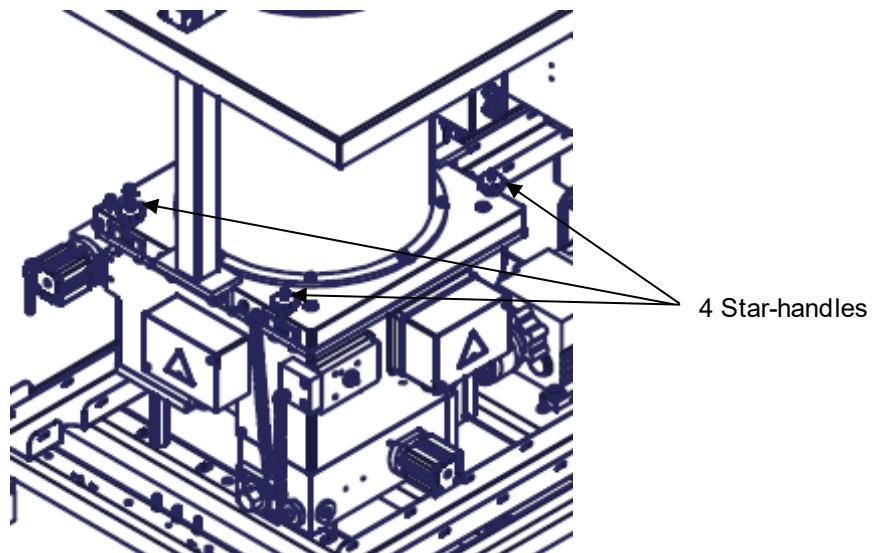


Illustration: Opening the basic tank – loosening the star handles

6. Make sure that the pneumatic cylinder is locked in place.
7. If necessary, unplug the cables from control cabinet.

8. Swivel the whole swiveling part (open the melting tank) depending on the version to the right or to the left side until the chain is tightened. The chain has been dimensioned suchlike that the unit cannot overbalance.

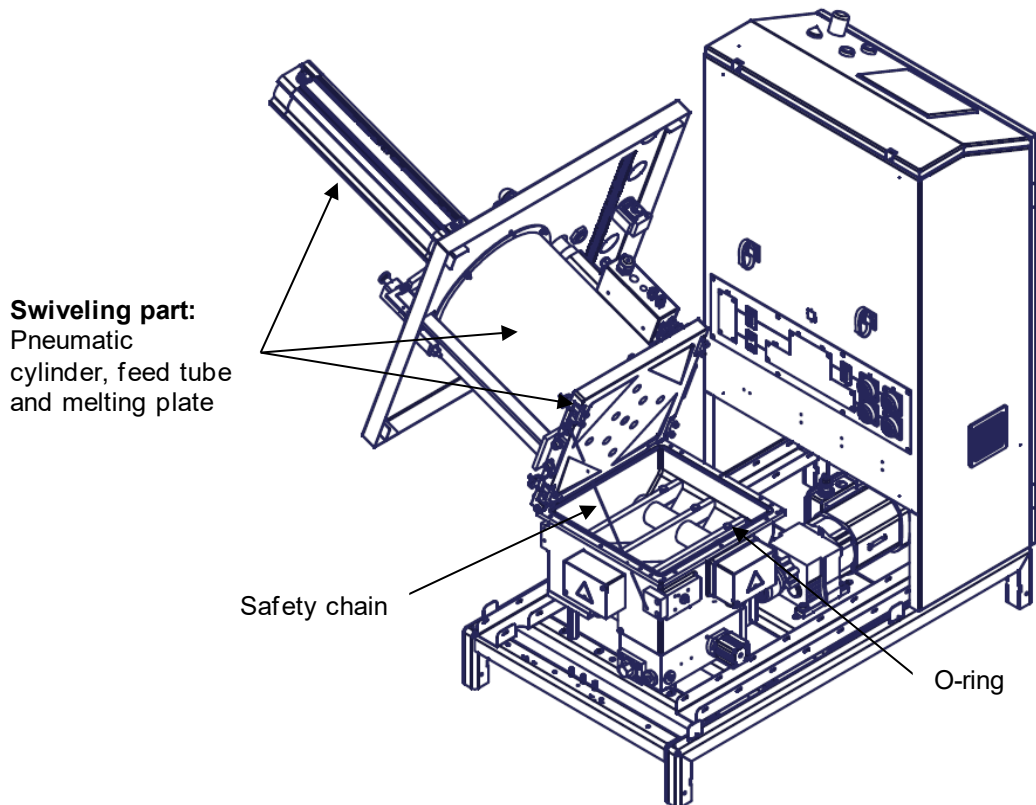


Illustration: Cleaning the basic tank - swiveling part



WARNING!

Always observe during cleaning:

If you switch off the motor, the system releases the adhesive pressure from the hose into the tank (pressure relief valve opens) and thereby adhesive might spurt out when the swiveling part is swiveled (opened) and cause injuries and burns. Therefore, before switching off the motor, bring the swiveling part temporarily into upright position (closed), then switch off the motor and wait 30 seconds to avoid injuries and burns.

Tank cleaning

9. Clean the basic tank as follows:

- Place a heat-resistant catchment tank under the basic tank. Hot adhesive may come out!
- **If circulating system:** Unscrew the return hose from the tank and put the hose end into a heat-resistant catchment tank. Place a heat-resistant catchment tank under the hose nipple or close this with a cap. Hot adhesive may come out!
- **If non-circulating system:** Unscrew the feed hose from the Applicator and put the hose end into a heat-resistant catchment tank. Place a heat-resistant catchment tank under the hose nipple or close this with a cap. Hot adhesive may come out!
- Switch on the main switch and the controller, turn the pump on to slow speed and empty the basic tank as much as possible.
- Bring the swiveling part temporarily into upright position (closed), switch off the motor, the controller and the main switch and wait 30 seconds.

- Swivel the swiveling part again (open the melting tank).
 - Remove the three heat-conducting melting arms of the melting aid by loosening the screws, moving the melting arms to the side and taking them off.
 - Clean immediately the melting arms with lint-free clothes (towels) and suitable cleaner. Do not scratch above the parts with sharp-edged tool, to not damage the coating.
 - **Shorter cleaning-procedure of the tank:**
Switch on the main switch and the controller, turn the pump on to slow speed and move all remaining adhesive by using a wooden scraper to the pump feed hole at the bottom of the tank. Clean immediately the tank and the cylindrical heating element of the melting aid with lint-free clothes (towels) and suitable cleaner and wooden scraper. Do not scratch above tank and parts with sharp-edged tool, to not damage the coating.
 - **Longer cleaning-procedure of the tank:**
Let the basic tank cool down to room temperature.
Switch on the main switch and the controller and warm the basic tank up to 50-60°C. While warming up, the disposal could be removed with a pincer like skin in one piece.
Remove further soiling or disposal with a wooden scraper.
Do not damage the coating of the tank by using sharp-edged tools.
 - Reinstall the three melting arms to the cylindrical heating element of the melting aid, position these at equal distances and retighten the fastening screws.
 - Check if the O-ring of the tank is damaged and replace it if necessary.
10. Swivel the swiveling part back into upright position (close) and switch off the unit.
11. Tighten the four star-handles nuts at the melting plate.
12. If necessary, plug the cables on the control cabinet again.

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
- Continue production.

7.7 Cleaning the unit



ADVICES

- Heed all security advices given in chapter 7.1.
- To switch the unit voltage-free and pressureless, see points 7.3 and 7.4.
- Adhere to the safety data sheet of the manufacturer when using cleaning material!
- In case the production should be stopped after cleaning (e. g. company holiday), the unit has to be switched off filled with cleaner! Fill in PUR adhesive again first when restarting the production!

Cleaning of circulating systems:

1. Take the bag out of the tank or melt the bag completely at first.
2. Run down (empty) the tank during production as good as possible.
3. Switch the unit over to manual mode (see chapter Controller).
4. Stop the pumps.
5. Switch the unit pressureless.
6. Demount the sidewalls. See point 7.2.
7. Swivel the whole swiveling part (see swiveling the feed tube) and open the basic tank.
8. Check the tank for possible contamination and remove it.
9. Fill the tank with a PUR-cleaner recommended by the adhesive manufacturer.
10. Disconnect the return hose from the tank. Put a heat-resistant catchment tank under the return port and return hose. Hot adhesive comes out.
11. Connect the compressed air supply and set the pressure regulator to 6 bar.
12. Start the pumps.
13. Let the pump run until only cleaner comes out of the return hose.
14. Open the application head and let the pump run until only cleaner comes out of the application head.
15. Switch off the application head and stop the pumps.
16. Connect the return hose at the tank again.
17. Start the pumps and let the cleaner circulate within the entire system.
18. Raise the temperature according to cleaner-manufacturer's data while the cleaner circulates.
19. To guarantee a secure dissolving of the adhesive residues, the cleaner should circulate at least 6 to 8 hours.
20. Stop the pumps.
21. Switch the unit pressureless.
22. Disconnect the return hose.
23. Pump the cleaner complete out of the unit into a catchment tank.
24. Disengage the filter screw. Check the filter for soiling, if necessary, replace the filter. See chapter, "Replacement of the filter".
25. Put new adhesive bag into the tank and start melting.
26. After enough adhesive is molten, start the pumps.
27. Let the pumps run as long as only clean adhesive comes out of the return hose and the application head.
28. Stop the pumps.
29. Connect the return hose at the tank again.
30. Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
31. Connect the air supply again and set the pressure regulator to the needed air pressure.
32. Mount the side panels again. See point 7.2.
33. Continue production.

Cleaning of non-circulating systems:

1. Take the bag out of the tank or melt the bag completely at first.
2. Run down (empty) the tank during production as good as possible.
3. Switch the unit over to manual mode (see chapter Controller).
4. Stop the pumps.
5. Switch the unit pressureless.
6. Demount the sidewalls. See point 7.2.
7. Swivel the whole swiveling part (see swiveling the feed tube) and open the basic tank.
8. Check the tank for possible contamination and remove it.
9. Fill the tank with a PUR-cleaner recommended by the adhesive manufacturer.
10. Disconnect the hose from the application head. Put a heat-resistant catchment tank under the port and hose. Hot adhesive comes out.
11. Connect the compressed air supply and set the pressure regulator to 6 bar.
12. Start the pumps.
13. Let the pump run until only cleaner comes out of the hose.
14. Stop the pumps.
15. Switch the unit pressureless.
16. Connect the hose again at the application head.
17. Connect the air supply again and set the pressure regulator to 6 bar.
18. Start the pumps.
19. Open the application head and let the pump run until only cleaner comes out of the application head.
20. Switch off the application head and stop the pumps.
21. Switch the unit pressureless.
22. Disconnect the hose from the application head and fix it on the tank so that the adhesive can flow into the tank.
23. Connect the air supply again and set the pressure regulator to 6 bar.
24. Start the pumps and let the cleaner circulate within the entire system.
25. Raise the temperature according to cleaner-manufacturer's data while the cleaner circulates.
26. To guarantee a secure dissolving of the adhesive residues, the cleaner should circulate at least 6 to 8 hours.
27. Stop the pumps.
28. Switch the unit pressureless.
29. Disconnect the hose and pump the cleaner complete out of the unit into a catchment tank.
30. Disengage the filter screw. Check the filter for soiling, if necessary, replace the filter. See chapter, "Replacement of the filter".
31. Put new adhesive bag into the tank and start melting.
32. After enough adhesive is molten, start the pumps.
33. Let the pumps run as long as only clean adhesive comes out of the hose.
34. Stop the pumps.
35. Connect the hose again at the application head.
36. Let the pumps run as long as only clean adhesive comes out of the application head.
37. Stop the pumps
38. Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
39. Connect the air supply again and set the pressure regulator to the needed air pressure.
40. Mount the side panels again. See point 7.2.
41. Continue production.

7.8 Replacement of the pneumatic pressure relief valve

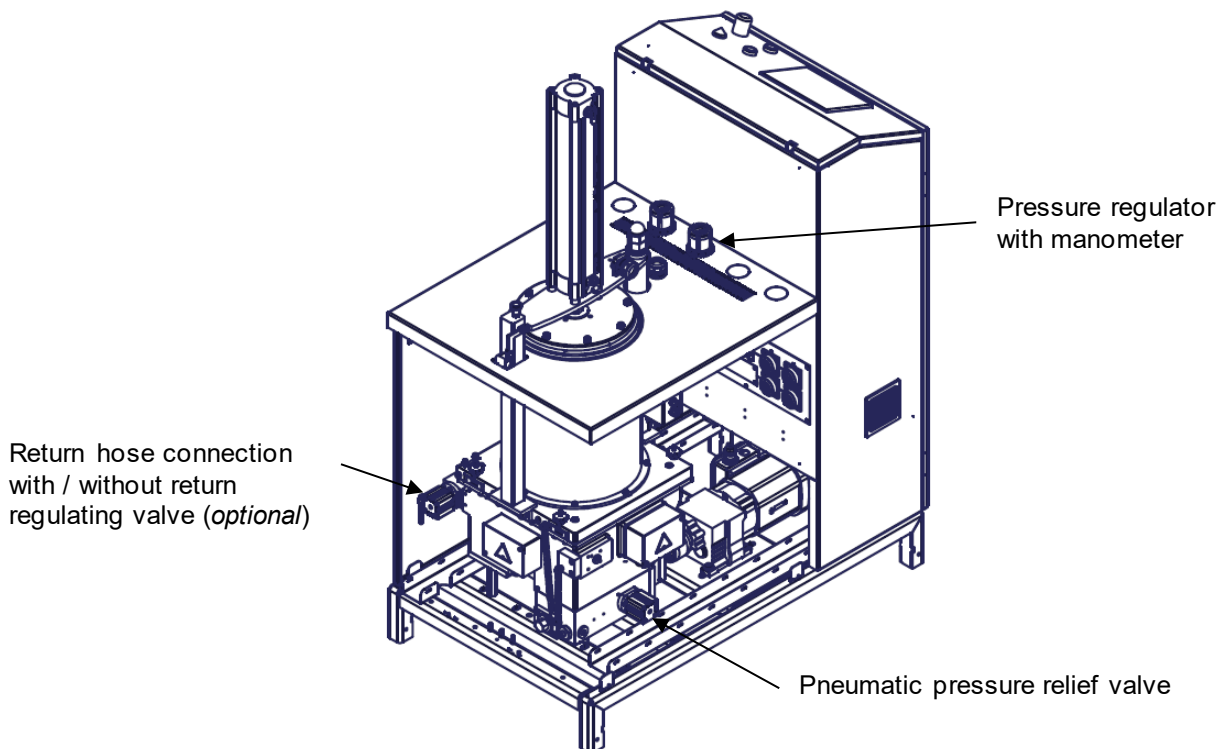


ADVICES

Heed all security advices given in chapter 7.1.

At a specific number of revolutions of the pump, not the adequate amount of adhesive is flowing out of the nozzle. The reason for that in most cases is a soiled filter. If after controlling and replacing the filters (if necessary) no change for the better is to be seen, there is evidence that there is a fault at the pressure relief valve.

The pneumatic pressure relief valve is maintenance-free because it is fitted up with an automated flushing device.



1. Stop the motors.
2. Switch the unit voltage-free and pressureless. See points 7.3 and 7.4.
3. Guard the unit against unauthorized restarting.
4. Demount the sidewalls. See point 7.2.
5. Place a heat-resistant catchment tank under the pressure relief valve. Hot adhesive may come out!



- See the drawing of the pressure relief valve under chapter "Drawings".
 - The replacement has to be done quickly because hot adhesive could pour out of the tank!
 - Soiled parts can be cleaned with a special cleaner (e. g. Hotmelt-Cleaner). Adhere to the current safety data sheet of the manufacturer when using hazardous materials (cleaning agents, etc.)!
6. Unscrew the 4 screws from the air cylinder.
 7. Unscrew the 2 screws at the connection flange.
 8. Pull out the valve housing with a pincer.

9. Mount the pressure relief valve in reverse order.

CAUTION: Check the O-rings if they are damaged. If the O-rings are damaged, they have to be replaced absolutely! Keep attention, that the O-rings will not be damaged while mounting the valve (see drawing under chapter "Drawings").

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
- Continue production.

7.9 Replacement of the gear pump



CAUTION

Heed all security advices given in chapter 7.1.

Adhere to the current safety data sheet of the manufacturer when using hazardous materials (cleaning agents, etc.)!

Please pay attention:

- Gear pump is not corrosion-resistant!
- Do NOT run gear pump with water or other corrosive media! Danger of corrosion! No guarantee!
- Never run the gear pump without a suitable medium (like adhesive), but always with adhesive or suitable cleaner only! Adhere to the current safety data sheet of the manufacturer when using hazardous materials (cleaning agents, etc.)!
- Pay attention: the rotating direction of the pump has to be compellable clockwise (right).
- Do not exceed the gear pump speed over 70 rpm!

Wear control:

- Due to normal wastage, the pumps could get leaky at the shaft sealing.
- Check weekly visual the shaft sealing of the gear pump.
If it's leaky, send the gear pump to ITW Dynatec for repair.
- We recommend stocking a gear pump for replacement!

Depending on the version, the gear pump has a seal housing with a needle bearing.

If the gear pump is leaking, we generally recommend having the defective pump repaired by manufacturer or using a replacement pump. No user-repairable part! Disassembling the gear pump will void the warranty!

Reason: There is a high risk from improper or unclean disassembly and assembly of the pump that the pump shaft or the gears seize on the pump plate, which can lead to the destruction of the pump.



NOTE on replacing the needle bearing in the seal housing:

If you need to replace the needle bearing of the gear pump, ensure to use a special grease (high-temperature grease) 5 g, PN 106.90100.149, and grease the needle bearing from the inside.

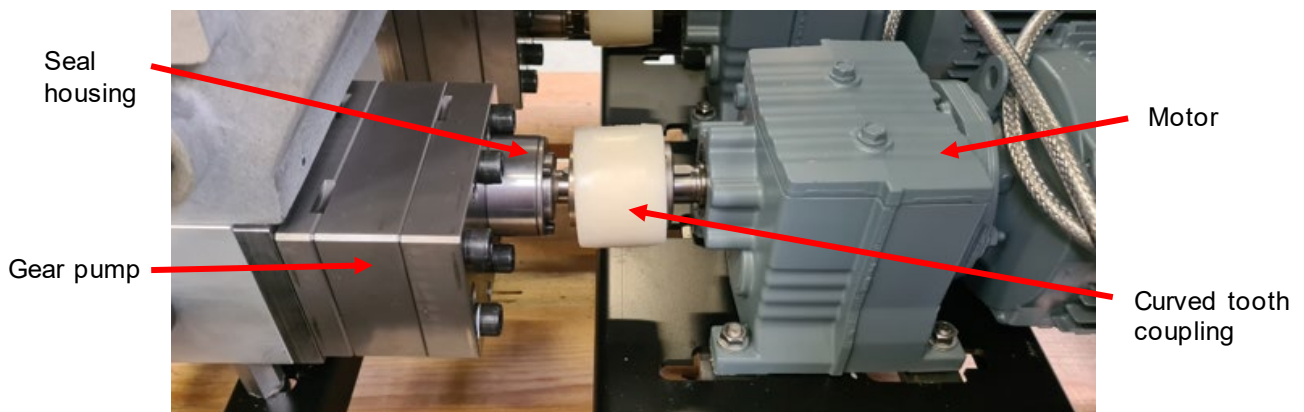


Illustration: Gear pump

Replacement of the gear pump



ADVICE

Before dismantling the pump, the tank has to be emptied or cooled down thus far, that no adhesive could pour out the tank holes anymore.



1. Stop the motors.
2. Switch the unit voltage-free and pressureless! See points 7.3 and 7.4.
3. Guard the unit against unauthorized restarting!
4. Demount the sidewalls. See point 7.2.
5. Place a heat-resistant catchment tank under the gear pump. Hot adhesive may come out!
6. Dismantle the four attachment screws of the motor and move the motor sideward resp. detach it.
7. Detach the curved tooth coupling. Clean it if necessary. Detach the fit-in key of the pump shaft.
8. Dismantle depending on the version the four or six attachment screws of the pump and detach the pump.
CAUTION: Do not damage the pump plates! They are smoothed sealing surfaces! Do not scratch above them with sharp-edged tools, otherwise the pump will get leaky and inoperable! Use only lint-free cleaning cloth and suitable cleaner for cleaning!
9. After dismantling the pump, the pump plate at the filter block has to be cleaned. Use lint-free cloth and suitable cleaner! **CAUTION:** Do not use sharp-edged tools when cleaning! The surface of the pump plate is, as well as the pump, smoothed.
10. Clean the basic tank before mounting the new pump, if necessary. The pump could be destroyed by major soiling like packaging remains or similar.
11. The new pump has to be fixed as far as it can be aligned later on. Pay attention that the pump is attached the right way: big bores up and small bores down!!
12. Attach the fit-in key and the curved tooth coupling again.
13. Place the motor in front of the pump and insert it into the curved tooth coupling. Thereby the pump might be turned slightly until the toothing fits together. Align motor and pump to each other and screw them together.
Motor and pump have to be aligned and screwed together hot, that means at working temperature!
The rotating direction of the pump compellable has to be clockwise (right).
14. The attachment screws have to be torqued steady going with a locking torque of 48 Nm.
Great attention has to be paid on that the curved tooth coupling can be swayed about 5 mm.



CAUTION

Pay attention: if the motor is not properly adjusted the pump might be damaged! No guarantee!

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
- Continue production.

7.10 Replacement of the Motor



ADVUCE

Heed all security advices given in chapter 7.1.



1. Stop the motors.
2. Switch the unit voltage-free and pressureless. See points 7.3 and 7.4.
3. Guard the unit against unauthorized restarting!
4. Demount the sidewalls. See point 7.2.
5. Dismantle the four attachment screws of the motor and move the motor sideward.
6. Disconnect the cables and draw out the motor.
7. Place the new motor in front of the pump and insert it into the curved tooth coupling. Thereby the pump might be turned slightly until the toothing fits together. Check the rotating direction of the motor before connecting with the pump! The rotating direction of the pump compellable has to be clockwise (right). Motor and pump have to be aligned hot, that means at working temperature!
8. Connect the cables again.
9. Torque the attachment screws down.
Great attention has to be paid on that the curved tooth coupling can be swayed about 5 mm.



CAUTION

Pay attention: if the motor is not properly adjusted the pump might be damaged! No guarantee!

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
- Continue production.

7.11 Replacement of the heated hoses



ADVICE

Heed all security advices given in chapter 7.1.

MAINTENANCE:

Because of the very different adhesive characteristics please clarify the possibility of cleaning the heated hoses as well as the cleaning methods and cleaning intervals with your adhesive manufacturer.

DISASSEMBLY INSTRUCTIONS:

- Do not remove hoses as long as they are under pressure.
- After demounting the heated hoses hot adhesive may come out. Close the demounted hoses with a cap.
- Let adhesive residues get cold before removing! Risk of heavy burns!
- WHEN USING PUR ADHESIVES:
Fill the ends of the demounted hoses with a PUR-cleaner to avoid a cross-linking of the PUR inside the hoses.
- Send the defective heated hoses to ITW Dynatec as soon as possible for check-up.

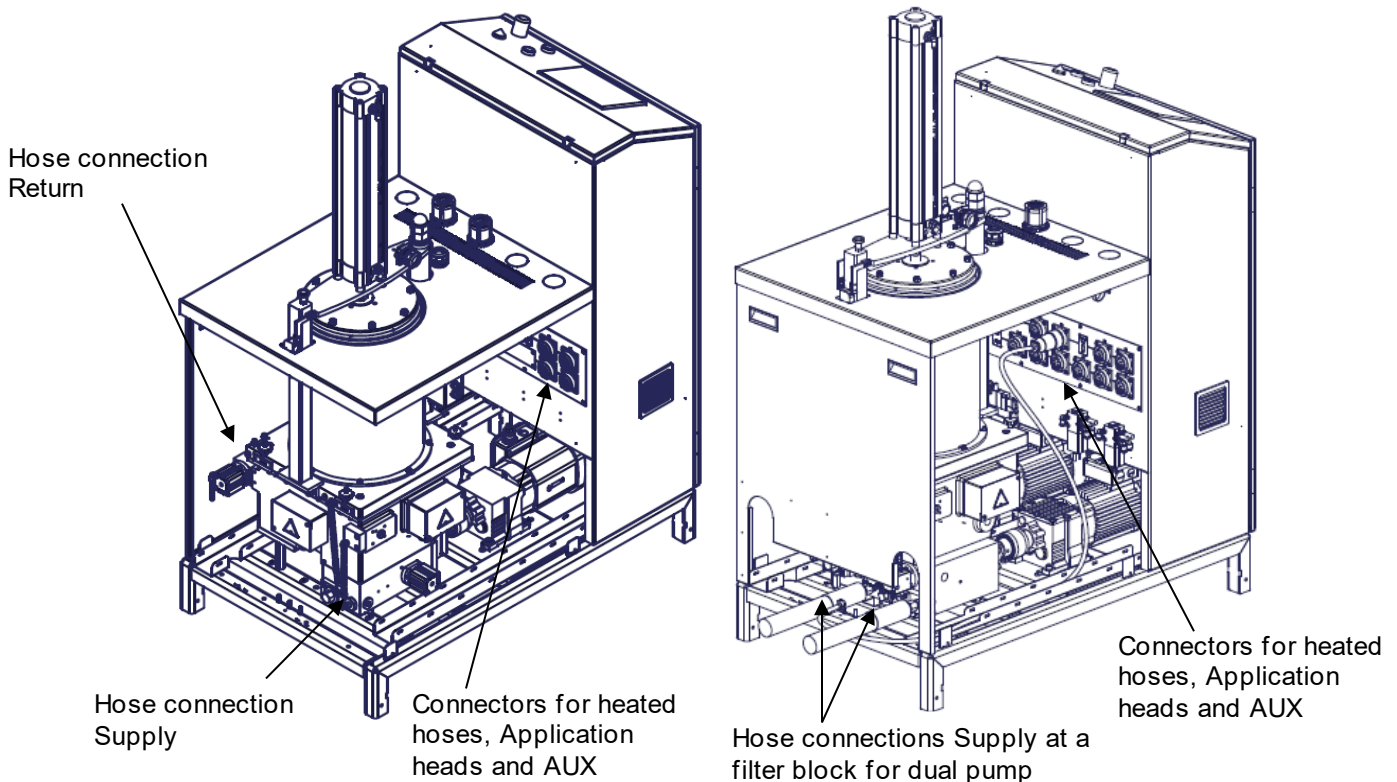


Illustration: Hose connections



1. Stop the motors.
2. Switch the unit voltage-free and pressureless. See points 7.3 and 7.4.
3. Guard the unit against unauthorized restarting.
4. Demount the sidewalls. See point 7.2.

5. Place a heat-resistant catchment tank under the hose connection. Hot adhesive may come out!
6. Disconnect the cable of the defect hoses.
7. Unscrew the hose on both ends (at the unit and at applicator).
8. Take the new heated hose and screw it on the unit and plug the cable.
9. Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
10. Start the pump and fill the hose with adhesive, to avoid unnecessary air in the adhesive circulation.
11. Stop the pump.
12. Screw the hose end on the applicator and connect the cable of the hose with the cable of the applicator.



ADVICE: If the heated hose is a **return hose**, connect it as follows:

- Screw the return hose on the slot applicator first.
- Heat it up and fill it with adhesive, to avoid unnecessary air in the adhesive circulation.
- Screw the hose end on the unit.

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Continue production.



CAUTION

Heed the following for the installation of the heated hoses:

- Heated hoses may be damaged by overheating, if they are laid faulty.
- The heated hoses may not be stacked one on the other!
- The heated hoses may not be pressed together and / or bound.
- Put the hoses separated next to each other!
- **The connections for supply resp. return hoses may not be mixed up.**
- It is essential that the hoses will be laid **without twisting!**
- Heated hoses may not be fastened with binders or similar.
- Heated hoses may not be laid on a sharp edge.
- When using a balancer, a hose support with a radius of 400mm has to be mounted.
Reason: The sensor cables and heating cables within the hoses can be damaged. As they cannot be repaired the hose would have to be changed completely.
- Refer to Hoses manual.

7.12 Over temperature protection, glass bead



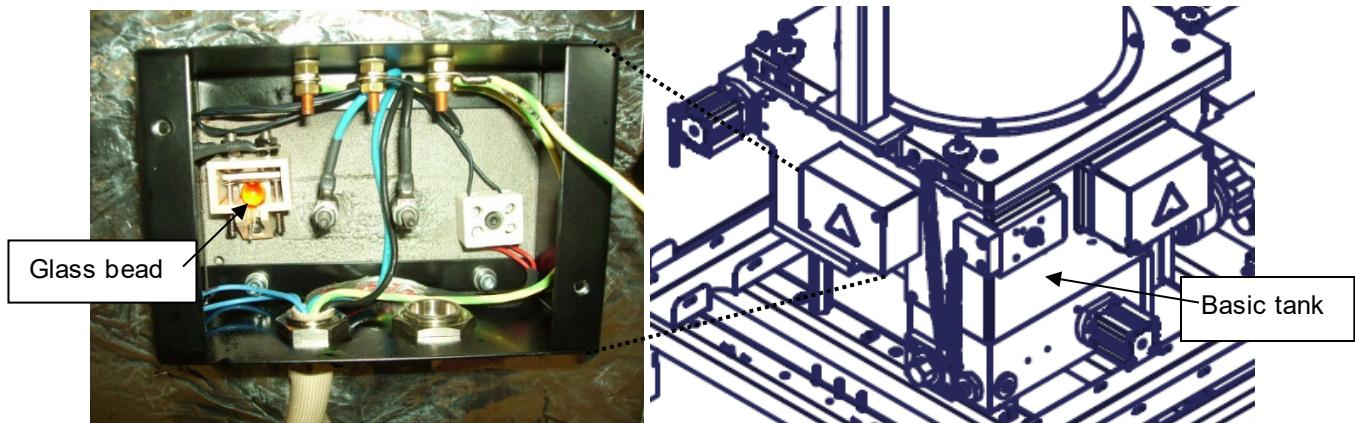
ADVICE

Heed all security advices given in chapter 7.1.

If the glass bead within the ceramic socket is damaged, the maximum permissible temperature for the tank has been exceeded. Renew the damaged or defect glass bead.



1. Stop the motors.
2. Switch the unit voltage-free and pressureless. See points 7.3 and 7.4.
3. Guard the unit against unauthorized restarting.
4. Demount the sidewalls. See point 7.2.
5. The defect, e. g. a damaged temperature sensor or solid-state relay, etc. has to be located and corrected.
6. Remove the residuals of the damaged glass bead.
7. Insert a new glass bead.



Illustrations: Over temperature protection with glass bead

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
- Continue production.

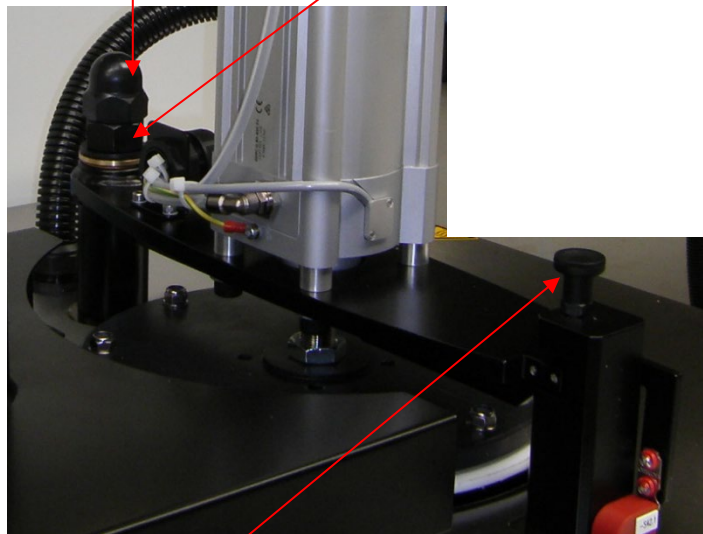
7.13 Replacement of the Teflon disc



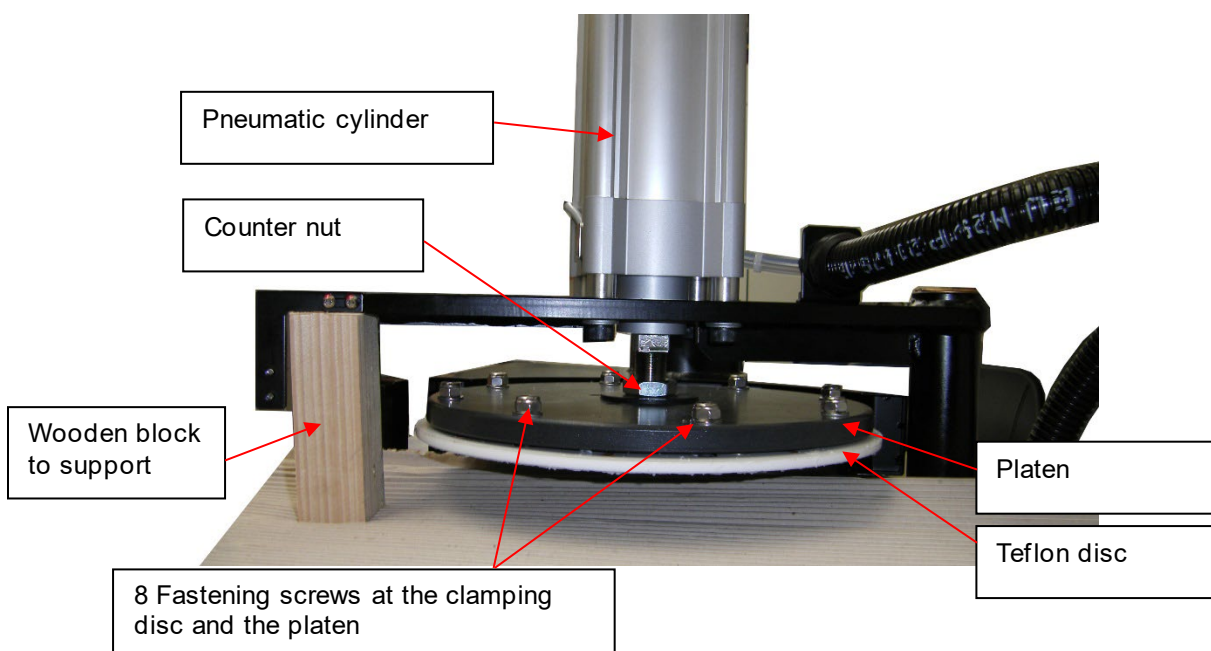
ADVICE

Heed all security advices given in chapter 7.1.

1. Stop all motors.
2. Lift up the platen out of the feed tube.
3. Unscrew the counter nut of the platen, see following pictures.
4. Put a clean paperboard or foil under the platen to avoid soiling the unit.
5. Loosen the cap nut and the underlying nut on the traverse.

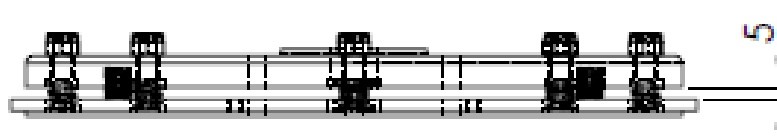


6. Pull up the locking bolt and turn the traverse to the side.
7. Lift the pneumatic cylinder with platen approx. 5cm and support the traverse with a wooden block, so that it is secured against lowering and you can disassemble the platen safely.



8. Loosen the counter nut.
9. Unscrew the platen.
10. Unscrew the 8 fastening screws from the clamping disc.
11. Take off the platen and detach the Teflon disc.
12. Clean the platen and clamping disc with a PUR-cleaner.
13. Put the clamping disc again on the cover of the unit (on a clean paperboard or foil).
14. Put the new Teflon disc on the clamping disc.
15. Assemble the platen with the 8 fastening screws and springs.
CAUTION: The Teflon disc may not clamp; it has to be freely movable to and fro.

Installation instruction: Adhere 5 mm distance!



CAUTION: The piston rod of the cylinder may be screwed into the platen max.15 mm.

16. Fasten the platen with the counter nut at the pneumatic cylinder.

After finishing the maintenance or repair works:

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the tank is molten completely.
- Continue production.

7.14 Maintenance plan



CAUTION

- Heed all security advices given in chapter 7.1.
- Use only original parts from ITW Dynatec, otherwise ITW Dynatec's warranty is void!
- Adhere to the current safety data sheet of the manufacturer when using hazardous materials (cleaning agents, etc.)!
- Please use only the indicated lubricants and keep the prescribed maintenance intervals. Consider in addition the enclosed regulations of manufacturers.
- Punctual and conscientious maintenance of the unit secures not only a trouble-free function, but prevents also for expensive repair costs.
- Before starting repair or maintenance, demount the sidewalls if necessary. After finishing the works, mount the side panels again. See point 7.2.
- Before starting the repair or maintenance, switch the system voltage-free and pressureless, see points 7.3 and 7.4.
- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Place a heat-resistant catchment tank under the components. Hot adhesive may come out.
- Use only lint-free cleaning cloth and suitable cleaner for cleaning! Do not damage surfaces! Do not scratch above them with sharp-edged tools, otherwise the components will get leaky and inoperable!

Maintenance plan:

Operating time/ frequency	Inspection point / maintenance notes
Continuous	• Remove dirt, dropped out adhesive and scrap adhesive and search for the cause of that, eliminate the cause. • Listen for abnormal sounds of the unit, e. g. from the motors, pumps, etc.
Once a day	• Clean the Melter and components from dirt.
Once a week	• Visual check of the gear pump-sealing. Send the pump to ITW Dynatec for repair if necessary. • Flush the pneumatic pressure relief valve if no automatic flushing is installed. • Check the mobility of the pressure relief valves. • Check air supply connections for leaks and tighten if loose or replace if necessary. • Check the solenoid valves for proper function and replace it if necessary. • Check the ventilation-filter in control cabinet and clean it if necessary. • Vent the basic tank.
Once a month	• Check basic tank for dirt and clean it if necessary. • Check the O-ring at the basic tank and replace it if necessary. • Check the adhesive filter for dirt and replace it if necessary. • Due to temperature differences a loosening of threads (threaded connections) is possible. Check all parts with threads and all screw fittings for tightness and tighten them if necessary.
Once a year	• Clean the unit. • Complete check-up for wearing. • Electrical check-up of the unit. • Check emergency Stop button for proper functioning.

	• Check safety chain and corresponding attachment screws for proper functioning.
Every two years	• Complete maintenance.
Heated hoses:	• Because of the very different adhesive characteristics please clarify the possibility of cleaning the heated hoses as well as the cleaning methods and cleaning intervals with your adhesive manufacturer.

Chapter 8

Troubleshooting

8.1 General Troubleshooting Notes



ADVICE: Please re-read all security advices given in chapter 2 before troubleshooting.

All troubleshooting or repair procedures must be performed by qualified, trained technicians.

The temperatures measured on the outer surface may deviate significantly from the temperatures set and displayed. This can lead to a false conclusion (e.g. defective heating). Such a difference is normal and depends also largely on the materials used.

The controller of the melter includes self-diagnosis, alarms and error warning messages in the event of malfunctions. The error warning messages (the warning messages that appear on the display) are triggered whenever a sensor error occurs and when there is an overtemperature condition. The procedure for error warning messages is described in Chapter 6 of these operating instructions.



DANGER HIGH VOLTAGE

The Melter uses electrical power that can be life-threatening!



WARNING HOT SURFACE

The melter uses hot melt adhesives that can cause serious burns!

Severe burns can occur if unprotected skin comes in contact with molten adhesive or hot application system parts.

Some of the procedures in the following Troubleshooting Guide require working near hot adhesive.

Face shields (preferred) or safety glasses (for minimum protection), heat-resistant protective gloves and long-sleeved clothing must be worn whenever working with or around adhesive application systems.

Use proper tools for handling hot melt components.

8.2 Preliminary Checks

Verify the following before proceeding:

1. The Melter (main switch) is switched on.
2. The Melter is supplied with power.
3. The Melter is supplied with pneumatic air (if applicable).
4. Pneumatic and electrical connections are correct.
5. The Tank is filled with adhesive.
6. The pump is running properly.
7. The temperature controller is in operation. The setpoints are correct for the Melter, Heated Hoses and Applicators. All components are heating properly.

8.3 Hose/ Applicator Troubleshooting Tip

Hose or Applicator problems can be isolated by electrically connecting the Applicator and hose to an alternate socket on the Melter. If the malfunction goes with the Applicator and hose, the problem will usually be in the Applicator or hose that was moved. If the malfunction does not move with the Applicator and hose, the problem is probably in the Melter.

Before disconnecting a hose or Applicator, always turn its temperature zone OFF at the controller. This will avoid controller alarms and possible system shutdown.

8.4 Troubleshooting: Problem, Possible Cause, Solution

Problem	Possible Cause	Solution
1. No function, Unit does not heat up.	Current supply not connected.	• Connect the current supply. • Plug in the connector.
	Main switch is OFF.	• Set main switch ON.
	E-stop has been pressed.	• Release E-stop • Release the superordinate master. • Switch controller on.
	Controller has been switched off.	• Switch controller on.
	Fault report on the Touch Panel.	• Accept fault report and clear the disturbance.
	Heating zone "Tank" has been switched off.	• Switch on the heating zone at the Touch Panel.
	Over or under temperature have been reached.	• Locate and clear the fault.
	Main fuse not switched on.	• Switch the main fuse on. • If the fuse drops out again, locate and clear the cause of fault.
	Fuse for reference voltage defective.	• Locate and clear the cause of fault. Replace the fuse. Switch on the fuse again; it releases.
	Fuses within the unit failed.	• Locate and clear the cause of fault. Replace the fuse. Switch on the fuse again
	Glass bead of the over temperature protection is defective.	• Locate and clear the cause of fault and then replace the glass bead.

Problem	Possible Cause	Solution
2. Gear pump delivers too little adhesive; adhesive application is too little.	Not enough adhesive has been molten.	• Let enough adhesive be molten.
	Temperature settings are too low.	• Raise temperatures.
	Air supply has not been connected / is disconnected.	• Connect air supply (6bar).
	Adhesive pressure has been set to low.	• Set resp. raise the adhesive pressure.
	Solenoid valve is defective.	• Replace the solenoid valve.
	Application modules are blocked or defective.	• Clean or replace the modules.
	Nozzle, slot nozzle or applicator are blocked or defective.	• Clean nozzle, slot nozzle or applicator resp. replace it.
	Heated hose is blocked or defective.	• Clean or replace the heated hose.
	Filters clogged or blocked.	• Clean or replace the filter cartridge.
	Tank or adhesive channels are blocked.	• Clean / flush the unit.
	Pressure relief valve is defective, O-rings are leaky.	• Clean or replace the Pressure relief valve, replace the O-rings.
	Gear pump is stiff or defective.	• Replace the gear pump.

Problem	Possible Cause	Solution
3. Controller has been switched on, but the unit does not heat up.	Fault report on the Touch Panel.	• Accept fault report and clear the disturbance.
	Heating zone "Tank" has been switched off.	• Switch on the heating zone at the Touch Panel.
	Fault report "Over Temperature" on the Touch Panel.	• Check the state of all heating zones. • Check all set temperatures and adjust if necessary. • Check if all cables have been connected correctly. • Adjust all alarm values correctly if necessary. • Check solid-state relay, replace if necessary.
	Fault report "over or under temperature" for one of the heating zones on the Touch Panel	• Check solid-state relay, main fuse and temperature sensor, replace if necessary.
	Glass bead of the over temperature protection is defective.	• Locate and clear the fault and then replace the glass bead.
4. Unit has reached set temperature; motors cannot be switched on.	Information "Stand by active" on the Touch Panel.	• Change to „Operation Temperature“.
	Information "Level Low" on the Touch Panel.	• Refill adhesive into the tank. • CAUTION = Air could get into the system! The gear pump could be damaged.
	Machine contact missing.	• Check machine contact. Connect if necessary.
	Faulty frequency inverter.	• Read off the fault report and correct it. • Press reset FN.

Problem	Possible Cause	Solution
5. Unit has reached set temperature, but the motors cannot be run depending on the line speed.	Unit has not been switched over to automatic mode.	• Switch over to automatic mode.
	Reference voltage has not been connected.	• Connect reference voltage.
	Reference voltage has been connected on wrong terminals.	• Connect the reference voltage on proper terminals. Refer to wiring diagram.
	The reference voltage has been poled incorrectly (Polarity + - clamped wrongly)	• Check polarity and correct it. Change the wires if necessary.
6. Unit switches the motors resp. the pumps off during production.	Fault report on the Touch Panel.	• Accept the fault report and correct the fault.
	Fault report "over or under temperature" for one of the heating zones on the Touch Panel	• Check solid-state relay, main fuse and temperature sensor, replace if necessary.
	Sensor break, status display "B" for a heating zone (controller main screen).	• Repair the sensor break.
	Fuse for the frequency inverter has dropped out.	• Switch the fuse on.
	Faulty frequency inverter	• Read off the fault report and correct it • Press reset FN
7. Temperatures alternate more than 8°C about the set value.	The heated element is exposed to changing cooling (ventilation, opened doors).	• Avoid changing cooling!
	EMC problems.	• Ensure that control and supplying cables are routed separately. • Install a potential equalization (16mm ²).
	Fault within the control circuit.	• Check the control circuit for defective connections or slack joints. Repair if necessary.
	Temperature sensor defective.	• Replace the temperature sensor.
	Solid state relay defective	• Check the solid-state relay and replace it if necessary.

Problem	Possible Cause	Solution
8. Operational temperature variations cause over or under temperature-alarms.	Alarm values not adjusted.	Adjust alarm values.
9. Machine contacts have been made, but have no function.	The bypasses on the terminal strip have not been removed.	Remove the factory-made bypasses.
	Unit has not been switched over to automatic mode.	Switch over to automatic mode.
10. Adhesive leaks at the joint between basic tank and melting plate.	Adhesive residues or contaminations on the flange resp. sealing face. Sealing damaged.	Clean the sealing face and check if the O-ring is damaged. Check if the O-ring fits perfectly.
	Inserted Bag is too small.	Heed the minimum diameter!
	Inserted Bag is damaged.	Replace the bag.
11. With level control: "Bag empty" will not be displayed.	Proximity switch setting wrong	Adjust the settings.
	Proximity switch defective	Replace proximity switch.
12. Application weight varies.	Compressed air varies.	Keep compressed air constant.
	Not enough molten adhesive within the tank.	Let more adhesive be molten. Consider the melting time!
	Track speed varies.	Keep the track speed constant.
	Application modules defective.	Replace application modules.

Chapter 9

Drawings and lists of parts



WARNING

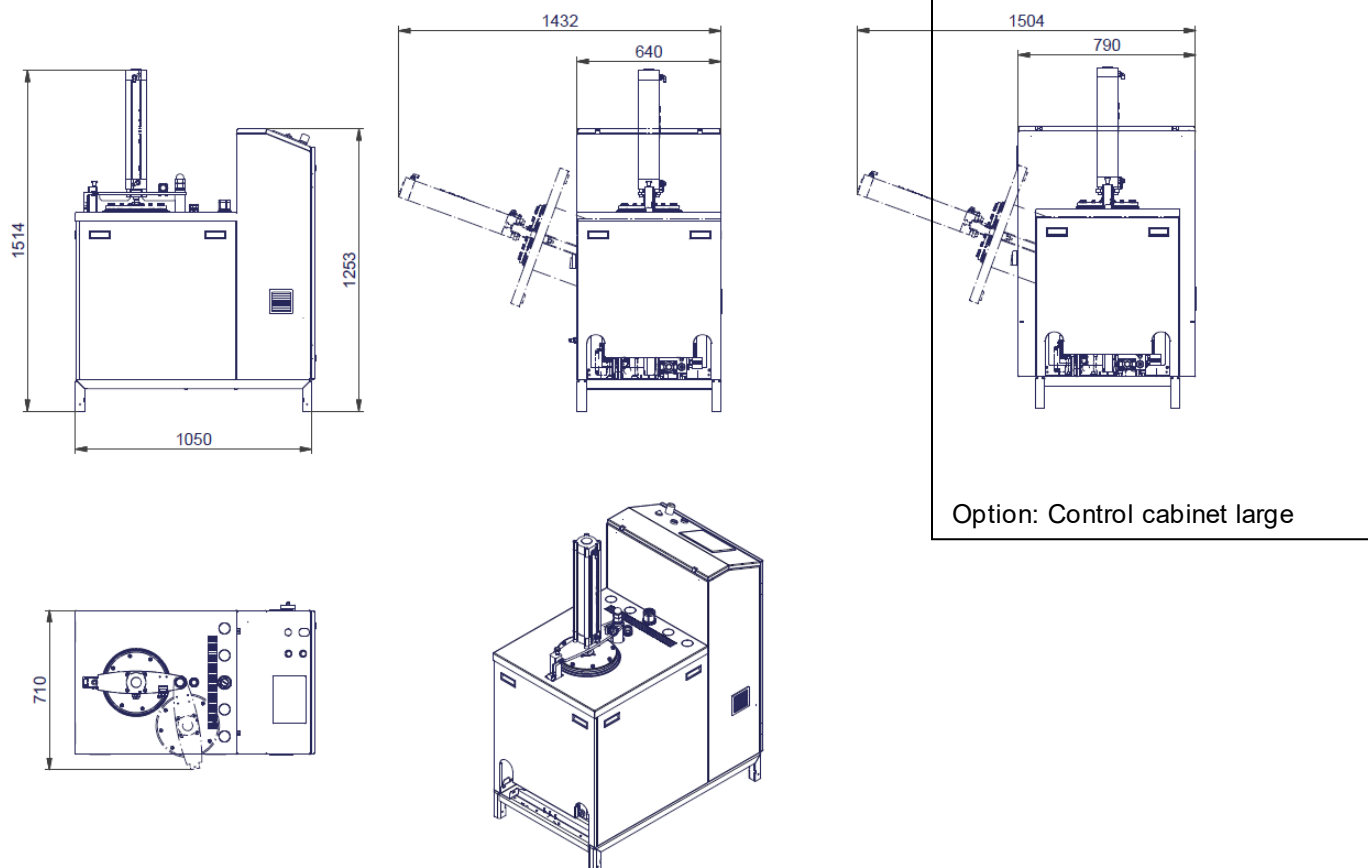
All parts must be periodically inspected and replaced if worn or broken. Failure to do this can affect equipment's operation and can result in personal injury.

This chapter contains the component illustrations (exploded-view drawings) for each assembly of the Melter. These drawings are useful for finding part numbers as well as for use when maintaining or repairing the equipment.

Note: Most common screws, nuts and washers called out in the manual are not for sale and they can be obtained locally at your hardware Store. Specialty fasteners are available by contacting ITW Dynatec's Customer Service.

9.1 Dimensions, Dynamelt™ PUR Bag Melter

All dimensions in mm.



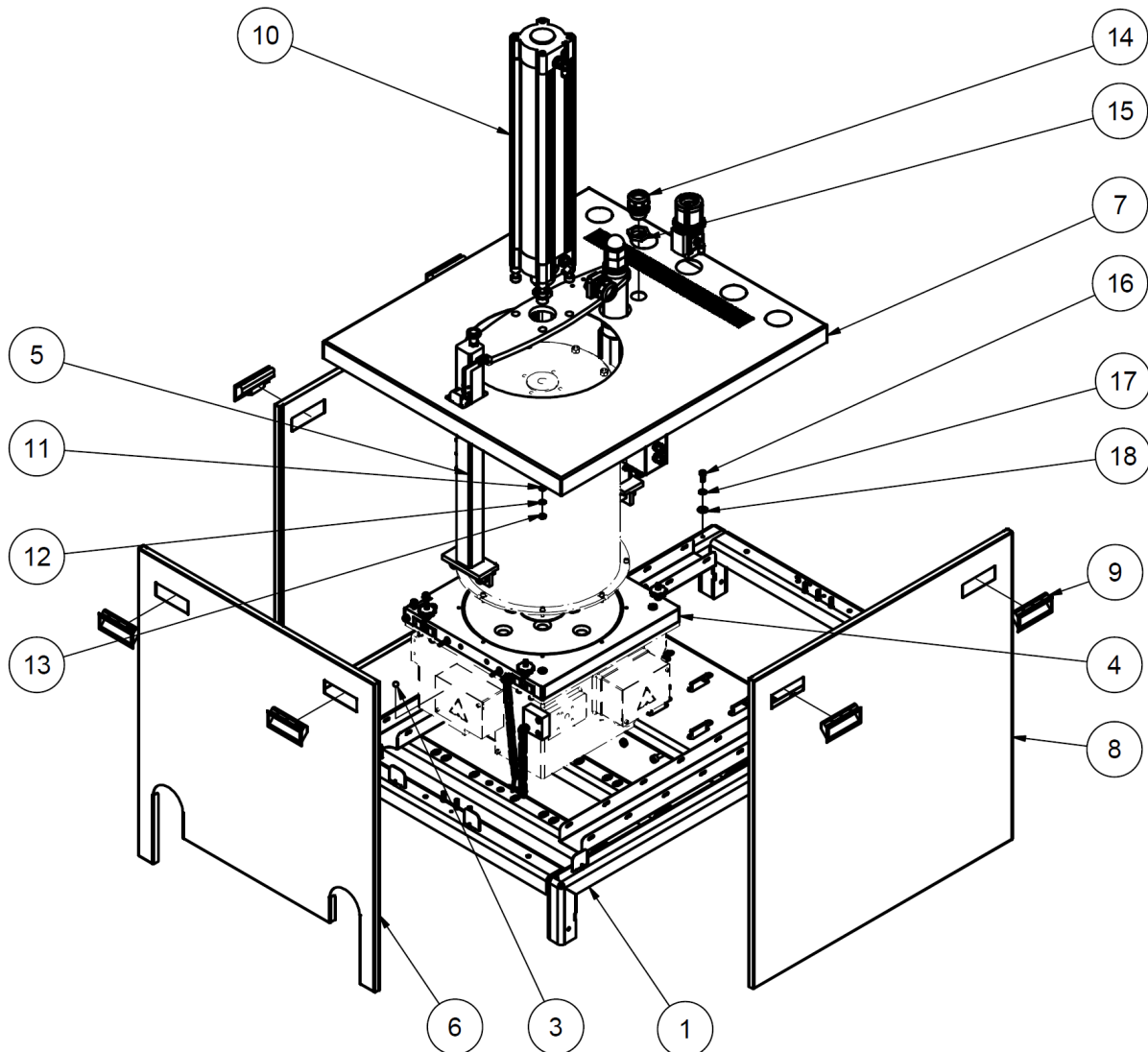
9.2 Main BOM, Bag Melter PUR20, AB403663

Pos.	Part no.	Description	Quantity
	I13.00200.500 *	Basic unit, PUR20	1
	I13.00231.500 *	Basic tank 10L	1
	I10.00430.500 *	Adapter plate complete	1
	I10.00256.501 *	Filter block, right	1
	I13.00245.500 *	Pressure relief valve including pneumatics for pressure relief	1
	I13.00131.501 *	Feed tube d=282 with platen	1
	I13.00116.501 *	Gear pump 4,5 ccm/rev, with needle bearing and accessories	1
	804155	Hose connection nipple DN10 G1/2	1
	00. 60970.101	Cap nut G1/8	1
	I13.00251.500 *	Pressure sensor with capillary, complete including electrics	1
	I13.00023.504	Return hose connection DN10	1
	I93.30172.500 *	Control Cabinet	1
	I95.00002.500	External signal connector	1
	I95.00052.500	Profibus/Profinet-connection	1
	I95.00004.500	Stack light	1

* see separate drawing and/or list of parts.

9.3 Basic unit

- Dynamelt PUR 20 (BM20) Bag Melter, Basic unit for 1 or 2 single pumps, PN I13.00200.500
- Dynamelt PUR 20 D (BM20) Bag Melter, Basic unit for 1 or 2 dual pumps, PN I13.00215.500



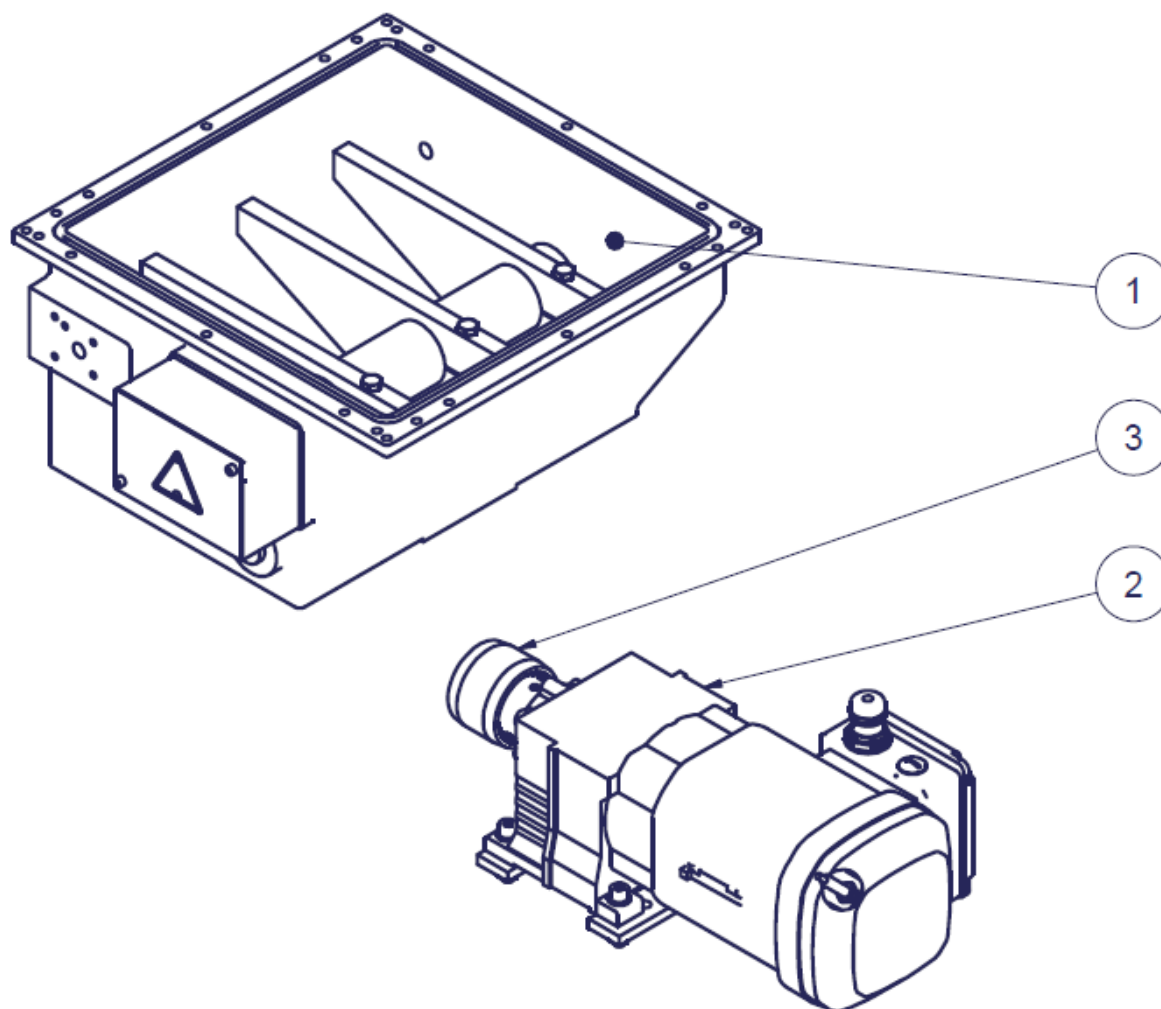
Pos.	Part no.	Description	Quantity
1	I10.00405.101	Base frame	1
3	I05.62190.001	Glass bead 190°C (374°F)	1
4	I13.00132.500 *	Melting plate 27 holes complete	1
5	I13.00129.500 *	Cylinder framing	1
6	I10.00408.100	Front panel BM20	1
	I10.00223.100	Front panel BM20D	1
7	I13.00113.100	Cover	1
8	I10.00413.101	Side panel right + left BM20	2
	I10.00222.100	Side panel right + left BM20D	2
9	I09.00000.003	Recessed grip	6
10	I80.00131.505 *	Pneumatic parts for platen	1
11	I02.00630.125	Washer 6.3	4
12	I02.20006.000	Schnorr-washer 6.3	4
13	I01.00600.934	Hexagon nut M6	4

14	I05.95004.016	Hose fitting PG21	1
15	I05.90210.006	Counter nut PG21 black	1
16	I00.10616.912	Cylinder head screw M6x16	4
17	I02.20006.000	Schnorr-washer 6.3	4
18	I02.00640.021	Washer	4

* see separate drawing and/or list of parts.

9.4 Basic tank 10l, prepared for pump

- Basic tank 10L prepared for 1 pump, PN I13.00231.500
- Basic tank 10L prepared for 2 pumps, PN I13.00232.500



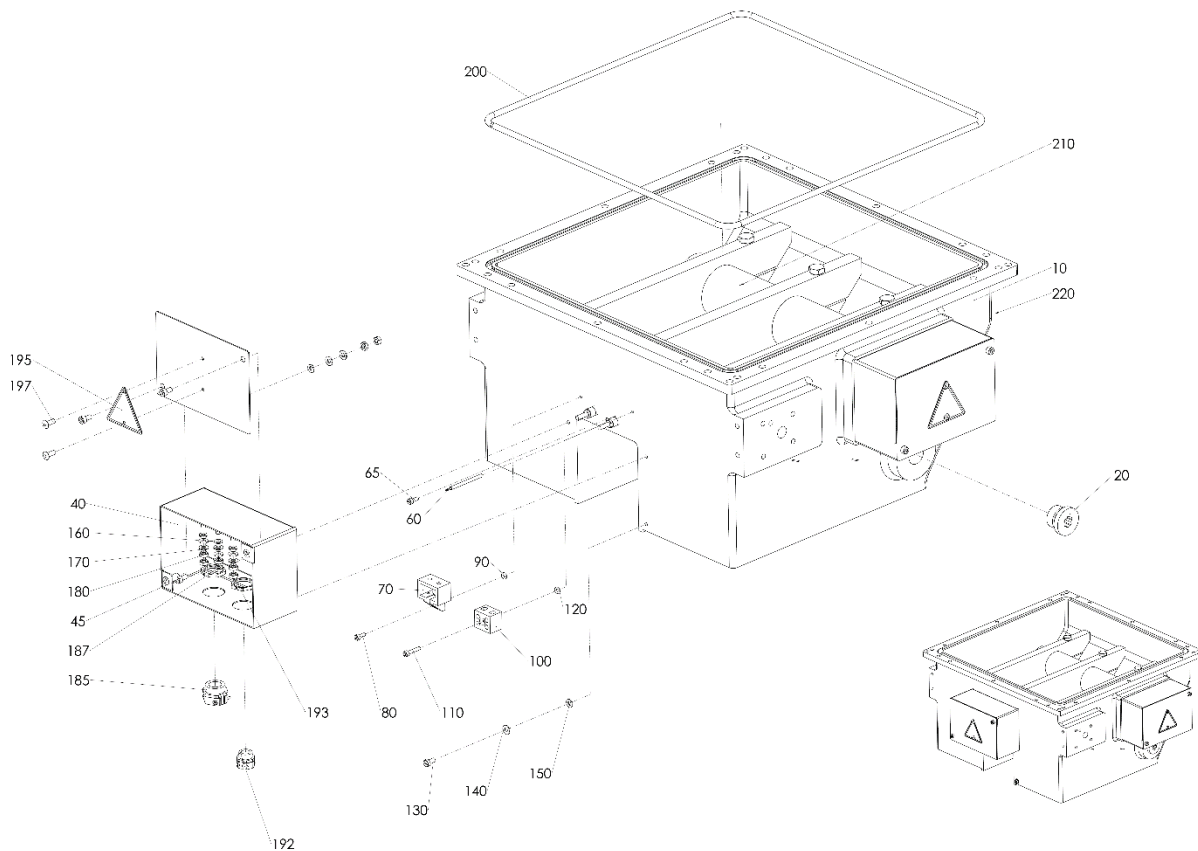
Pos.	Part no.	Description	Quantity
1	I10.00616.500 *	Basic tank 10L complete for 1 pump	1
	I10.00653.500 *	Basic tank 10L complete for 2 pumps	1
2	I10.00546.500 *	Three phase gear motor 0.5 KW with accessory	1
3	I09.20002.004	Coupling sleeve M28	1
4	I95.00005.501 **	Assembly for 1 frequency converter V20	1
	I05.64010.145	Frequency converter Sinamics V20 0.55KW	1
	I05.65401.216	Connection cable for initiator 5m, for I05.65401.215	1
	I05.56000.019	Filter fan 230V black, air volume 63m³/h	1
	I05.52220.083	Time relay 5-100sec 1CO, 24VDC with LED	1

* see separate drawing and/or list of parts.

** not shown.

9.5 Basic tank 10l, complete

- Basic tank 10 liters for 1 pump with melting aid complete, PN I10.00616.500
- Basic tank 10 liters for 2 pumps with melting aid complete, PN I10.00653.500



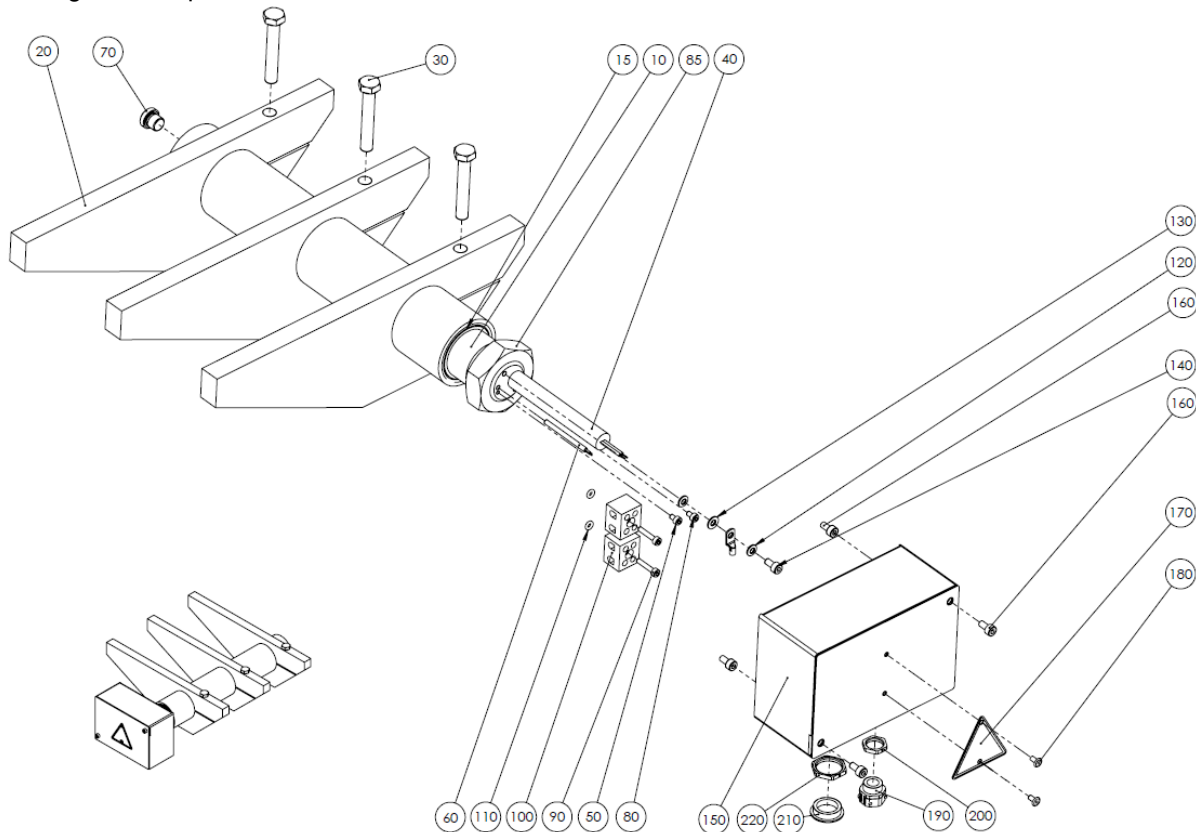
Pos.	Part no.	Description	Quantity
10	I10.00631.500	Basic tank 10 liters for 1 pump, coated	1
	I10.00651.500	Basic tank 10 liters for 2 pumps, coated	1
20	I00.62100.102	Plug screw G1/2"	1
40	I10.00465.300	Terminal box, small	1
45	I00.10408.912	Cylinder head screw M4x8	4
60	I05.63030.040	Temperature sensor Ø3x40 PT100	1
65	I00.10408.912	Cylinder head screw M4x8	1
70	I05.62001.001	Over temperature socket with BZ-Washer	1
80	I00.10308.912	Cylinder head screw M3x8	1
90	I06.00290.006	O-ring 2-006	1
100	I05.80002.002	Ceramic luster clamp 2-pole with hole	1
110	I00.10316.912	Cylinder head screw M3x16	1
120	I06.00290.006	O-ring 2-006	1
130	I00.20408.084	Slotted cylinder head screw M4x8	1
140	I02.00430.125	Washer 4.3	1
150	I02.70040.000	Contact disc M4	1
160	I02.70040.000	Contact disc M4	4
170	I02.90430.125	Washer Ø4.3 Ms	8
180	I01.00400.439	Hexagon nut M4	8
185	I05.90110.100	Pressure cap screw KLE MS Pg11	1
187	I05.92110.001	Hexagon nut MS Pg11	1
192	I05.90070.100	Pressure cap screw KLE MS Pg7	1
193	I05.92070.001	Hexagon nut MS Pg 7	1

195	I05.22000.158	Warning plate "electrical flash" heat-resistant Al	1
197	I01.70306.001	Blind rivet Ø3x6mm	2
200	I06.40526.385	O-ring 2-385	1
210	I10.00618.500 *	Melting aid complete	1
220	I10.00486.500	Insulation for base tank	1

* see separate drawing and/or list of parts.

9.6 Melting aid

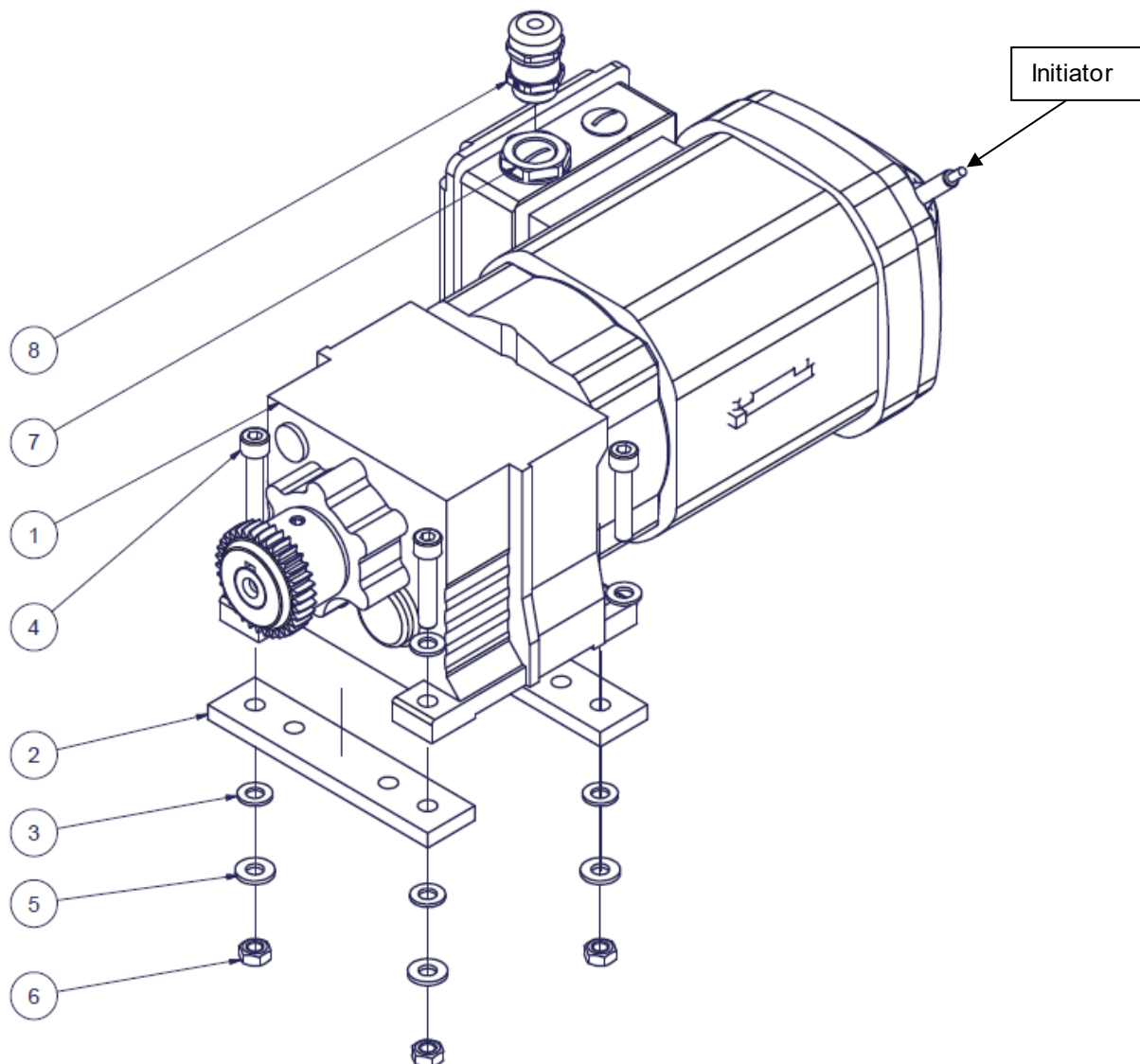
Melting aid complete, PN I10.00618.500



Pos.	Part no.	Description	Quantity
10	I10.00611.500	Heating element for melting aid, coated	1
15	I06.04100.030	O-Ring 2-030	1
20	I10.00612.300	Melting arm for melting aid	3
30	I00.10850.933	Hexagon head screw	3
40	I05.31700.002	Heating cartridge d=12,5x300mm, 1700W, 230V, UL-version	1
50	I00.10305.912	Hexagonal socket head screw	1
60	I05.63030.081	Temperature sensor Ø3x80mm PT100	1
70	00.60970.101	Plug screw G1/8	1
80	I00.10305.912	Hexagonal socket head screw	1
85	I01.00300.936	Hexagonal nut M30 even	1
90	I00.10316.912	Cylinder head screw	2
100	I05.80002.002	Cer. Luster terminal 2-pole with hole	2
110	I06.00290.006	O-Ring 2-006	2
120	I02.70040.000	Contact disc	2
130	I02.00430.125	Washer	1
140	I00.10408.912	Cylinder head screw	1
150	I10.00465.300	Terminal box small	1
160	I00.10408.912	Cylinder head screw	4
170	I05.22000.158	Warning sign "electric-flash"	1
180	I01.70306.001	Blind rivet	2
190	I05.90070.100	Pressure screw	1
200	I05.92070.001	Hexagonal nut	1
210	I05.93110.001	Plug screw	1
220	I05.92110.001	Hexagonal nut	1

9.7 Motor

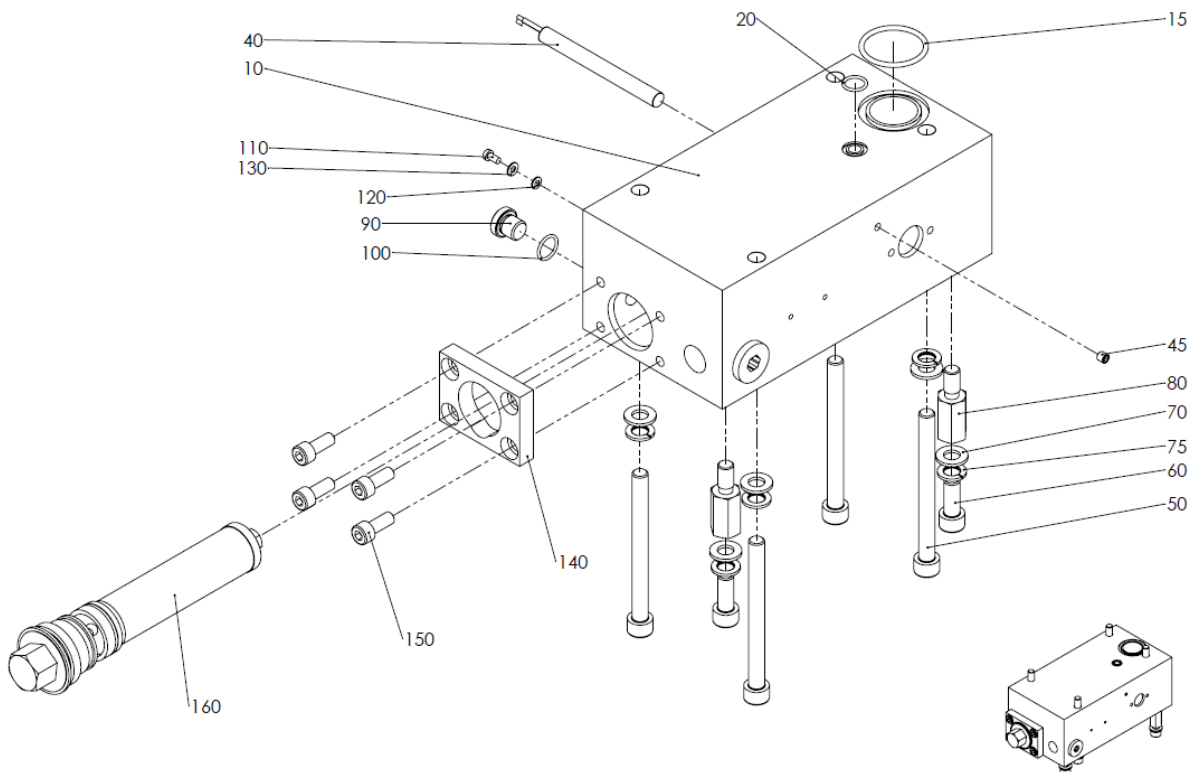
Three phase gear motor 0.5 KW with accessories, PN I10.00546.500



Pos.	Part no.	Description	Quantity
1	I09.20005.540	Three phase gear motor 0.5 KW, complete with initiator for motor control	1
	I09.20005.541	Three phase gear motor 0.5 KW, 230/400V 50/60Hz Iso. Kl. F	1
	I05.65401.215	Initiator PNP reacting distance 3mm	1
	I09.20002.025	Coupling hub M28-d=20 L=25mm	1
	I09.20005.042	Driver for SEW motor I09.20005.041	1
	I14.00172.400	Holder for initiator	1
2	I14.00137.400	Motor bar	2
3	I02.00840.125	Washer	8
4	I00.10840.912	Cylinder head screw	4
5	I02.20008.000	Spring washer	4
6	I01.00800.934	Hexagonal nut	4
7	I05.94001.002	Reduction M25 to M20	1
8	I05.94400.020	Cable fitting M20	1

9.8 Filter block

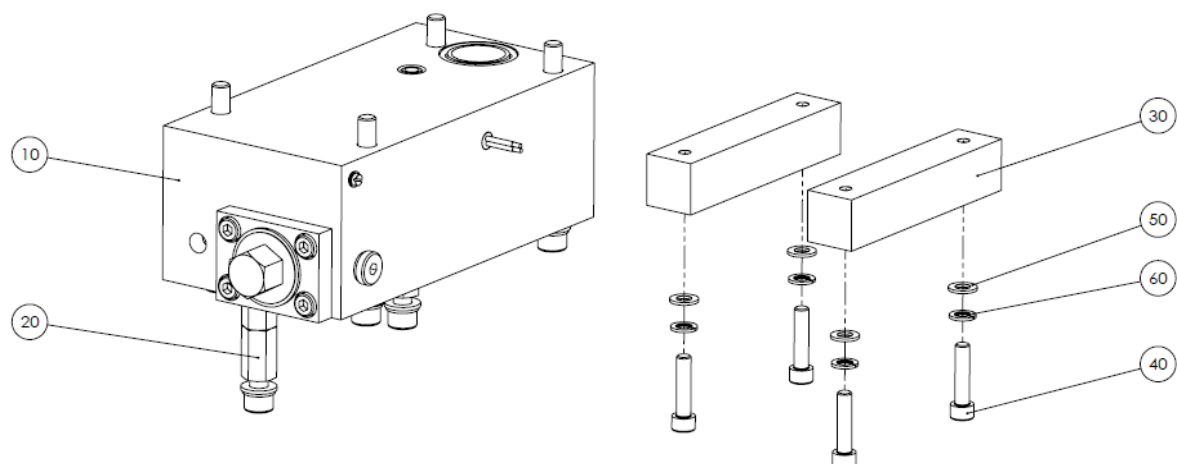
- Filter block right complete for DN 8, DN 10 and DN 16, for single pump, PN I10.00256.501
- Filter block left (inversely) complete for DN 8, DN 10 and DN 16, for single pump, PN I10.00257.501



Pos.	Part no.	Description	Quantity
10	I10.00256.100	Filter block right	1
	I10.00257.100	Filter block left	1
15	I06.03609.222	O-ring 2-222	1
20	I06.01242.014	O-ring 2-014	1
40	I05.30350.003	Heating cartridge Ø10x100mm, 350W, 230V	1
45	I00.80605.913	Headless screw M6x5	1
50	I00.11011.004	Cylinder head screw M10x110	4
60	I00.11025.003	Cylinder head screw M10x25	2
70	I02.01040.003	Washer 10.4	6
75	I02.51000.127	Lock washer A10	6
80	I10.00258.400	Spacer	2
90	I00.61320.101	Plug screw G1/4	1
100	I06.01400.015	O-ring 2-015	1
110	I00.20408.084	Slotted cylinder head screw M4x8	1
120	I02.70040.000	Contact disc M4	1
130	I02.00430.125	Washer 4.3	1
140	I10.00255.400	Connecting plate	1
150	I00.10820.912	Cylinder head screw M8x20	4
160	I10.00252.500 *	Filter screw, complete 200µm	1

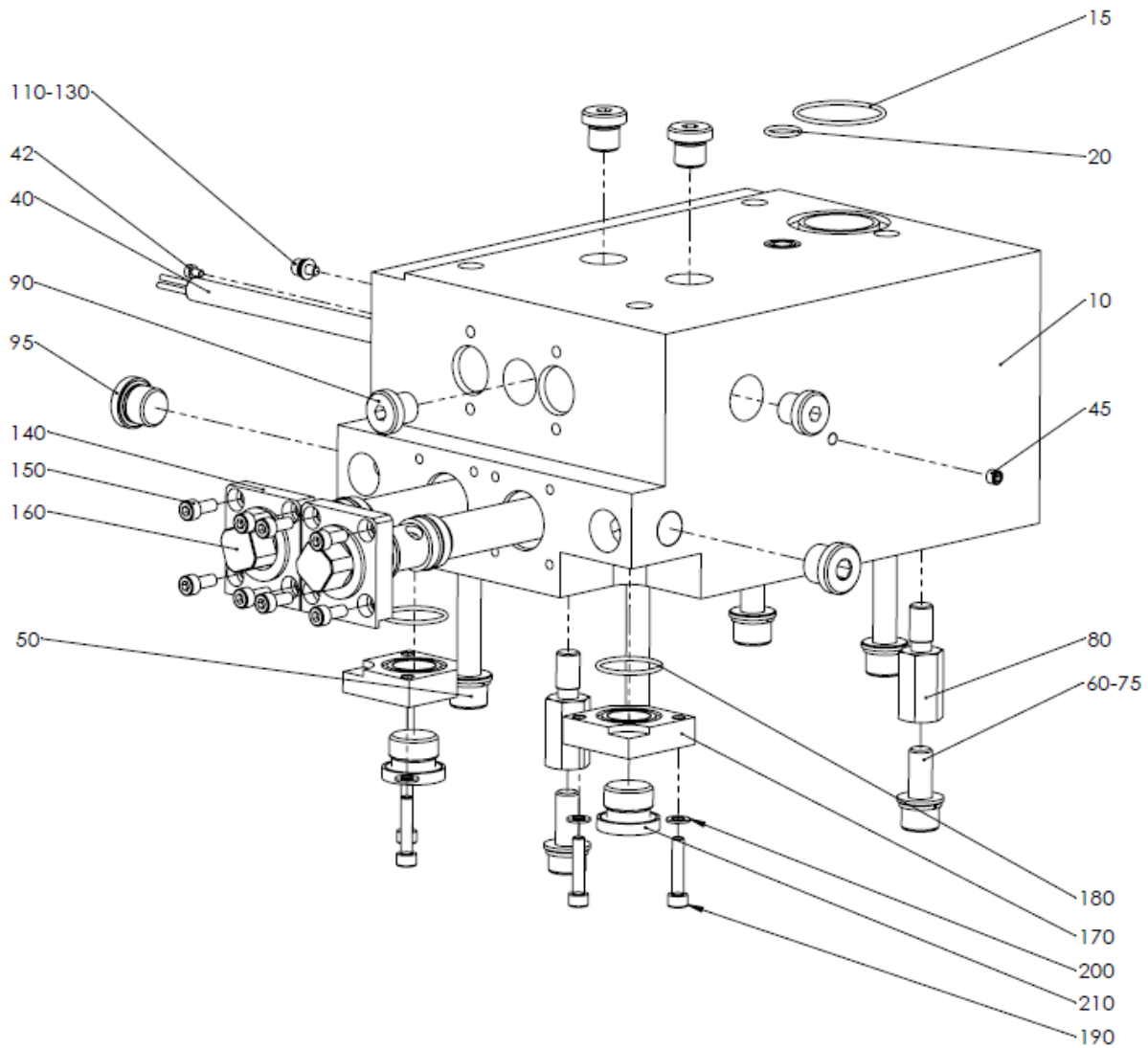
* see separate drawing and/or list of parts.

- Filter block left (for single pump) incl. feet + adaptor for motor, if right is a dual pump, PN I13.00240.500



Pos.	Part no.	Description	Quantity
10	I10.00257.501	Filter block left for DN8+10	1
20	I10.00258.400	Spacer	2
30	I13.00221.400	Motor base	2
40	I00.10835.912	Cylinder head screw M8x35	4
50	I02.00840.125	Washer 8.4	4
60	I02.50800.127	Lock washer A8	4

- Filter block right complete for DN 8 and DN 10, for dual pump, PN I10.00601.500
- Filter block left (inversely) complete for DN 8 and DN 10, for dual pump, PN I10.00602.500



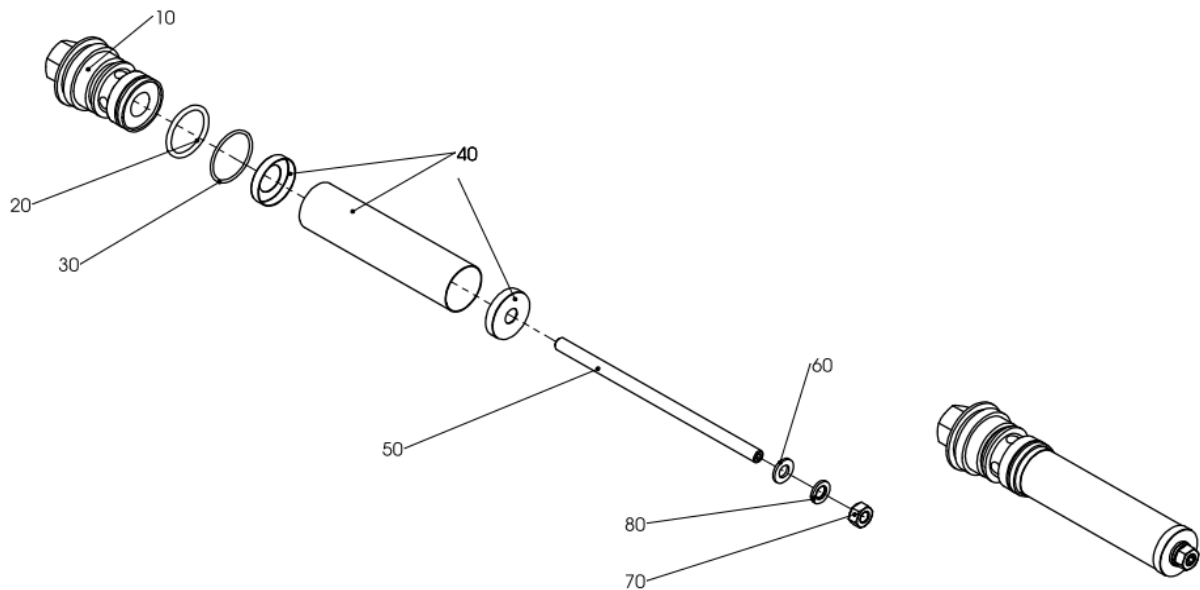
Pos.	Part no.	Description	Quantity
10	I10.00599.100	Filter block right for dual pump	1
	I10.00600.100	Filter block left for dual pump	1
15	I06.03609.222	O-ring 2-222	1
20	I06.01242.014	O-ring 2-014	1
40	05.30420.001	Heating cartridge Ø10 x 138 mm, 230 V, 420 W	1
42	I00.10305.912	Hexagonal socket head screw M3x5	1
45	I00.80605.913	Headless screw M6x5	1
50	I00.11011.004	Cylinder head screw M10x110	4
60	I00.11025.003	Cylinder head screw M10x25	2
70	I02.01040.003	Washer 10.4	6
75	I02.51000.127	Lock washer A10	6
80	I10.00258.400	Spacer	2
90	I00.61320.101	Plug screw G1/4	4
95	I00.61670.101	Plug screw G3/8	2
100	I00.62100.102	Plug screw G1/4	2
110	I00.20408.084	Slotted cylinder head screw M4x8	1
120	I02.70040.000	Contact disc M4	1
130	I02.00430.125	Washer 4.3	1

140	I14.00006.401	Adapter plate for filter screw	2
150	I00.10512.912	Cylinder head screw M5x12	8
160	I14.00282.500 *	Filter screw, complete 150µm	2
170	I13.00247.400	Adapter plate for pressure sensor	2
180	I06.02512.022	O-ring 2-022	2
190	I00.10525.912	Cylinder head screw M5x25	4
200	I02.00530.125	Washer 5.3	4
210	I00.62100.102	Plug screw G1/2"	2

* see separate drawing and/or list of parts.

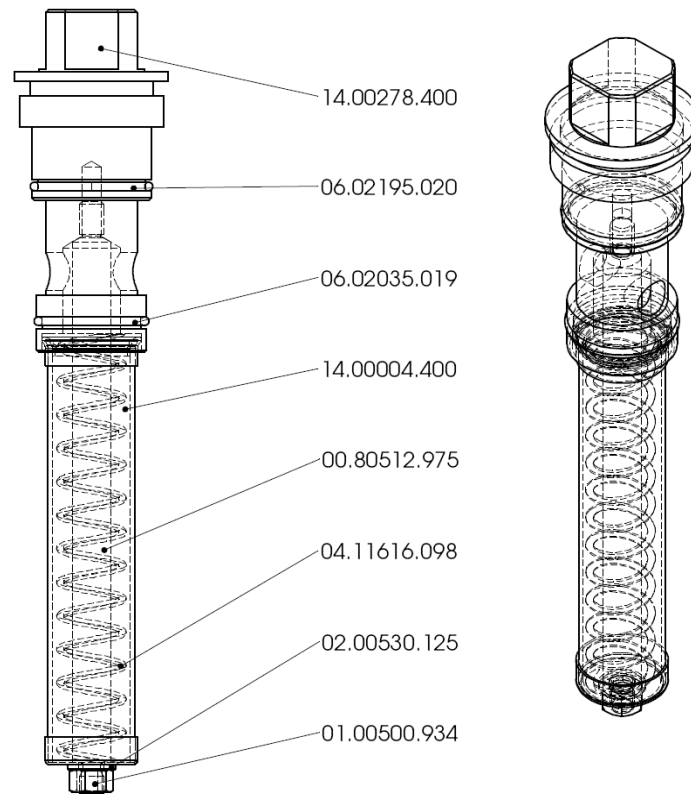
9.9 Filter screw

- Filter screw, complete 200µm, (for filter block for single pump), PN I10.00252.500



Pos.	Part no.	Description	Quantity
10	I10.00253.300	Filter screw	1
20	I06.02974.217	O-ring 2-217	1
30	I06.03147.026	O-ring 2-026	1
40	I10.00254.400	Filter cartridge 200 µm	1
50	I00.88170.913	Headless screw M8x170	1
60	I02.00840.021	Washer 8.4	1
70	I01.00800.934	Hexagon nut M8	1
80	I02.60800.980	Lock washer 8.2	1

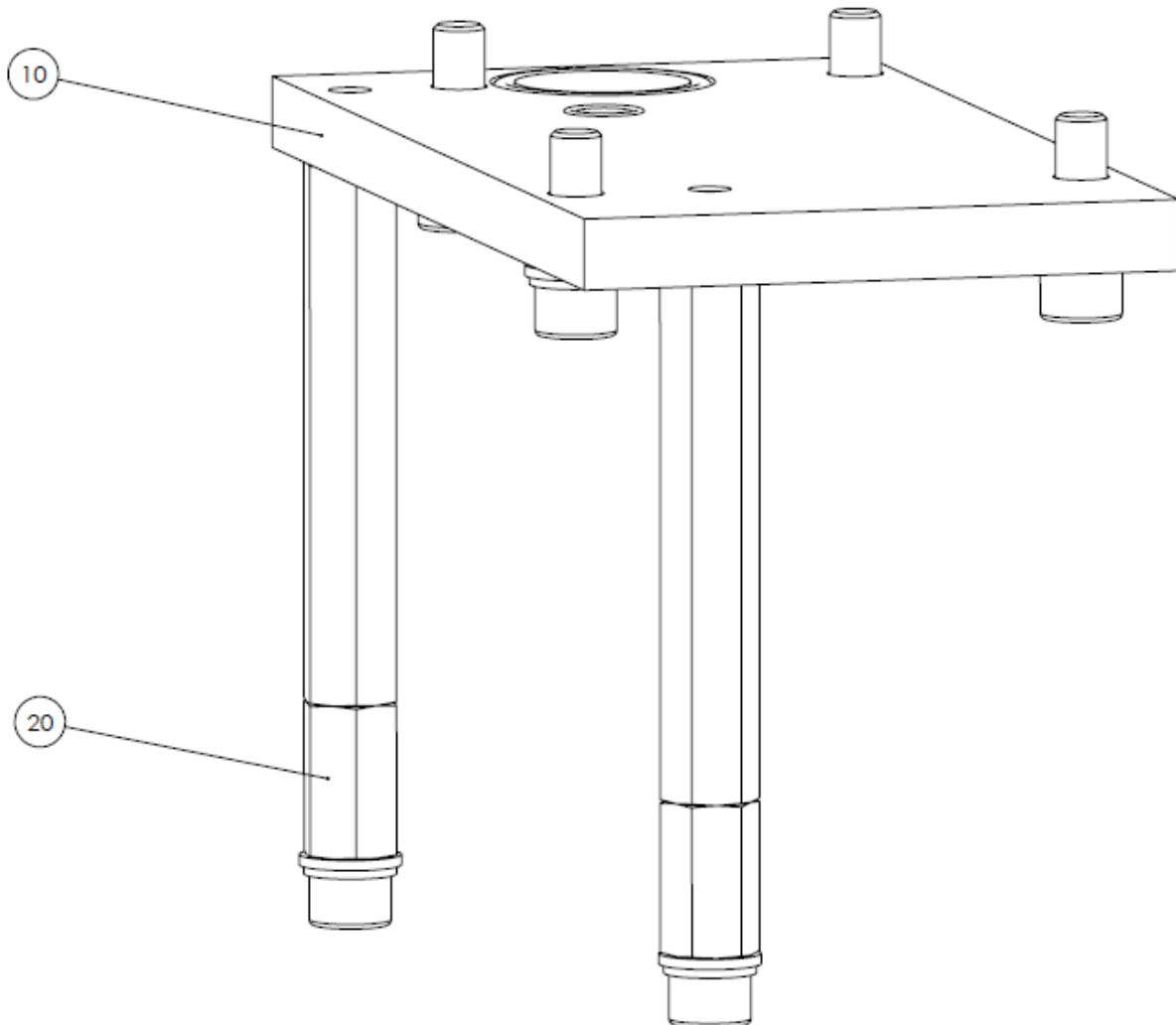
- Filter screw, complete 150µm, (for filter block for dual pump), PN I14.00282.500



Pos.	Part no.	Description	Quantity
	I14.00278.400	Filter screw	1
	I06.02195.020	O-ring 2-020	1
	I06.02035.019	O-ring 2-019	1
	I14.00004.400	Filter cartridge 150 µm	1
	I00.80512.975	Distance piece	1
	I04.11616.098	Pressure spring	1
	I02.00530.125	Washer 5.3 mm	1
	I01.00500.934	Hexagon nut M5	1

9.10 Adapter filter block

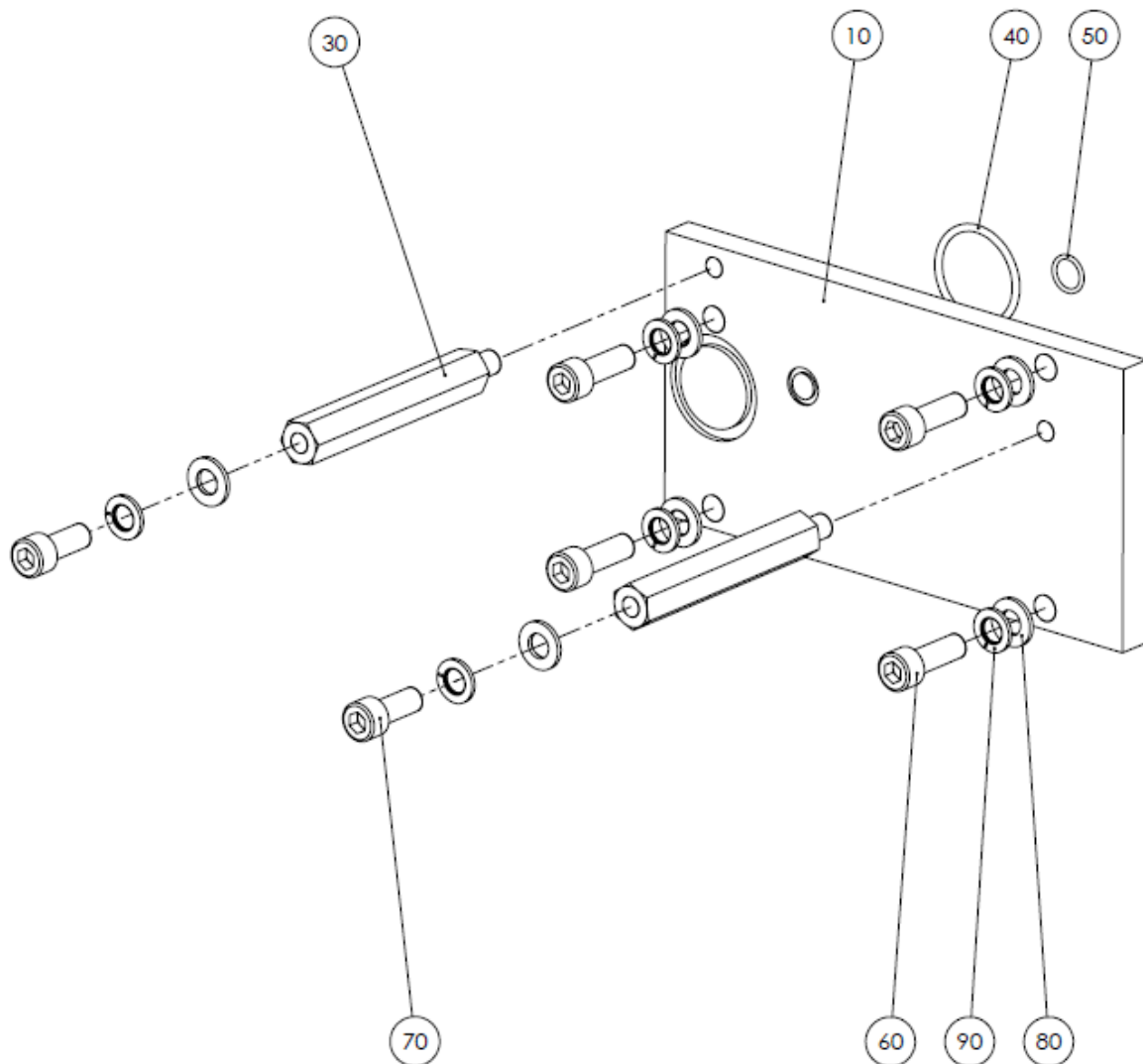
- Adapter complete, at 1 dual pump, PN I13.00242.500



Pos.	Part no.	Description	Quantity
10	I10.00430.500 *	Adapter plate complete	1
20	I10.00258.400	Spacer	2

* see separate drawing and/or list of parts.

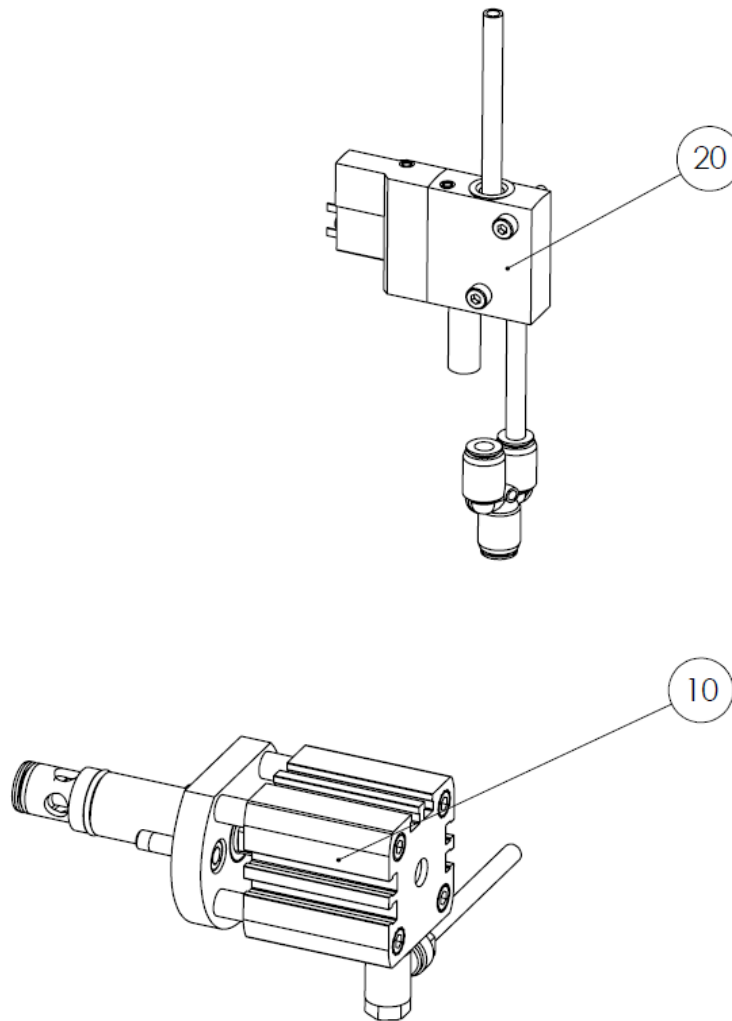
- Adapter filter block, complete, PN I10.00430.500



Pos.	Part no.	Description	Quantity
10	I10.00319.300	Adapter plate	1
30	I10.00320.400	Feet	2
40	I06.03609.222	O-Ring 2-222	1
50	I06.01242.014	O-Ring 2-014	1
60	I00.11030.912	Cylinder head screw M10x30	4
70	I00.11025.004	Cylinder head screw M10x25	2
80	I02.01040.003	Washer 10.4	6
90	I02.51000.127	Lock washer A10	6

9.11 Pneumatic pressure relief valve incl. pneumatic

Pneumatic pressure relief valve incl. pneumatic for pressure safety, PN I13.00245.500

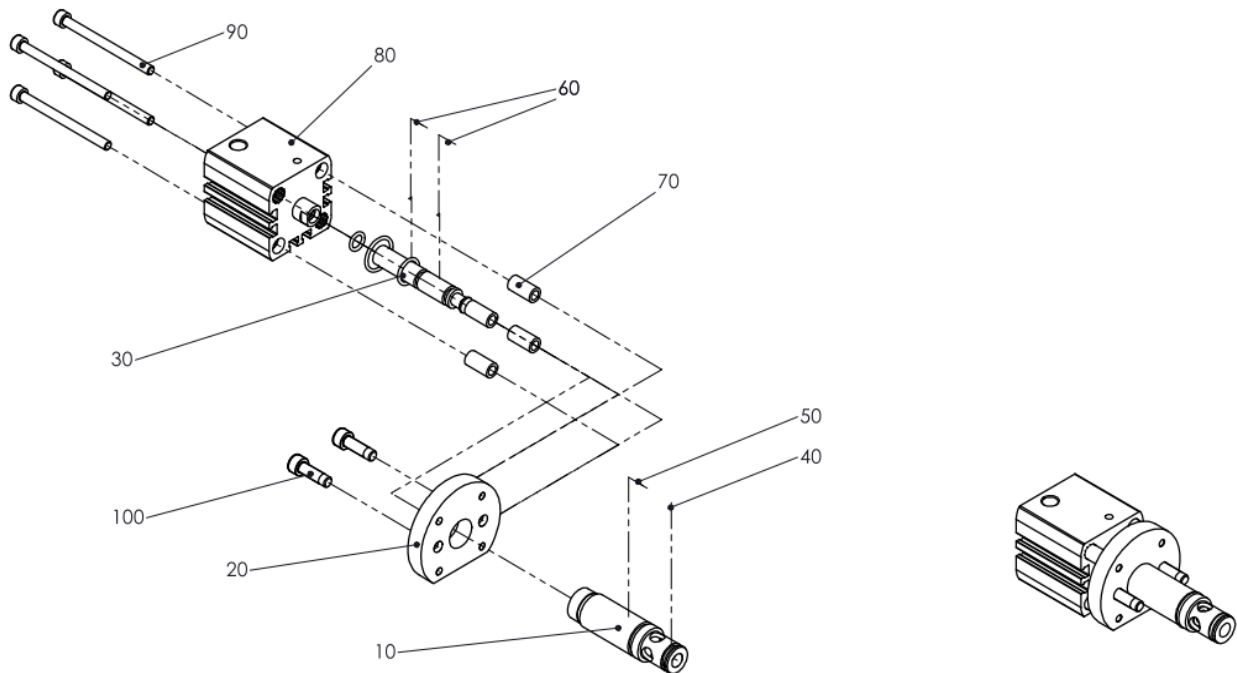


Pos.	Part no.	Description	Quantity
10	I14.00263.500 *	Pneumatic pressure relief valve *	1
20	I80.00112.501 *	Pneumatic for pressure relief valve *	1

* see separate drawing and/or list of parts.

9.12 Pneumatic pressure relief valve

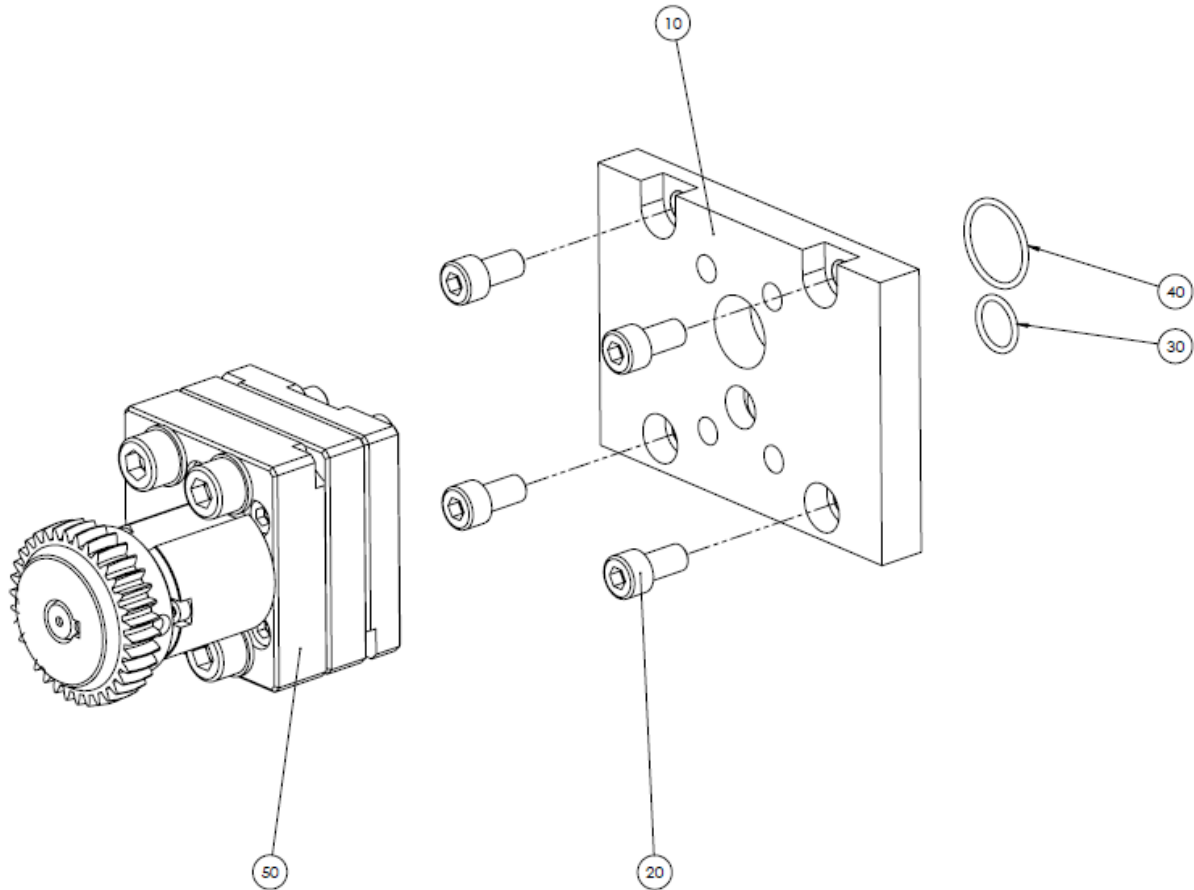
Pneumatic pressure relief valve max. 96 bar (1392 psi) with pn.-cylinder Ø32, PN I14.00263.500



Pos.	Part no.	Description	Quantity
10	I14.00164.400	Casing	1
20	I14.00262.400	Adapter	1
30	I14.00165.400	Piston	1
40	I06.01242.014	O-ring 2-014	1
50	06.01717.017	O-ring 2-017	1
60	I06.00765.011	O-ring 2-011	2
70	I14.00264.400	Distance washer	4
80	I07.96008.050	Short stroke cylinder Ø32/5 single-acting-Viton	1
90	I00.10565.912	Cylinder head screw M5x65	4
100	I00.10616.912	Cylinder head screw M6x16	2

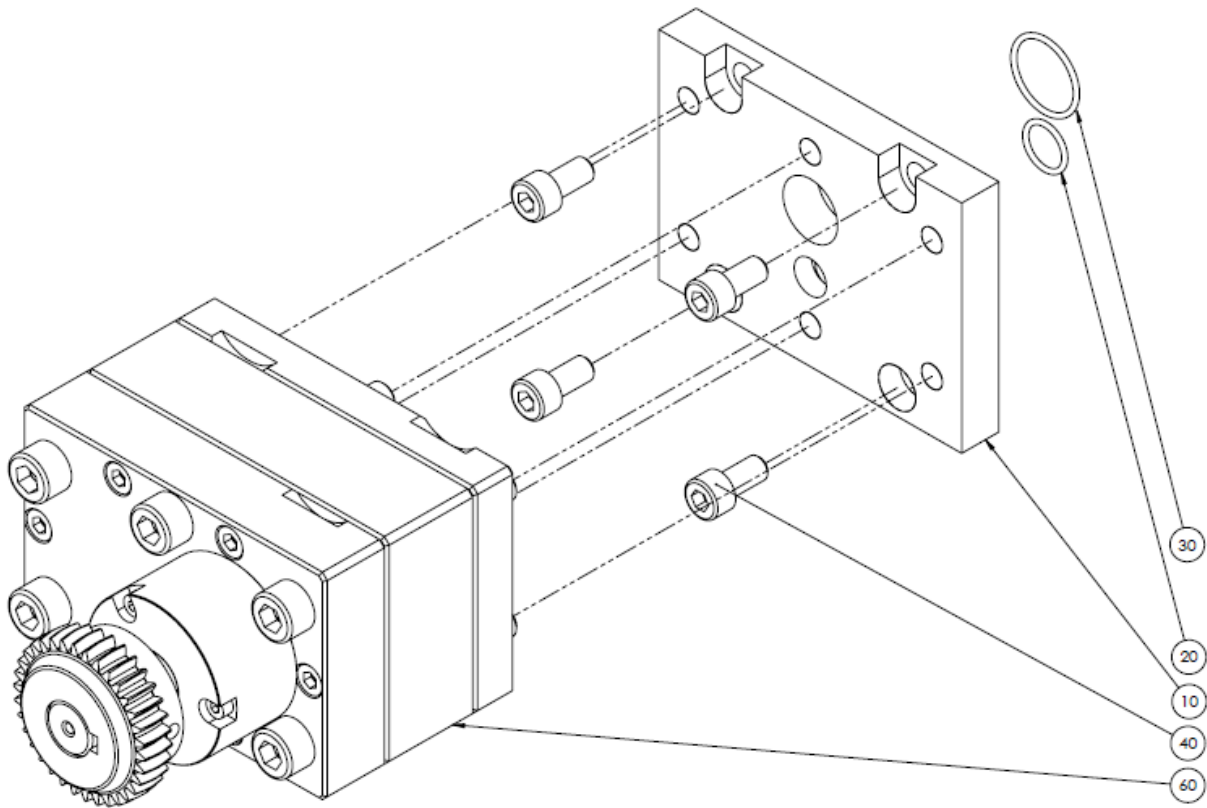
9.13 Gear pump

- Gear pump 0.6 ccm incl. adapter plate, PN I10.00562.501
- Gear pump 1.2 ccm incl. adapter plate, PN I10.00670.500
- Gear pump 2.4 ccm incl. adapter plate, PN I10.00563.501
- Gear pump 4.5 ccm incl. adapter plate, PN I13.00116.501



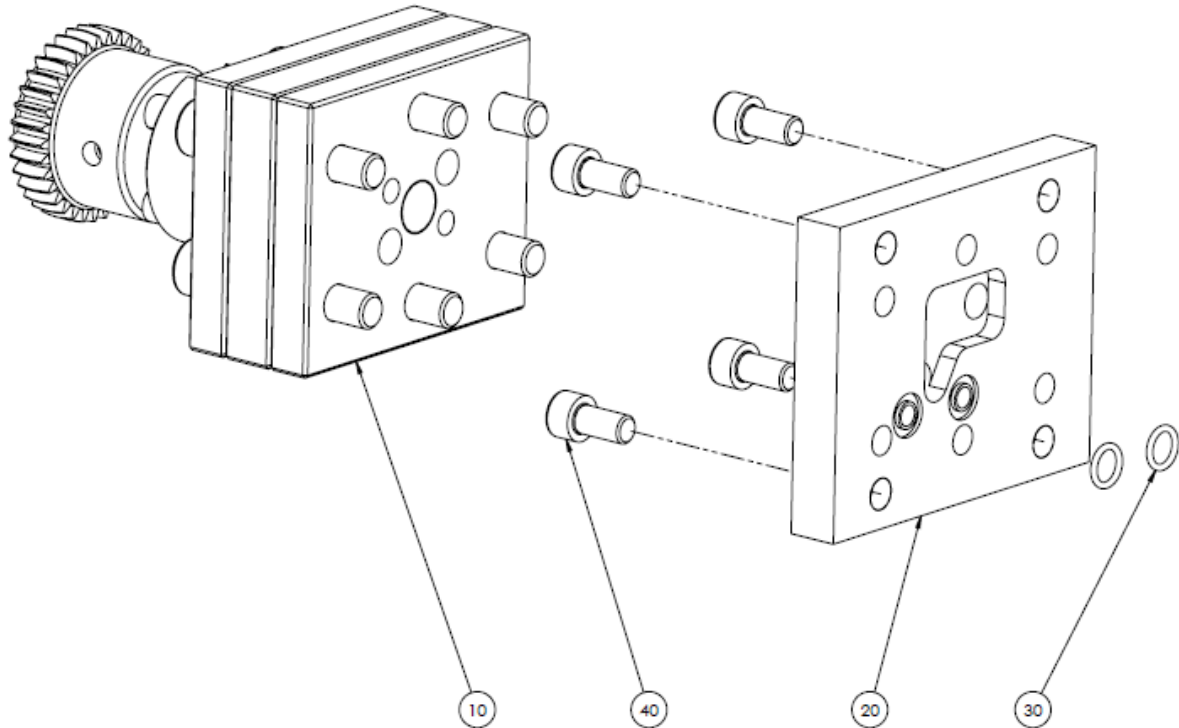
Pos.	Part no.	Description	Quantity
10	I10.00162.301	Adapter plate for 0.3-4.5 pump	1
20	I00.10816.912	Cylinder head screw M8x16	4
30	I06.01400.015	O-ring 2-015	1
40	I06.02352.021	O-ring 2-021	1
50	I07.99106.503	Gear pump 0.6ccm	1
	I07.99112.503	Gear pump 1.2ccm	1
	I07.99124.503	Gear pump 2.4ccm	1
	I07.99145.503	Gear pump 4.5ccm	1
90	I00.10565.912	Cylinder head screw M5x65	4
100	I00.10616.912	Cylinder head screw M6x16	2

- Gear pump 10 ccm incl. adapter plate, PN I10.00437.502
- Gear pump 20 ccm incl. adapter plate, PN I10.00436.501



Pos.	Part no.	Description	Quantity
10	I10.00020.302	Adapter plate for 10+20 pump	1
20	I06.01400.015	O-ring 2-015	1
30	I06.02352.021	O-ring 2-021	1
40	I00.10816.912	Cylinder head screw M8x16	4
60	I07.99110.503	Gear pump 10ccm	1
	I07.99120.503	Gear pump 20ccm	1

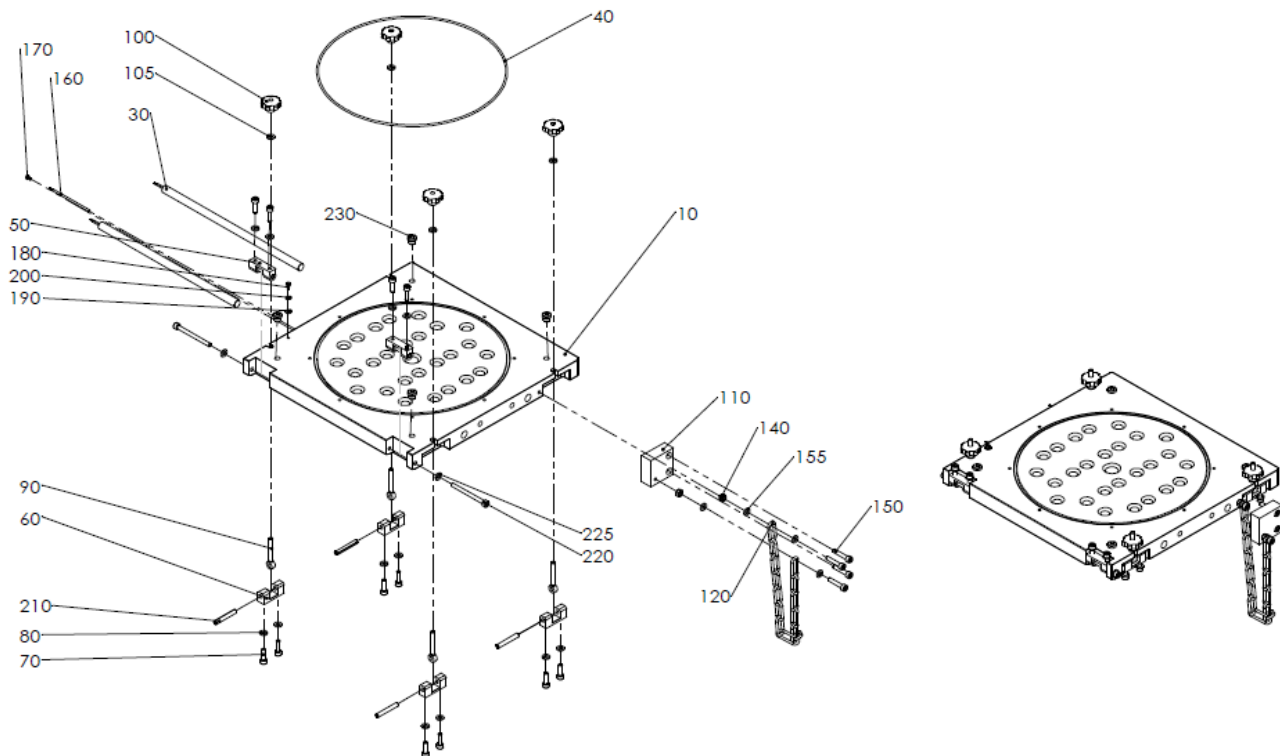
- Dual pump 2x0.6 ccm incl. adapter plate, PN I13.00233.501
- Dual pump 2x1.2 ccm incl. adapter plate, PN I13.00234.501
- Dual pump 2x2.4 ccm incl. adapter plate, PN I13.00235.501
- Gear pump 2x4.8 ccm incl. adapter plate, PN I13.00236.501



Pos.	Part no.	Description	Quantity
10	I07.98206.501	Dual pump 2x0.6ccm	1
	I07.98212.501	Dual pump 2x1.2ccm	1
	I07.98224.501	Dual pump 2x2.4ccm	1
	I07.98248.501	Dual pump 2x4.8ccm	1
20	I10.00075.300	Adapter plate for dual pump	1
30	I06.00925.012	O-ring 2-012	2
40	I00.10816.912	Cylinder head screw M8x16	4

9.14 Melting plate

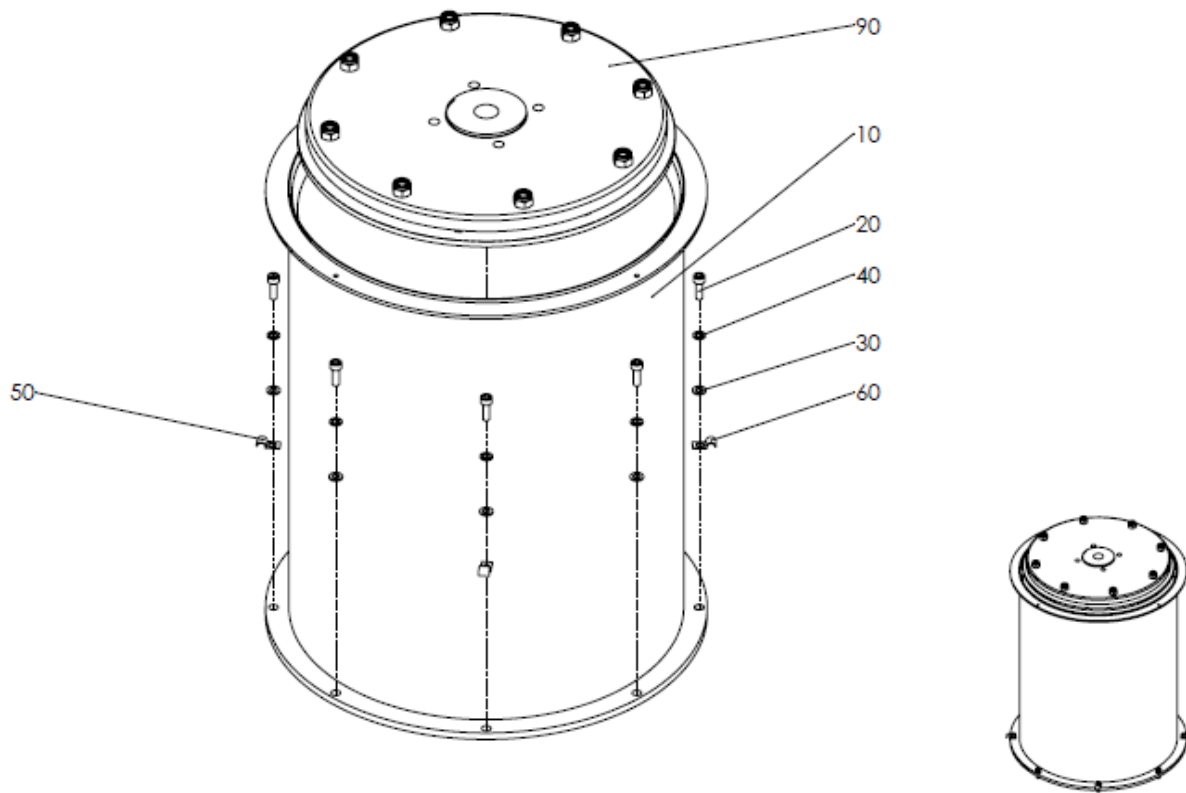
Melting plate 27 holes complete PN I13.00132.500



Pos.	Part no.	Description	Quantity
10	I13.00071.300	Melting plate 27 holes	1
30	I05.31700.002	Heating cartridge d=12,5x300mm, 1700W, 230V, UL-version	2
40	I06.29169.277	O-ring 2-277	1
50	I09.10070.007	Hinge lower part Ø9	2
60	I09.10070.008	Hinge lower part Ø6.3	4
70	I00.10620.912	Cylinder head screw M6x20	12
80	I02.00640.125	Washer 6.4	12
90	I00.30650.444	Eye screw M6x50	4
100	I09.00632.001	Star handle grey iron	4
105	I02.00640.021	Washer 6.4	4
110	I13.00101.400	Fixing for chain	1
120	I03.70500.001	Chain length 13 chain link	1
140	I01.00600.934	Hexagon nut M6	2
150	I00.10630.912	Cylinder head screw M6x30	4
155	I02.00640.125	Washer 6.4	4
160	I05.63030.081	Temperature sensor Ø3x80mm PT100	1
170	I00.10306.912	Cylinder head screw M3x6	1
180	I00.20408.084	Slotted cylinder head screw M4x8	1
190	I02.00430.125	Washer 4.3	1
200	I02.70040.000	Contact washer M4	1
210	I03.30645.481	Heavy duty dowel pin Ø6x24mm	4
220	I00.10670.912	Cylinder head screw M6x70	2
225	I02.00640.125	Washer 6.4	2
230	I00.60970.101	Plug screw G1/8	4

9.15 Feed tube

- Feed tube Ø282 with platen, PN I13.00131.501
- Feed tube Ø288 with platen, PN I13.00159.500

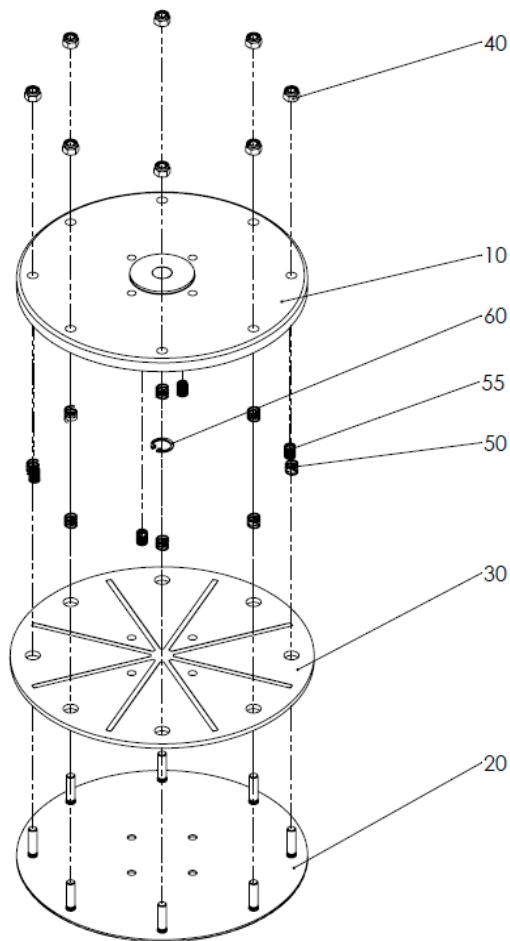


Pos.	Part no.	Description	Quantity
10	I13.00164.500	Feed tube with ring tube Ø 282mm	1
	I13.00170.500	Feed tube with ring tube Ø 288mm	1
20	I00.10516.912	Cylinder head screw M5x16	8
30	I02.00530.125	Washer 5.3	8
40	I02.50500.127	Lock washer A5	8
50	I05.99003.008	Fastening clamp 8mm	1
60	I05.99003.006	Fastening clamp 6mm	3
90	I13.00065.502 *	Platen complete for tube Ø 282 mm	1
	I13.00163.500 *	Platen complete for tube Ø 288 mm	1

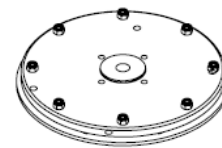
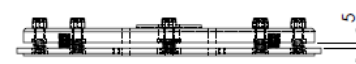
* see separate drawing and/or list of parts.

9.16 Platen

- Platen complete for tube Ø 282 mm, PN I13.00065.502
- Platen complete for tube Ø 288 mm, PN I13.00163.500



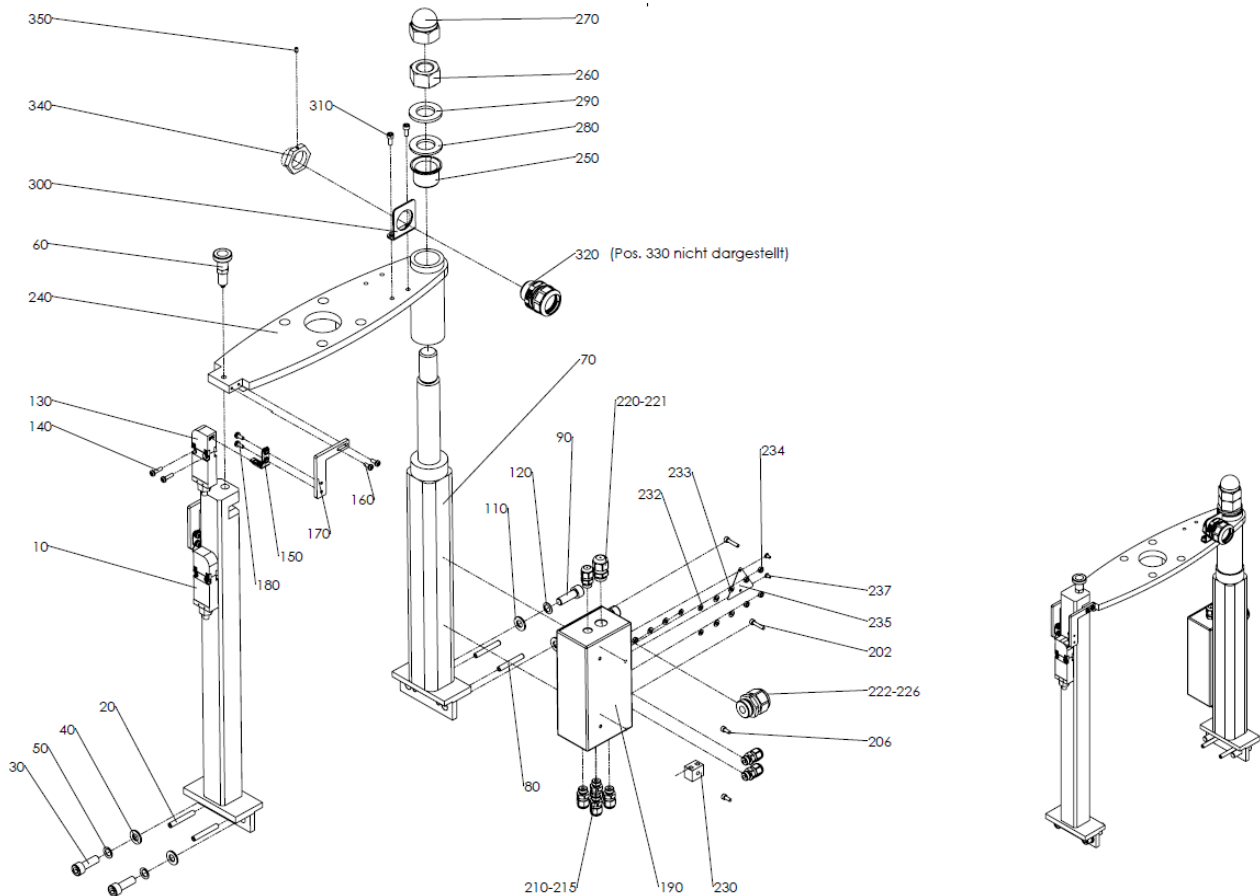
*Installation Instruction:
Adhere 5 mm distance!*



Pos.	Part no.	Description	Quantity
10	I13.00051.301	Platen Ø270mm	1
20	I13.00053.300	Clamping disc Ø270mm	1
30	I13.00092.501	Teflon disc Ø282mm, complete with star-sealing	1
	I13.00161.500	Teflon disc Ø288 mm, complete with star-sealing	1
40	I01.00800.985	Hexagon nut M8 self-locking	8
50	I04.11111.098	Pressure spring 1.1x10.9x23	8
55	I04.11092.098	Pressure spring 1.0x9.2x16	4
60	I03.41901.472	Inner retaining ring J19x1	1

9.17 Cylinder framing

Cylinder framing, PN I13.00129.500



Pos.	Part no.	Description	Quantity
10	I13.00123.300	Pillar right	1
20	I03.30645.481	Heavy duty dowel pin Ø6x24mm	2
30	I00.11030.003	Cylinder head screw M10x30	2
40	I02.01040.125	Washer Ø10.4	2
50	I02.20010.000	Schnorr-washer ZN S10 retaining washer "S"	2
60	I00.86000.617	Stop bolt Ø6	1
70	I13.00062.300	Fulcrum pillar	1
80	I03.30645.481	Heavy duty dowel pin Ø6x24mm	2
90	I00.11030.003	Cylinder head screw M10x30	2
110	I02.01040.125	Washer Ø10.4	2
120	I02.20010.000	Schnorr-washer ZN S10 retaining washer "S"	2
130	I05.52220.051	Limit switch safety switch 1 NCC (normally closed contact) 1 NOC (normally opened contact)	1
140	I00.50416.738	Torx-screw M4x16	2
150	I05.52220.052	Enabling key for 05,52220,051 vertical fixing	1
160	I00.50410.738	Torx-screw M4x10	2
170	I13.00122.400	Stop position	1
180	I00.50410.738	Torx-screw M4x10	2
190	I13.00153.200	Terminal box pillar right	1
202	I00.10420.912	Cylinder head screw M4x20	2
206	I00.10410.912	Cylinder head screw M4x10	2
210	I05.90012.008	Cable fitting KS M12x1,5	7

215	I05.91012.001	Counter nut M12 OBO light grey	7
220	I05.90016.008	Cable fitting KS M16x1.5	1
221	I05.91016.001	Counter nut M16 OBO light grey	1
222	I05.90025.008	Cable fitting KS M25x1.5	1
226	I05.91025.001	Counter nut M25 OBO light grey	1
230	I05.80002.002	Ceramic luster clamp 2-pole with hole	1
232	I02.70040.000	Contact washer M4	3
233	I02.90430.125	Washer D=4,3 Ms	6
234	I01.00400.439	Hexagon nut M4	6
235	I05.22000.158	Warning plate "electrical flash" heat-resistant Al	1
237	I01.70306.001	Blind rivet Ø3x6mm	2
240	I13.00121.300	Upper traverse cyl. Ø80	1
250	I04.33026.102	Flange sleeve 30x34x42x26mm	2
260	I01.02400.003	Hexagon nut M24	1
270	I01.02400.587	Cap nut-hexagon M24	1
280	I13.00021.400	Horn center for swivel joint	1
290	I02.02440.003	Washer Ø25	1
300	I15.00194.300	Sheet steel angle for hose fitting 05.95004.016	1
310	I00.10512.912	Cylinder head screw M5x12	2
320	I05.95004.016	Hose fitting PG21 for 05.95004.017	0,5
330	I05.95004.017	Cable protective hose M25/PG21 for 05.95004.016	1
340	I15.00195.400	Counter nut from PG21 05.90210.006	1
350	I00.80406.913	Headless screw M4x6	1

9.18 Control cabinet

Control Cabinet, PN I93.30172.500

Part no.	Description	Quantity
I05.90000.260	Control cabinet	1
I05.90000.299	Cover plate for connector cutout/control cabinet	1
00.10408.738	Pan-head screw M4x8, DIN ISO 7380 A2	34
I05.97003.011	Mounting base	2
I05.90000.265	Cover plate dual	1
I05.90000.266	Cover plate 6-way	1
I08.60000.011	Velcro back to back 10mm	2
I05.14001.101	End cap for 3-pole busbar	4
I05.14001.098	Busbar 3-pole 16qmm	2
I05.14001.056	Circuit breaker B16A	1
I05.14001.057	Circuit breaker B25A	3
I05.14001.107	Circuit breaker B2A	1
I05.14001.054	Circuit breaker B6A	1
I05.14001.062	Circuit breaker C6A	1
I05.14001.051	Circuit breaker A10A	7
I05.14001.052	Circuit breaker A16A	1
I05.14001.053	Circuit breaker A20A	1
I05.07016.101	Add-on housing HAN 16A	3
I05.07016.506	Socket insert HAN 16A socket	3
9997	Small parts - electronics	19
I05.22000.119	Mounting adapter M22-A	4
I05.22000.121	M22-XST insert label	3
I05.22000.123	Contact element M22-K10 normally open	2
I05.22000.124	Contact element M22-KO1 normally closed	4
I05.22000.125	Lamp socket M22-LED-W	2
I05.22000.144	Illuminated pushbutton green	1
I05.22000.145	Illuminated pushbutton red	1
I05.22000.132	EMERGENCY STOP sign M22-XBK1	1
I05.22000.131	EMERGENCY STOP button M22-PV	1
I05.22000.122	Label holder M22S-ST-X	3
I05.05001.037	Main switch KG80 T 103 / 01E	1
I05.05001.054	Shield holder + shield main switch	1
I05.56000.018	Outlet filter black	1
I05.56000.017	Filter fan 230V black	1
I05.64800.269	Siemens touch display 7 "color TP700-Comfort	1
I05.52220.084	Main contactor 3-pole 7,5KW 24VDC, auxiliary contacts 1xNO 1xNC	1
I05.52220.085	Excess voltage limiter 24VDC	1
I05.52220.075	Auxiliary contactor 24VDC 3xNO 1xNC	2
I05.52220.066	Coupling relay Siemens 24VDC, 2 changeover contacts with 8A each	4
I05.64800.110	PLC S7 micro memory card 128KB	1
I05.64800.104	PLC S7 profile rail	1
I05.64800.152	Shield connection clamp for 2 cables	2
I05.64800.151	Shield support element 80mm pulp	1
I05.42000.011	Power supply 24VDC 2.5A	1
I05.52000.033	Solid State Relay 20A 1-phase	8
I05.64800.096	PLC S7 AI8 13Bit PT100	1
I05.64800.109	PLC S7 front connector 40-pin	3
I05.64800.130	PLC S7 Profibus connector with PG	1
I05.64800.129	PLC S7 Profibus connector without PG	1
I05.52220.112	Excess voltage limiter, varistor, DC 24 ... 70 V	2
I09.70001.135	ITW Dynatec branding sticker	1

9.19 CPU Standard

CPU Standard (no Profibus option) PN I05.64800.238

Chapter 10

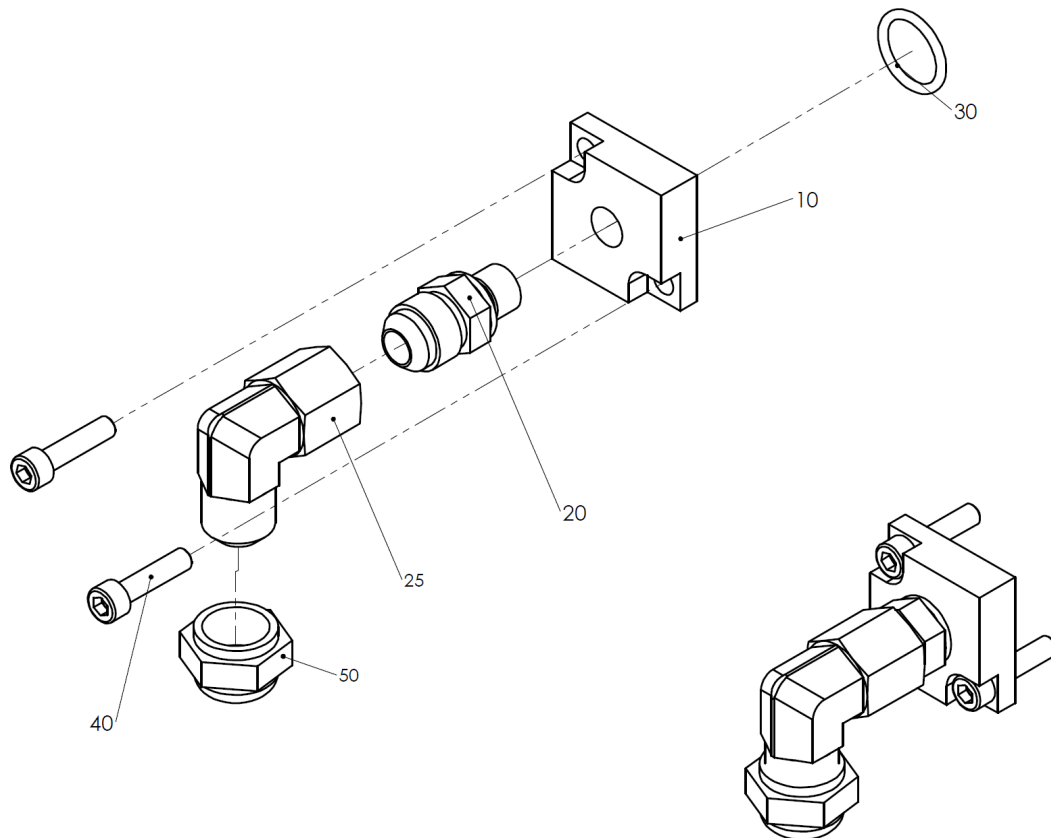
Options / Accessories

10.1 Supply hose connections

- Hose connection DN8 G1/2, PN 803984
- Hose connection DN10 G1/2, PN 804155
- Hose connection DN16 G1/2 (INATEC), PN I07.00800.222
- Hose connection DN16 G1/2 (Dynatec), PN I07.00800.245

10.2 Return hose connection for 1 hose

- Return hose connection DN 8, PN I10.00672.501
- Return hose connection DN 10, PN I10.00023.504
- Return hose connection DN 16 (Dynatec), PN I10.00705.500
- Return hose connection DN 16 (INATEC), PN I10.00151.502

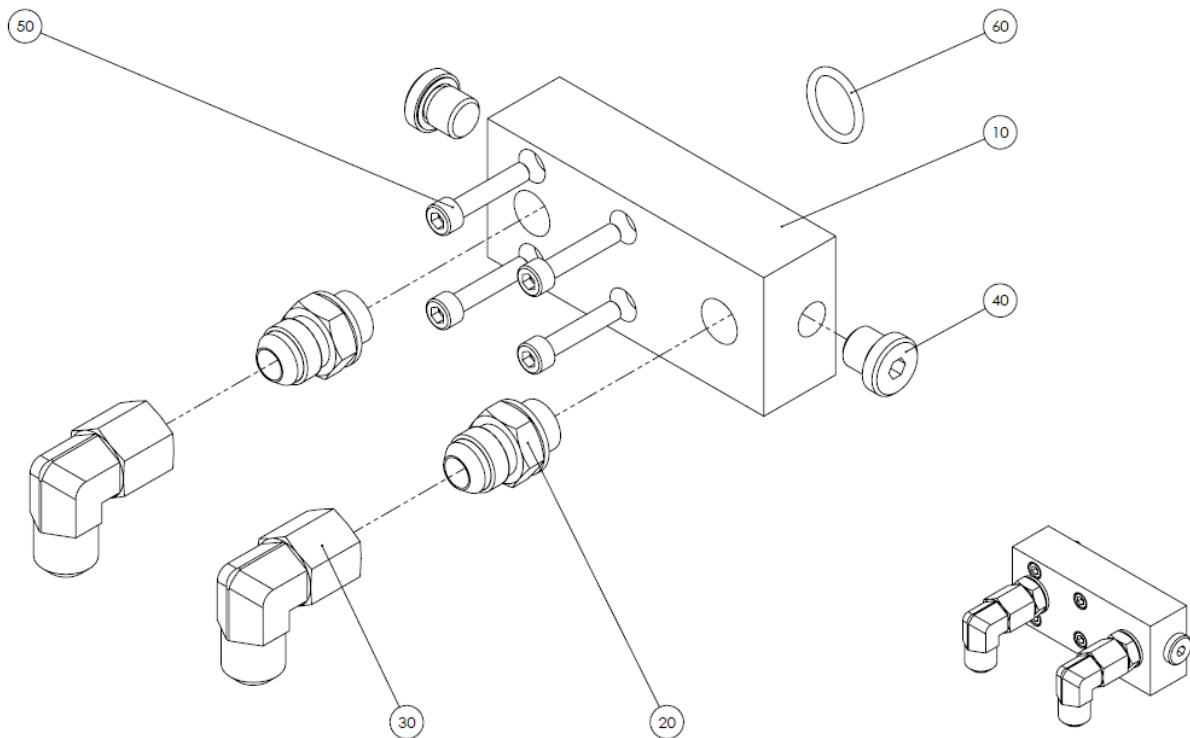


Pos.	Part no.	Description	Quantity
10	I10.00044.304	Return connection DN8+10+16	1
20	803984	Hose connection DN8, G1/2	1
	804155	Hose connection DN10, G1/2	1
	I07.00800.245	Hose connection DN10, G1/2 (Dynatec)	1
	I07.00800.222	Hose connection DN10, G1/2 (INATEC)	1
25	07.08990.101	Swivel screw fitting DN8 90°	1
	07.10990.101	Swivel screw fitting DN10 90°	1
	I07.11090.102	Swivel screw fitting DN16 90° (Dynatec)	1

	I07.11090.101	Swivel screw fitting DN16 90° (INATEC)	1
30	I06.02507.120	O-ring 2-120	1
40	I00.10625.912	Cylinder head screw M6x25	2
50	07.61270.021	Plug screw DN8	1
	07.61905.016	Plug screw DN10	1
	07.61905.014	Plug screw DN16 (INATEC)	1
	07.61905.017	Plug screw DN8 (Dynatec)	1

10.3 Return hose connection for 2 hoses

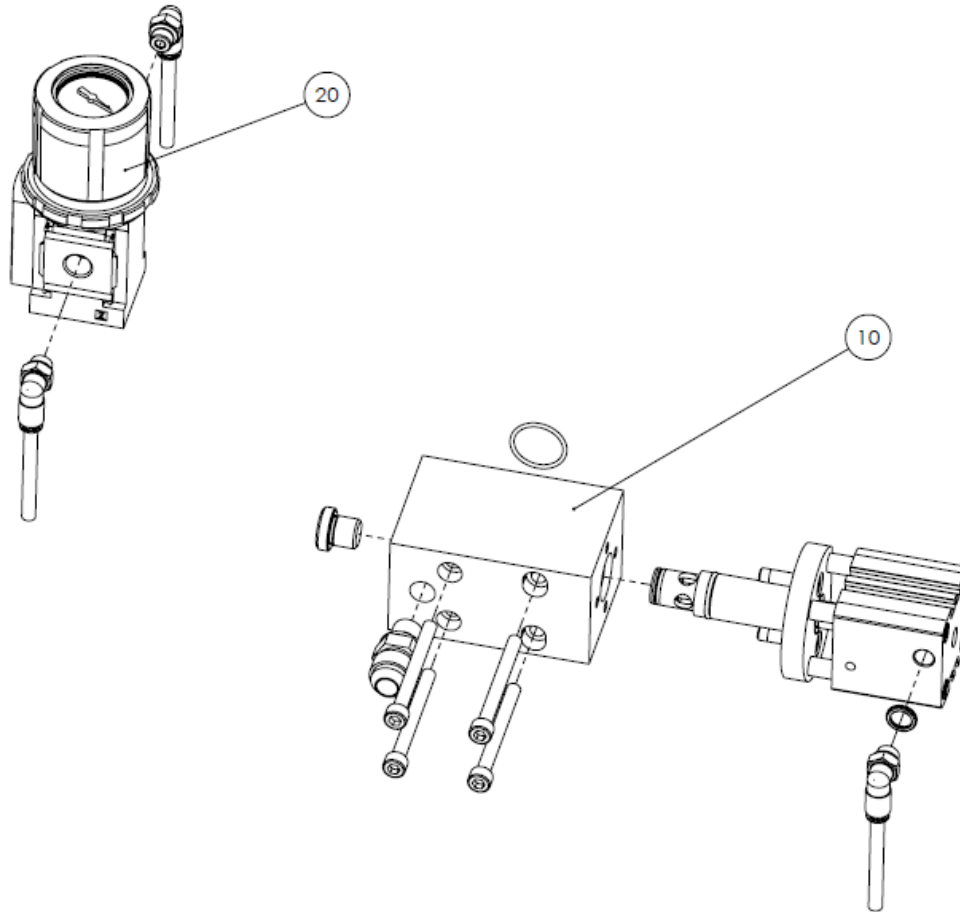
- Return hose connection for 2 hoses DN 8, PN I13.00225.501
- Return hose connection for 2 hoses DN 10, PN I13.00227.501
- Return hose connection for 2 hoses DN 16 (INATEC), PN I13.00229.501
- Return hose connection for 2 hoses DN 16 (Dynatec), PN I13.00230.500



Pos.	Part no.	Description	Quantity
10	I13.00226.400	Return connection for 2 hoses DN8+DN10+DN16	1
20	803984	Hose connection DN8, G1/2	2
	804155	Hose connection DN10, G1/2	2
	I07.00800.222	Hose connection DN10, G1/2	2
	I07.00800.245	Hose connection DN10, G1/2 (Dynatec)	2
30	07.08990.101	Swivel screw fitting DN8 90°	2
	07.10990.101	Swivel screw fitting DN10 90°	2
	I07.11090.101	Swivel screw fitting DN16 90° (INATEC)	2
	I07.11090.102	Swivel screw fitting DN16 90° (Dynatec)	2
40	I00.61320.101	Plug screw G1/4	2
50	I00.10630.912	Cylinder head screw M6x30	4
60	I06.01872.116	O-ring 2-116	1

10.4 Pneum. Return regulating valve

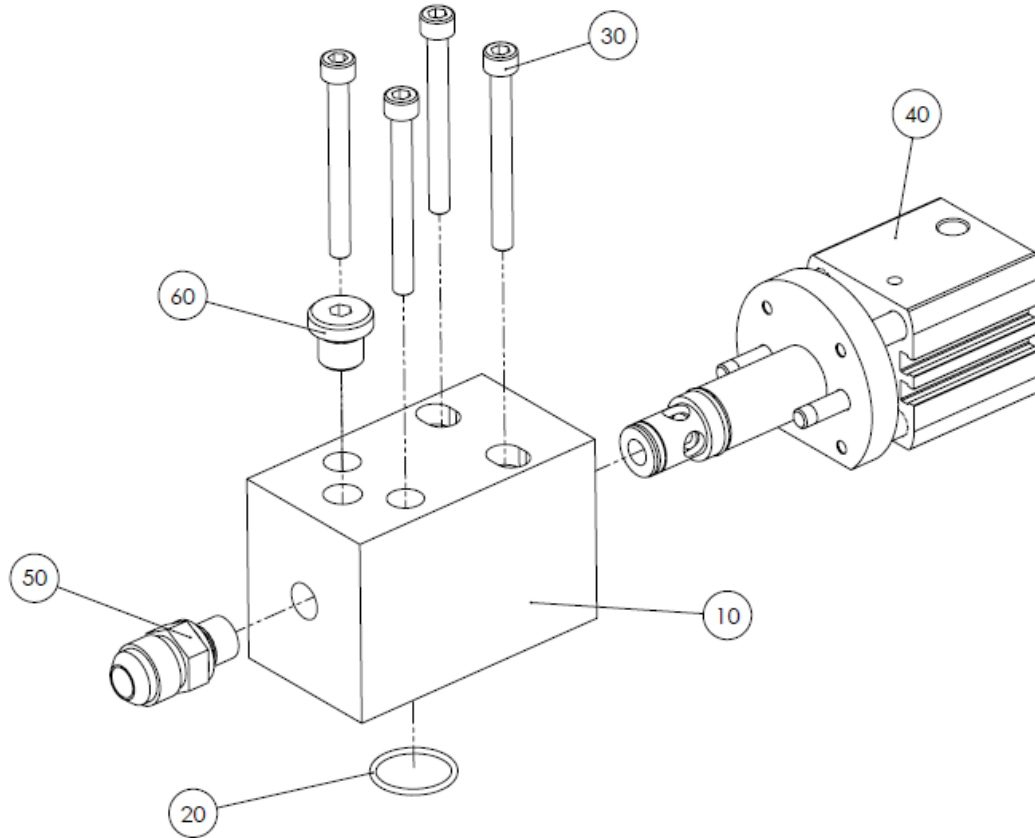
- Pneum. Return regulating valve DN 8 with pneumatic, PN I13.00197.501
- Pneum. Return regulating valve DN 10 with pneumatic, PN I13.00194.501
- Pneum. Return regulating valve DN 16 with pneumatic (INATEC), PN I13.00198.500
- Pneum. Return regulating valve DN 16 with pneumatic (Dynatec), PN I13.00255.500



Pos.	Part no.	Description	Quantity
10	I10.00673.501 *	Pneum. Return regulating valve DN 8 without pneumatics	1
	I10.00174.502 *	Pneum. Return regulating valve DN 10 without pneumatics	1
	I10.00173.501 *	Pneum. Return regulating valve DN 16 (INATEC) without pneumatics	1
	I10.00707.500 *	Pneum. Return regulating valve DN 16 (Dynatec) without pneumatics	1
20	I80.00063.502 *	Pneumatic for return regulating valve	1

* see separate drawing and/or list of parts.

- Pneum. Return regulating valve DN 8 without pneumatics, PN I10.00673.501
- Pneum. Return regulating valve DN 10 without pneumatics, PN I10.00174.502
- Pneum. Return regulating valve DN 16 (INATEC) without pneumatics, PN I10.00173.501
- Pneum. Return regulating valve DN 16 (Dynatec) without pneumatics, PN I10.00707.500



Pos.	Part no.	Description	Quantity
10	I10.00172.300	Supply part for DN 8, DN 10 and DN 16	1
20	06.02195.020	O-ring di=21.95/S=1.78 mm	1
30	I00.10660.912	Cylinder head screw M6x60	4
40	I14.00263.500 *	Pressure regulating / relief valve	1
50	103623	Hose connection DN8 G3/8	1
	I07.00800.231	Hose connection DN10 G3/8	1
	I07.00800.219	Hose connection DN16 G3/8 (INATEC)	1
	I07.00800.244	Hose connection DN16 G3/8 (Dynatec)	1
60	I00.61320.101	Plug screw G1/4	1

* see separate drawing and/or list of parts.

10.5 Cap

- Cap DN10, PN 07.61905.016
- Cap UNF9/16-18G, chemically nickel-plated, PN 07.61270.021

10.6 Pressure transducer, pressure sensor

- **Pressure transducer 160bar, complete with electrics, PN I13.00195.500**

Pos.	Part no.	Description	Quantity
	I07.83100.028	Pressure transducer with flush diaphragm Type 990.36	1
	I07.83100.020	Seal for pressure transducer	1

- **Pressure transducer 200bar, complete with capillary and electrics, PN I13.00196.500**

Pos.	Part no.	Description	Quantity
	I07.83100.029	Pressure transducer 4...20 mA, 2 wires, 0...200 bar, Type S-10, 1m capillary	1
	I07.83100.020	Seal for pressure transducer	1

- **Pressure transducer 100bar, complete with electrics, PN I13.00250.500**

Pos.	Part no.	Description	Quantity
	I07.83100.030	Pressure transducer with flush diaphragm Type 990.36 100 bar	1
	I07.83100.020	Seal for pressure transducer	1

- **Pressure transducer 100bar, complete with capillary and electrics, PN I13.00251.500**

Pos.	Part no.	Description	Quantity
	I07.83100.031	Pressure transducer 4...20 mA, 2 wires, 0...100 bar, Type S-10, 1m capillary	1
	I07.83100.020	Seal for pressure transducer	1

10.7 External signal connector

External signal connector, PN I95.00002.500

10.8 Profibus connection

Profibus connection, PN I95.00003.500

10.9 Profibus/Profinet-connection

Profibus/Profinet-connection, PN I95.00052.500

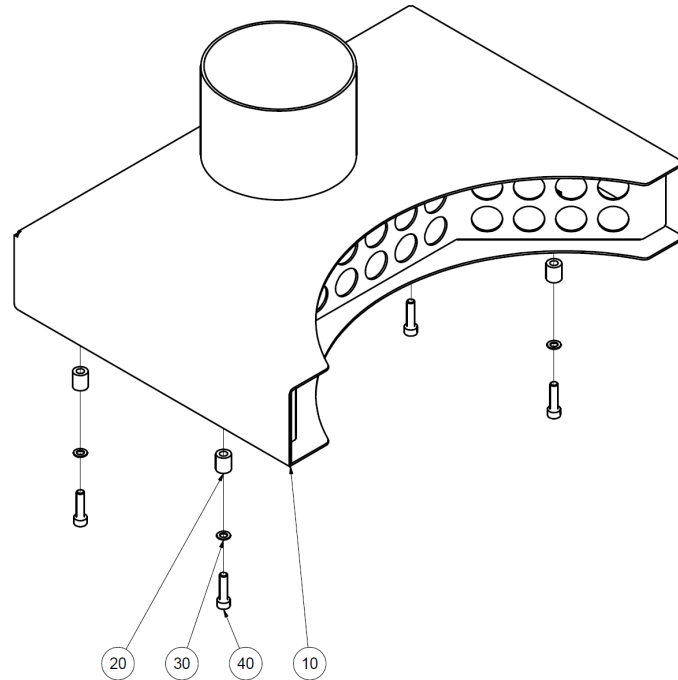
10.10 Stacklight, horn, proximity switch

Stacklight, horn, proximity switch, assembly PN I95.00004.500

10.11 Exhaust-Kit

Exhaust-Kit, PN 826261 (optional), mounted on the cover

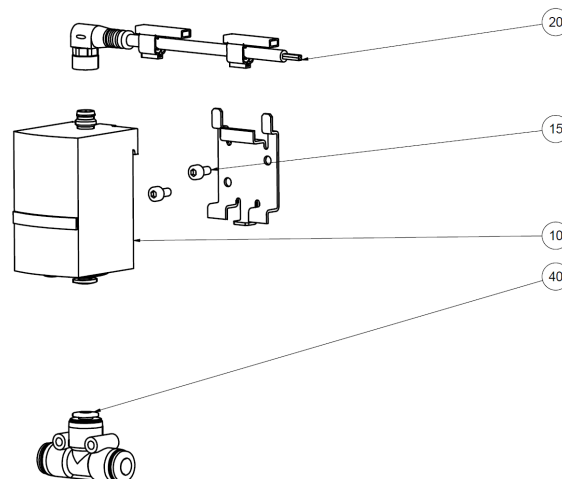
Pos.	Part no.	Description	Quantity
10	826262	Exhaust hood	1
20	02.10512.001	Ceramic isolation ring 5x12mm	4
30	I02.20005.000	Schnorr-washer S5	4
40	I00.10520.912	Screw M5x20mm	4



10.12 Pressure switch (optional)

PN I13.00301.500 (mounted on the rear side of the control cabinet)

Pos.	Part no.	Description	Quantity
10	I07.83100.037	Pressure switch	1
15	I00.10306.912	Screw	2
20	I07.83100.038	Connecting cable 2.5m	1
30	08.00503.103	Pneumatic hose Teflon (not shown)	1
40	I07.11400.026	T-plug connection 2xØ6/4 1xØ4/2	1



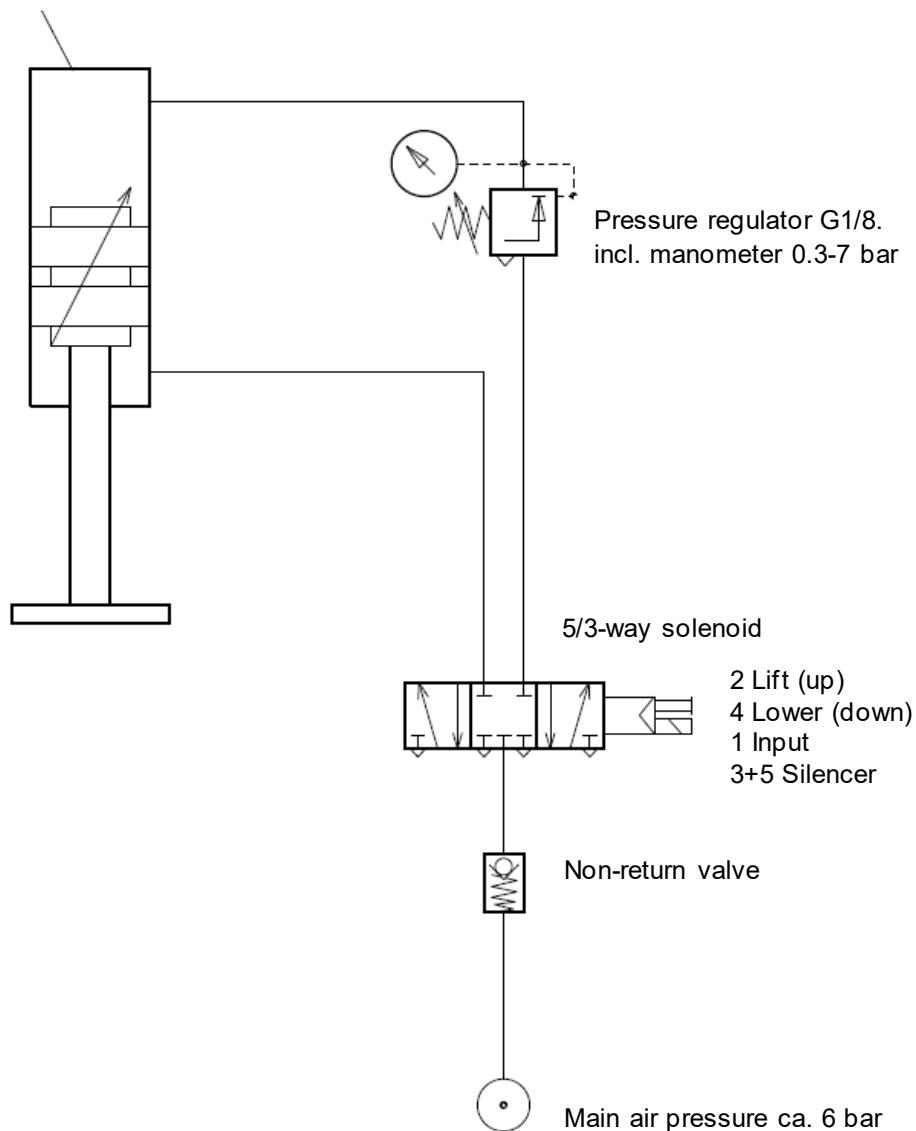
Chapter 11

Pneumatic plans and lists of parts

11.1 Pneumatic for Platen

Pneumatic for Platen, PN I80.00131.505

Pneumatic cylinder Ø80 standard cylinder stroke 400

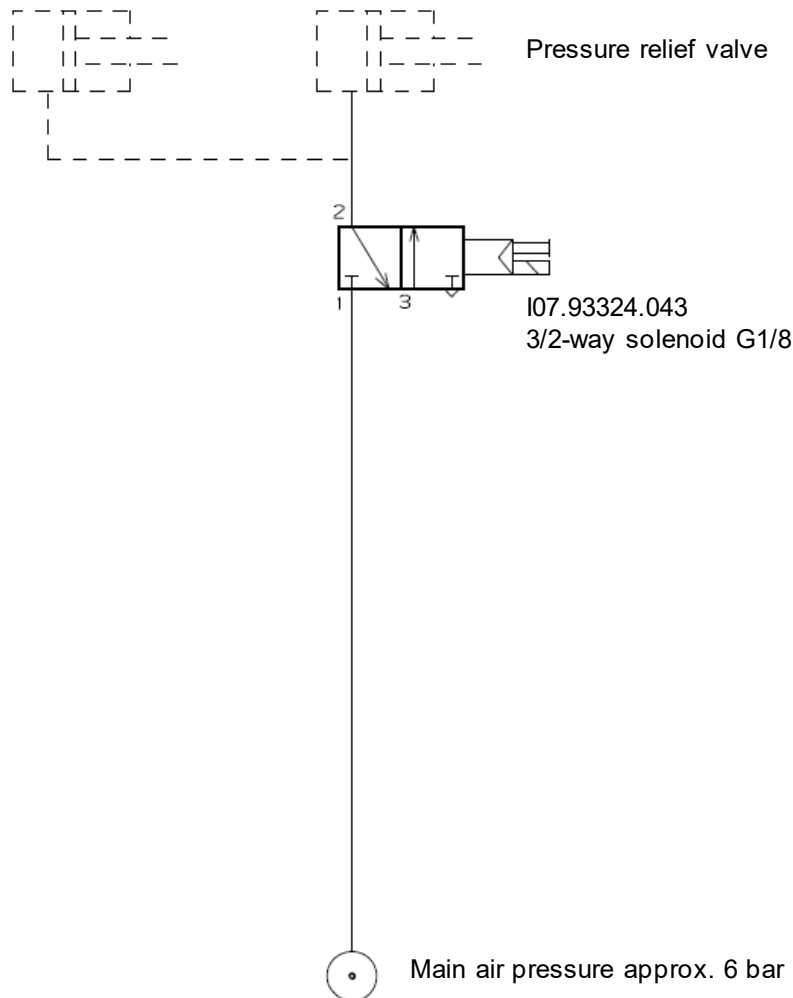


Pos.	Part no.	Description	Quantity
	I07.96007.018	Pneumatic cylinder Ø80 standard cylinder stroke 400	1
	I15.00101.400	Distance bushing for pneum. Cylinder	4
	I00.11050.003	Cylinder head screw M10x50	4
	I07.41014.401	Plug nipple DN7, G1/4 male thread	1
	I07.11400.006	Bulkhead fitting inside G1/4	1

I07.10600.013	Swivel connector pivotable G1/4-Ø6/4	1
07.03814.201	Reducer piece 3/8 – 1/4 a-i	2
I08.00604.106	Pneumatic hose PFAN Ø4/6mm	1,2m
I07.11400.008	Plug-in T-connection	1
I07.70000.035	Non-return valve	1
I07.95324.001	5/3-way solenoid valve	1
I02.18503.001	Distance washer Ø4.3/8 L=3mm	2
I00.10420.912	Cylinder head screw M4x20	2
I07.40970.501	Silencer with slot R-1/8	2
I07.10600.014	Swivel connector pivotable G1/8-Ø6/4	5
I07.95324.002	Cable 2m with Led	2
I07.81000.055	Pressure regulator incl. manometer 0.3-7 bar	1

11.2 Pneumatic for Standard Over-Pressure Relief Function

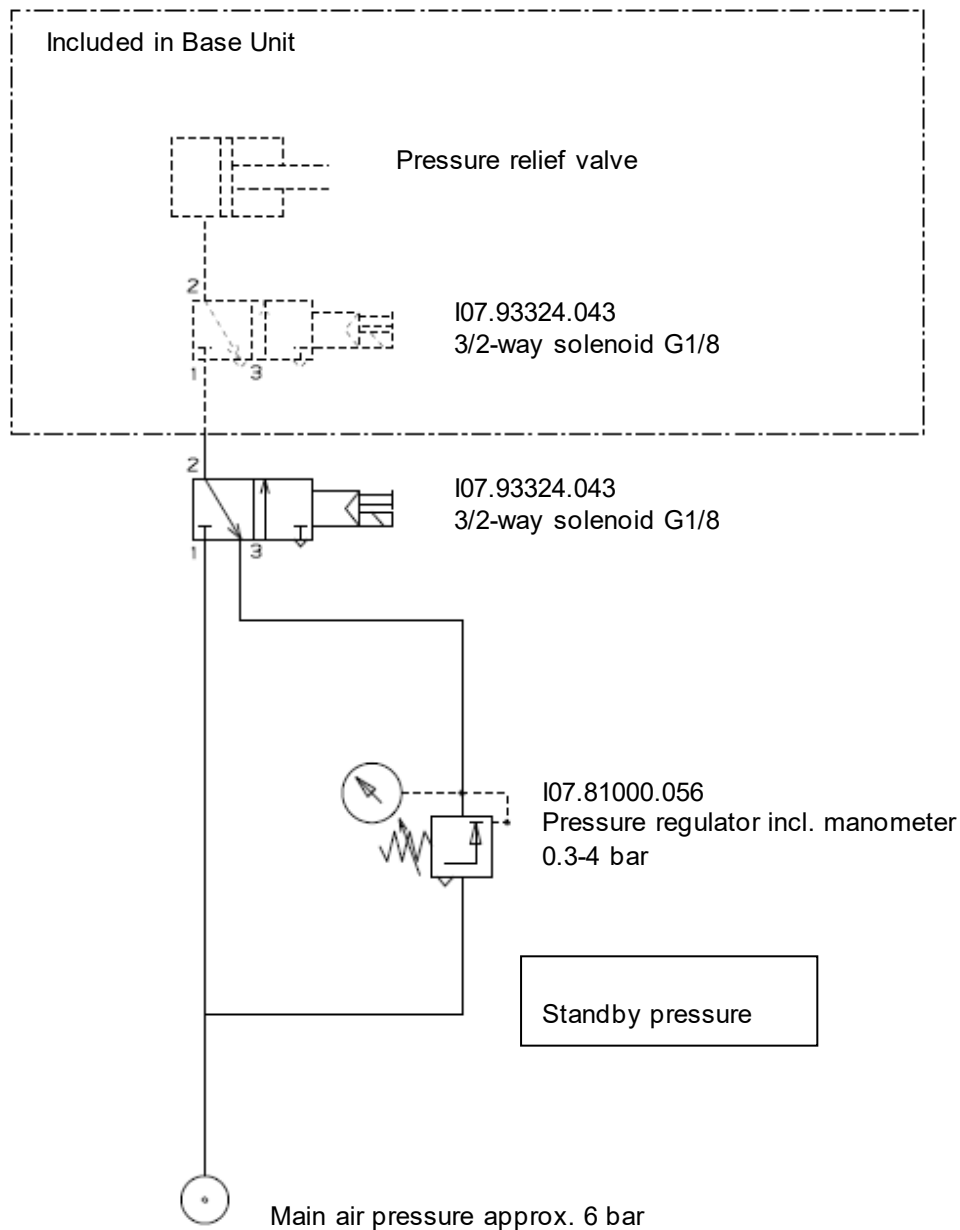
Pneumatic for pneumatic pressure relief valve, for supply, PN I80.00112.501



Pos.	Part no.	Description	Quantity
	I07.41006.501	Silencer Ø6	1
	I07.00600.112	Straight connection G1/4-Ø6/4	1
	I07.93324.043	3/2-way solenoid valve G1/8	1
	I08.00604.106	Pneumatic hose PFAN Ø4/6mm	2m
	I07.11400.006	Bulkhead fitting inside G1/4	1
	I07.41014.401	Connector plug DN7-G1/4	1
	I02.18503.001	Distance washer Ø4.3/8 L=3mm	2
	I00.10420.912	Cylinder head screw M4x20	2

11.3 Pneumatic for Tank circulation (Option)

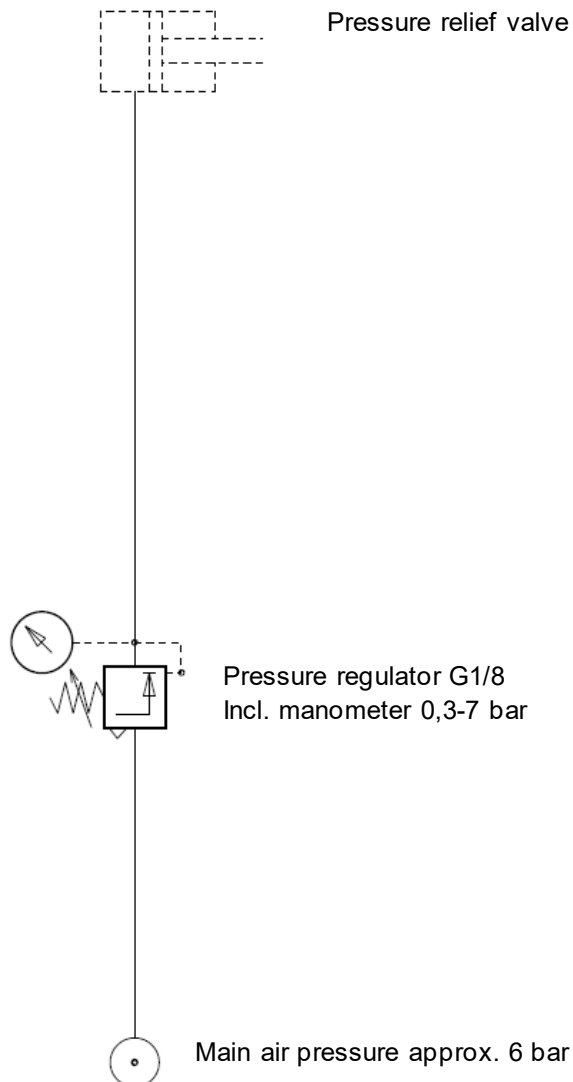
Pneumatic for tank circulation, PN I80.00228.500 (Option)



Pos.	Part no.	Description	Quantity
	I07.11400.008	T-plug in connection Ø6/4mm	1
	I07.81000.056	Pressure regulator incl. manometer 0.3-4 bar	1
	I07.10600.014	Swivel connector pivotable G1/8-Ø6/4	2
	I07.93324.043	3/2-way solenoid valve G1/8	1
	I02.18503.001	Distance washer Ø4.3/8 L=3mm	2
	I00.10440.912	Cylinder head screw M4x40	2
	I08.00604.106	Pneumatic hose Ø4/6mm	1

11.4 Pneumatic for Pressure controlled return (Option)

Pneumatic for return regulating valve, PN I80.00063.502 (Option)



Pos.	Part no.	Description	Quantity
	I07.81000.055	Pressure regulator incl. manometer 0.3-7 bar	1
	I07.10600.014	Swivel connector pivotable G1/8-Ø6/4	2
	I07.11400.008	T-plug in connection Ø6/4mm	1
	I07.10490.001	Swivel connector G1/8 Ø6/4	1
	I02.11050.483	Copper seal ring G1/8	2
	I08.00604.101	Pneumatic hose Ø4/6mm	1

Chapter 12

Recommended spare parts

NOTE: We recommend keeping these parts always on stock to avoid longer machine breakdowns, when one of these parts is missing or broken.

12.1 Basic unit

- Dynamelt PUR 20 (BM20) Bag Melter, Basic unit for 1 or 2 single pumps, PN I13.00200.500
- Dynamelt PUR 20 D (BM20) Bag Melter, Basic unit for 1 or 2 dual pumps, PN I13.00215.500

Pos.	Part no.	Description	Quantity
3	I05.62190.001	Glass bead 190°C (374°F)	5

12.2 Basic tank 10l, prepared for pump

- Basic tank prepared for 1 pump, PN I13.00231.500
- Basic tank prepared for 2 pumps, PN I13.00232.500

Pos.	Part no.	Description	Quantity
2	I10.00546.500 *	Three phase gear motor 0.5 KW with accessories	1
4	I95.00005.501 **	Assembly for 1 frequency converter V20	1
	I05.64010.145	Frequency converter Sinamics V20 0.55KW	1
	I05.65401.216	Connection cable for initiator 5m, for I05.65401.215	1
	I05.56000.019	Filter fan 230V black, air volume 63m³/h	1
	I05.52220.083	Time relay 5-100sec 1CO, 24VDC with LED	1

12.3 Basic tank 10l, complete

- Basic tank 10 liters for 1 pump with melting aid complete, PN I10.00616.500
- Basic tank 10 liters for 2 pumps with melting aid complete, PN I10.00653.500

Pos.	Part no.	Description	Quantity
60	I05.63030.040	Temperature sensor Ø3x40 PT100	5
70	I05.62001.001	Over temperature socket with BZ-Washer	1
90	I06.00290.006	O-ring 2-006	5

12.4 Melting aid

Melting aid complete, PN I10.00618.500

Pos.	Part no.	Description	Quantity
15	I06.04100.030	O-Ring 2-030	1
40	I05.31700.002	Heating cartridge d=12,5x300mm, 1700W, 230V, UL-version	1
60	I05.63030.081	Temperature sensor Ø3x80mm PT100	1
110	I06.00290.006	O-Ring 2-006	2

12.5 Motor

Three phase gear motor 0.5 KW with accessories, PN I10.00546.500

Pos.	Part no.	Description	Quantity
1	I09.20005.540	Three phase gear motor 0.5 KW, complete with initiator for motor control	1
	I09.20005.541	Three phase gear motor 0.5 KW, 230/400V 50/60Hz Iso. Kl. F	1
	I05.65401.215	Initiator PNP reacting distance 3mm	1

12.6 Filter block

- Filter block right complete for DN 8, DN 10 and DN 16, for single pump, PN I10.00256.501
- Filter block left (inversely) complete for DN 8, DN 10 and DN 16, for single pump, PN I10.00257.501

Pos.	Part no.	Description	Quantity
15	I06.03609.222	O-ring 2-222	1
20	I06.01242.014	O-ring 2-014	1
40	I05.30350.003	Heating cartridge Ø10x100mm, 350W, 230V	1
100	I06.01400.015	O-ring 2-015	1
160	I10.00252.500 *	Filter screw, complete 200µm	1

* see separate drawing and/or list of parts.

- Filter block right complete for DN 8 and DN 10, for dual pump, PN I10.00601.500
- Filter block left (inversely) complete for DN 8 and DN 10, for dual pump, PN I10.00602.500

Pos.	Part no.	Description	Quantity
15	I06.03609.222	O-ring 2-222	1
20	I06.01242.014	O-ring 2-014	1
40	05.30420.001	Heating cartridge Ø10 x 138 mm, 230 V, 420 W	1
160	I14.00282.500 *	Filter screw, complete 150µm	2
180	I06.02512.022	O-ring 2-022	2

* see separate drawing and/or list of parts.

12.7 Filter screw

Filter screw, complete 200µm, (for filter block for single pump), PN I10.00252.500

Pos.	Part no.	Description	Quantity
20	I06.02974.217	O-ring 2-217	1
30	I06.03147.026	O-ring 2-026	1
40	I10.00254.400	Filter cartridge 200 µm	1

Filter screw, complete 150µm, (for filter block for dual pump), PN I14.00282.500

Pos.	Part no.	Description	Quantity
	I06.02195.020	O-ring 2-020	1
	I06.02035.019	O-ring 2-019	1
	I14.00004.400	Filter cartridge 150 µm	1

12.8 Pneumatic pressure relief valve incl. pneumatic

Pneumatic pressure relief valve incl. pneumatic for pressure safety, PN I13.00245.500

Pos.	Part no.	Description	Quantity
10	I14.00263.500 *	Pneumatic pressure relief valve	1

* see separate drawing and/or list of parts.

12.9 Pneumatic pressure relief valve

Pneumatic pressure relief valve max. 96 bar (1392 psi) with pn.-cylinder Ø32, PN I14.00263.500

Pos.	Part no.	Description	Quantity
40	I06.01242.014	O-ring 2-014	1
50	06.01717.017	O-ring 2-017	1
60	I06.00765.011	O-ring 2-011	2
80	I07.96008.050	Short stroke cylinder Ø32/5 single-acting-Viton	1

12.10 Gear Pump

- Gear pump 0.6 ccm incl. adapter plate, PN I10.00562.501
- Gear pump 1.2 ccm incl. adapter plate, PN I10.00670.500
- Gear pump 2.4 ccm incl. adapter plate, PN I10.00563.501
- Gear pump 4.5 ccm incl. adapter plate, PN I13.00116.501

Pos.	Part no.	Description	Quantity
30	I06.01400.015	O-ring 2-015	1
40	I06.02352.021	O-ring 2-021	1
50	I07.99106.503	Gear pump 0.6ccm	1
	I07.99112.503	Gear pump 1.2ccm	1
	I07.99124.503	Gear pump 2.4ccm	1
	I07.99145.503	Gear pump 4.5ccm	1

- Gear pump 10 ccm incl. adapter plate, PN I10.00437.502
- Gear pump 20 ccm incl. adapter plate, PN I10.00436.501

Pos.	Part no.	Description	Quantity
20	I06.01400.015	O-ring 2-015	1
30	I06.02352.021	O-ring 2-021	1
60	I07.99110.503	Gear pump 10ccm	1
	I07.99120.503	Gear pump 20ccm	1

- Dual pump 2x0.6 ccm incl. adapter plate, PN I13.00233.501
- Dual pump 2x1.2 ccm incl. adapter plate, PN I13.00234.501
- Dual pump 2x2.4 ccm incl. adapter plate, PN I13.00235.501
- Gear pump 2x4.8 ccm incl. adapter plate, PN I13.00236.501

Pos.	Part no.	Description	Quantity
10	I07.98206.501	Dual pump 2x0.6ccm	1
	I07.98212.501	Dual pump 2x1.2ccm	1
	I07.98224.501	Dual pump 2x2.4ccm	1
	I07.98248.501	Dual pump 2x4.8ccm	1
30	I06.00925.012	O-ring 2-012	2

12.11 Melting plate

Melting plate 27 holes complete PN I13.00132.500

Pos.	Part no.	Description	Quantity
30	I05.31700.002	Heating cartridge d=12,5x300mm, 1700W, 230V, UL-version	2
40	I06.29169.277	O-ring 2-277	1
160	I05.63030.081	Temperature sensor Ø3x80mm PT100	1

12.12 Platen

- Platen complete for tube Ø 282 mm, PN I13.00065.502
- Platen complete for tube Ø 288 mm, PN I13.00163.500

Pos.	Part no.	Description	Quantity
30	I13.00092.501	Teflon disc Ø282mm, complete with star-sealing	1
	I13.00161.500	Teflon disc Ø288 mm, complete with star-sealing	1

12.13 Control cabinet

Control Cabinet, PN I93.30172.500

Part no.	Description	Quantity
I05.14001.056	Circuit breaker B16A	1
I05.14001.057	Circuit breaker B25A	3
I05.14001.107	Circuit breaker B2A	1
I05.14001.054	Circuit breaker B6A	1
I05.14001.062	Circuit breaker C6A	1
I05.14001.051	Circuit breaker A10A	7
I05.14001.052	Circuit breaker A16A	1
I05.14001.053	Circuit breaker A20A	1
I05.56000.018	Outlet filter black	1
I05.56000.017	Filter fan 230V black	1
I05.52220.084	Main contactor 3-pole 7,5KW 24VDC, auxiliary contacts 1xNO 1xNC	1
I05.52220.075	Auxiliary contactor 24VDC 3xNO 1xNC	2
I05.52220.066	Coupling relay Siemens 24VDC, 2 changeover contacts with 8A each	4
I05.64800.110	PLC S7 micro memory card 128KB	1
I05.42000.011	Power supply 24VDC 2.5A	1
I05.52000.033	Solid State Relay 20A 1-phase	8

12.14 Pneum. Return regulating valve

- Pneum. Return regulating valve DN 8 without pneumatics, PN I10.00673.501
- Pneum. Return regulating valve DN 10 without pneumatics, PN I10.00174.502
- Pneum. Return regulating valve DN 16 (INATEC) without pneumatics, PN I10.00173.501
- Pneum. Return regulating valve DN 16 (Dynatec) without pneumatics, PN I10.00707.500

Pos.	Part no.	Description	Quantity
40	I14.00263.500	Pneumatic pressure relief valve *	1

12.15 Pressure transducer, pressure sensor

- Pressure transducer 160bar, complete with electrics, PN I13.00195.500

Pos.	Part no.	Description	Quantity
	I07.83100.028	Pressure transducer with flush diaphragm Type 990.36	1
	I07.83100.020	Seal for pressure transducer	1

- Pressure transducer 200bar, complete with capillary and electrics, PN I13.00196.500

Pos.	Part no.	Description	Quantity
	I07.83100.029	Pressure transducer 4...20 mA, 2 wires, 0...200 bar, Type S-10, 1m capillary	1
	I07.83100.020	Seal for pressure transducer	1

- Pressure transducer 100bar, complete with electrics, PN I13.00250.500

Pos.	Part no.	Description	Quantity
	I07.83100.030	Pressure transducer with flush diaphragm Type 990.36 100 bar	1
	I07.83100.020	Seal for pressure transducer	1

- Pressure transducer 100bar, complete with capillary and electrics, PN I13.00251.500

Pos.	Part no.	Description	Quantity
	I07.83100.031	Pressure transducer 4...20 mA, 2 wires, 0...100 bar, Type S-10, 1m capillary	1
	I07.83100.020	Seal for pressure transducer	1

12.16 Pneumatic for Platen

Pneumatic for Platen, PN I80.00131.505

Pos.	Part no.	Description	Quantity
	I07.70000.035	Non-return valve	1
	I07.95324.001	5/3-way solenoid valve	1
	I05.03107.603	Proximity switch for pneumatic cylinder	1
	I08.00604.106	Pneumatic hose PFAN Ø4/6mm	1,2m

12.17 Pneumatic for Standard Over-Pressure Relief Function

Pneumatic for pneumatic pressure relief valve, for supply, PN I80.00112.501

Pos.	Part no.	Description	Quantity
	I07.93324.043	3/2-way solenoid valve G1/8	1
	I08.00604.106	Pneumatic hose PFAN Ø4/6mm	2m

12.18 Pneumatic for Tank circulation (Option)

Pneumatic for tank circulation, PN I80.00228.500 (Option)

Pos.	Part no.	Description	Quantity
	I07.93324.043	3/2-way solenoid valve G1/8	1
	I08.00604.106	Pneumatic hose Ø4/6mm	1m

12.19 Pneumatic for Pressure controlled return (Option)

Pneumatic for return regulating valve, PN I80.00063.502 (Option)

Pos.	Part no.	Description	Quantity
	I08.00604.101	Pneumatic hose Ø4/6mm	1

12.20 Cleaner

- Hotmelt-Cleaner, 5 liters container with 1 faucet cook and spray bottle, PN I06.90100.147.

Chapter 13

Wiring diagrams

NOTE: The wiring diagrams are provided as separate files depending on the machine configuration.

Manual Revisions

Revision	Page/Chapter	Update description
Rev.6.24	Ch.3.2.1	Model Designation Guide Fieldbus options updated, R = Profinet and P = Profibus.
Rev.10.25	Ch.7.9	"NOTE on replacing the needle bearing" added.

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