ITW Dynatec®

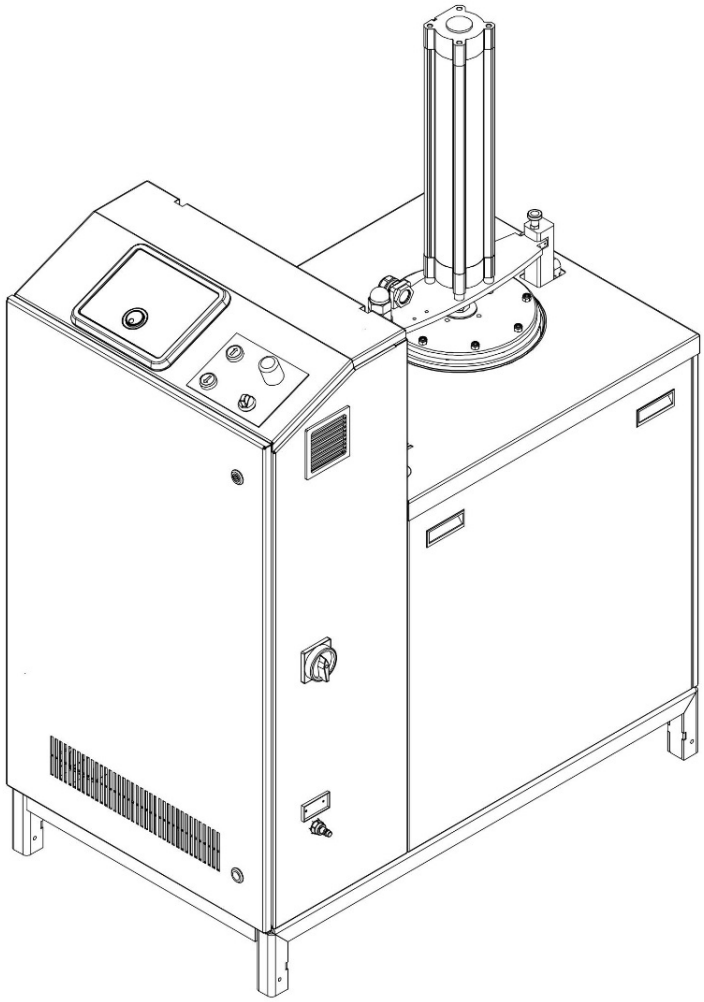
Adhesive Application Solutions | ISO 9001 certified

Dynamelt PUR20 Bag Melter

with DynaControl V6 Touch Panel Controller

Technical Documentation, No. 20-71, Rev.6.24

English - Translation of the original instructions (German)



ITW Dynatec
An Illinois Tool Works Company
www.itwdynatec.com

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.

ITW Dynatec Service Parts and Technical Service:

AMERICAS

ITW Dynatec
31 Volunteer Drive
Hendersonville, TN 37075
USA
Tel. +1.615.824.3634
info@itwdynatec.com
service@itwdynatec.com

EUROPE, MIDDLE EAST & AFRICA

ITW Dynatec
Industriestrasse 28
40822 Mettmann
Germany
Tel. +49.2104.915.0
info@itwdynatec.de
service@itwdynatec.de

ASIA PACIFIC

ITW Dynatec
No. 2 Anzhi Street,
SIP, Suzhou, 215122
China
Tel. +86.512.6289.0620
info@itwdynatec.cn
service@itwdynatec.cn

ITW Dynatec
Tsukimura Building 5th Floor
26-11, Nishikamata 7-chome
Ota-ku, Tokyo 144-0051,
Japan
Tel. +81.3.5703.5501
info@itwdynatec.co.jp
service@itwdynatec.co.jp

Index

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

Industriestraße 28

40822 Mettmann

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

Andreas Pahl

ITW Dynatec GmbH

Industriestraße 28

DE - 40822 Mettmann

Description and identification of the machinery

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

S Shirgaonkar

Place, Date

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

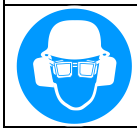
1. Read and obey all of the warning labels, signs and caution statements on the equipment.

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
	Read and adhere to the documentation!
	Switch the unit voltage-free before working! Main switch OFF!
	Wear headgear, protective goggles and ear protection!

	Wear foot guard!
	Wear protective gloves!
	Wear protective clothing!

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!**

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!

	**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 is 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 287.1 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

Appropriate extinguishing agents:
Foam extinguisher, Dry powder, Spray, Carbon dioxide (CO2), Dry sand.

For safety reasons not appropriate extinguishing agents: 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, and
- 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 L / 22 lb
Feed tube -∅:	EU: ∅ 282 mm or US / Japan: ∅ 288 mm
Adhesive bag reserve, bag size:	20 kg / 44 lb
Number of hoses and applicators	max. 4 (supply), max. 4 (return)
Number of internal temperature zones	3
Number of gear pumps	max. 2 single or dual pumps
Gear pump sizes	0.6 to 20 cm³/rev
Number of motors	max. 2 three-phased gear motors, 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” (optional) 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	if 9 Zones: 15 kW, 32A if 17 zones: 52 kW, 50A
Temperature sensor	Pt 100
Electrical connectors	If 9 zones: max. 2 Hoses + Applicators and 2 Hoses or AUX If 17 zones: max. 4 Hoses + Applicators 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. 0.5 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

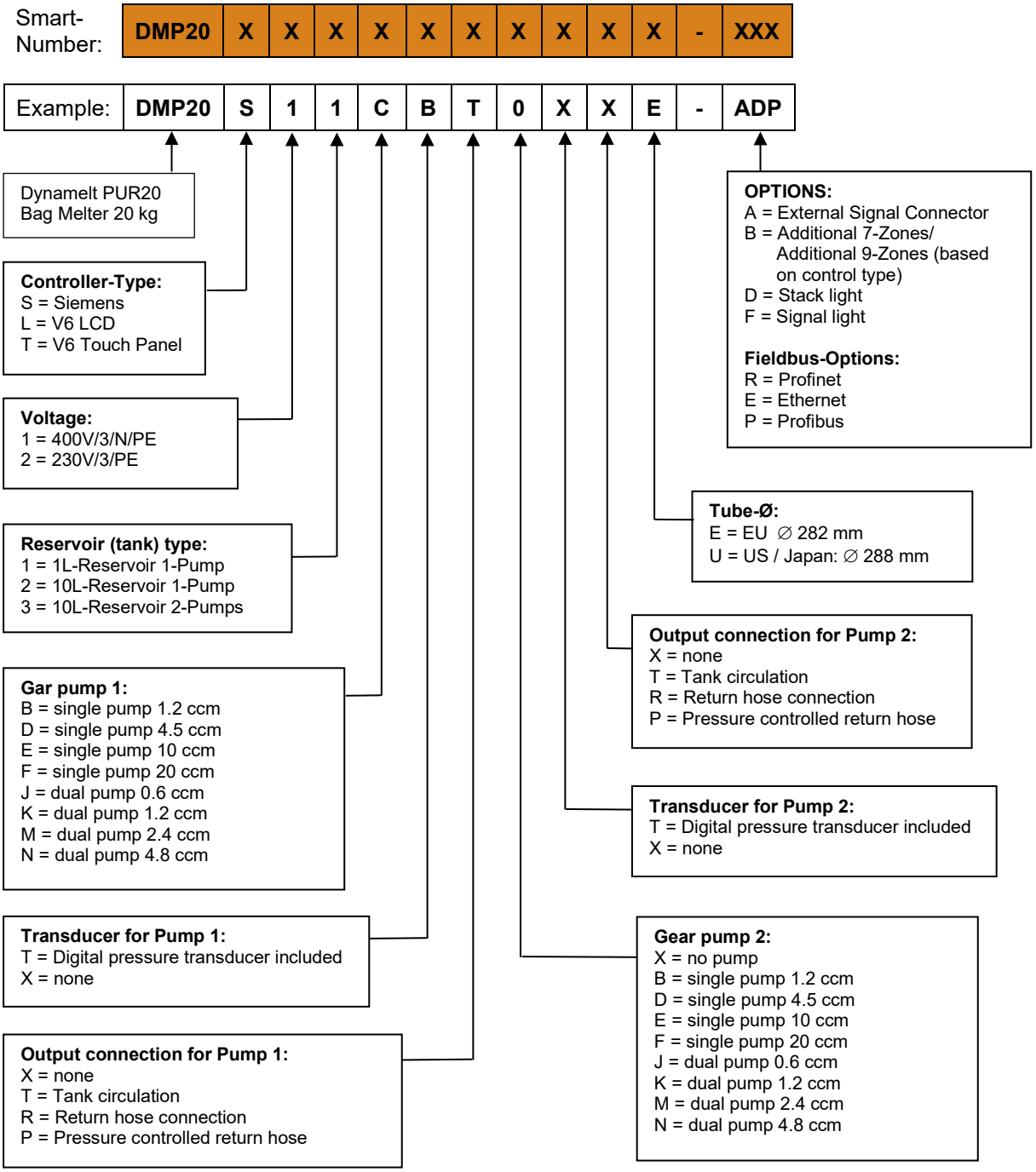
Controller:

Controller	DynaControl V6
Display languages	English, German, French, Spanish, Chinese and Japanese
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

3.2.1 Model Designation Guide



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 applicator type.

Circulating system

In the circulating system the Bag Melter and the applicator 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 applicator 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 Controller. 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 3.9 "Pneumatics for platen".

Proximity switch:

There are one or optionally 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 3.8 "Level control in the feed tube".

Basic tank (reservoir), 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 3.7 "Over temperature protection".

Gear pump:

At each filter block a single or dual pump is mounted. Gear motor drive 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 3.4 "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 applicator.

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 3.6 "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 Controller.

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 airproof 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.

Hose connections

At each filter block, you can connect two heated hoses for supplying the applicators 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 pressure relief valve that is regulated by pressure regulator. Refer to chapter 3.6 "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!*

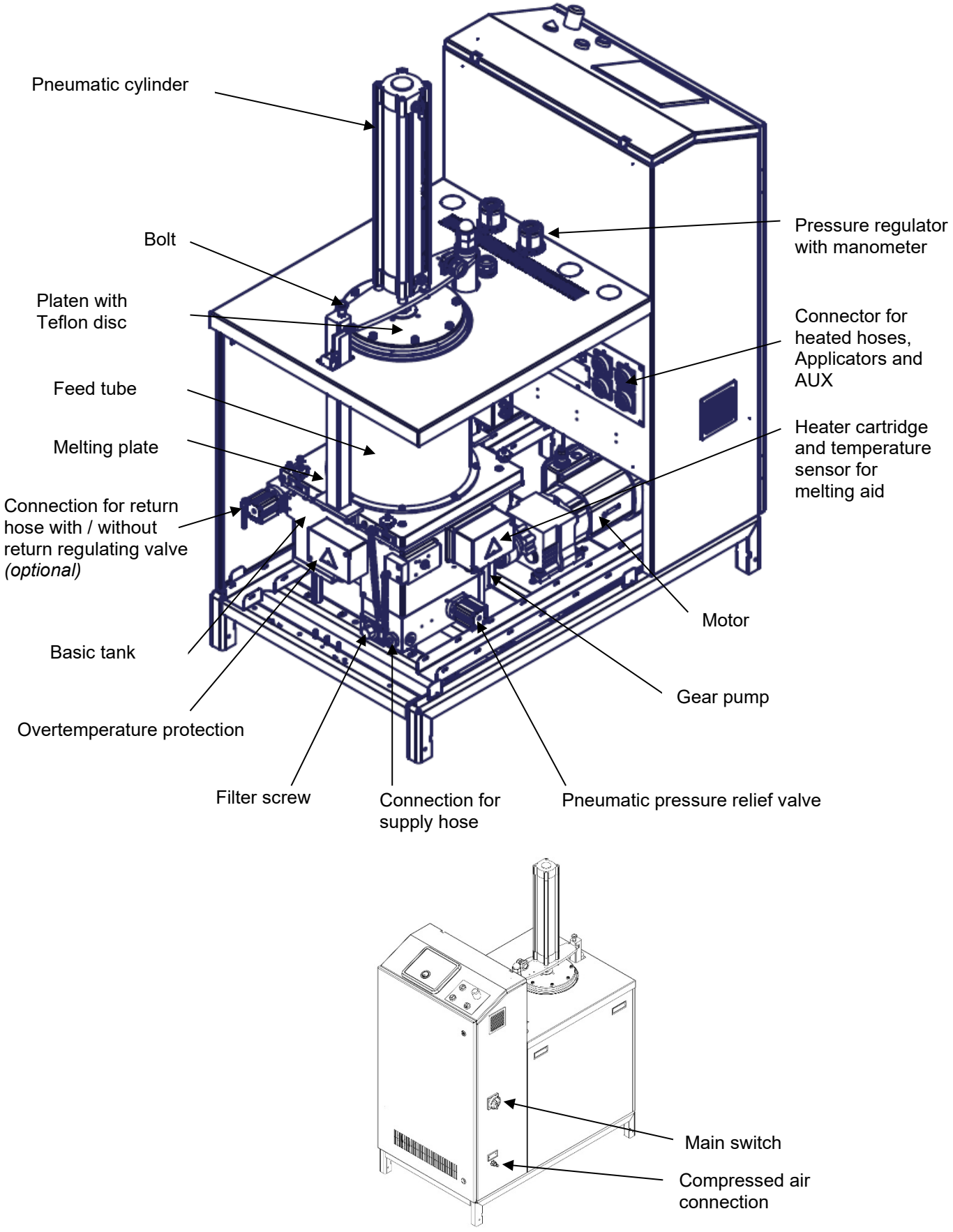
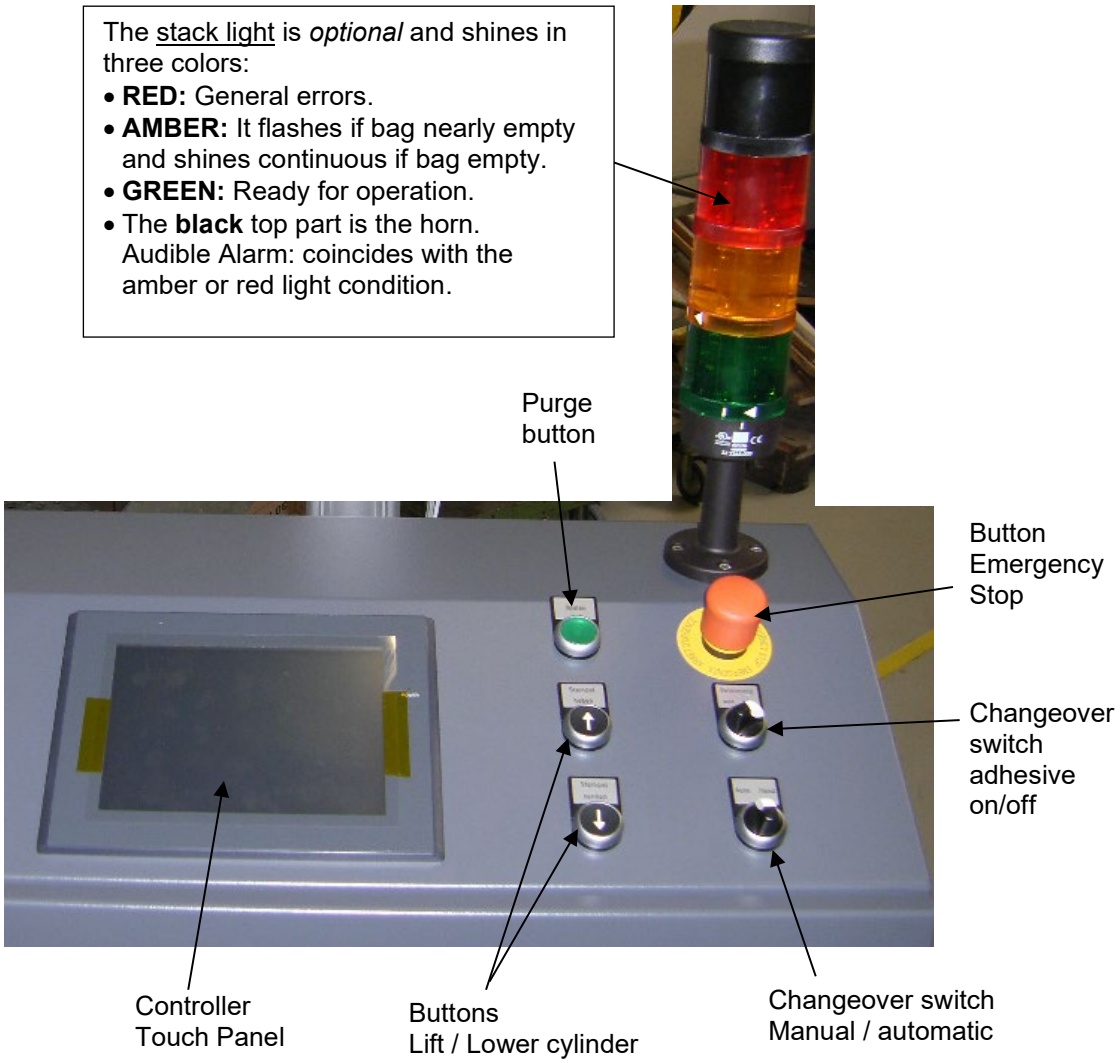


Illustration: Dynamelt™ PUR Bag Melter - components



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 Lift Platen	By pressing this button, the platen (cylinder) will be lifted.
Button Lower Platen	By pressing this button, the platen (cylinder) will be lowered.
Changeover switch Manual / automatic	Over this switch you can select manual or automatic control of the platen (cylinder).
Changeover switch adhesive on/off	With this switch you can switch the gluing on or off. • On = adhesive application starts when the machine line speed is above an adjustable limit. This switch must be set to "On" if you are operating the system via a pattern controller. • Off = adhesive application is switched off.
Purge button	By pressing this button, the valve on the applicator will be purged.

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/USB of the documentation) and save the changes by pressing the reset-button FN.

3.4 Gear pump

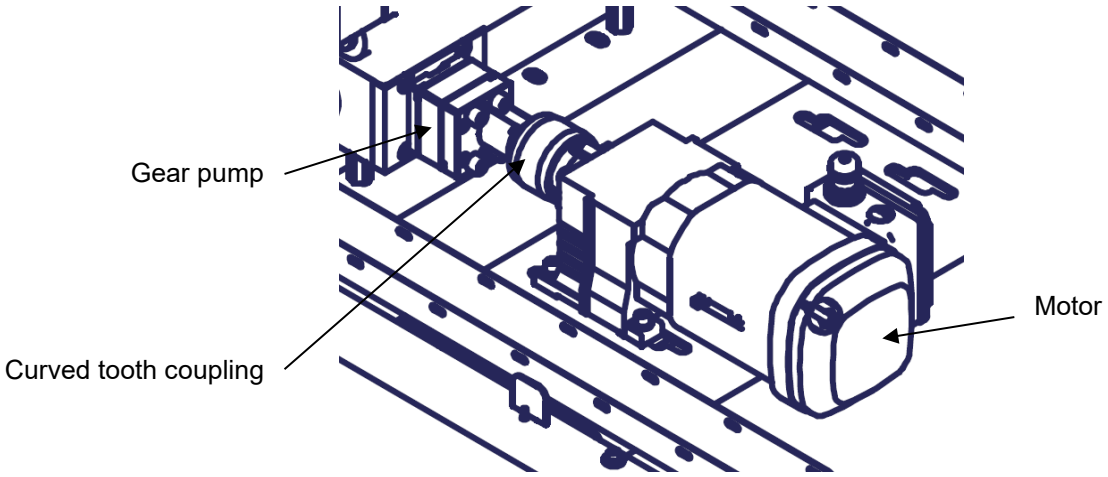


Illustration: Gear pump

At each 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 controller.

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

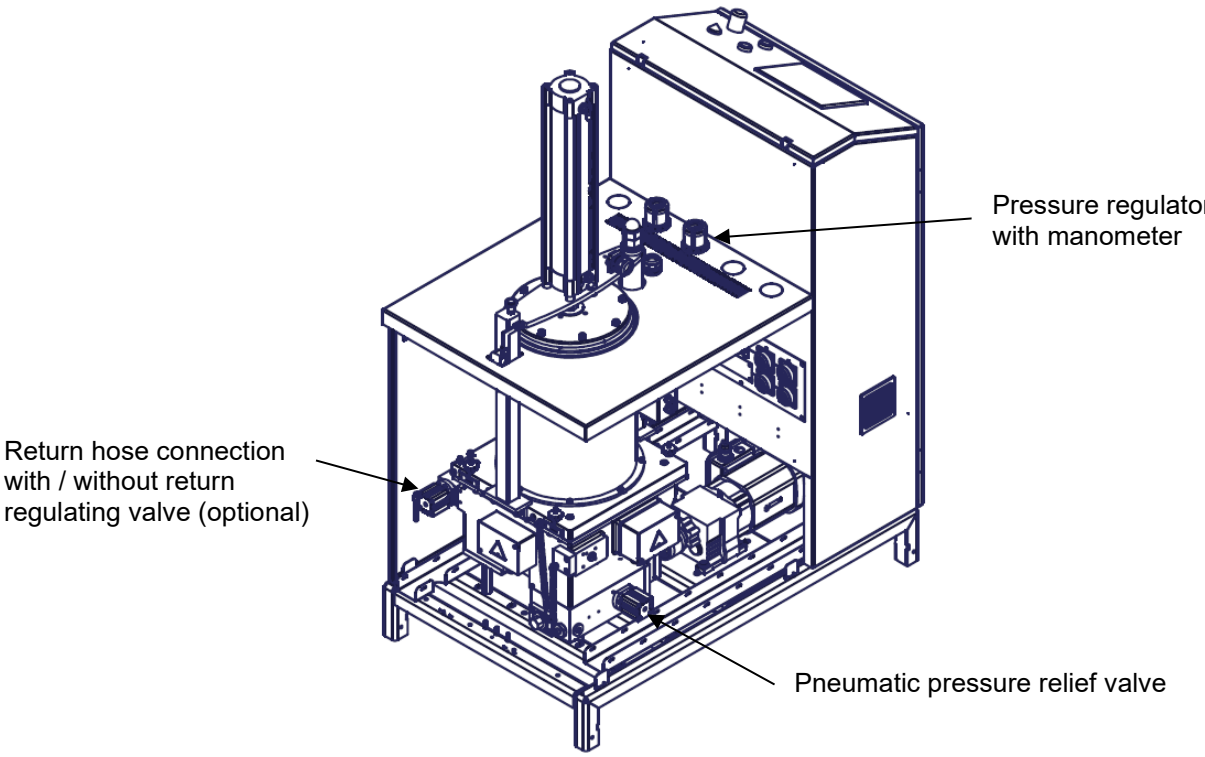
When you multiply the volume with the unit weight of the adhesive you will get the weight of the adhesive per minute.
Formula: Volume/min x unit weight of the adhesive = weight of adhesive per minute.

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 get 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:

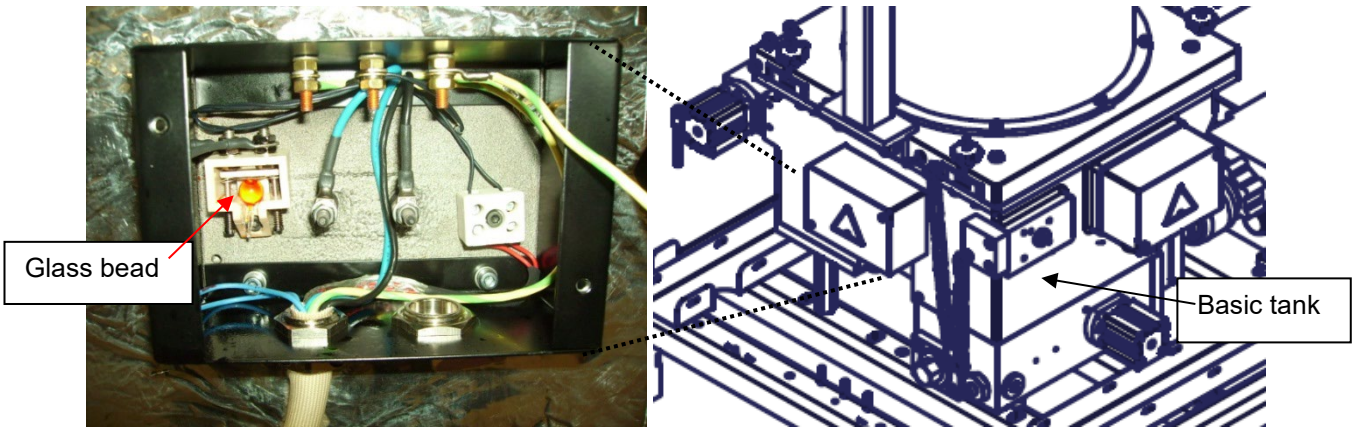
1. Pull up the pressure regulator.

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 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

Upper proximity switch - position **"Bag almost empty"**

Lower proximity switch - position **"Bag empty"**

Illustration: Proximity switches for level control on pneumatic cylinder

Illustration: Control Cabinet

The stack light is *optional* and shines in three colors:

- **RED:** General errors
- **AMBER:** It flashes if bag almost empty and shines long-term if bag empty.
- **GREEN:** Ready for operation
- The **black** top part is the horn. Audible Alarm: coincides with the amber or red-light condition.

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.
The proximity switches are installed on the pneumatic cylinder that controls the platen.
These recognize the position of the platen in the adhesive feed tube.
The proximity switches trigger an alarm when the platen reaches their position.

Proximity switch Position "bag almost empty" (optionally):

The "bag almost empty" sensor is offered as part of the optional stack light.
When the "bag almost empty" sensor is triggered, a flashing amber light is activated along with an audible alarm.

Proximity switch Position "bag empty":

When the platen on the pneumatic cylinder has reached the **"bag empty"** position (lower proximity switch) a long-term amber light will be activated along with an audible alarm.

The messages "bag almost empty" and "bag empty" are indicated also on the controller.

CAUTION

If the position "Bag empty" has been reached, a new bag has to be inserted immediately, in order to avoid emptying the tank 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”,
- GREEN: Ready for operation.
- The BLACK top part is the horn.

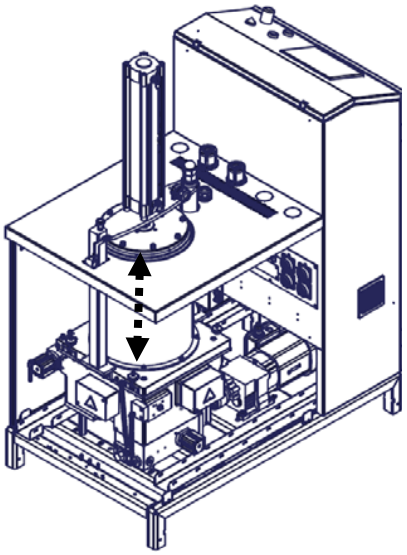
Horn

When the adhesive bag is empty, an acoustic signal will sound (optional). If you press on the message on the display of the Controller, 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. If the pneumatic cylinder is turned to the side, the limit switch prevents the platen from being lowered outside the locking position.

Lowering the platen

The platen control can be done manually or automatically. Over the **changeover switch** you can select a manual or automatic control.

- At **manual control** you can lower or lift the platen by pressing the **buttons lower and lift.**
- At **automatic control** the platen will be lowered automatically.

Lower the cylinder in order to lower the platen onto the bag. The adjusted pressure remains as long as the adhesive bag is not emptied.

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, i.e. the PUR bag is empty, a message on the Controller's display will be displayed, that a new bag must be inserted.

To remove the empty bag, press the **"lift"** button. 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 5.2 "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 dimension drawing of the unit 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.

See pictures under Ch. 3.3 Description.

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.

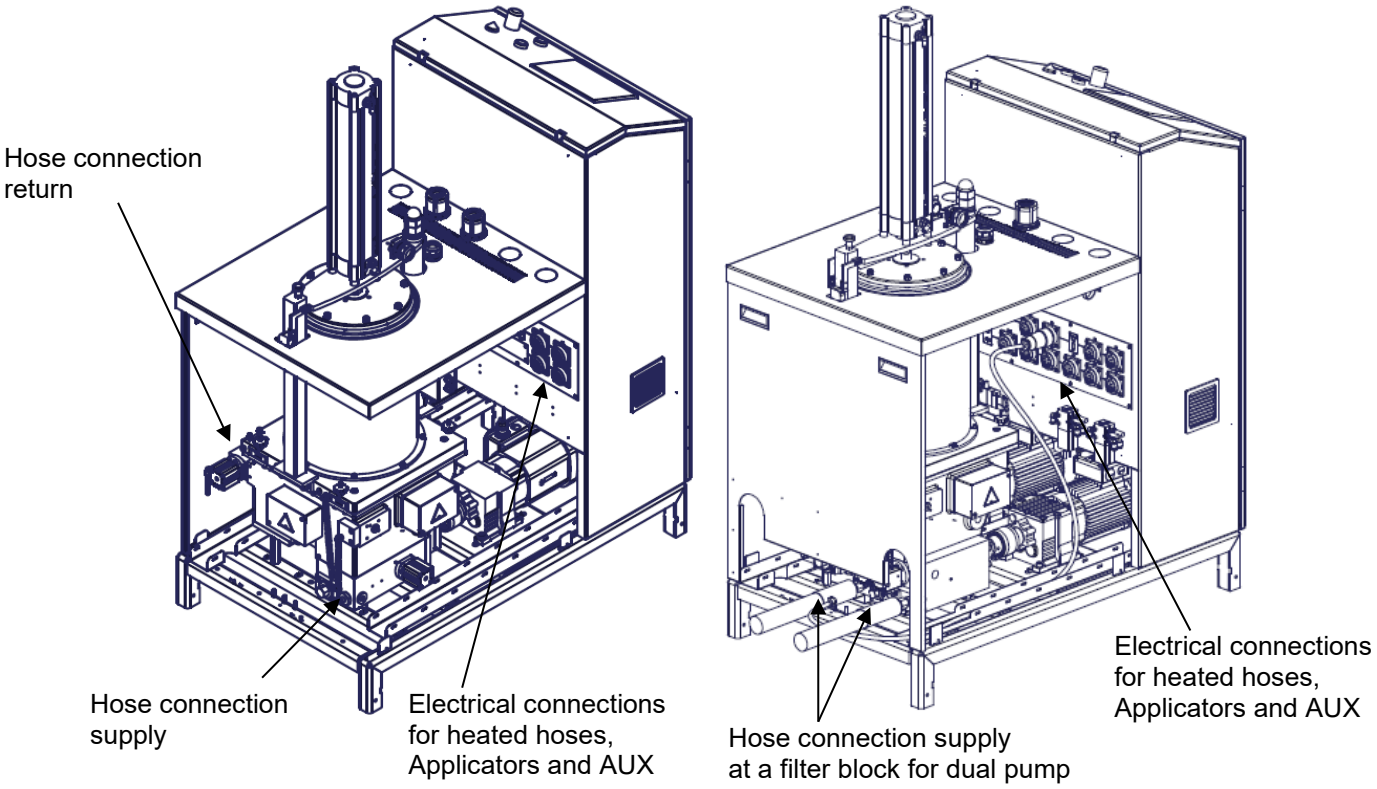
ADVICE

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 Applicator with the heated hoses.
   Heed all advices in Applicator's manual.
   See notes on next page.

   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 applicators. 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 disconnect the connectors 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 sends 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 m³			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/m³	°C	g/m³	mg/m³
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.
   The controller display will light up and the melter will begin to heat up.

   Or, start the controller by pressing the green switch “Controller ON” (optional).

   See pictures under Ch.3.3 Description.

   Allow adequate time (approximately 20-30 min.) for the adhesive to melt and the temperatures of the heated zones to stabilize. The display will indicate when the unit reaches operating temperature.

   The Controller will display “READY” in the Status Line when all zones are within their Temperature Alarm Window of the setpoint temperature. More information about the display can be found in Ch. 6 Controller.

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 Controller 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.

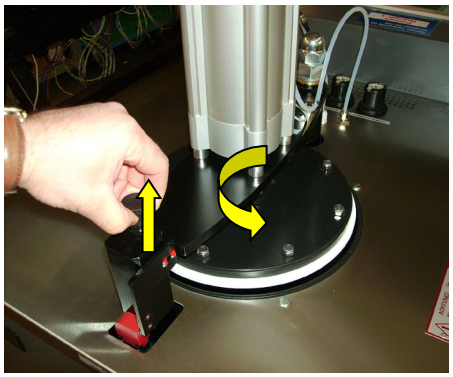
Remove adhesive residues from the walls of the feed tube obligatory, because otherwise the slipping of the bag will be prevented while pressing the bag. Then the bag can move over the platen, be filled with adhesive and burst.

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.

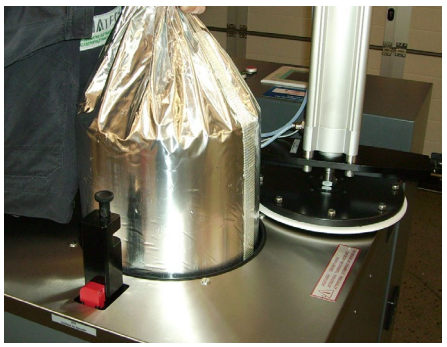
7.2 The whole bottom has to be removed up to 2 cm edge using a template.

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

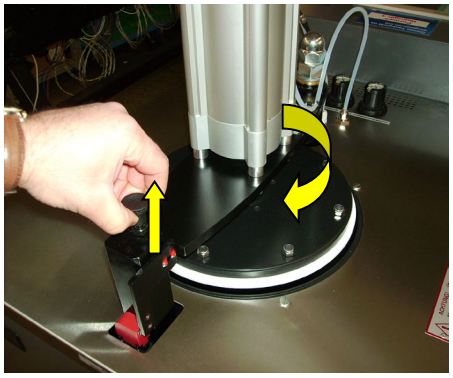


7.4 Place the adhesive bag with the adhesive side downward into the feed tube.

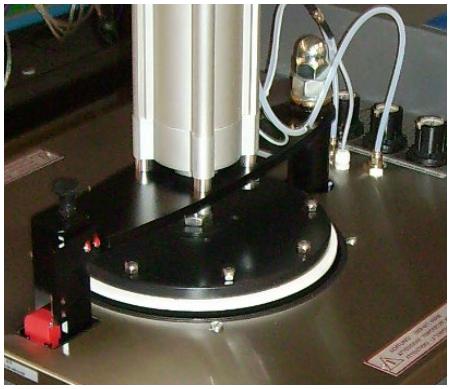
(**Before that step** the old bag has to be removed. See point **Removing the adhesive package** on next page).



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 the basic tank

ADVICE:
Vent (deaerate) 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 inclosed 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 the air is escaped).
4. Lubricate the vent screws with copper paste and tighten them again.

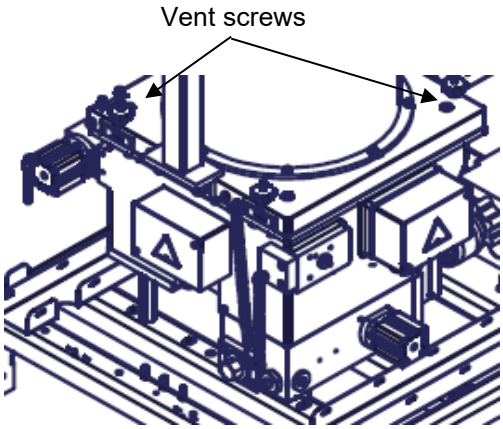


Illustration: Deaerating of the basic tank

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.

NOTE

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

After reaching the operating temperature

10. When temperatures are ready, the pump/ motor is enabled to pump adhesive.

    a. If Pump is in Auto Program: Adhesive will begin to pump when the production line begins.

    b. If Pump is in Manual Program:
    1. Press the Pumps button on the Main Screen.
    2. Press the desired Pump # on the Pump Overview screen.
    3. Enter the desired manual setpoint speed on Pump Control Screen.
    4. Switch the pump to MANUAL mode and adhesive will begin to pump after Ready condition is attained.

Optional: If an <u>Applicator without circulation</u> 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 "Applicator".

- Switch off all pumps/motors.
- Put a heat-resistant catchment tank under the applicator.
- Switch on the pumps/motors in the unit. Switch on the motors of the applicator (if existing)!
- Switch on the adhesive.
- Let the adhesive comes 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 <u>Applicator with circulation</u> 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 "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 applicator (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 applicator.
- Switch on the pumps/motors in the unit. Switch on the motors of the applicator (if existing)!
- Switch on the adhesive.
- Let the adhesive comes 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 <u>Circulating Slot Die Applicator with slot nozzle</u> 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 applicator (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 applicator (if existing)!
- Switch on the adhesive.
- Let the adhesive comes 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

Shut Down Procedures

1. *If Pump is in Auto Program:*
   Turn OFF the Main Switch.

2. *If Pump is in Manual Program:*
   a. Turn OFF the pump/ motor by depressing the Pumps button, then STOP button.
   b. Turn OFF the Main Switch.

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.

CLEANING:
For cleaning, wooden scrapers, lint-free cloth with cleaner **may be used only.**

WARNING: For cleaning, 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 avoid 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 DynaControl V6 Touch Panel

Programming Instructions of DynaControl V6 Touch Screen, Rev.5.21.

6.1 DynaControl V6 Touch Screen Set-Up

6.1.1 Software & Hardware Versions

The software & hardware versions of your controller and V6 modules are listed on the controller's System Info Screen. At the HMI's Main Screen, press the Settings button. On the Settings Screen, press the System Info button.

6.1.2 Temperature Control Functions in General

The DynaControl microprocessor-based proportional temperature control in the melter performs a number of functions that help to maintain adhesive setpoints in all temperature zones of the DYNAMELT™ system. It maintains permanent system values (fixed proportional and integration values that have been programmed at the factory, such as the maximum temperature setpoint). It enables the user to program temperature settings and heater on/off sequencing that are appropriate to a specific application. It displays all programmed values, and it includes self-diagnostic malfunction alerts and failure alarms. **Note:** Some DynaControl functions are direct temperature conversions between degrees Celsius and Fahrenheit. Other parameters are independently selected values.

6.1.3 Defining DynaControl Temperature Control Terms

Adhesive Temperature Control Range
The temperature limits within which the melter, hoses and applicators may be programmed and maintained.

Default Settings
The factory-set programmable system values that will be in effect if the user does not enter new values. The controller will revert to its defaults whenever it is reset.

EtherNet Serial Communication
A bi-directional data transfer connection to a remote PLC which enables system parameters to be monitored and/ or controlled from the remote station.

Faults/ Alarms
Controller alarms which indicate that the programmed over-temperature values have been exceeded for one or more hopper, hose or head. Alarms may also indicate an open or short-circuited sensor.

Heating Priority

The heating sequence which allows the slower-heating hopper to reach operating temperature without unnecessary use of electricity for faster-heating hoses and applicators. Heating priority is the time period during which the melting plate, the hoses and applicators remain OFF while the hopper (and optional drop-in grids) heat up. Melting plate, hoses and applicators may be independently programmed. If hopper temperature is above ready temperature when the melter is turned ON, the melting plate, hose and applicator priority sequence is bypassed and they will be turned ON. The heating priority is restored after Standby is turned from ON to OFF. Priority heating is not needed for most applications.

Power Modules & Power PCBs

Each power module consists of two printed circuit boards (PCBs). They provide power to all the temperature zones in the melter's system. The standard unit's hopper, hoses and applicators are controlled by the Power PCBs. Additional hoses and applicators are controlled by the PCB(s) on additional power modules, if required.

Microprocessor-based Proportional Temperature Control

The built-in control system that controls, monitors and displays all system temperatures.

Over-Temperature Setpoint

The programmable temperatures that will cause alarms to occur when those temperatures are exceeded. Power is not disconnected, the READY contact opens and the alarm contact opens. If an external alarm has been connected, it will activate. The over-temp setpoint is the upper limit of the ready temperature range of each zone.

Pump Enable Temperature

The pump enable temperature protects the pump, pump shaft, motor and motor control board from damage by not allowing the pump to activate until a low limit (the programmed pump enable temperature) is achieved. The pump enable temperature is independent from the zone temperature setpoints. This feature serves as a redundant safety measure.

Temperature Sensors

The standard Dynamelt system uses 100-ohm platinum resistance temperature detector sensors for all temperature controls. As an option, the unit can be configured for 120-ohm nickel sensors.

Ramp Compensation

A feature of the Touch Panel HMI. Programmed parameters automatically regulate the amount of adhesive applied as production speeds accelerate and decelerate.

Recipe

A program recipe is a set of temperature setpoints and parameters which the user has programmed and wishes to store in the controller for future use.

Scheduler

The Scheduler enables the controller to provide scheduling of ON and OFF times of the Dynamelt melter system by the use of timers. Up to three Scheduler timers may be programmed. The operator may program ON and OFF heating cycles which coincide with his production schedule through the work week. The Scheduler helps conserve electricity usage and also serves as an additional safety feature.

Setpoint

A programmed temperature that has been selected for each of the temperature zones.

Setpoint Limitation

This is a universal maximum temperature for all zones. The programmer cannot program a temperature setpoint higher than the setpoint limitation. If the actual temperature of any zone climbs higher than the setpoint limitation, all heaters will shut down.

Standby Condition

The system condition where the melter, hose and head temperatures are maintained at predetermined reduced temperature values. Standby temperatures are set lower than setpoint temperatures in order to reduce adhesive degradation and energy consumption when the system is temporarily inactive, and to permit rapid system warm-up when run condition is selected. When standby mode is active, the controller's display will read "STANDBY".

Temperature Alarm Hysteresis

This is a second, smaller, temperature range and alarm limit programmed in addition to the Temperature Alarm Window which allows the unit to remain in Ready condition as temperatures stabilize after start up. The Temperature Alarm Hysteresis is a deviation (+/-) from the Temperature Alarm Window.

Temperature Alarm Window

This is the programmable temperature range which allows the unit to go into Ready condition. The Temperature Alarm Window is a deviation (+/-) from the setpoint. The setpoint minus the deviation is the low limit of the window, and the setpoint plus the deviation is the high limit of the window. The Temperature Alarm Window (+/- the Temperature Alarm Hysteresis, if programmed) will trigger high and low temperature alarms when zone temperatures rise or fall outside of the window.

Temperature Zone Enable

The temperature zone enable allows the operator to disable unused temperature zones in such a way that they do not appear on the controller's display and heating is switched OFF.

Temperature Zone Offset

Temperature zone offsets are mathematical factors which compensate for differences in temperature within components. Each temperature zone may be programmed with an offset, if desired. Standard equipment does not usually require temperature offsets.

V6 Base Module

The main control module of the system. It controls and communicates with the temperature control module, the operator interface and all auxiliary modules and I/O devices.

V6 BUS Module

The module which allows remote communication. Several communication protocols (EtherNet, EtherCad, Profibus, etc.) can be adapted by the BUS Module.

V6 Temperature Module

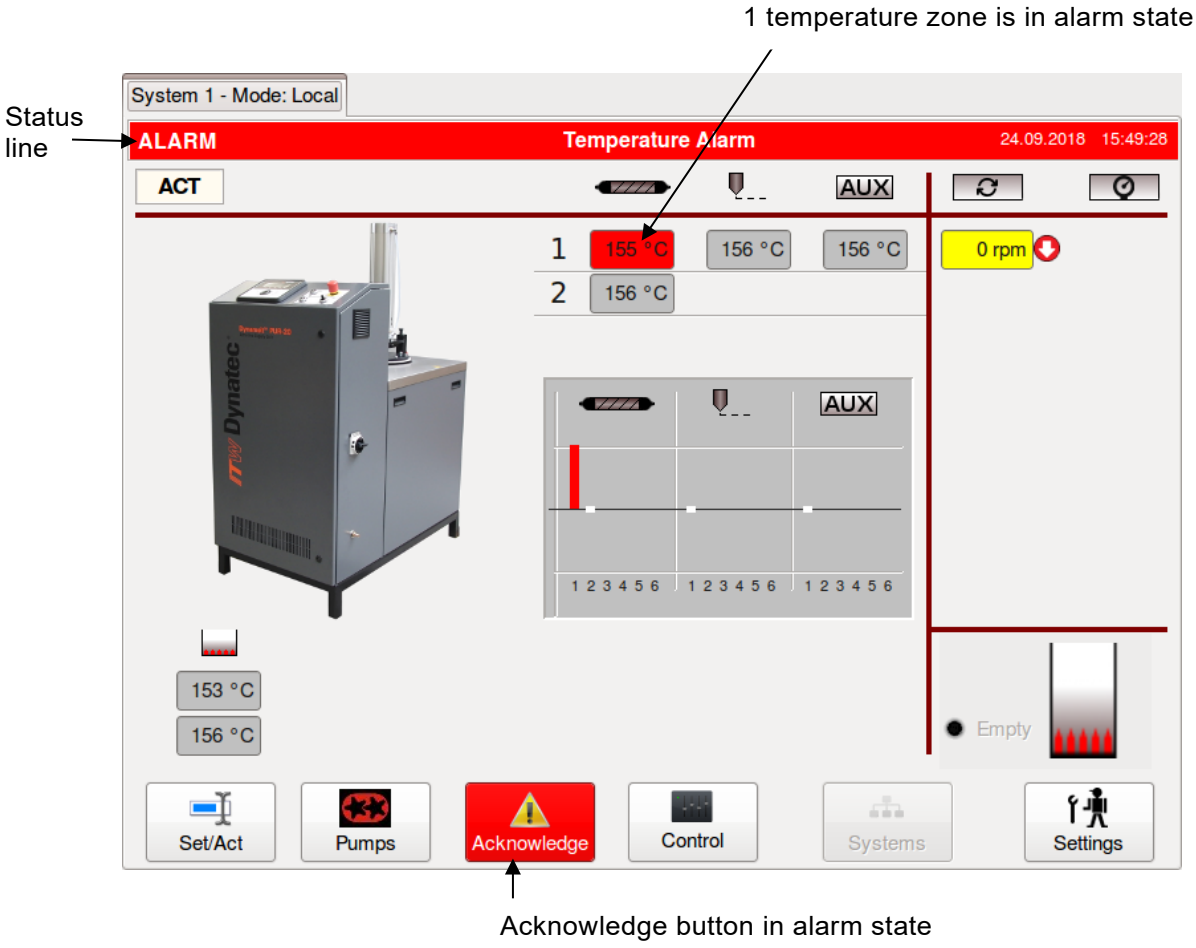
Monitors temperature signals from all heated zones and provides control signals to the Power and auxiliary PCBs (modules).

Error Indication Faults & Alarms

If a fault/ alarm occurs, the Acknowledge button (on the Main Screen) and the temperature zone will be highlighted in red. The controller will turn off the internal power to the heaters and an appropriate alarm indication will appear in the status line of the controller's display.

The operator must either turn Off the indicated temperature zone(s) or troubleshoot to correct the problem. Then press the Acknowledge button in order to turn on the main contactor and reset the error. If more than one alarm condition occurs simultaneously, the alarms will be displayed sequentially and each alarm must be acknowledged.

When an alarm occurs, the current display will be interrupted only if a sensor (or a motor drive) failure has occurred. When the actual temperature exceeds the setpoint limitation (plus a tolerance) the over-temperature alarm is displayed and main power is switched Off.



6.1.4 Optional System Status Lights

This tri-color stack light eases remote monitoring of the system's status.

- The lower, green light indicates that the system has warmed up to temperature setpoints ("ready").
- The middle, amber light flashes if bag nearly empty and shines continuous if bag empty and is accompanied by an audible alarm.
- The upper, red light illuminates only in an alarm condition and is accompanied by an audible alarm.
- The audible alarm (horn) is housed within the upper (black) section of the stack and coincides with the amber or red light condition.

Black - audible alarm

Red - alarm

Amber - waning bag empty

Green - system ready

6.1.5 Helpful Tips for the User

- When the melter is turned ON, all temperature setpoints and other operating parameters will be exactly where they were when the melter was turned off.

- When the melter is turned ON, all system heaters go ON if the automatic heater startup is enabled and if setpoints are programmed unless sequential heat-ups have been set. However, if hopper temperature is above ready temperature when the melter is turned ON, all hose and head sequential heat-ups will be bypassed and hoses and heads will be turned ON.

- If the system is turned OFF and then ON again, the standby condition will be disabled.

6.2 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.

6.3 Setup Your System's Parameters

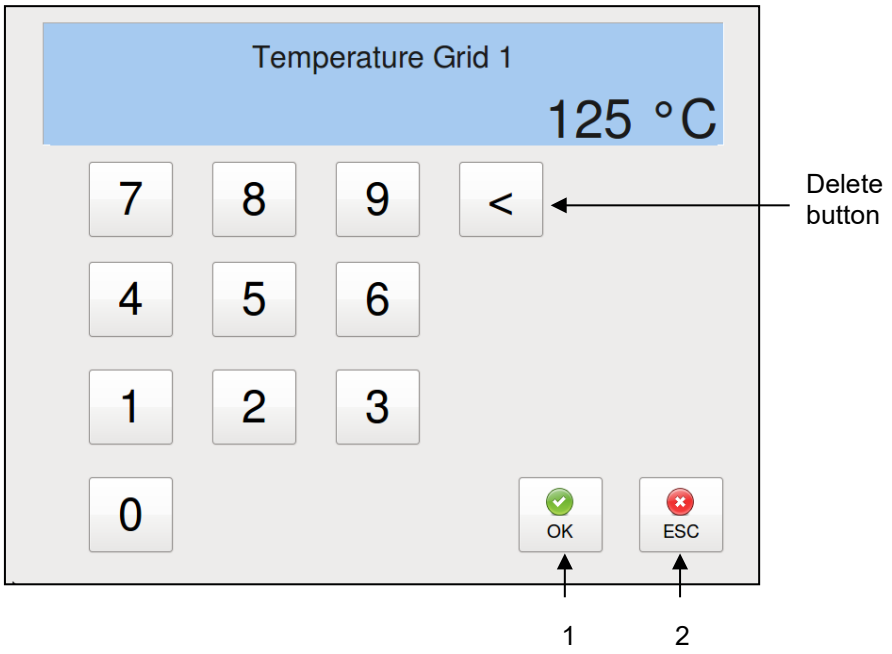
➢ Program the controller parameters to meet the specific temperature requirements of your production. Setpoints for each temperature zone must be programmed as well as a standby temperature, pump enable temperature, temperature alarm window and temperature alarm hysteresis.

➢ Choices must be made for recipe (program) selection, pump (or motor) conditions and heating priority. If desired, temperature zone offsets and/ or a temperature zone enable may be selected.

6.4 Numeric Entry Keypad

- Use the numeric entry keypad to enter or change numeric parameters (values).
- In the top window, the temperature zone name and its setpoint value will be displayed.

This is a typical example of the numeric entry keypad:

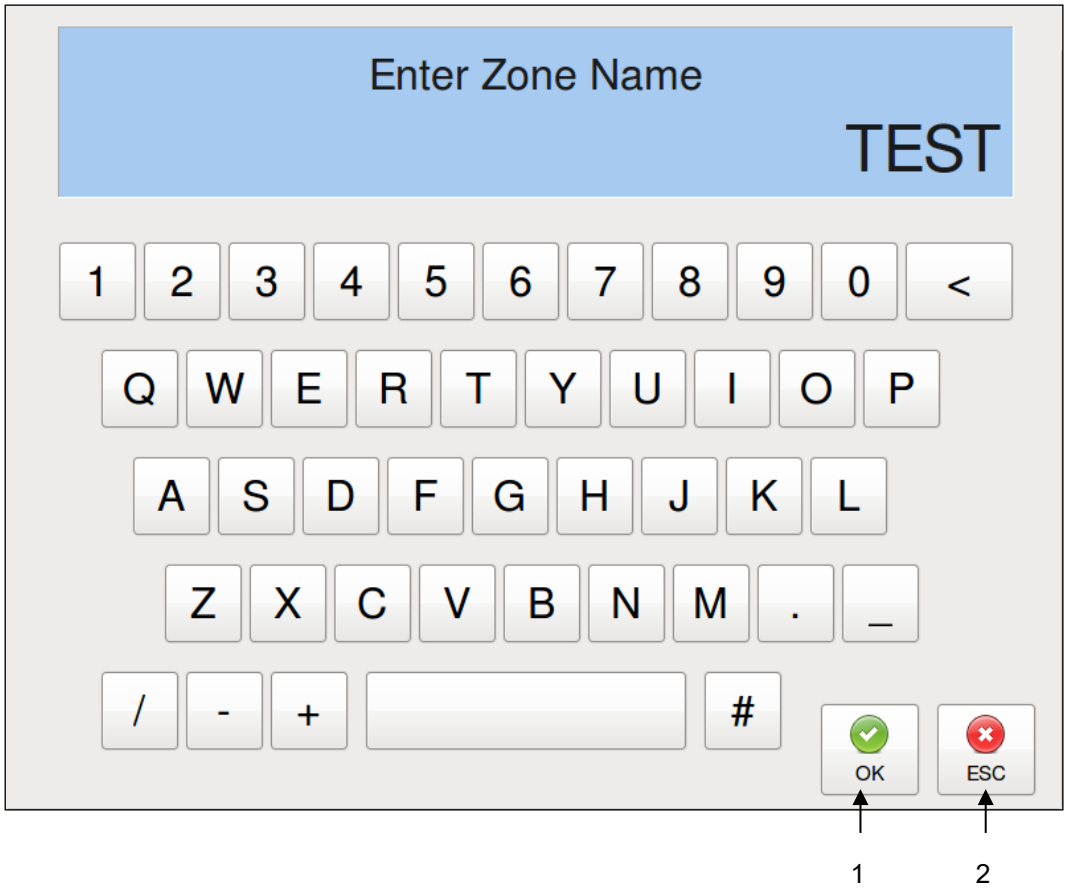


Item	*Description*
1	By pressing the OK button the entered values will be confirmed and stored in the controller. The numeric entry keypad closes and you will return to the previous screen.
2	By pressing the ESC button any entered but not yet confirmed values will be discarded and you will return to the previous screen.

6.5 Alphabetic Entry Keypad

- Use the alphabetic keypad to enter or change text, e.g. temperature zone names.
- In the top window, the temperature zone name will be displayed.

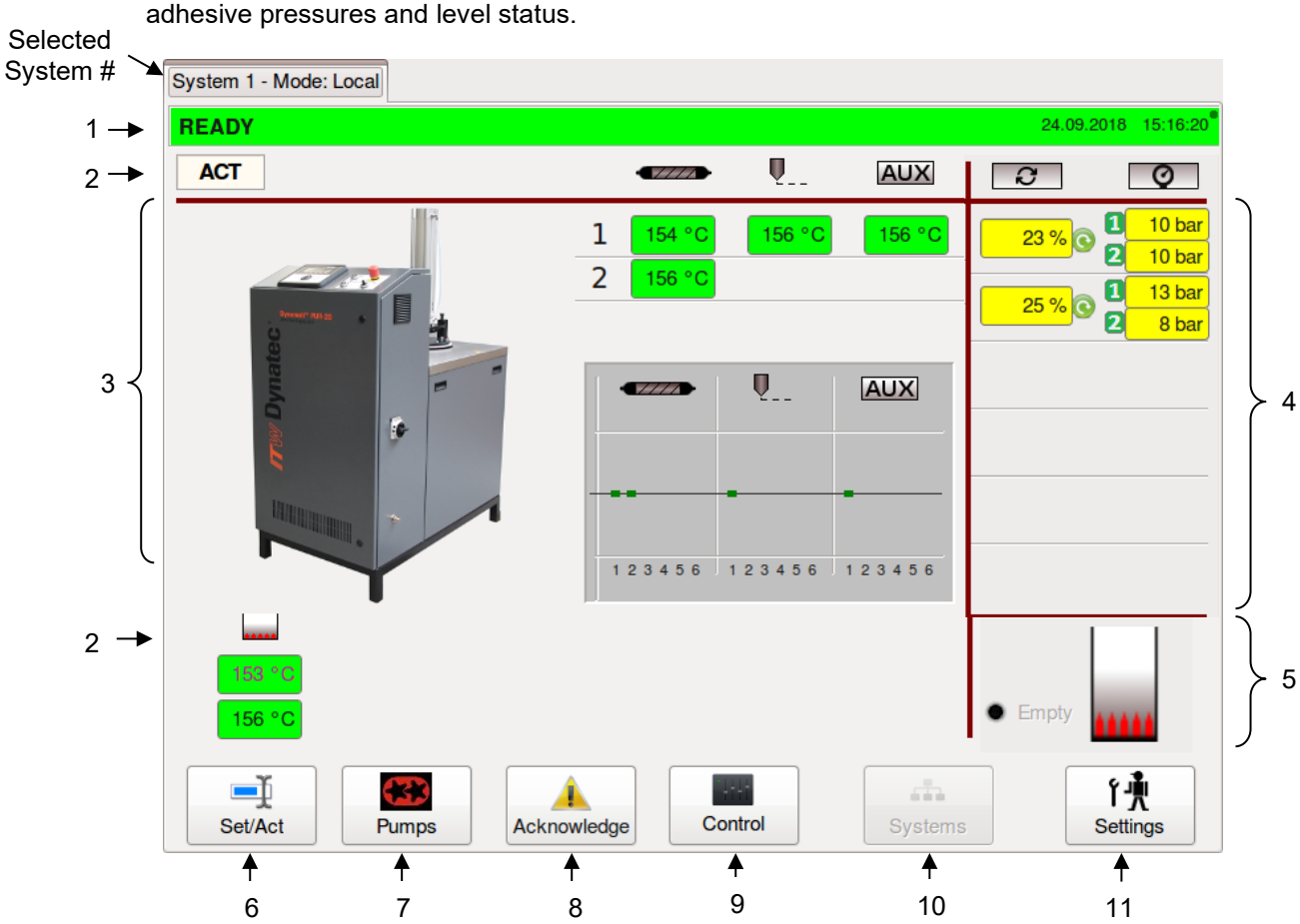
This is a typical example of an alphabetic keypad:

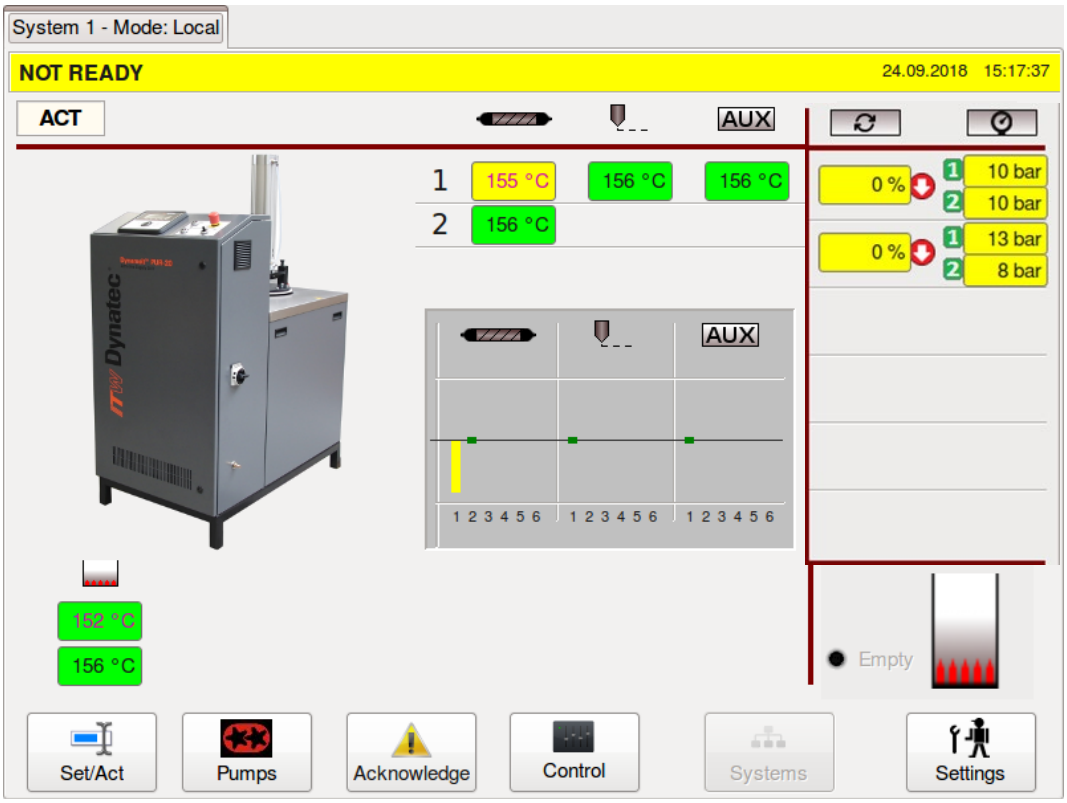


Item	*Description*
1	By pressing the OK button the entered text will be confirmed and stored in the controller. The alphabetic entry keypad closes and you will return to the previous screen.
2	By pressing the ESC button any entered but not yet confirmed text will be discarded and you will return to the previous screen.

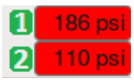
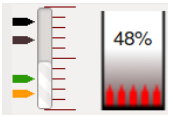
6.6 Main Screen

- The Main Screen is displayed automatically when the unit is switched ON.
- The Main Screen provides a comprehensive overview of the status of each of the temperature zones and the system as a whole. It gives the status and speed of the pump, along with any adhesive pressures and level status.



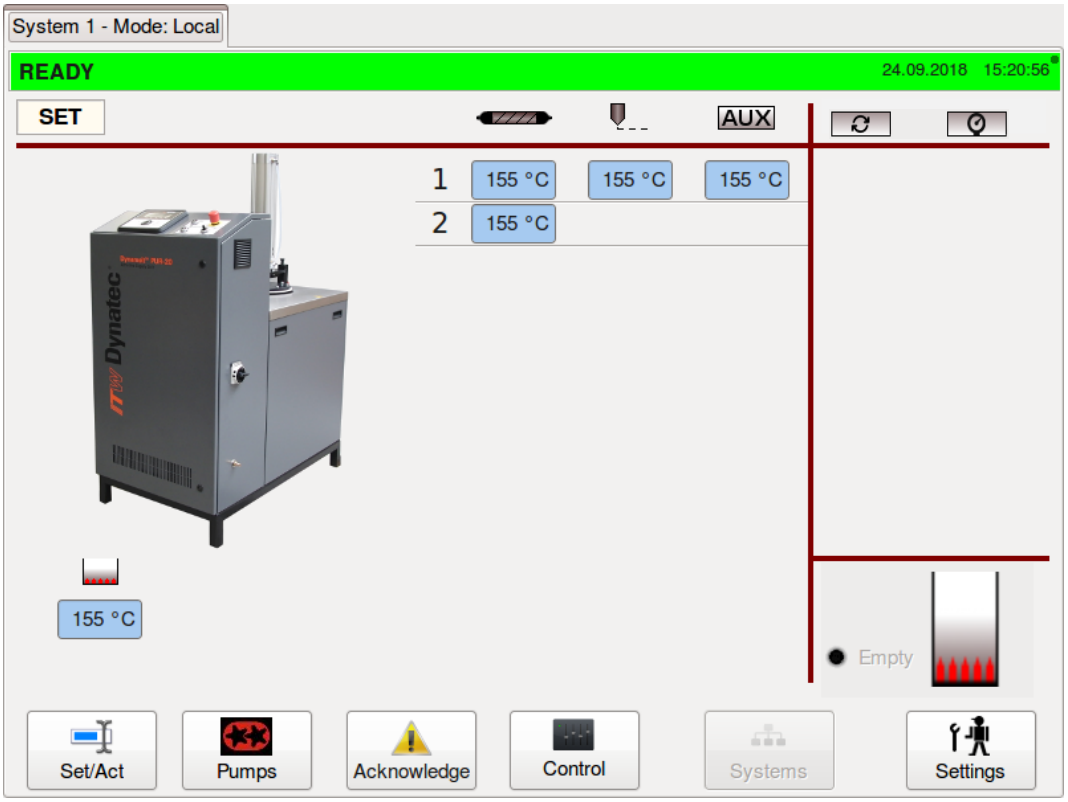


Item	Description
1	**Status Line** Display of the actual status of the unit: • READY = All zones are within their setpoint temperatures and the unit is ready for operation. • RUNNING = All zones are within their setpoint temperatures and the unit/pump is running. • NOT READY = At least one zone has not yet reached its setpoint temperature or has fallen below its set point or it is lower than the set global release temperature. • STANDBY = Standby temperature is activated. • ALARM = Alarms or faults are active. The status line is highlighted green when the system is READY or RUNNING, yellow when NOT READY, grey when in STANDBY and red when in ALARM condition. The status line along with “Systems”-button is in orange color if a non-visible system goes into Alarm condition (if f several systems are controlled by the HMI). The „clock“  icon appears if a timer is activated under „Time & Scheduler“ screen and disappears if the timer is deactivated. Display of the actual date and time are on the right side of the screen. Depending on the selection of the unit of temperature and pressure (°C and bar or °F and psi) made under Unit & Date Selection, the appearance of the date display is affected also. With the C/bar selection, the date is displayed as ‘day.month.year’ while in F/psi mode, the date is displayed as ‘month/day/year’. The time is displayed as hour.minutes.seconds (i.e., 08:25:05 pm). By pressing the status line you go to the Log Book screen.
2	**Icon Line** ACT / SET: Indicates if the temperature values shown on the display are Actual or Setpoint values. The Actual values will be displayed during production. By pressing the Set/Act button, the Set values can be displayed and edited. The display returns automatically to the Actual values after about 15 seconds if there is no activity. **The icons:**  Hopper (tank)  Melting plate (Pre Melt Grid)  Hose  Applicator  Auxiliary components  Pump speed either in RPM (revolution per minute) or in % of production line speed  Pressures  Decentralized pumps (e.g. Applicator, Metering Station:  A plausible limit value of Input Pressure (a minimum pressure of not less than 2 bar is recommended) has to be entered to avoid a dry run of the pumps; otherwise the pump can be damaged. See point “Extended Pump Mode Settings Screen, Linear Line Speed, Pressure Control”. The appropriate actual values (temperature, pump rpm, pressures) are displayed under the icons.

Item	*Description*
3	• The actual values of the temperature zones are displayed in columns under the icons. Zone status is indicated by color: the zone field is colored green when the zone reaches setpoint, yellow while the zone is heating up, grey it it has been temporarily switched off and red if in alarm. • When all zones have reached their setpoint values, READY will be displayed in the status line. If zones are still heating up and have not yet reached their setpoint values, NOT READY will be displayed in the status line. • Under the  Hopper icon two temperature zones are displayed, one for hopper and one for hopper aux; both zones have only one setpoint temperature. • The temperature status of Hose, Applicator and Aux are shown each by a bar-graph indicating if the temperature zone is inside its setpoint window (green) or outside (yellow).
4	The appropriate actual values (pump rpm, pressures) are displayed under the icons.  **Primary pressure:** If the system is equipped with a (primary) pressure sensor, the appropriate primary pressure transducer input will be displayed with number 1. The primary pressure input can be controlled via the Pressure Set Point in Pump Control/ Pressure Control Screen.  **Secondary pressure:** If a second pressure sensor is equipped (usually in combination with dual pump outlets), the appropriate pressure transducer input will be displayed with number 2. The secondary pressure input is just a readout function.  **Platen discrepancy Alarm:** If the display fields are highlighted red, it indicates that the (optional) platen discrepancy has detected an excessive difference between the primary and secondary pressure. See point “Extended Pump Mode Settings Screen, Linear Line Speed, Pressure Control” for further information.
5	 If an optional digital level sensor is built-in, Hopper Empty status will be indicated when adhesive drops below the level sensor.  If an optional analog probe used the status bar will display the adhesive level along with a percentage of hopper volume.
6	**Set/Act Button** By pressing Set, values may be displayed and edited. The display will automatically return to actual values after about 15 seconds, if there is no display activity.
7	**Pumps Button** Press to go to the Pump Overview screen.
8	**Acknowledge Button** Press to acknowledge an error or alarm.
9	**Control Button** Press to go to the Control screen.
10	**Systems Button** Press to go to the Systems screen, if several systems are controlled by the HMI.
11	**Settings Button** Press to go to the Settings screen.

6.7 Temperature Zones Set Screen

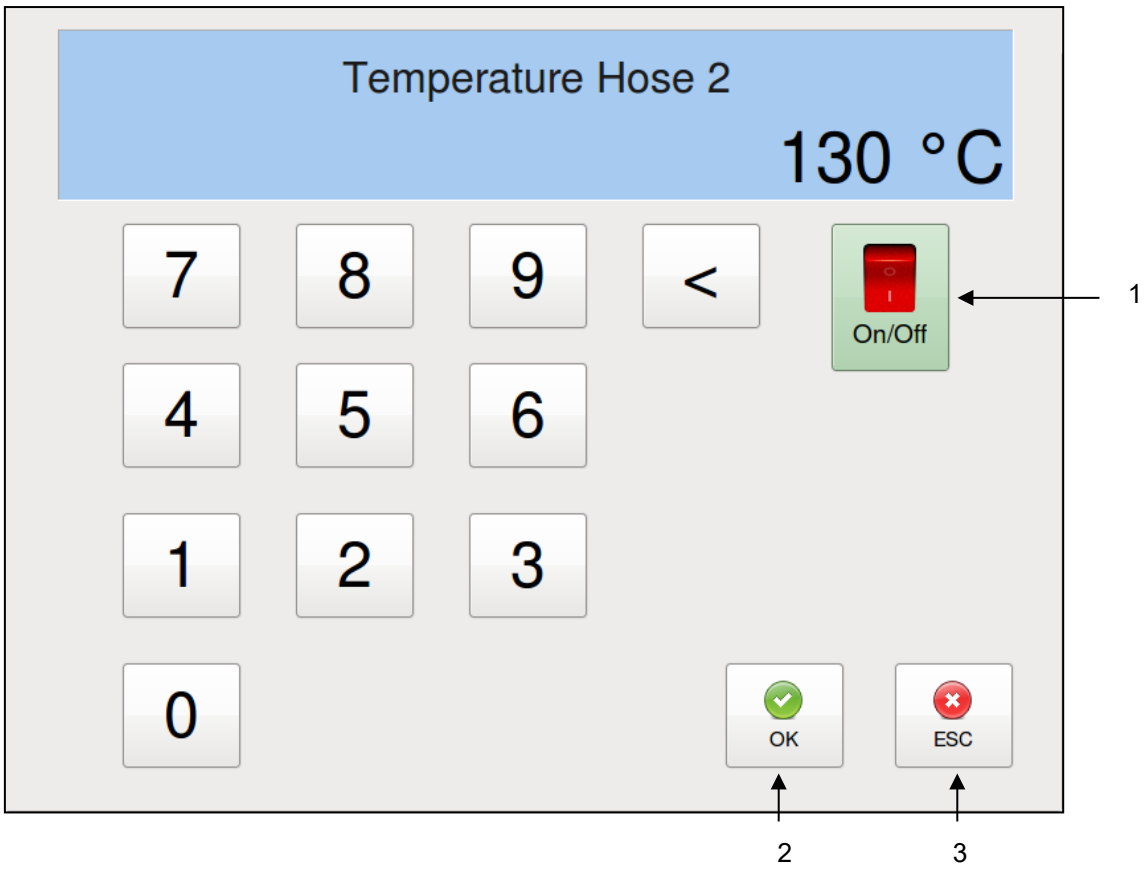
- To go to this screen, press the Set/Act button on the Main Screen.
- The Set screen allows you to program the setpoint temperature for each activated zone. Each zone requires a temperature setpoint.
- When a temperature zone is not used, it can be de-activated (turned OFF) on the Heating Priority screen. A zone that is turned Off no longer heats and is not monitored by the controller for over or under temperatures.



Item	Description
1	**Set values** • Display of the temperature setpoint values. • To edit values: Touch a zone input box and a numeric entry keypad will appear. Enter your new setpoint value and confirm by pressing OK. NOTE: Must be below the maximum setpoint value listed below. • The Set values are displayed for about 15 seconds and, if there is no display activity, the display returns automatically to the Actual values. • The maximum setpoint value is 190°C (374°F). • The setpoint temperature under the Hopper (tank) icon applies to two temperature zones “hopper” and “hopper aux”.

- See next page for *Zone* On/Off Switch on the Numeric Entry Keypad.

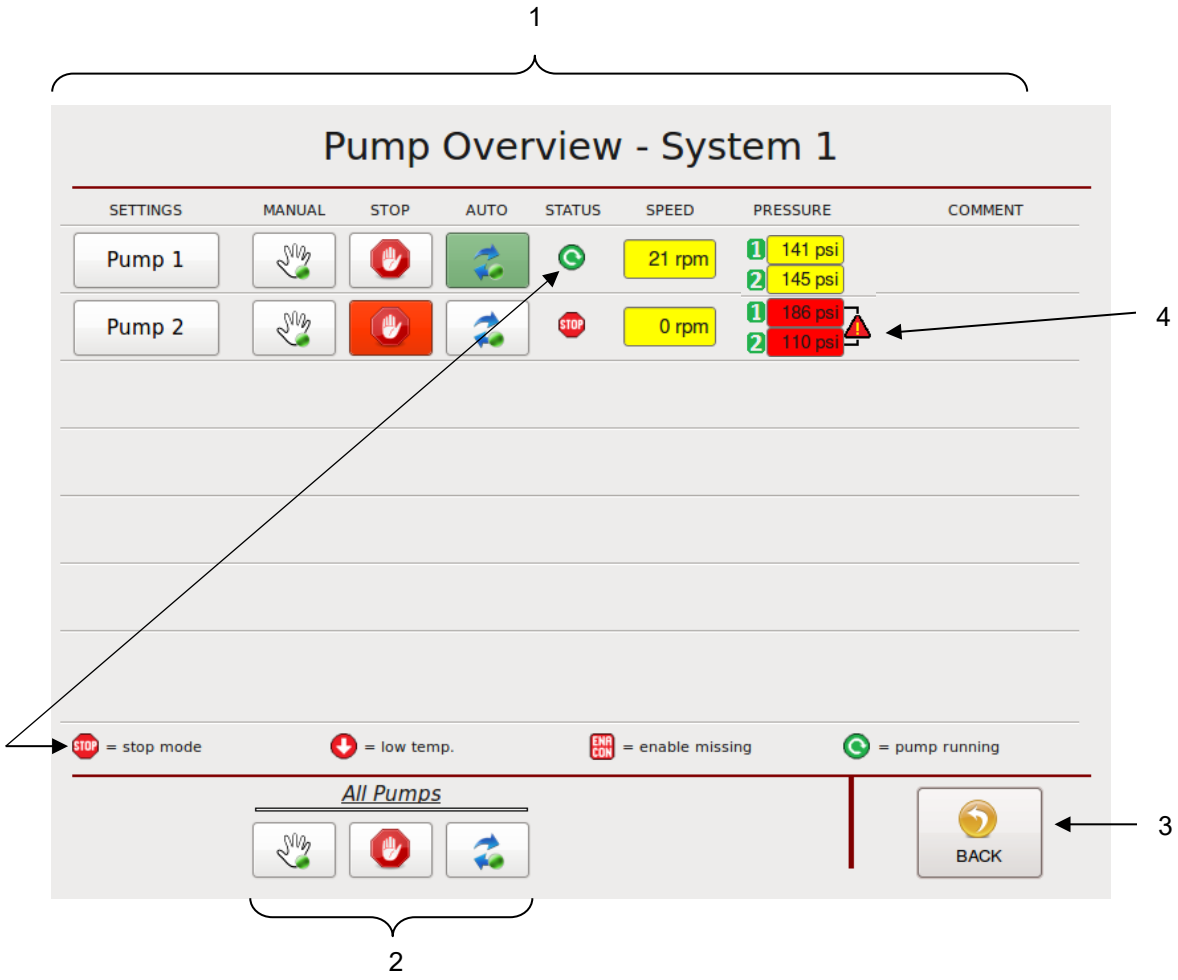
6.7.1 Zone On/Off Switch on the Numeric Entry Keypad



Item	*Description*
1	**Zone On/Off Switch** • Zones can be activated/ deactivated temporarily. A system with a hopper zone off or pump/motor zone off will put the system in NOT READY state which does not let the motors run. • The switch is colored light green if ON and light red if OFF.
2	By pressing the OK button the entered values will be confirmed and stored in the controller. The numeric entry keypad closes and you will return to the previous screen.
3	By pressing the ESC button any entered but not yet confirmed values will be discarded and you will return to the previous screen.

6.8 Pump Overview Screen

- To go to this screen, press the Pumps button on the Main Screen.
- While on the Pump Overview Screen, all changes are immediate (you do not need to confirm).
- The Pump Overview Screen allows you to program the pump mode (Manual, Stop or Automatic). Each pump in the system must be programmed with a Pump Mode.
- Decentralized pumps (e.g. Applicator, Metering Station:  A plausible limit value of Input Pressure (a minimum pressure of not less than 2 bar is recommended) has to be entered to avoid a dry run of the pumps; otherwise the pump can be damaged. See point “Extended Pump Mode Settings Screen, Linear Line Speed, Pressure Control” on next pages.

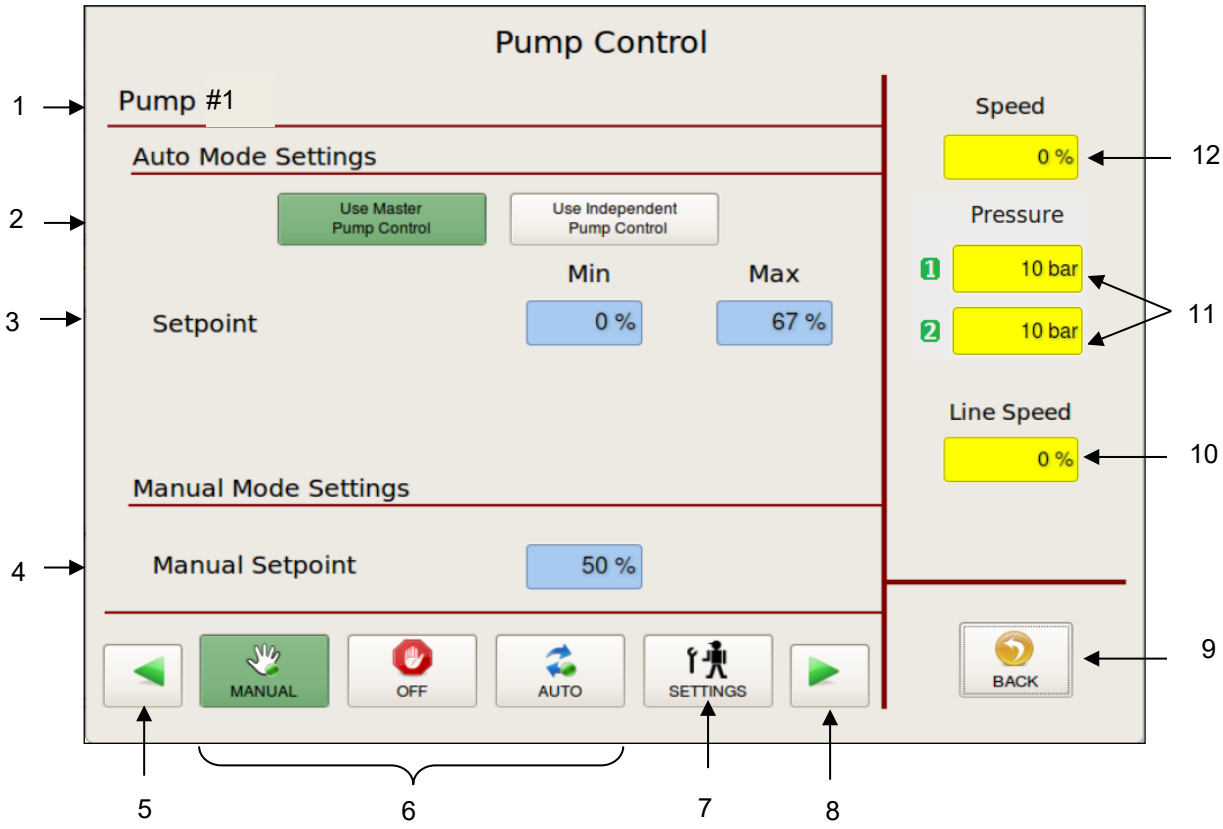


Item	*Description*
1	**Pump Overview** • SETTINGS: Press Pump 1, Pump 2, etc. to go to the appropriate Pump Control screen. • MANUAL: The pump speed is adjusted manually by the melter operator. When selected the MANUAL icon is highlighted green. • STOP: The pump is stopped, until AUTO or MANUAL is selected. When selected, the STOP icon is highlighted red. • AUTO: The pump speed is controlled via a 0–10VDC signal that is provided by an external device (pattern control equipment or parent machine input). When selected, the AUTO icon is highlighted green. Auto operating parameters for each Pump must be set on the Pump Control Screen. • STATUS: Indicates the pump status. *See icons line/description at the bottom of the screen.* - Stop Mode = Pump is stopped. - Low Temp. = Melter has not reached setpoint temperature. - Enable Missing = Pump enable signal is missing from customer contact. - Pump Running = Pump is running. • SPEED: The actual (calculated) either in RPM or in % of production line speed of each pump will be displayed. • PRESSURE: The pressure for each pump (if available) will be displayed. See explanation under Main Screen point 4. • COMMENT = The entered pump name will be displayed.
2	**All Pumps Buttons** Press one of the All Pumps buttons (either MANUAL, STOP or AUTO) to set all pumps to the desired function at one time.
3	**BACK Button** Press to return to the previous screen.
4	**Pressure discrepancy Alarm:** If the display fields are highlighted red, it indicates that the (optional) pressure discrepancy has detected an excessive difference between the primary and secondary pressure. See point “Extended Pump Mode Settings Screen, Linear Line Speed, Pressure Control” for further information.

6.8.1 Pump Control Screen/ Linear Line Speed

- To go to this screen, press the Pump 2 field on the Pump Overview screen (to go to the Pump 1, etc. Control screen, press the corresponding field). Then press the Settings button, select Linear Line Speed in the Current Pump Mode menu on the Extended Pump Mode Settings screen and then press the BACK button.
- The Pump Control Linear Line Speed screen allows you to program the Auto Mode Settings (Setpoint minimum/maximum RPM at 0–10VDC external signal control) and Manual Mode Settings (Manual Setpoint RPM).

Pump 1 Example:



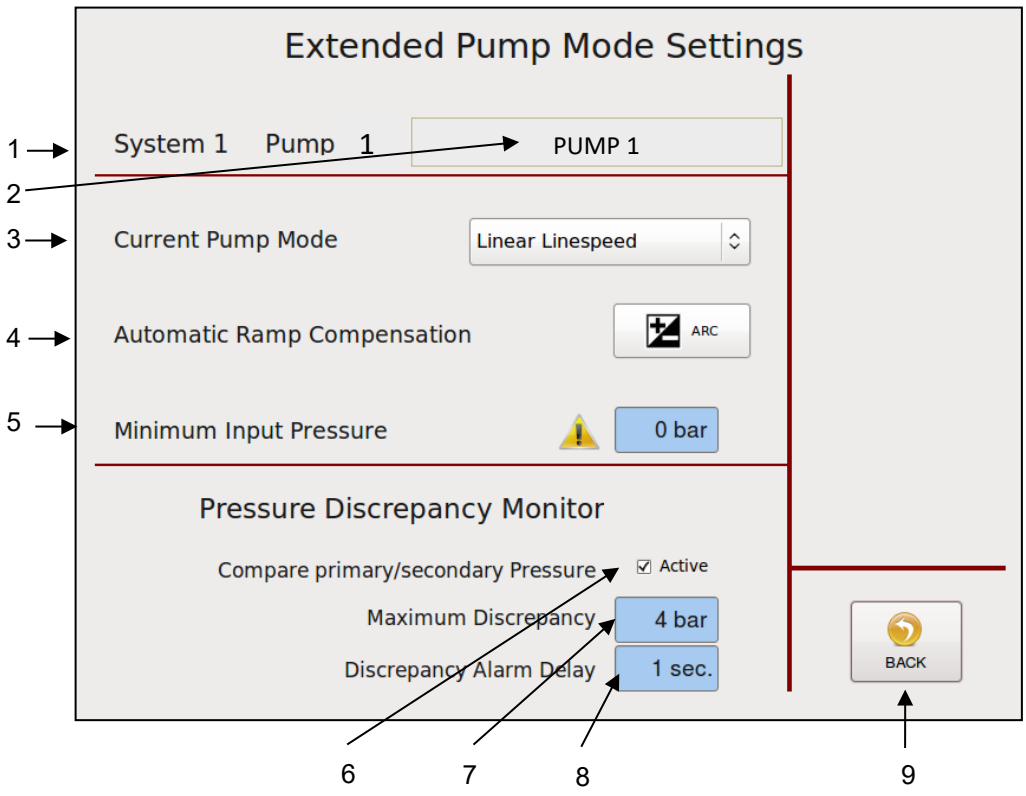
Item	*Description*
1	Pump #1 is the selected pump. All the settings and speeds displayed on this screen correspond to Pump #1.
2	**Auto Mode Settings** Press the according switch for pump control. The activated switch is highlighted green. • **Use Master Pump Control:** The selected pump will use the START/STOP signal and the 0-10V speed signal that pump #1 uses. • **Use Independent Pump Control:** The selected pump will use its own START/STOP signal and 0-10V speed signal.
3	**Auto Mode Settings** **Setpoint** The minimum and maximum setpoint values of the pump are displayed. The programmable range is 0 to 90 rpm or 0 to 100%. By pressing the input field you can edit the RPM or % values.
4	**Manual Mode Settings** **Manual Setpoint** The manual setpoint value of the pump is displayed. By pressing the input field you can edit the value.

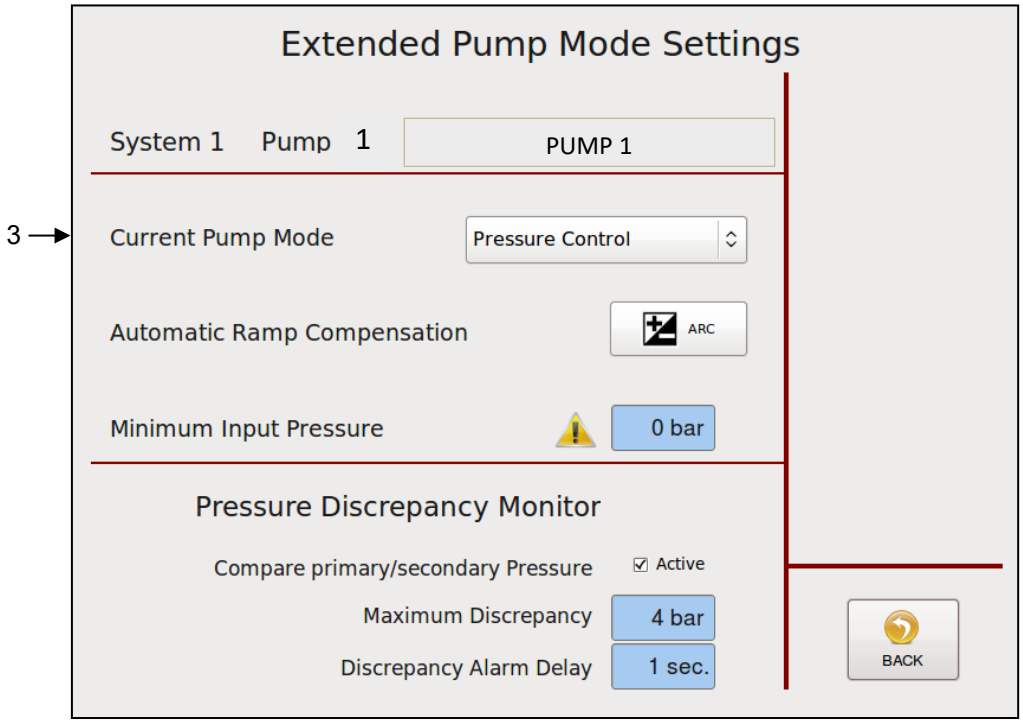
Item	*Description*
5	Press the arrow icon to go to the previous pump screen.
6	Set the pump to the desired mode by pressing MANUAL, OFF (STOP) or AUTO. • MANUAL: The pump speed is adjusted manually by the operator. If MANUAL is selected the icon is highlighted green. • OFF (STOP): The pump is stopped, until AUTO or MANUAL is selected. If OFF is selected the icon is highlighted red. • AUTO: The pump speed is controlled via a 0–10VDC signal that is provided by an external device (pattern control equipment or parent machine input). If AUTO is selected the icon is highlighted green. A minimum speed is necessary to keep the pump turning in order to maintain a minimum amount of adhesive pressure through the hose and applicator head. For instance, if the input signal is 10VDC at 100 meters per minute and the pump percentage of full speed is 100% (maximum speed), but the system is putting out too much adhesive, adjusting the MAX pump percentage to 50 will cause the pump to slow down over the parent machine's entire speed range and adhesive output will be decreased.
7	**Settings Button** Press this button to go to the Extended Pump Mode Settings screen where you can select the Current Pump Mode "Linear Line Speed" or "Pressure Control" and you can go to the "Automatic Ramp Compensation" screen.
8	Press the arrow icon to go to the next pump screen (i.e., Pump 2, etc.).
9	**BACK Button** Press to return to the previous screen.
10	**LINE SPEED**: The actual (or calculated) line speed is displayed.
11	**PRESSURE:** The actual pressures are displayed. See explanation under Main Screen point 4.
12	**SPEED**: The actual (or calculated) pump speed is displayed.

6.8.2 Extended Pump Mode Settings Screen, Linear Line Speed, Pressure Control

- To go to this screen, press the Settings button on the Pump Control screen.
- The Extended Pump Mode Settings screen allows you to select the Current Pump Mode and to go to the Automatic Ramp Compensation (ARC) screen.

System 1 Pump 1 Example:



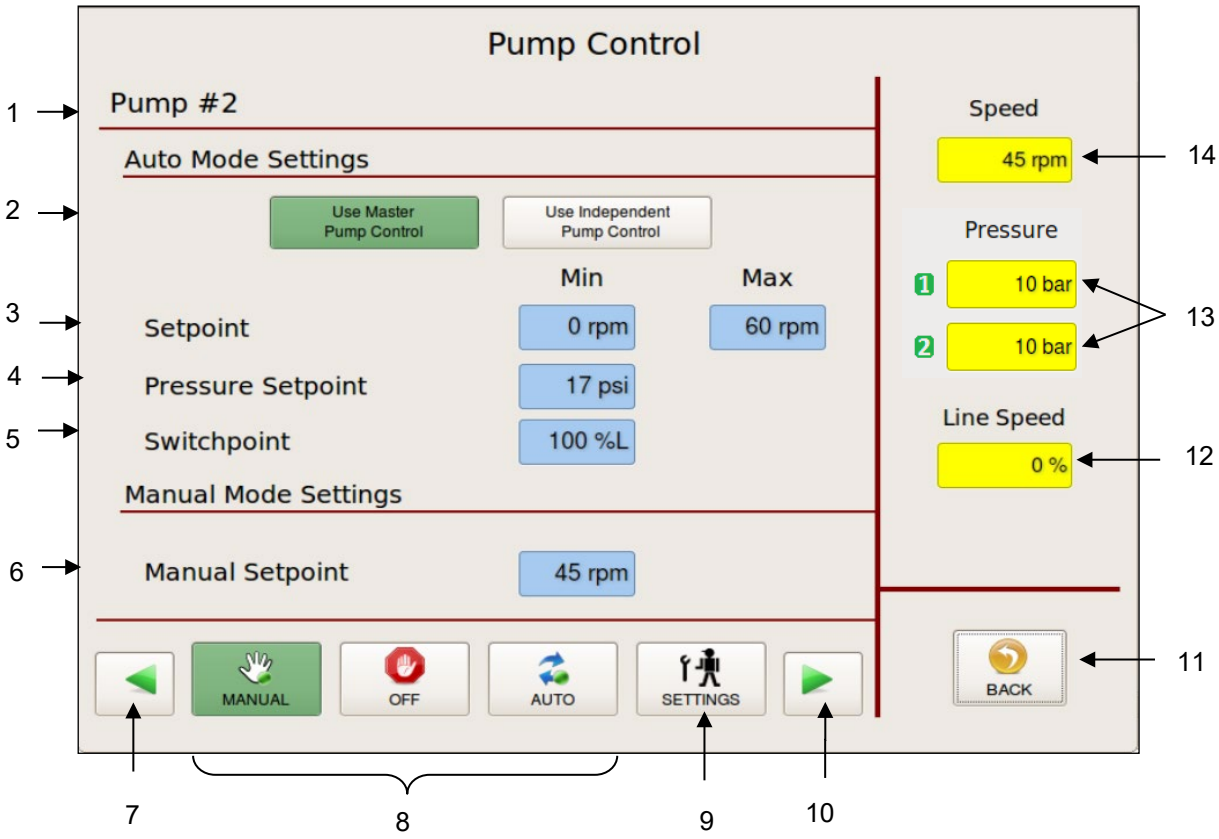


Item	*Description*
1	System 1 Pump 1 is selected.
2	**Pump Name** Touch the input box and an Alphabetic Entry Keypad will appear. Enter your desired pump name and confirm by pressing OK. The entered pump name will be displayed on the Pump Overview Screen.
3	**Current Pump Mode** Press Current Pump Mode to select "Linear Line Speed" or "Pressure Control". Then press the BACK button to go to the appropriate screen.
4	**Automatic Ramp Compensation (ARC) Button** Press to go to the Automatic Ramp Compensation screen.
5	**Optional: Minimum Input Pressure** • This field appears only if the pump is configured for a minimum input pressure lock. • The Minimum Input Pressure is a customer parametrizable value which has to be reached for the according pumps on decentralized pump (Applicator or Metering Station) to be released. •  A plausible limit value of Input Pressure (a minimum pressure of not less than 2 bar is recommended) has to be entered to avoid a dry run of the pumps; otherwise the pump can be damaged.
6	**Compare primary/secondary Pressure** Click this field if the pressure deviation is to be monitored.
7	**Maximum Platen discrepancy** This is the maximum allowable difference and it is adjustable between 1-17 bar (15-250 psi). If the current difference is higher, a discrepancy alarm will be generated for reference only.
8	**Discrepancy Alarm Delay** A platen discrepancy alarm can be delayed. In this way, an excessive difference must exist for a minimum time to trigger an alarm.
9	**BACK Button** Press to return to the previous screen.

6.8.3 Pump Control/ Pressure Control Screen

- To go to this screen, press the Pump 2 field on the Pump Overview screen (to get to the Pump 1, etc. Control screen, press the corresponding field). Then press the Settings button, select Pressure Control in the Current Pump Mode menu on the Extended Pump Mode Settings screen and then press the BACK button.
- If (optional) pressure sensors (transducers) are installed on the unit, the pumps can be pressure controlled. Pressure values (Bar/PSI) will be displayed on the Main Screen.
- A plausible limit value of Input Pressure (a minimum pressure of not less than 2 bar is recommended) has to be entered to avoid a dry run of the pumps; otherwise the pump can be damaged. See point “Extended Pump Mode Settings Screen, Linear Line Speed, Pressure Control” on previous pages.

Pump 2 Example:



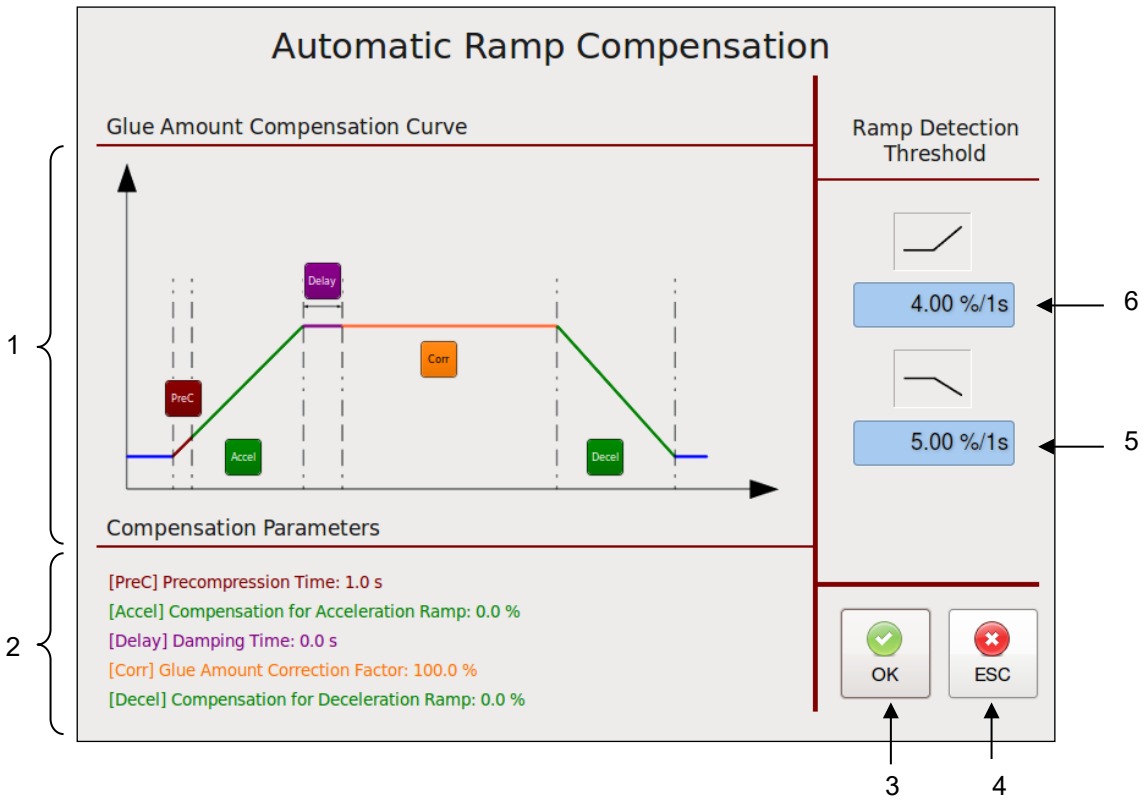
Item	*Description*
1	Pump #2 is the selected pump. All the settings and speeds displayed on this screen correspond to Pump #2.
2	**Auto Mode Settings:** Press the according switch for pump control. The activated switch is highlighted green. • **Use Master Pump Control:** The selected pump will use the START/STOP signal that pump #1 uses. • **Use Independent Pump Control:** The selected pump will use its own START/STOP signal.
3	**Setpoint (if in Auto Mode only)** The minimum and maximum setpoint RPM of the pump are displayed as programmed. Press the input field to edit the values.

Item	*Description*
4	**Pressure Setpoint (if in Auto Mode only)** The pressure setpoint value (BAR/PSI) is displayed as programmed and it controls the primary pressure input (point 11). Press the input field to edit the value.
5	**Switch Point (if in Auto Mode only)** Switch Point is set at a percentage of line speed. In the example shown above, 10%L equals 10% of line speed. Below the Switch Point speed, the system runs in pressure control mode (PID control, in order to maintain the pressure set point). Above the Switch Point speed, the system runs in normal line speed following mode (utilizing the auto min and auto max parameters). The switch point value is displayed as programmed. Press the input field to edit the value.
6	**Manual Setpoint (if in Manual Mode only)** The manual setpoint RPM of the pump is displayed as programmed. Press the input field to edit the value.
7	Press the arrow icon to go to the previous pump screen (i.e., Pump 1, etc.).
8	Set the pump to the desired mode by pressing either MANUAL, OFF (STOP) or AUTO. • MANUAL: The pump speed is adjusted manually by the operator. If MANUAL is selected the icon is highlighted green. • OFF (STOP): The pump is stopped, until AUTO or MANUAL is selected. If OFF is selected the icon is highlighted red. • AUTO: The pump speed is controlled via a 0–10VDC signal that is provided by an external device (pattern control equipment or parent machine input). If AUTO is selected the icon is highlighted green. A minimum speed is necessary to keep the pump turning in order to maintain a minimum amount of adhesive pressure through the hose and applicator head. For instance, if the input signal is 10VDC at 100 meters per minute and the pump percentage of full speed is 100% (maximum speed), but the system is putting out too much adhesive, adjusting the MAX pump percentage to 50 will cause the pump to slow down over the parent machine's entire speed range and adhesive output will be decreased.
9	**Settings Button** Press this button to go to the Extended Pump Mode Settings screen where you can select the Current Pump Mode "Linear Line Speed" or "Pressure Control" and you can go to the "Automatic Ramp Compensation" screen.
10	Press the arrow icon to go to the next pump screen (i.e., Pump 3, etc.).
11	**BACK Button** Press to return to the previous screen.
12	**LINE SPEED**: The actual (or calculated) line speed is displayed.
13	**PRESSURE:** The actual pressures are displayed. The primary pressure input can be controlled via the Pressure Set Point (point 3) set on this screen. The secondary pressure input is just a readout function. See explanation under Main Screen point 4.
14	**SPEED**: The actual (or calculated) pump speed is displayed.

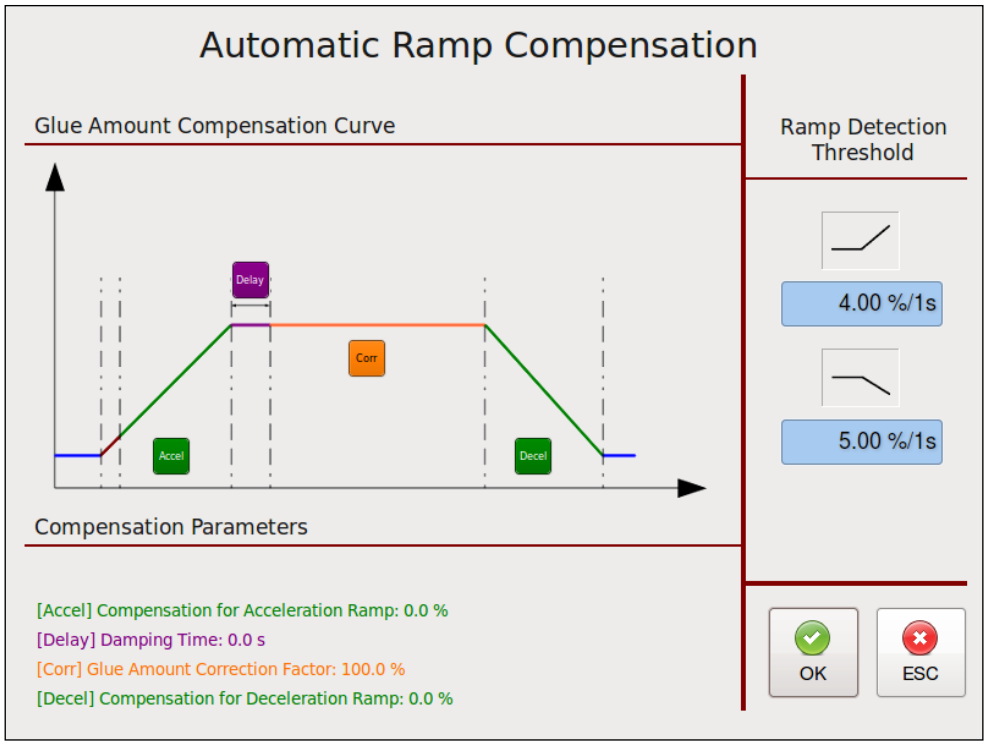
6.8.4 Automatic Ramp Compensation

- To go to this screen, press the Automatic Ramp Compensation button on the Extended Pump Mode Settings Linear Line Speed screen.
- The Automatic Ramp Compensation screen allows you to program parameters in order to compensate the adhesive amount when the speed of the main machine accelerates and decelerates.

With Linear Pump Control (Line Speed without Pressure PID Loop):



With Pressure Control PID Loop:

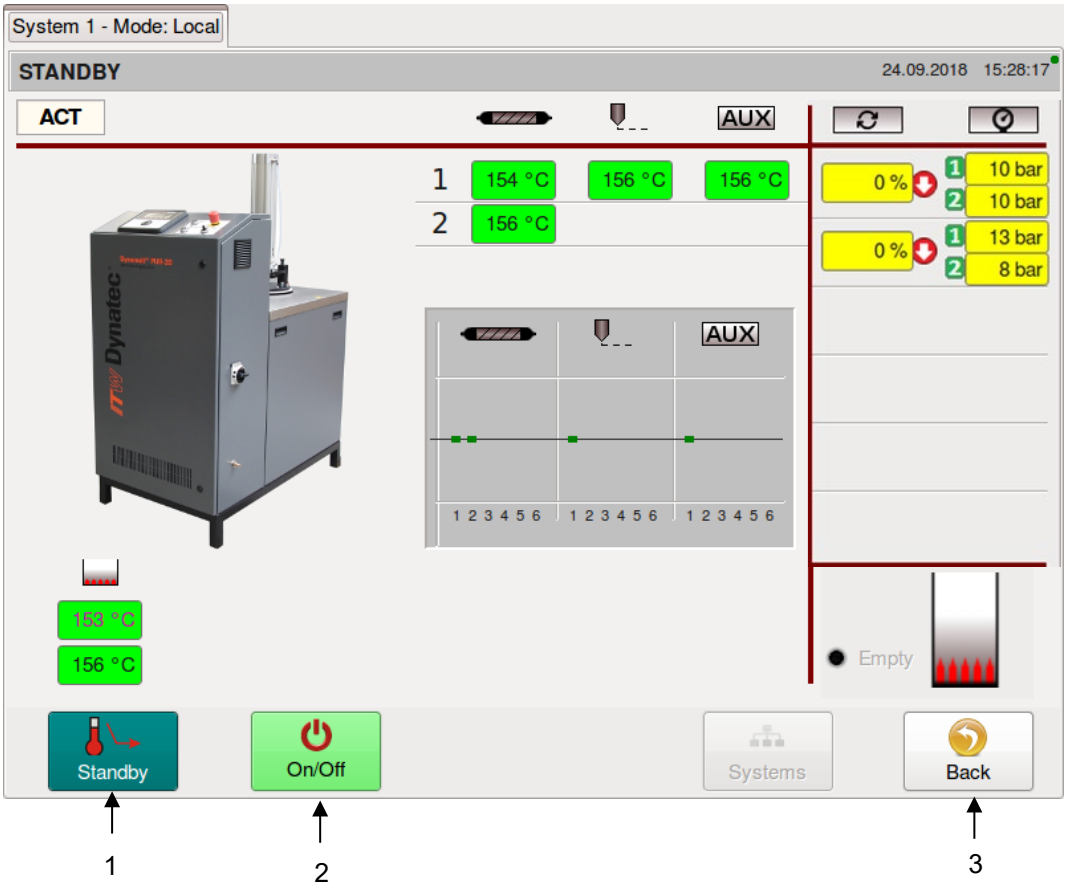


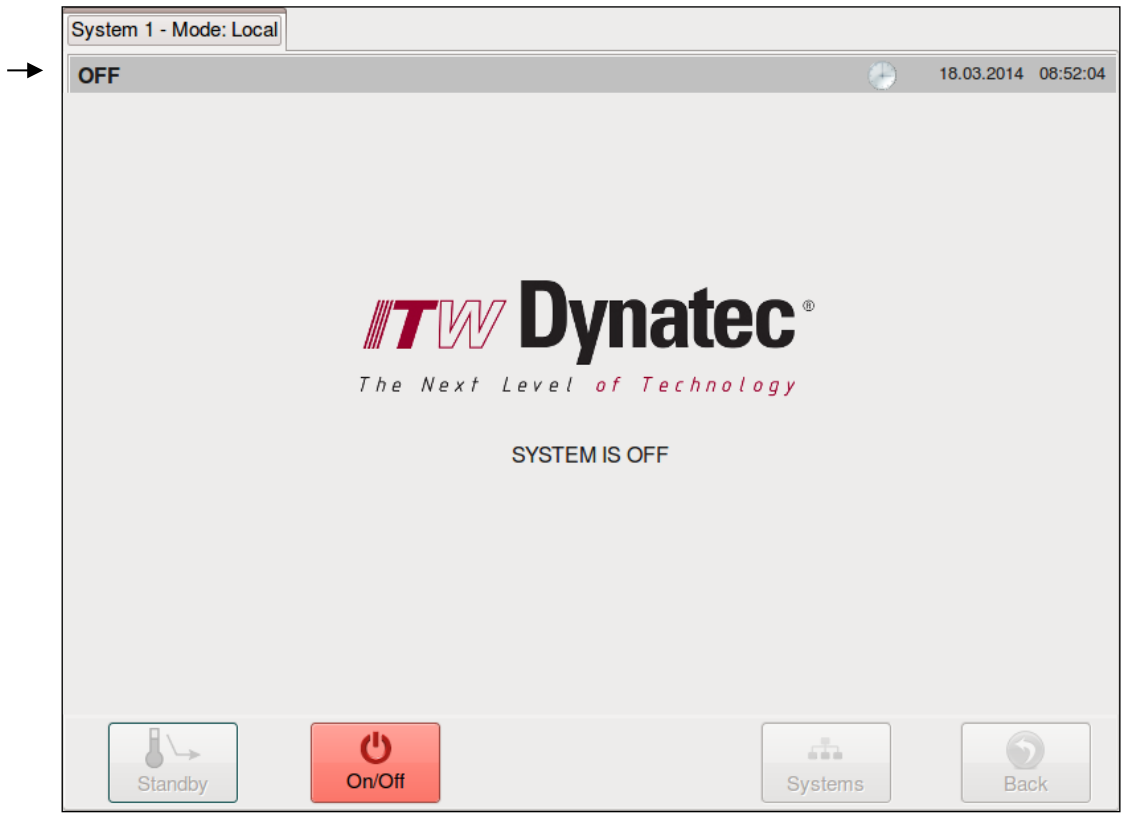
- Ramp Compensation allows tuning of adhesive amounts during acceleration and deceleration of main machine to reduce waste and increase machine efficiency by entering appropriate parameters.
- The colored parameters are related to the different phases of the main machine (see colored graph). A higher value will result in a higher compensation (more glue amount during acceleration, less glue amount during deceleration).
- After setting parameters by visibly checking the product result, further fine tuning might be necessary by checking products from the acceleration/deceleration ramp in a lab.

Item	*Description*
1	**Glue Amount Compensation Curve** • **(PreC) Precompression Time** in seconds: When using ramp compensation without pressure control loop, this defines the time the system will pre-compress at 75% pump speed before adhesive application. • **(Accel) Compensation for Acceleration Ramp** in % or rpm: This is the added percentage or rpm of pump speed to compensate the main machine acceleration ramp. • **(Delay) Damping Time** in seconds: within this time the compensation is reduced to the normal application rate in order to prevent an elastic impact. • **(Corr) Glue Amount Correction Factor** in %: Allows an adjustment of pump speed if a speed correction is required due to measured deviations of the adhesive amount. • **(Decel) Compensation for Deceleration Ramp**: This is the subtracted percentage or rpm of pump speed to compensate the main machine deceleration ramp. By pressing the appropriate button you can edit the value by means of numeric entry keypad.
2	**Compensation Parameters** The compensation parameters values currently in use are displayed.
3	Press the OK button to confirm your entered values and return to the previous screen.
4	Press the ESC button to discard any non-confirmed values and return to the previous screen.
5	**Ramp Detection Threshold for deceleration in %/1s** A main machine deceleration phase is automatically detected when its speed change lies above the given value. By pressing the input field you can edit the value by means of numeric entry keypad.
6	**Ramp Detection Threshold for acceleration in %/1s** A main machine acceleration phase is automatically detected when its speed change lies above the given value. By pressing the input field you can edit the value by means of numeric entry keypad.

6.9 Control Switch On/Off and Standby Switch

- To go to this screen, press the Control button on the Main Screen.
- This screen allows you to turn the system On or Off and to activate/deactivate standby condition.

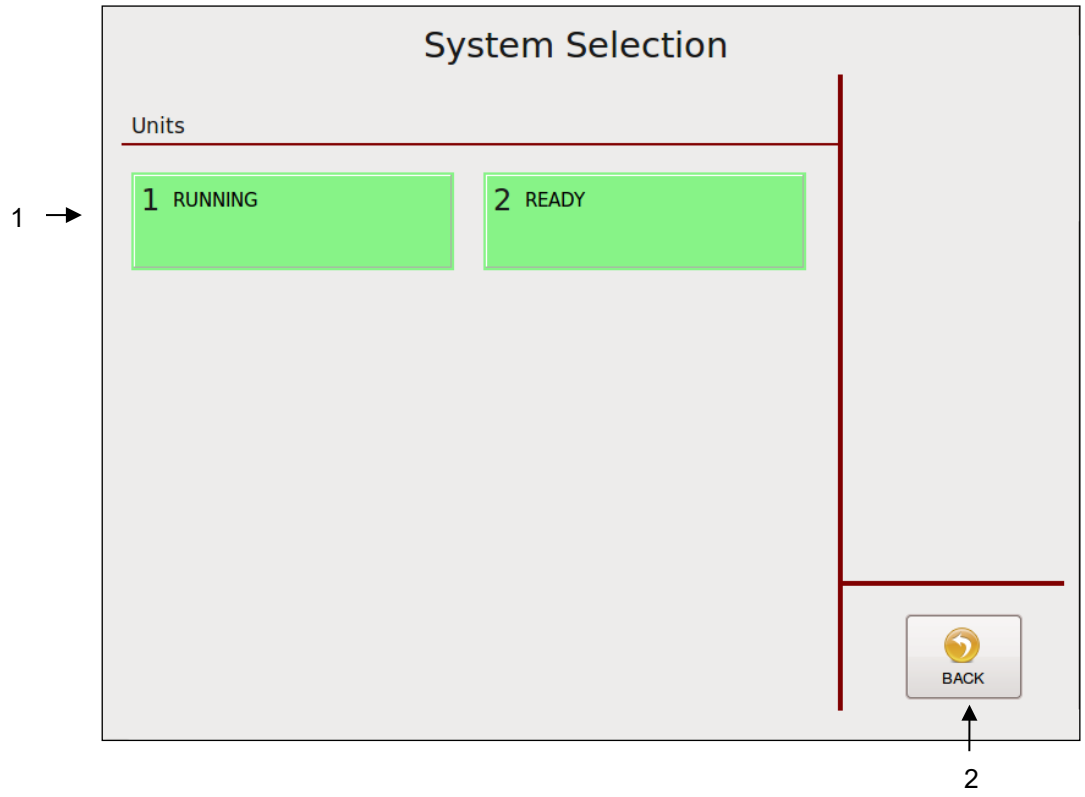




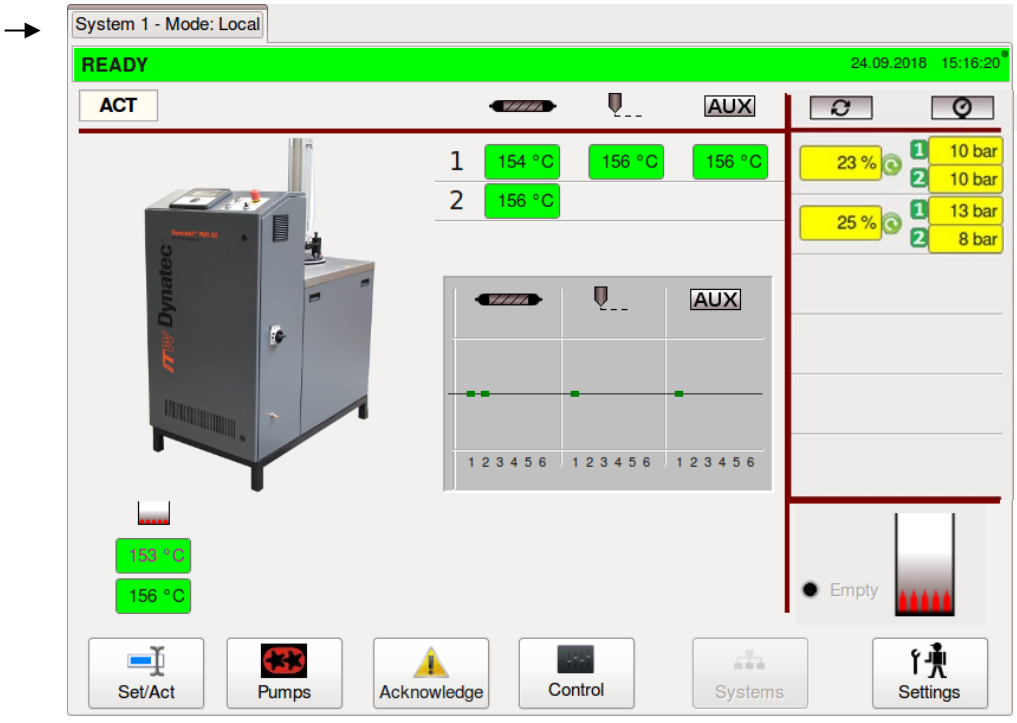
Item	*Description*
1	**Standby Switch** • Press the Standby switch to activate or deactivate the standby condition. When Standby is activated, the button will be highlighted blue. • When Standby is activated, all zone temperatures will be set to the standby value (programmed on the General Settings Screen) and all pumps will be disabled.
2	**On/Off Switch** Press the On/Off button to toggle the system On or Off. When the system is On, the button will be highlighted green. When the system is Off, the button will be highlighted red.
3	**BACK Button** Press to return to the previous screen.

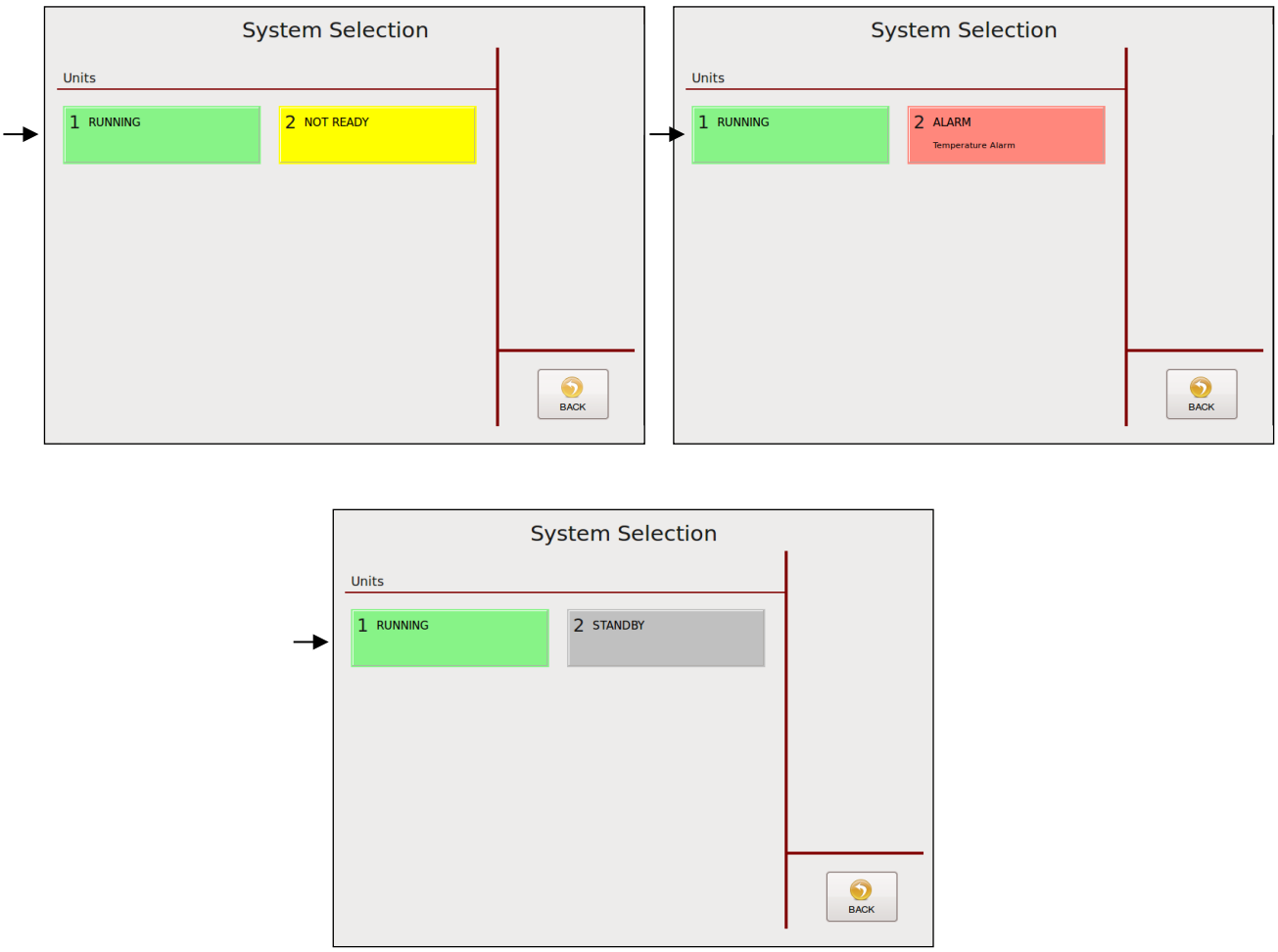
6.10 Systems Screen

- To go to this screen, press the Systems button on the Main Screen.
- This screen displays all attached systems and allows you to select the desired system to control it.



- For example: System #1 is selected. The system # will be indicated over the Status Line.

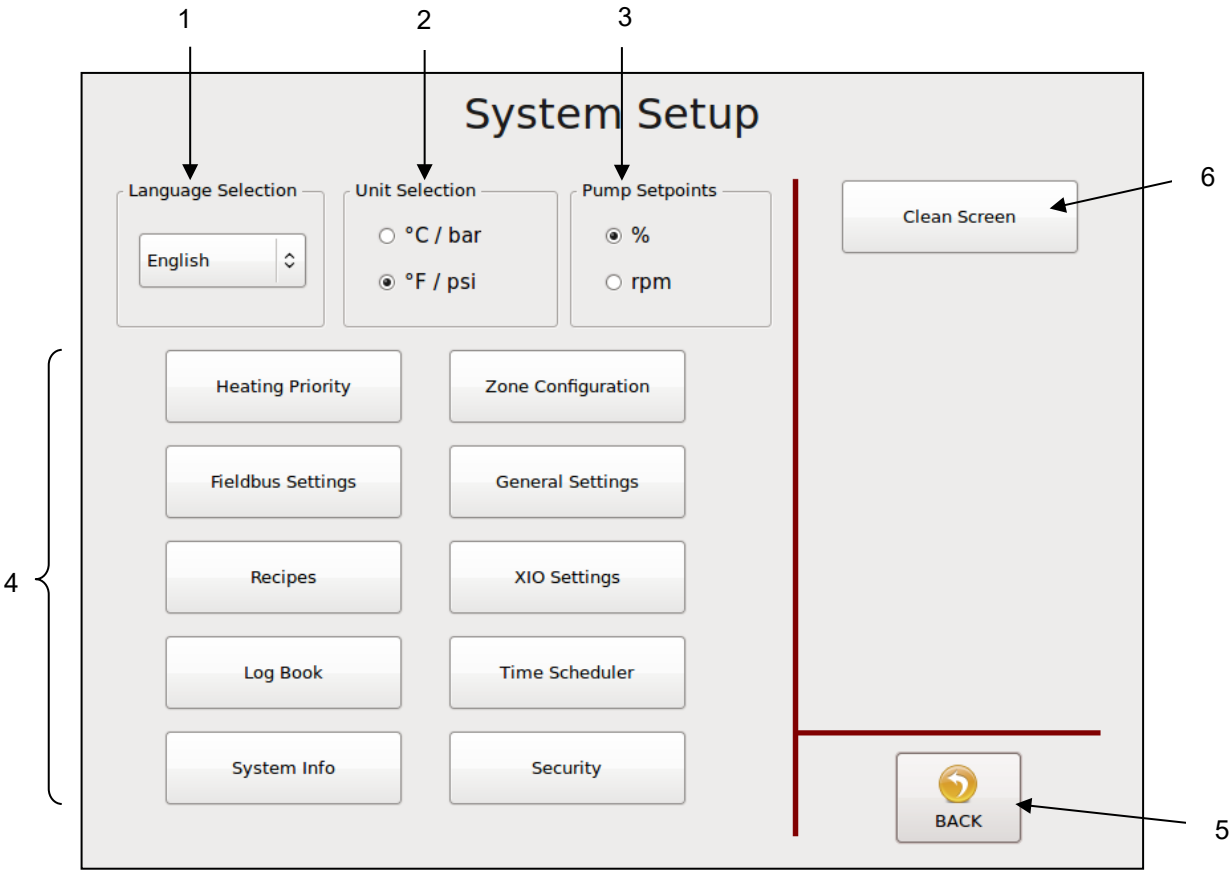




Item	*Description*
1	**System # Button** • Each system is assigned with a number. • Press the desired number to go to the appropriate system to control and to edit its parameters. • The button is highlighted green when the system is RUNNING or READY, yellow when NOT READY, grey when in STANDBY and red when in ALARM condition.
2	**BACK Button** Press to return to the previous screen.

6.11 Settings Screen

- To go to this screen, press the Settings button on the Main Screen.
- This screen allows you to set the parameters displayed: Language, Temperature/ Pressure Units, Pump Setpoints, Heating Priority, Fieldbus, Recipes, Log Book, System Info (to see information about the controller and modules installed), Zone Configuration, General Settings (including Temperature Settings, Standby Settings, Level Control Settings, Pressure Calibration, Customer Zone Names and Support), XIO Settings, Time Scheduler and Security.

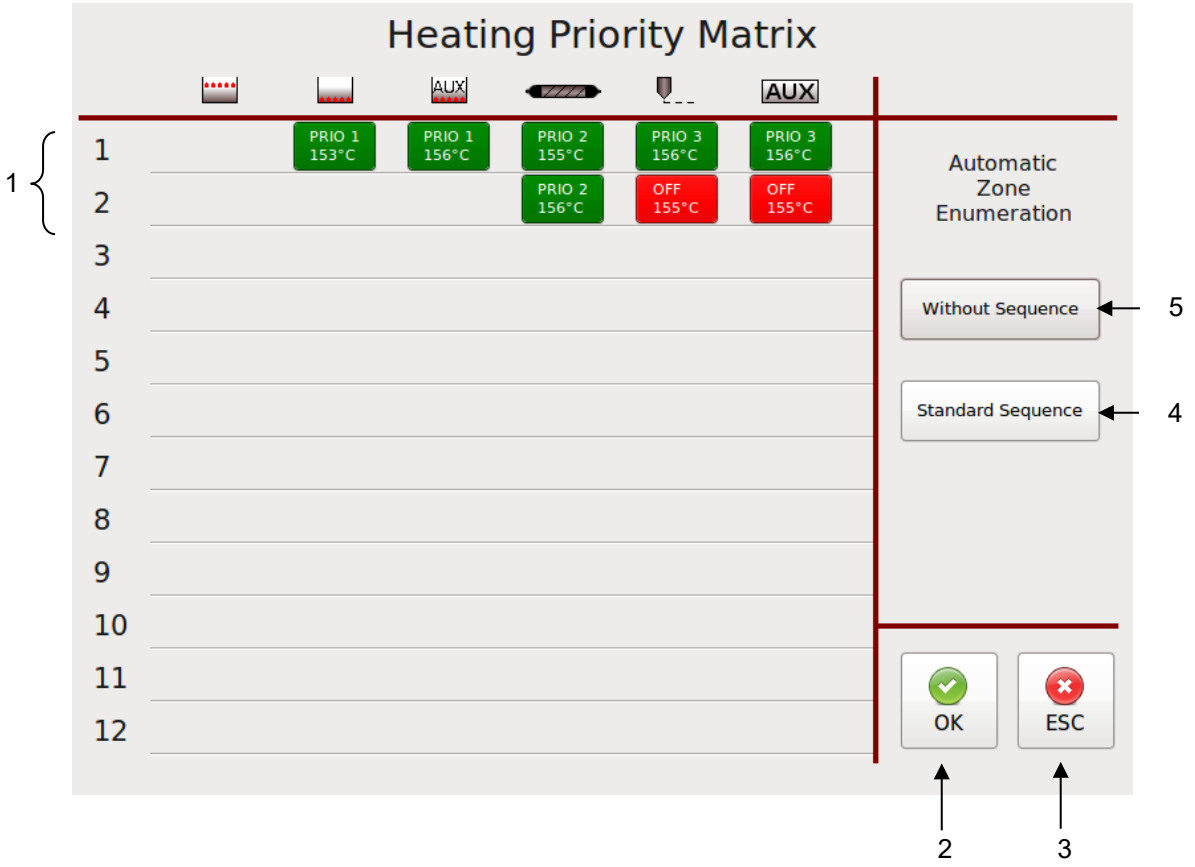


Item	*Description*
1	**Language Selection Menu** The current language is displayed. Press the button to select any language from the ones listed on the menu.
2	**Unit & Date Selection** Select the unit of temperature and pressure: choose either °C and bar or °F and psi. Depending on the selection made, the appearance of the date display is affected also. With the C/bar selection, the date is displayed as 'day.month.year' while in F/psi mode, the date is displayed as 'month/day/year'.
3	**Pump Setpoints** Select the pump speed setpoints either in RPM or % of production line speed.
4	**All other Setting Buttons** • To go to a desired screen, press the appropriate button. • On the following pages each screen is explained except XIO Settings. • **XIO Settings:** The screens used under XIO Settings are dependent from integrated equipment. See separate add-on at the end of this chapter.
5	**BACK Button** Press to return to the previous screen.
6	**Clean Screen Button** Press this button to clean the screen. Then, the functions of the Touch Panel will be switched off for 20 seconds.

6.11.1 Heating Priority Screen

- To go to this screen, press the Heating Priority button on the Settings Screen.
- This screen allows you to set a Heating Priority for each zone. Heating Priority allows the hopper zones to heat to their ready temperatures before the other zones begin heating. In this way, the larger mass of adhesive in the hopper zones (including the grid, hopper and filter block) gets a head start on the other zones (hoses, applicators and auxiliary zones).

Heating Priority Matrix Example:

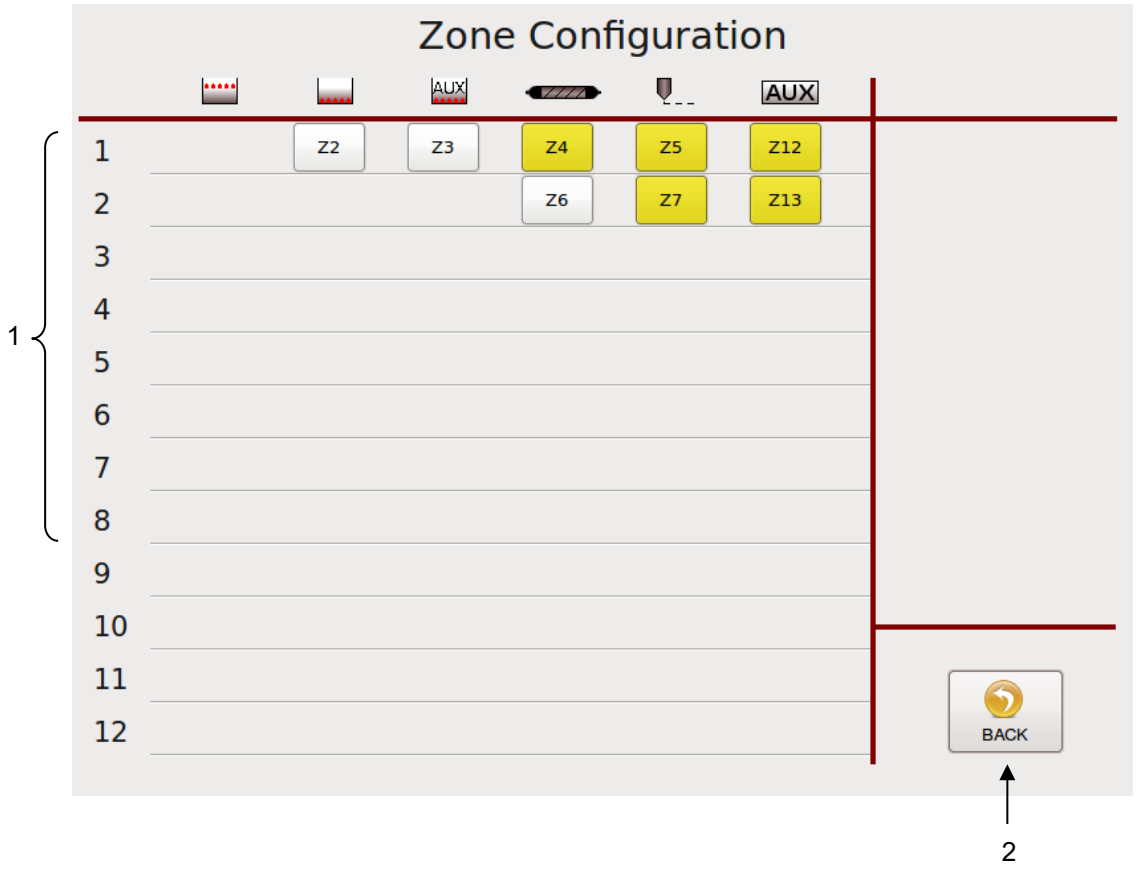


Item	Description
1	Touch each zone field to select one of the following three Heating Priorities, or to switch the zone OFF: • PRIO1 = the zone will heat first. • PRIO2 = the zone will begin to heat after the PRIO1 zones have reached their setpoints. • PRIO3 = the zone will begin to heat after the PRIO2 zones have reached their setpoints. • OFF = the zone is OFF. It will not heat and it will not be displayed on the Main screen.
2	Press the OK button to confirm your entered values and return to the previous screen.
3	Press the ESC button to discard any non-confirmed values and return to the previous screen.
4	Press the Standard Sequence button to accept the following standard Heating Priorities: • PRIO1 = grid, hopper and filter block • PRIO2 = hoses • PRIO3 = applicators and other auxiliary components Press the OK button to confirm.
5	Press the Without Sequence button to assign all zones to PRIO1. With this setting, all zones will begin to heat after turning on the unit. Press the OK button to confirm.

6.11.2 Zone Configuration Screen

- To go to this screen, press the Zone Configuration button on the Settings Screen.
- This screen allows you to enter zone names and to set Offset Temperature and other Control Settings for each zone.

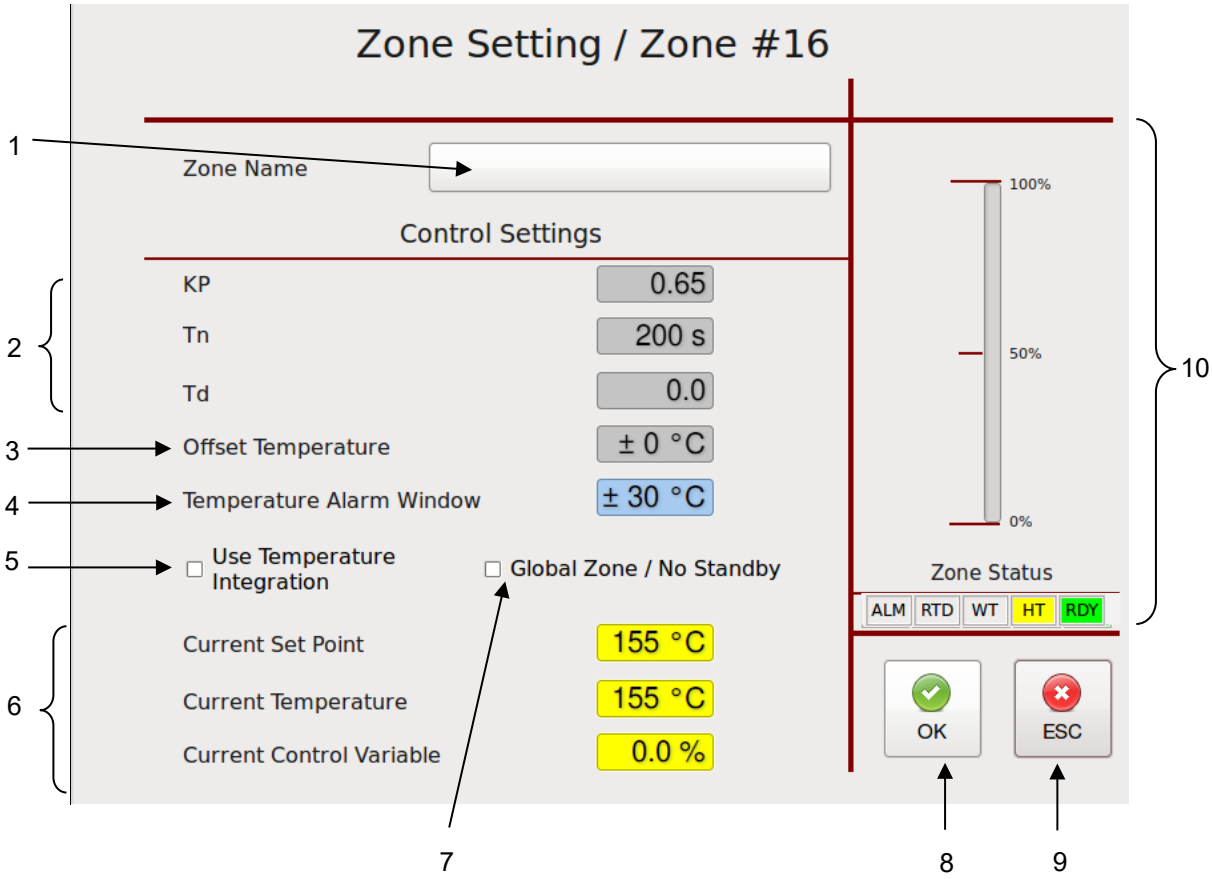
Zone Configuration Screen Example:



Item	Description
1	• Touch a zone input box to go to the Zone Settings. •  Zone is highlighted yellow if an Offset Temperature has been set for this zone. •  Square bracket is displayed if a custom zone name has been entered for this zone.
2	**BACK Button** Press to return to the previous screen.

6.11.3 Zone Settings

➢ To go to this screen, press a zone input box on the Zone Configuration Screen.



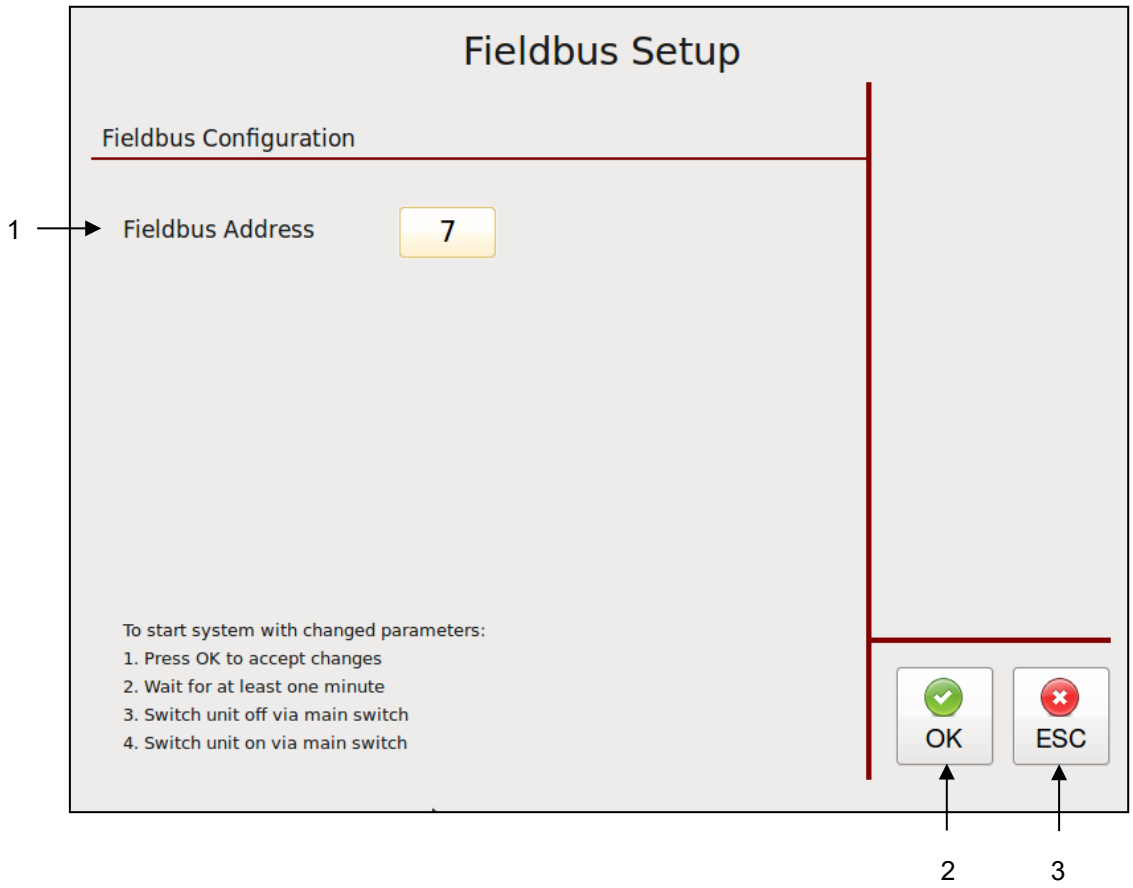
Item	Description
1	**Zone Name** Touch the input box and an Alphabetic Entry Keypad will appear. Enter your desired name and confirm by pressing OK.
2	**Control Settings** • KP, Tn and Td values allow access to the control parameters of PID Controller of the selected zone. • These values can be changed only by using a Maintenance password. See Security screen.
3	**Offset Temperature** • Temperature Offsets are mathematical factors which compensate for differences in temperature within components. Each temperature zone may be programmed with an offset, if desired. Standard equipment does not usually require temperature offsets. Note: Entering a positive-numbered offset will raise the temperature reading of that zone. Since the controller attempts to equate setpoint and actual temperature, this lowers the actual temperature by the amount of the offset. For example: setpoint and actual temperature both equal 150°C (302°F). An offset of +10°C (+10°F) is programmed. Initially the display will read 160°C (312°F), but the controller will lower the output power until the actual temperature value is back to 150°C (302°F). •  Warning icon is displayed if an Offset Temperature has been set for the zone. • This value can be changed only by using a Maintenance password. See Security screen.

Item	Description
4	**Temperature Alarm Window** Here you can define a separate alarm window for this zone. If you do this, this will be indicated by an  in the General Settings / Temp Settings window.
5	**Use Temperature Integration** • Depending on your Temp Module this function can be activated/ deactivated. • If you experience strong variations in actual temperature read-out, an integration function can be activated to eliminate EMC influence.
6	These values are read-only.
7	**Global Zone / No Standby** The function is set individually for each zone. When this function is activated, the zone is defined as a "Global Zone". Global zones are not covered by the temperature reduction (standby) if the unit is switched to standby mode; i.e. even in standby mode, the "global zones" will continue to heat up to the set setpoint temperatures, while the other zones are reduced by the set standby difference.
8	Press the OK button to confirm your entered values and return to the previous screen.
9	Press the ESC button to discard any non-confirmed values and return to the previous screen.
10	**Zone Status** Zone status is indicated. • ALM = is highlighted if zone has an alarm. • RTD = is highlighted if temperature sensor error occurs. • WT = is highlighted if zone is in wait status because of heating priority setting. • HT = is highlighted if zone is heating up. • RDY = is highlighted if zone ready (setpoint temperatures are reached). • Scale = Indication of Current Control Variable of the selected PID control zone.

6.11.4 Fieldbus Setup Screen

➢ To go to this screen, press the Fieldbus Settings button on the Settings Screen.

➢ When communicating to a parent machine which utilizes Profibus or EtherNet IP, the unit must have a Fieldbus Address to identify it. When there are additional units in a system, each unit must have its own unique Fieldbus Address.

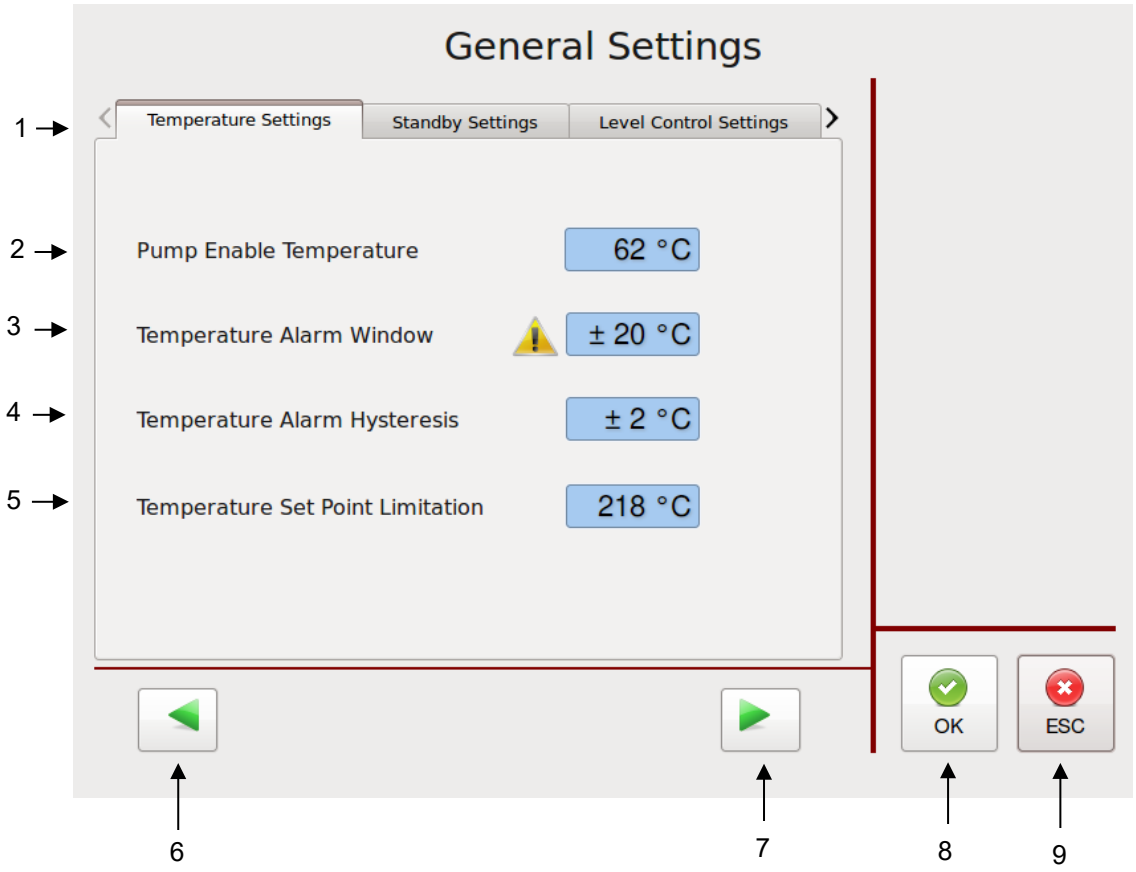


Item	*Description*
1	**Fieldbus Address** Touch the input box and a numeric entry keypad will appear. Enter the Fieldbus Address of the unit. Confirm by pressing OK. After programming the Fieldbus Address, the system must be re-started. To re-start the system with changed parameters: 1. Press OK to accept changes. 2. Wait at least one minute. 3. Switch unit Off via the main switch. 4. Switch unit On via the main switch.
2	Press the OK button to confirm your entered values and return to the previous screen.
3	Press the ESC button to discard any non-confirmed values and return to the previous screen.

6.11.5 General Settings Screen

- To go to this screen, press the General Settings button on the Settings Screen.
- This screen allows you to set the parameters shown across the screen's top line (Item #1, shown below).
- Select a desired parameter (Temperature, Standby, Level Control, Pressure Calibration or Customer Zone Names) by pressing its tab or by pressing the arrows at the bottom of the screen.

6.11.5.1 Temperature Settings

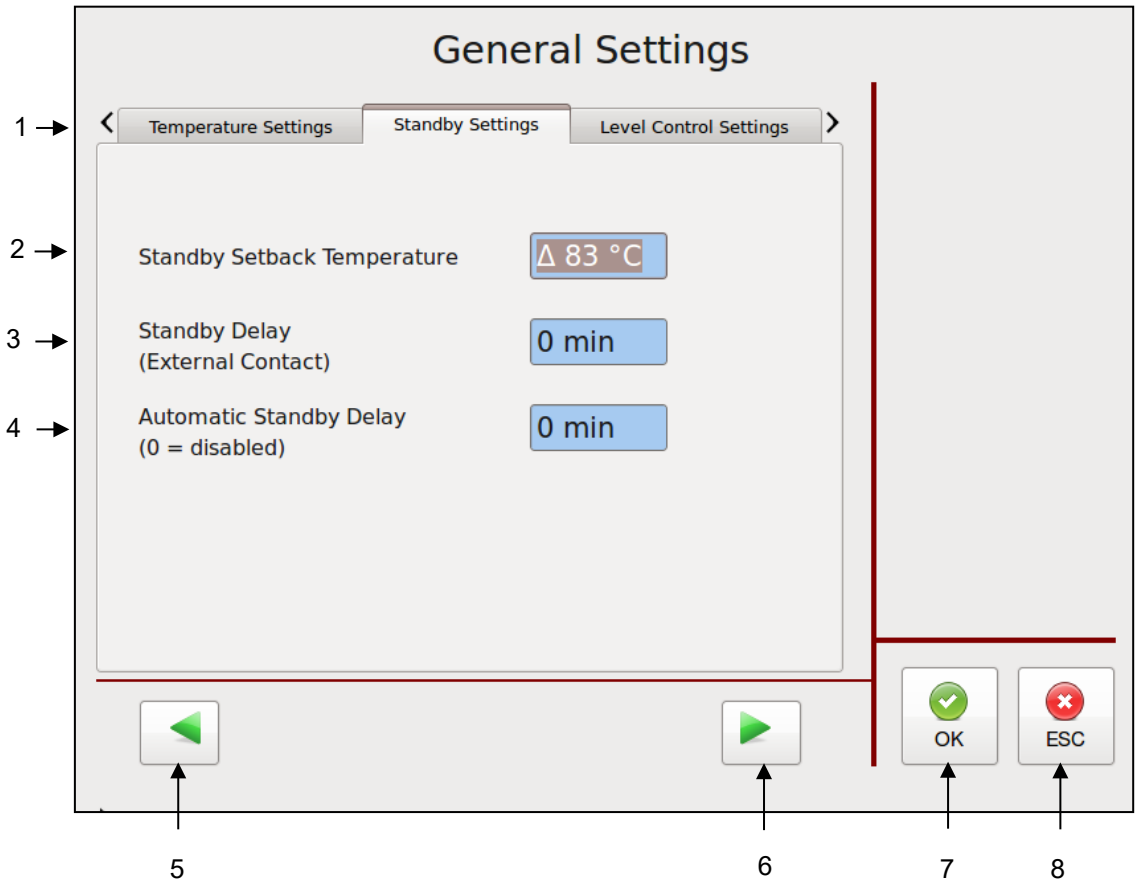


Item	Description
1	**Parameter Selection tabs** The Temperature Settings tab has been selected.
2	**Pump Enable Temperature** • The Pump Enable Temperature is a low-limit value (e.g. 100°C / 212°F) which protects the pump, pump shaft, motor and motor control module by preventing the pump from turning on until a minimum adhesive temperature is achieved. Caution should be taken to avoid setting this value too low because attempting to rotate the pump when the adhesive inside it is not molten will result in damage to the pump and, possibly, to the pump motor. The Pump Enable Temperature is independent from the temperature setpoints. The programmable range is 10-200 °C (50- 400°F). • Touch the input box and a numeric entry keypad will appear. Enter your desired Pump Enable Temperature value and confirm by pressing OK.

Item	*Description*
3	**Temperature Alarm Window** • The displayed value is from zone 1.  This indicates that other zones have a different alarm window. • This is the programmable temperature range which allows the unit to go into Ready condition. The Temperature Alarm Window is a deviation (e.g. ± 20°C / 36°F) from the setpoint. The setpoint minus the deviation is the low limit of the window, and the setpoint plus the deviation is the high limit of the window. The programmable range is 0-50 °C (0-90°F). • The Temperature Alarm Window (± the Temperature Alarm Hysteresis, if programmed) will trigger high and low temperature alarms when zone temperatures rise or fall outside of the window. • Touch the input box and a numeric entry keypad will appear. Enter your desired Temperature Alarm Window value and confirm by pressing OK.
4	**Temperature Alarm Hysteresis** • This is a second, smaller, temperature range and alarm limit programmed in addition to the Temperature Alarm Window which allows the unit to remain in Ready condition as temperatures stabilize. The Temperature Alarm Hysteresis is a deviation (e.g. ± 2°C / 3°F) from the Temperature Alarm Window. The Temperature Alarm Window minus the deviation is the low limit of the Temperature Alarm Hysteresis, and the Temperature Alarm Window plus the deviation is the high limit of the Temperature Alarm Hysteresis. The programmable range is 0-10 °C (0-30°F). • The Temperature Alarm Hysteresis will trigger high and low temperature alarms when those temperatures are exceeded. • Touch the input box and a numeric entry keypad will appear. Enter your desired Temperature Alarm Hysteresis value and confirm by pressing OK.
5	**Temperature Set Point Limitation** This is a by customer programmable maximum temperature set point limitation.
6	Press the left-pointing arrow to go to the previous General Settings screen.
7	Press the right-pointing arrow to go to the next General Settings screen.
8	Press the OK button to confirm your entered values and return to the previous screen.
9	Press the ESC button to discard any non-confirmed values and return to the previous screen.

6.11.5.2 Standby Settings

➢ To go to this screen, press the General Settings button on the Settings Screen.



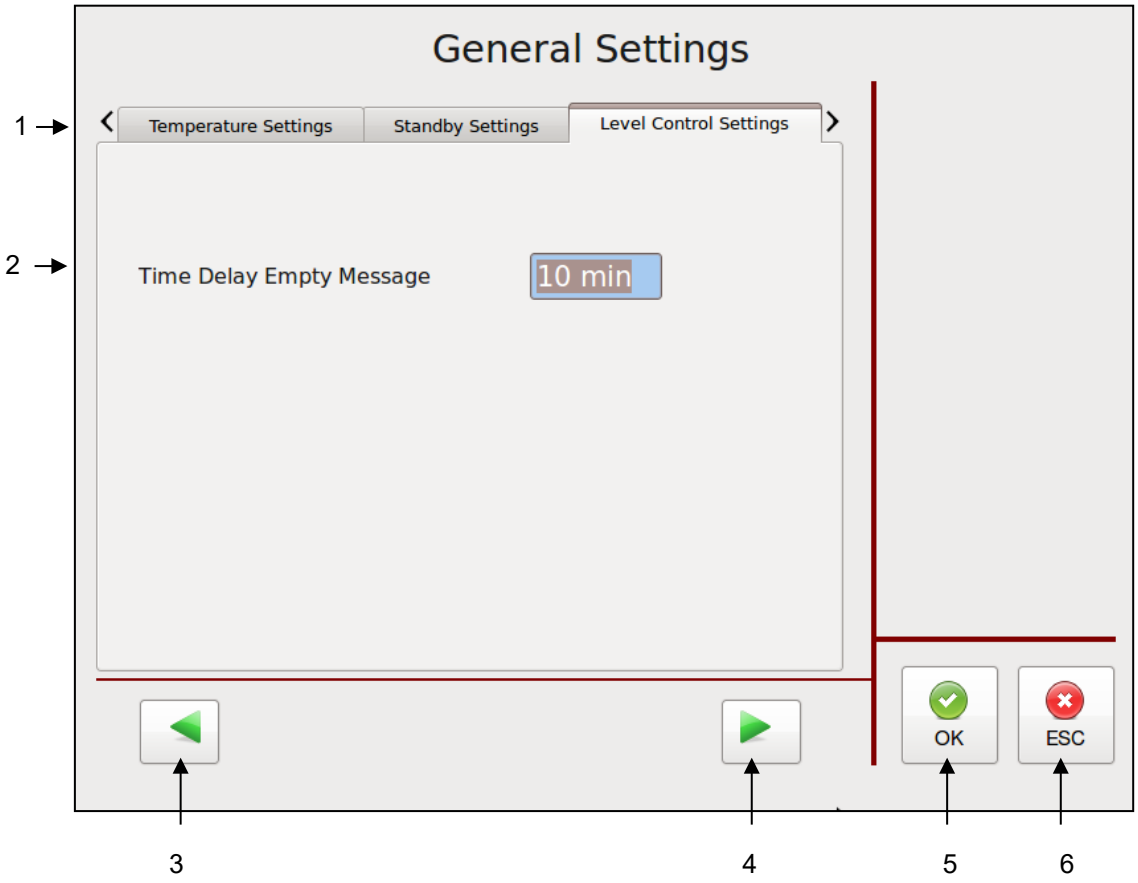
Item	*Description*
1	**Parameter Selection tabs** The Standby Settings tab has been selected.
2	**Standby Setback Temperature** • This is the system condition where the hopper, hose and head temperatures are maintained at predetermined reduced temperature values. Standby Setback Temperatures are set lower than setpoint temperatures (e.g. 83°C / 149°F) in order to reduce adhesive degradation and energy consumption when the system is temporarily inactive, and to permit rapid system warm-up when run conditions are selected. When standby mode is activated, the controller will display STANDBY. The programmable range is 0-150 °C (0-270°F). • Touch the input box and a numeric entry keypad will appear. Enter your desired Standby Setback Temperature value and confirm by pressing OK.
3	**Standby Delay (External Contact)** • The Standby Delay is the programmed number of minutes until the unit goes into standby mode after activation by an external contact (for example: a PLC or an external switch). The programmable range is 0-150 minutes. • Touch the input box and a numeric entry keypad will appear. Enter your desired Standby Delay value and confirm by pressing OK.
4	**Automatic Standby Delay (0 = disabled)** • The Automatic Standby Delay is the programmed number of minutes until the unit goes into standby mode after the unit has heated-up and the pump is stopped (no adhesive feeding activity). The programmable range is 0-1440 minutes. Enter 0 to disable the feature. • Touch the input box and a numeric entry keypad will appear. Enter your desired Automatic Standby Delay value and confirm by pressing OK.

Item	Description
5	Press the left-pointing arrow to go to the previous General Settings screen.
6	Press the right-pointing arrow to go to the next General Settings screen.
7	Press the OK button to confirm your entered values and return to the previous screen.
8	Press the ESC button to discard any non-confirmed values and return to the previous screen.

6.11.5.3 Level Control Settings

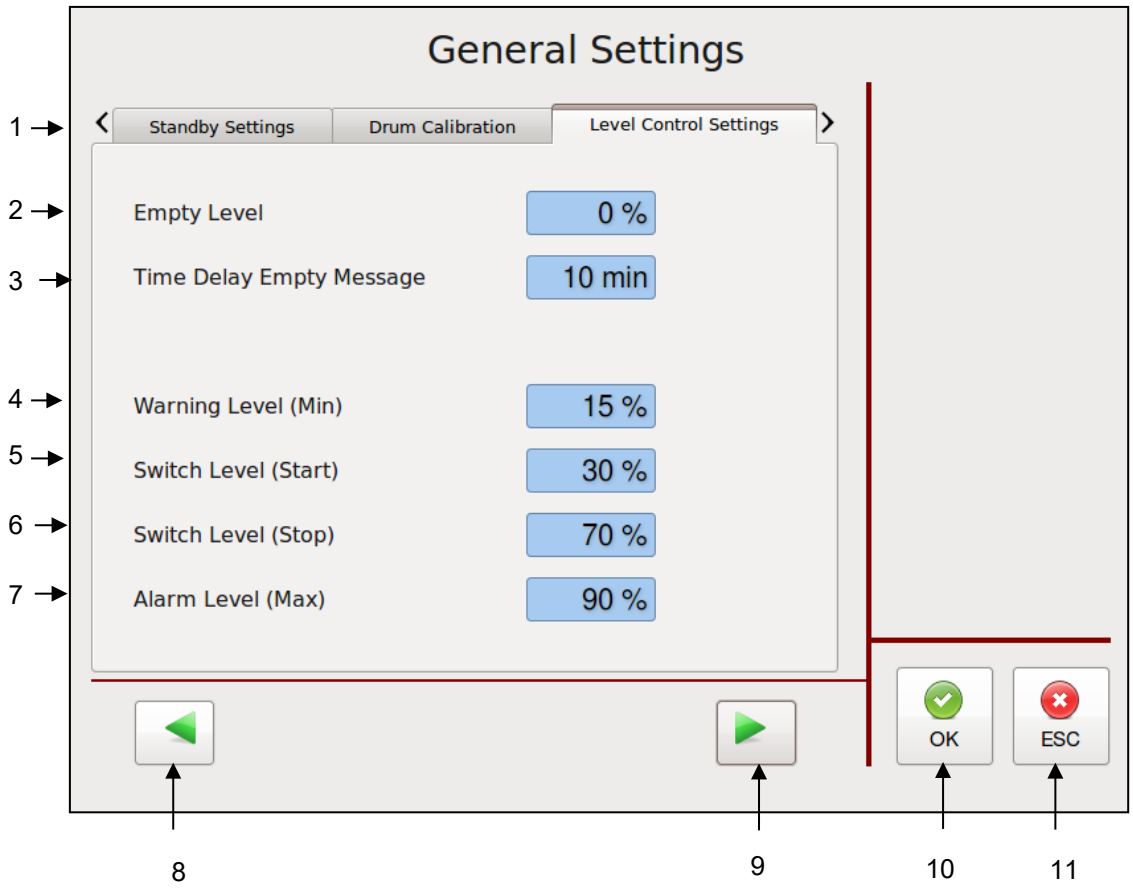
➢ To go to this screen, press the General Settings button on the Settings Screen.

If Digital Level Sensor is installed:



Item	*Description*
1	**Parameter Selection tabs** The Level Control Settings tab has been selected.
2	**Time Delay Empty Message** • This is a programmable time delay for reappearance of the level control's Empty message. The level control device informs the operator via a "Minimum Level" message on the display that the hopper needs to be refilled. After expiration of the time delay, the message Minimum Level will be indicated on the display. The programmable range is 0-31 minutes. • Touch a zone input box and a numeric entry keypad will appear and the values can be edited. Enter the value and confirm by pressing OK.
3	Press the left-pointing arrow to go to the previous General Settings screen.
4	Press the right-pointing arrow to go to the next General Settings screen.
5	Press the OK button to confirm your entered values and return to the previous screen.
6	Press the ESC button to discard any non-confirmed values and return to the previous screen.

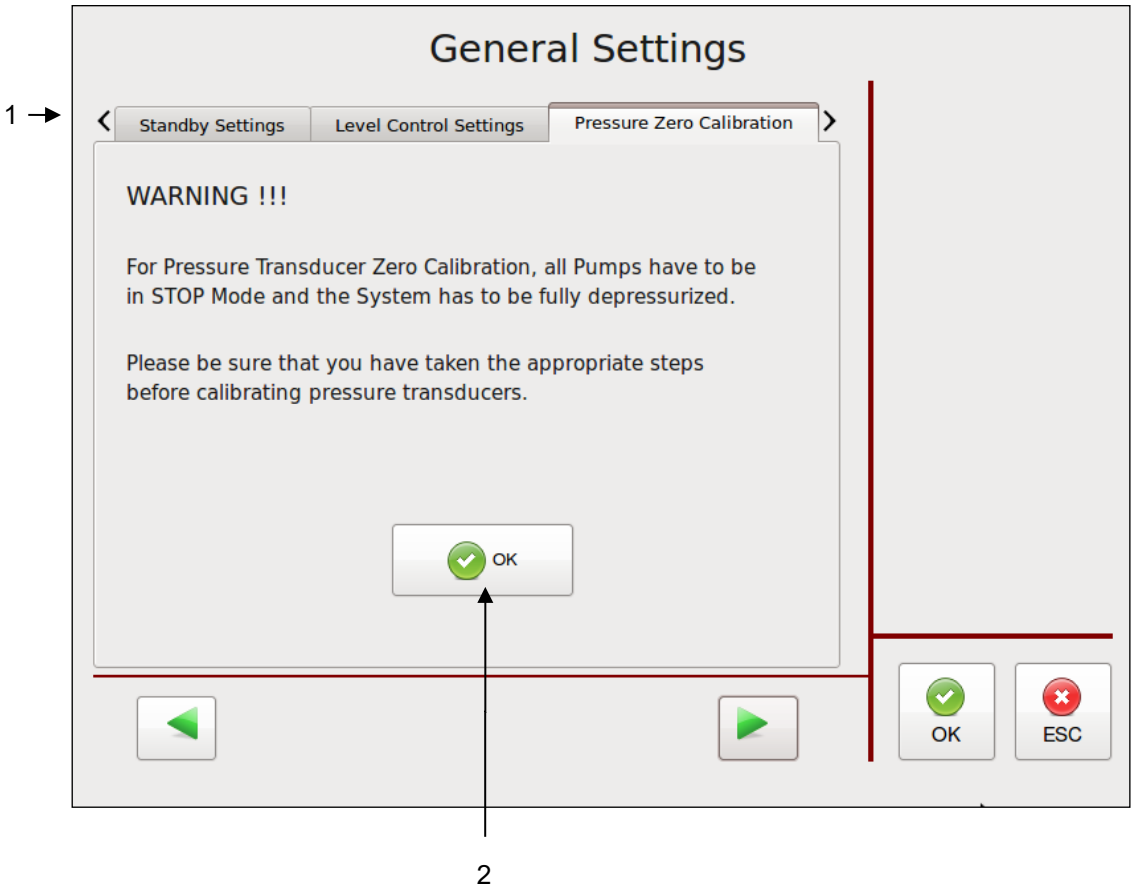
If Analog Level Sensor is installed:



Item	*Description*
1	**Parameter Selection tabs** The Level Control Settings tab has been selected.
2	**Empty Level** If fill level is lower than this parameter an empty message will be generated.
3	**Time Delay Empty Message** • This is a programmable time delay for reappearance of the level control's Empty message. The level control device informs the operator via a "Minimum Level" message on the display that the hopper needs to be refilled. After expiration of the time delay, the message Minimum Level will be indicated on the display. The programmable range is 0-31 minutes. • Touch a zone input box and a numeric entry keypad will appear and the values can be edited. Enter the value and confirm by pressing OK.
4	**Warning Level (Min)** Template-dependent parameter (not used in standard configuration).
5	**Switch Level (Start)** If system is configured as refiller control this parameter defines the refill start level.
6	**Switch Level (Stop)** If system is configured as refiller control this parameter defines the refill stop level.
7	**Alarm Level (Max)** Template-dependent parameter (not used in standard configuration).
8	Press the left-pointing arrow to go to the previous General Settings screen.
9	Press the right-pointing arrow to go to the next General Settings screen.
10	Press the OK button to confirm your entered values and return to the previous screen.
11	Press the ESC button to discard any non-confirmed values and return to the previous screen.

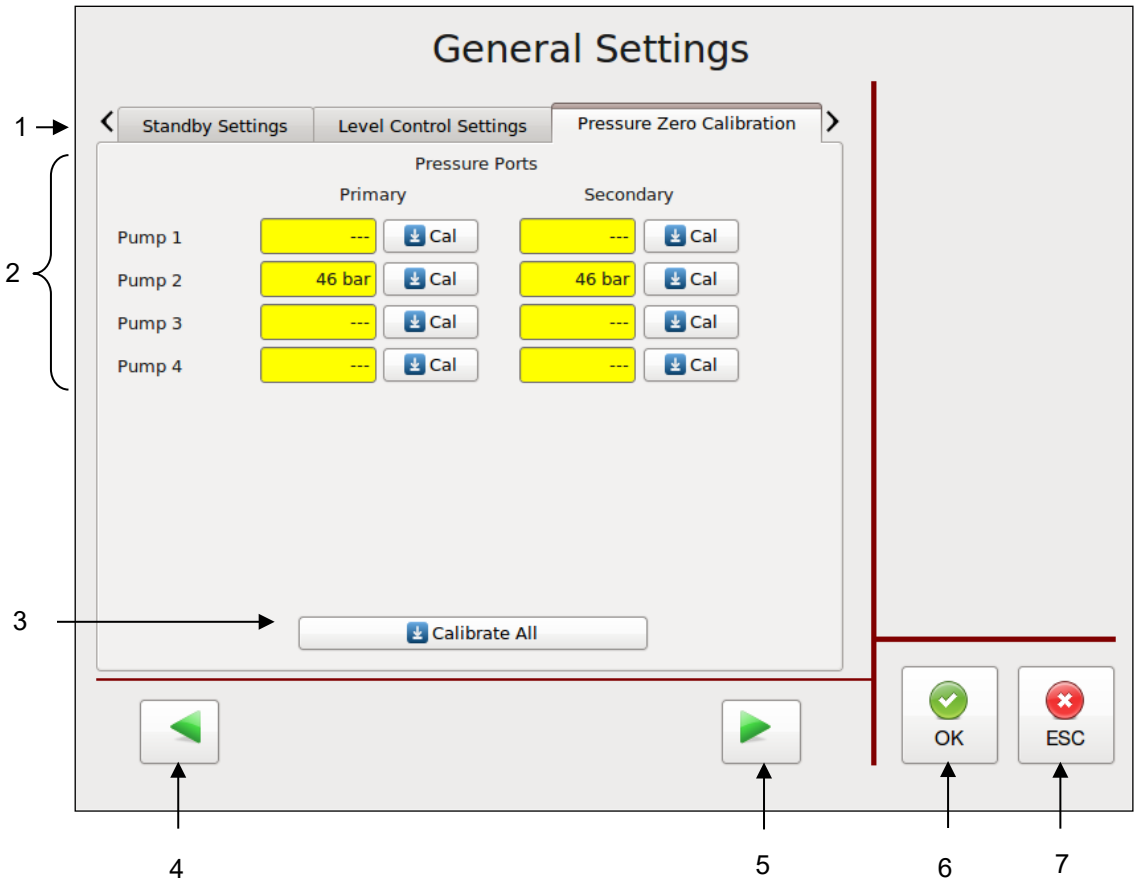
6.11.5.4 Pressure Zero Calibration

➢ To go to this screen, press the General Settings button on the Settings Screen.



Item	*Description*
1	**Parameter Selection tabs** The Pressure Zero Calibration tab has been selected.
2	**OK Button** Before calibrating the (optional) pressure transducers, all pumps must be in STOP mode and the system must be fully depressurized. After taking the appropriate steps, confirm this by pressing the OK button. You will then go to the Calibrating Screen.

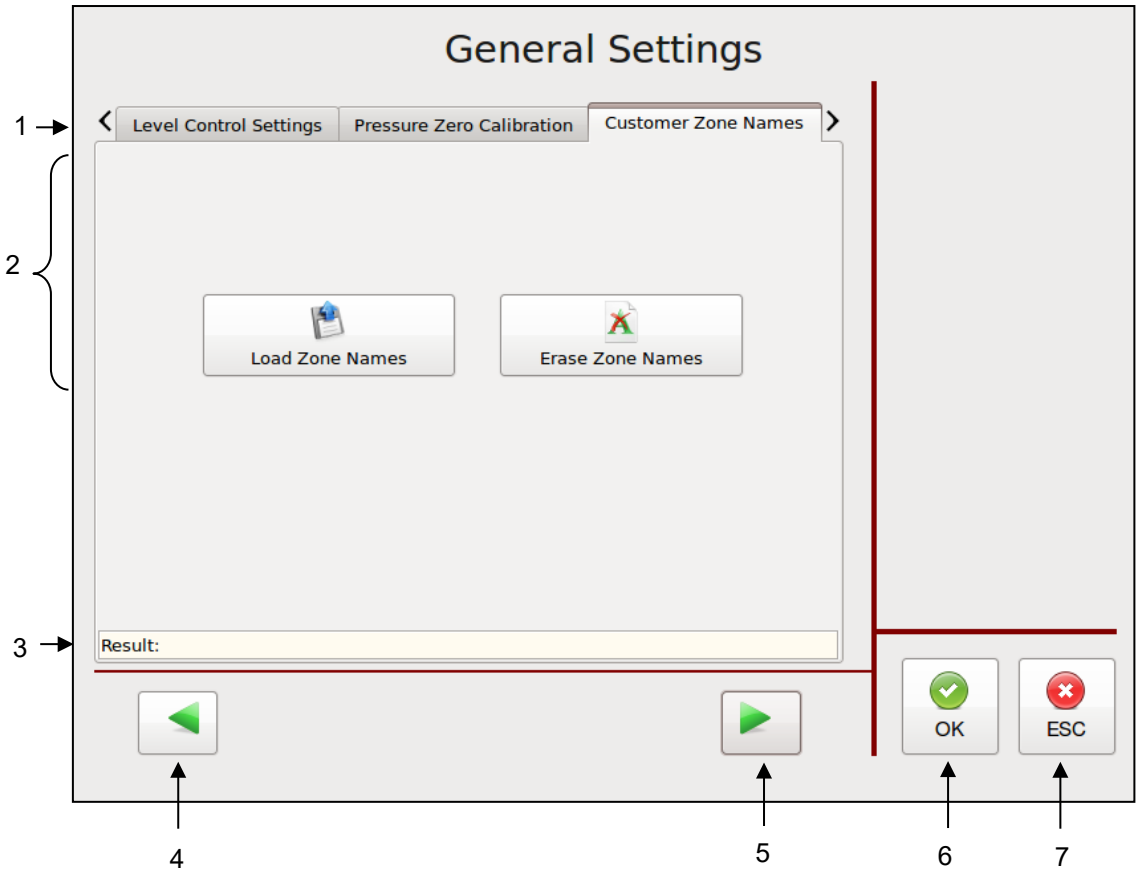
6.11.5.5 Calibrating Screen



Item	*Description*
1	**Parameter Selection tabs** The Pressure Zero Calibration tab has been selected.
2	**Pressure Zero Calibration** If (optional) pressure sensors are installed on the unit, the pumps can be pressure controlled. Pressure values will be displayed on the Main Screen. Refer to Pump Control, Pressure Control. Primary and Secondary Pressure Ports are displayed on the screen. Calibrate each pump to zero by pressing the appropriate "Cal" button. Note: before calibrating pressure transducers, all pumps must be in STOP mode and the system must be fully depressurized.
3	**Calibrate All** Press the Calibrate All button to calibrate all pumps to zero at one time. Note: before calibrating pressure transducers, all pumps must be in STOP mode and the system must be fully depressurized.
4	Press the left-pointing arrow to go to the previous General Settings screen.
5	Press the right-pointing arrow to go to the next General Settings screen.
6	Press the OK button to confirm your entered values and return to the previous screen.
7	Press the ESC button to discard any non-confirmed values and return to the previous screen.

6.11.5.6 Customer Zone Names

- To go to this screen, press the General Settings button on the Settings Screen.
- Use the Customer Zone Names Editor program (provided on CD) and a thumb drive (not provided) to make changes.

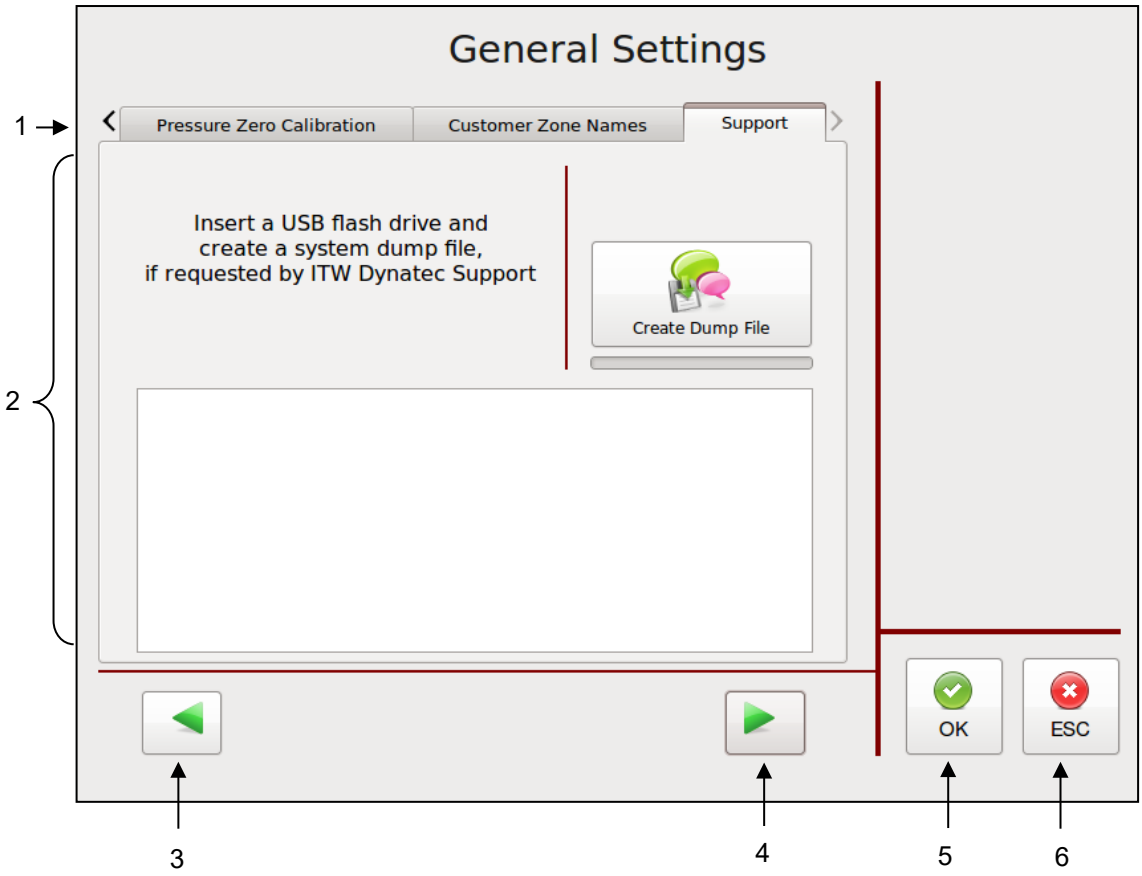


Item	Description
1	**Parameter Selection tabs** The Customer Zone Names tab has been selected.
2	**Customer Zone Names** If activated, you can Load or Erase Zone Names by pressing the appropriate button. With the Customer Zone Names feature, the user may personalize the names of the temperature zones with names that are more descriptive for his application. A CD with the Customer Zone Names Editor program is supplied with your unit. The program allows the character sets of many different languages. To utilize this feature: 1. Install the program from the CD into your computer. 2. Write your personalized zone names in this program. 3. Load your personalized program onto a thumb drive. 4. Insert the thumb drive into the V6 touch panel. 5. Load the new names into the controller by pressing “Load Zone Names” on the Customer Zone Names screen (shown above). 6. Activate the names by pressing “Activate Customer Zone Names”. Later you may deactivate (or re-activate) the names by pressing “Activate Customer Zone Names” again. When personalized names are deactivated, the ITW Dynatec default zones names become active. You may also press Erase Zone Names to delete your loaded zone names and you may load a new group of names utilizing the Customer Zone Names Editor program again.

Item	*Description*
3	**Result** A message will confirm if the names were successfully loaded, activated or deactivated, or if there was an error in loading the names.
4	Press the left-pointing arrow to go to the previous General Settings screen.
5	Press the right-pointing arrow to go to the next General Settings screen.
6	Press the OK button to confirm your entered values and return to the previous screen.
7	Press the ESC button to discard any non-confirmed values and return to the previous screen.

6.11.5.7 Support

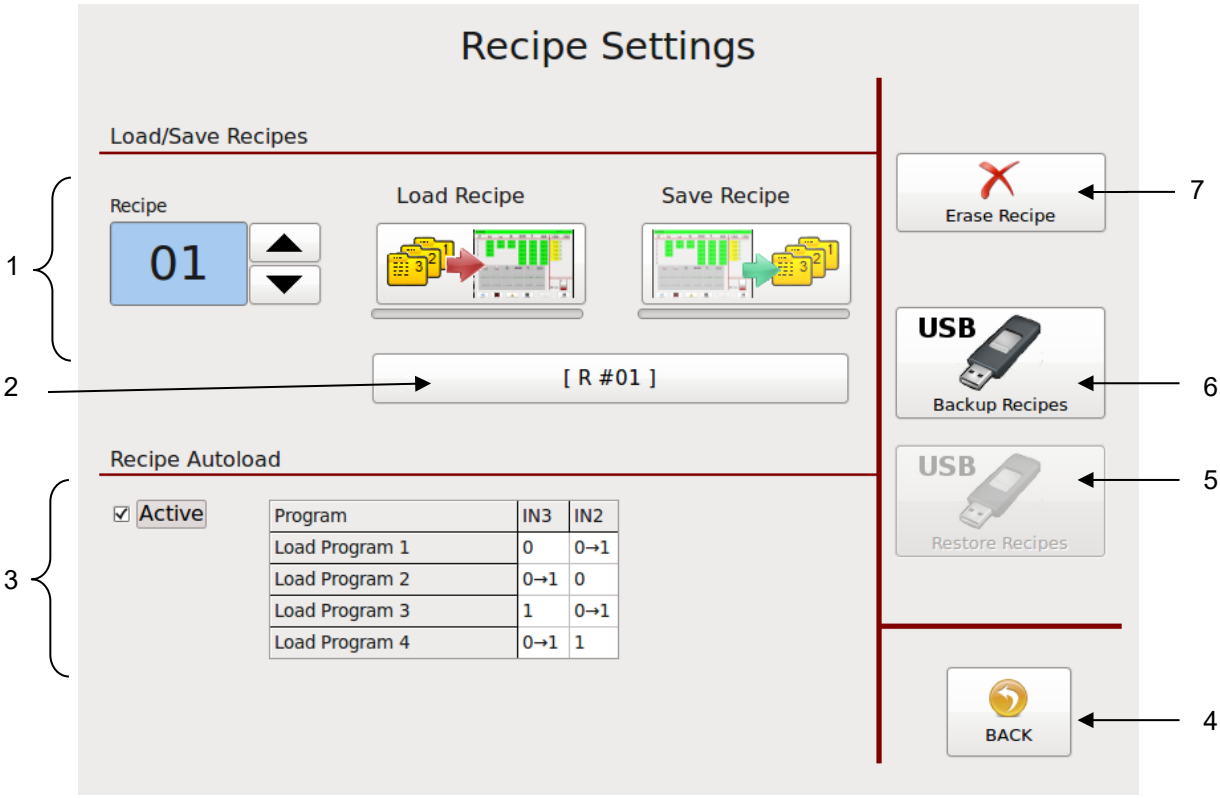
- To go to this screen, press the General Settings button on the Settings Screen.
- Use the Customer Zone Names Editor program (provided on CD) and a thumb drive (not provided) to make changes.



Item	Description
1	**Parameter Selection tabs** The Support tab has been selected.
2	If requested by ITW Dynatec Support you can insert USB Flash Drive to create a system dump file. This file can be sent to ITW Dynatec for offline diagnostics.
3	Press the left-pointing arrow to go to the previous General Settings screen.
4	Press the right-pointing arrow to go to the next General Settings screen.
5	Press the OK button to confirm your entered values and return to the previous screen.
6	Press the ESC button to discard any non-confirmed values and return to the previous screen.

6.11.6 Recipes Screen

- To go to this screen, press the Recipes button on the Settings Screen.
- This screen allows you to create recipes (or “programs”). A recipe is a set of temperature set points and parameters which the user has programmed and stored in the controller for future use. Up to ten recipes may be stored in the V6 controller.

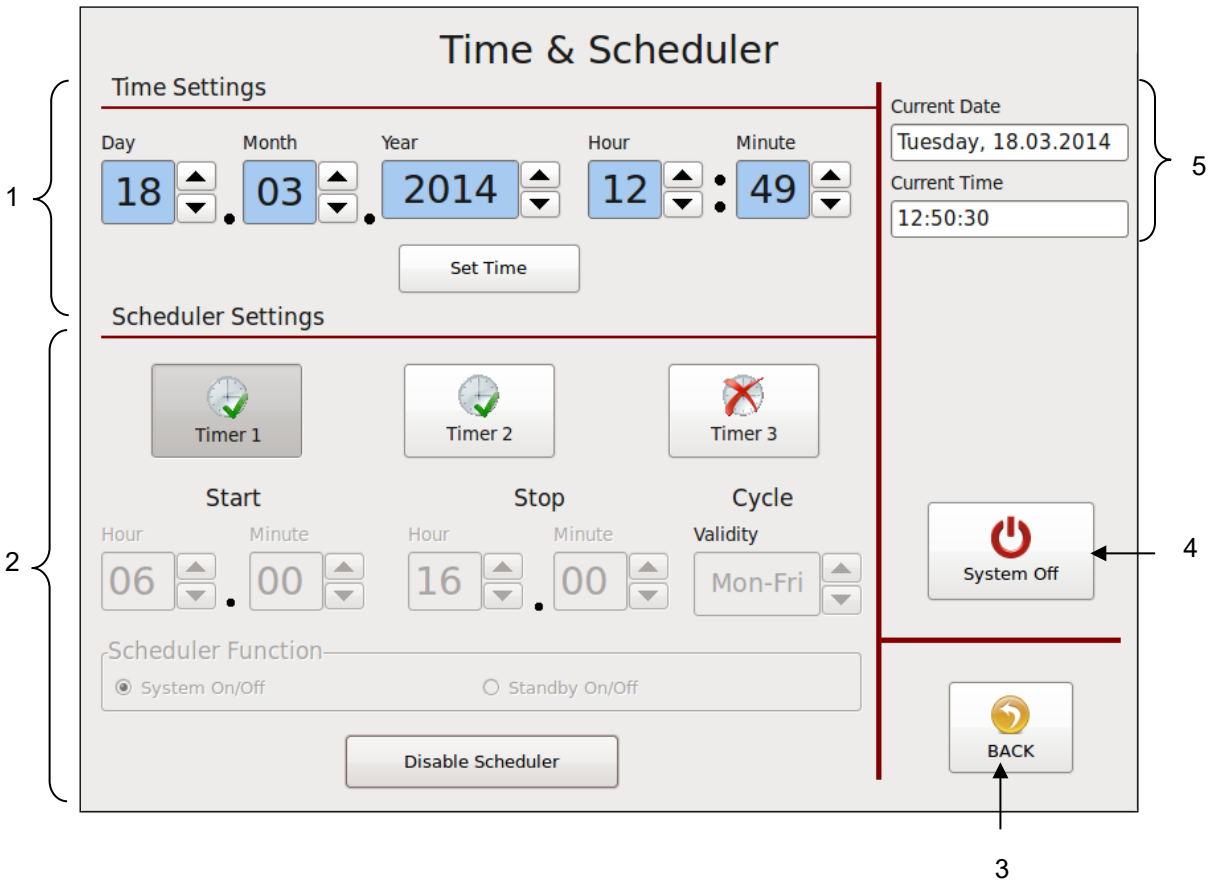


Item	Description
1	**To Create and Save a Recipe:** 1. Program the controller as you wish it to be setup for a recipe. Program the following parameters: temperature settings, zone On/Off settings, motor mode and speed. 2. Using the up and down arrows, select a number to assign to your recipe. 3. Press “Save Recipe”  button. The recipe will be saved. **To Load a Saved Recipe:** 1. Using the up and down arrows, select a recipe number. 2. Press the “Load Recipe”  button. The recipe will be loaded and the saved parameters will be set.
2	**Recipe Name** Touch the input box and an Alphabetic Entry Keypad will appear. Enter your desired name and confirm by pressing OK.
3	**Recipe Autoload** This function may be activated or deactivated by pressing the Active button. If activated, up to four recipes (always the first four saved recipes) can be loaded individually and automatically by addressing the digital inputs IN3 and IN2 on the Controller-Module via a parent machine controller, as indicated on the table shown above.

Item	*Description*
4	**BACK Button** Press to return to the previous screen.
5	**Restore Recipes** This button is visible only if USB Flash Drive is inserted into the Touch Panel. Press this button to restore recipe collection from USB Flash Drive into the Touch Panel.
6	**Backup Recipes** This button is visible only if USB Flash Drive is inserted into the Touch Panel. Press this button to save recipe collection from Touch Panel to the USB Flash Drive.
7	**Erase Recipe** 1. Using the up and down arrows, select the number of the recipe you wish to erase. 2. Press Erase Recipe to delete the recipe from the controller/ Touch Panel.

6.11.7 Time & Scheduler Screen

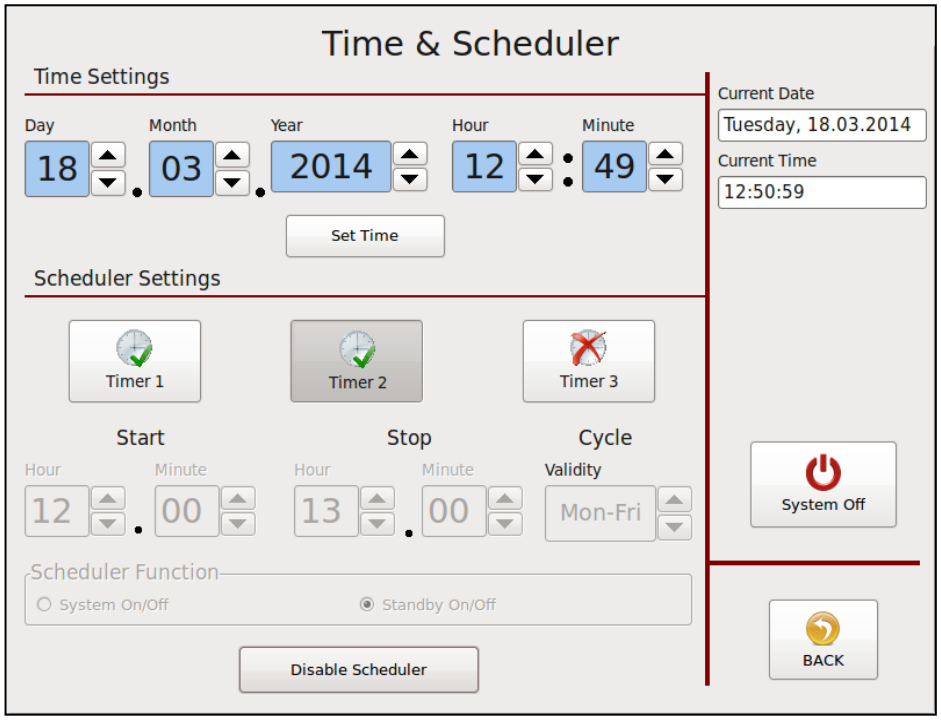
- To go to this screen, press the Time & Scheduler button on the Settings Screen.
- This screen allows you to set the current date and time, and program the scheduler.



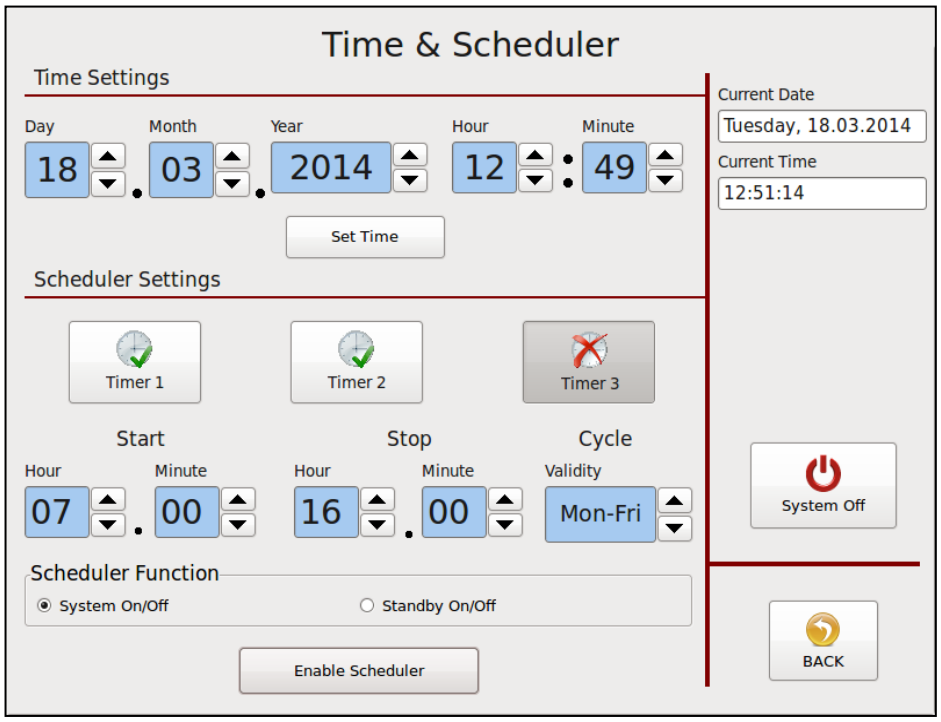
Item	Description
1	**Time & Date Settings** The Time and Date are set with the buttons across the top of the screen. Using the up and down arrows, choose the current Day, Month, Year, Hour and Minute. To confirm these values, press Set Time. Afterwards, the current date and time will be displayed at right (item #5).
2	**Scheduler Settings** The controller's scheduler will automatically turn On the unit at the programmed start time and turn it Off at the programmed stop time on the programmed days (cycle). Up to three scheduler timers may be programmed either for System On/Off or for Standby On/Off. Each scheduler timer is programmed with a start time, a stop time and a cycle. Three cycles are available: Monday thru Friday, Saturday & Sunday or Sunday thru Saturday (i.e., every day). **For example:** The display illustrated above shows Timer 1 programmed and activated. It is programmed for System On/Off with a Start time of 06:00, a Stop time of 16:00 and a Cycle of Mon-Fri.

Item	Description
2	**Programming** • Select a timer for programming by pressing Timer 1, Timer 2 or Timer 3. • Select either System On/Off or Standby On/Off. • Using the up and down arrows, set the start time hour and minute. The scheduler will automatically turn On the unit at this time. • Using the up and down arrows, set the stop time hour and minute. The scheduler will automatically turn Off the unit at this time. • Using the up and down arrows, set the cycle. The scheduler will automatically turn the unit On and Off on these days. • By pressing the Enable Scheduler button, the programmed parameters will be confirmed and the selected timer is activated. To change a timer program, first select the desired timer. Then press the Disable Scheduler button. Now the selected timer can be re-programmed with new parameters as described above. The „clock“  icon appears in the status line on main screen if a timer is activated and disappears if the timer is deactivated.
3	**BACK Button** Press to return to the previous screen.
4	**Turn System Off** Press System Off to turn the system Off. Refer to "Control switch On/Off and Standby".
5	**Current Date & Time** Display of the current date and time as programmed into the controller.

Example:
The display on the right shows Timer 2 programmed and activated for Standby On/Off with a Start time of 12:00, a Stop time of 13:00 and a Cycle of Mon-Fri.

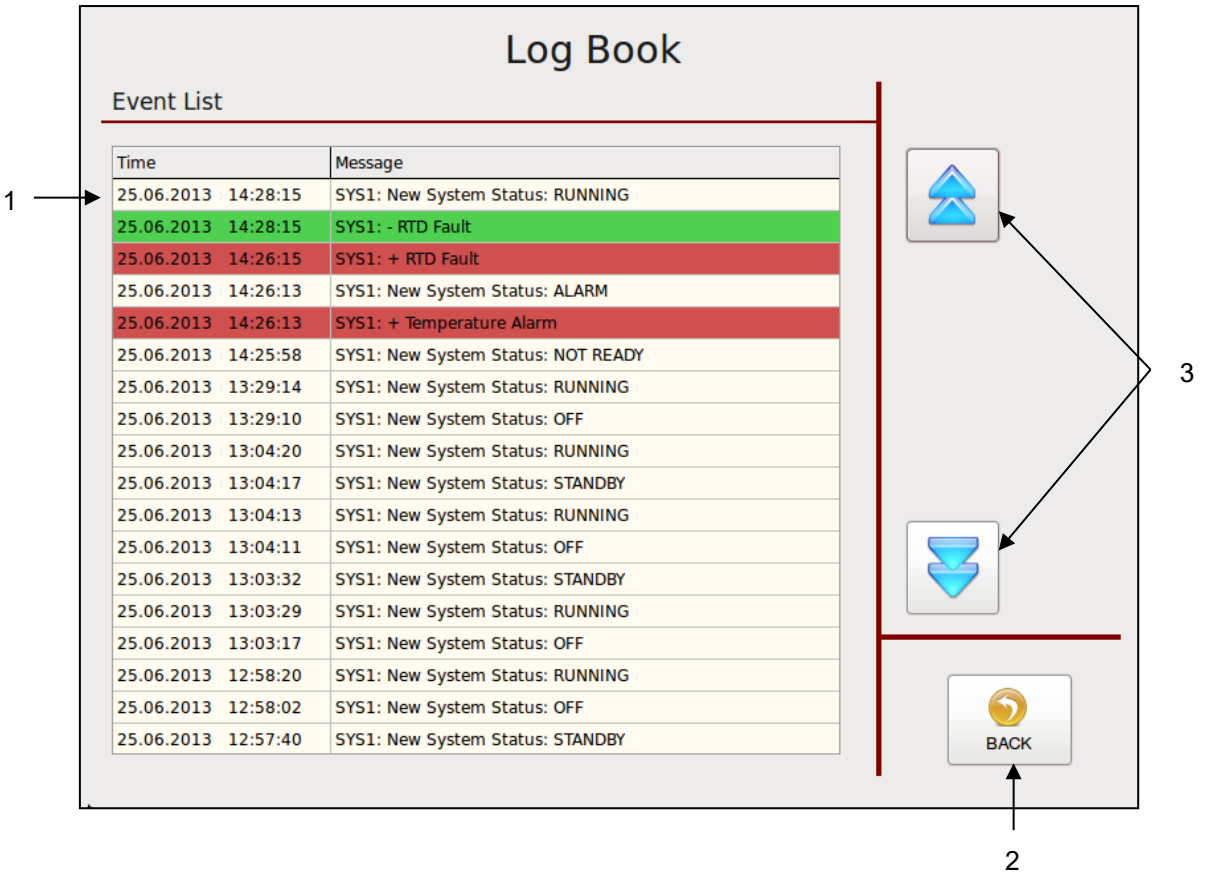


Example:
The display on the right shows that Timer 3 is not programmed and not activated:



6.11.8 Log Book Screen

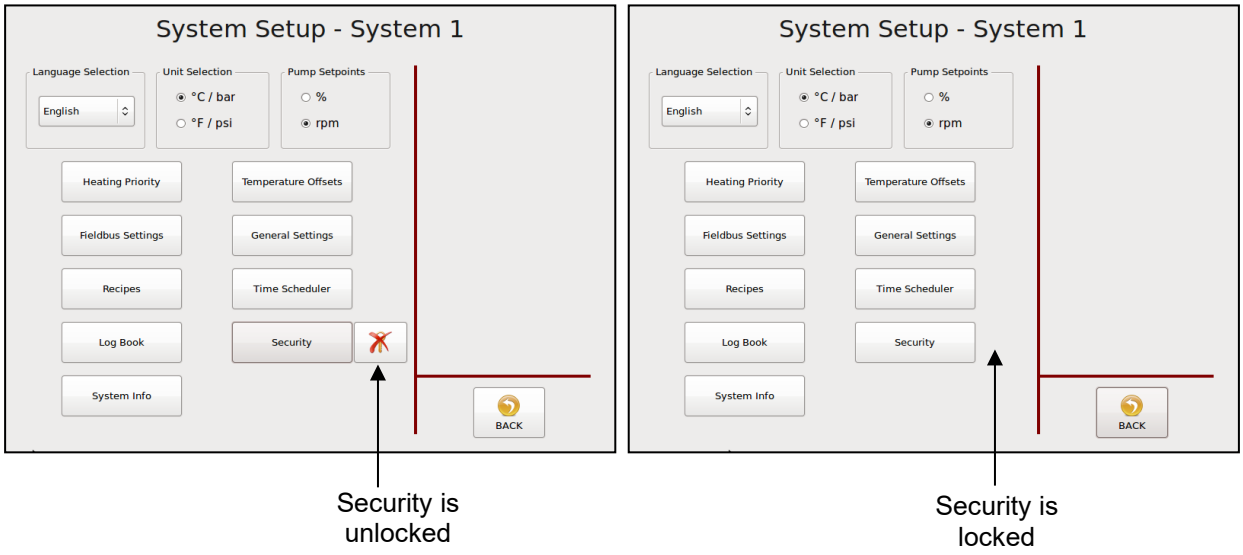
- To go to this screen, press the Log Book button on the Settings Screen.
- The Log Book provides a read-only history of the last 100 (maximum) controller faults and events.
- If several systems are controlled by the HMI, all events will be listed here.



Item	*Description*
1	The most recent event is recorded at the top of the Event List. • **Examples of events:** System Status OFF, READY, RUNNING, STANDBY, NOT READY, Recipe loaded. • **Examples of controller faults:** Temperature sensor Fault, Temperature Alarm, Minimum Level, Drive Failure, Parameter CRC Error, Over-temperature, Communication error. See point "Faults, Alarms".
2	**BACK Button** Press to return to the previous screen.
3	**Scroll Buttons** Press the arrow buttons to scroll up and down through the Event List.

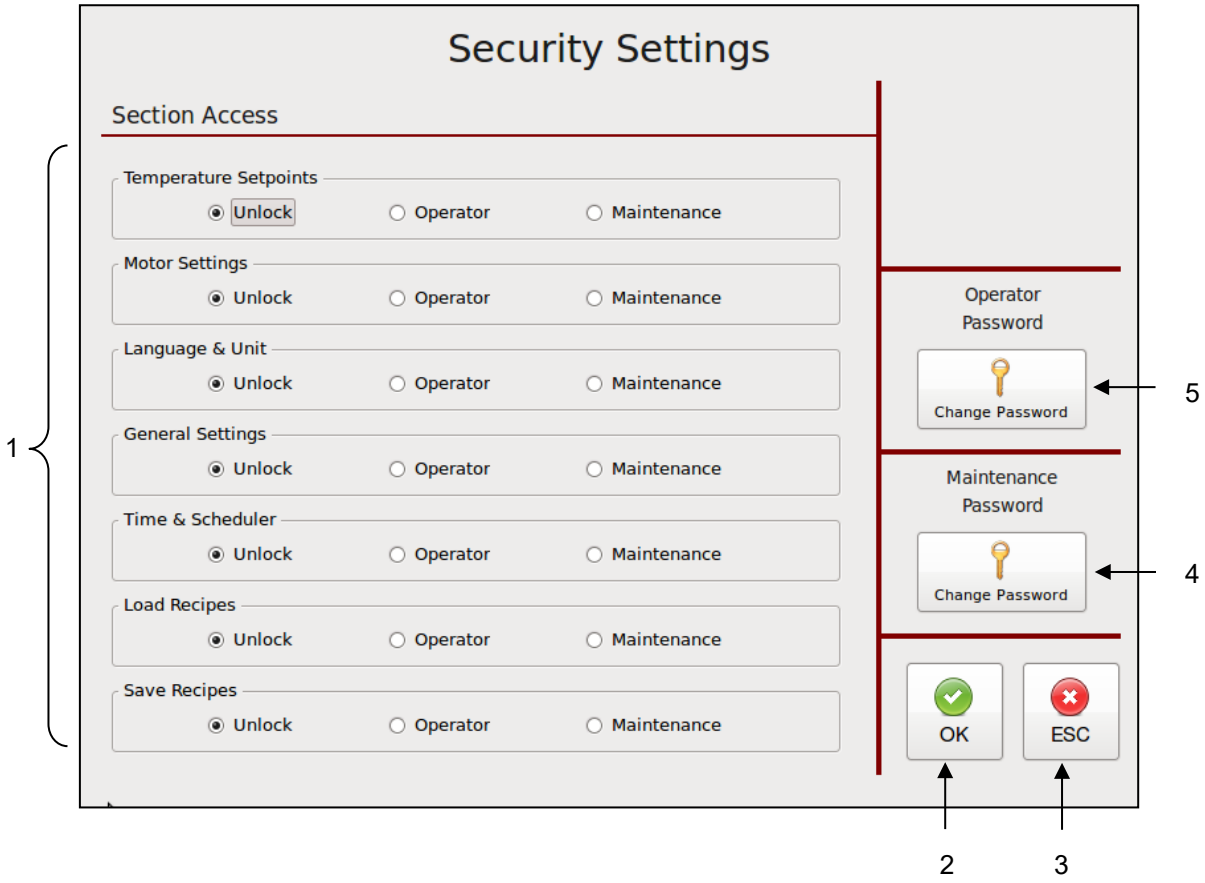
6.11.9 Security Screen

- To go to this screen, press the Security button on the Settings Screen.
- This screen allows you to set securities (with password) for access and for changing parameters.



Item	Description
	• **Security unlocked** = access to the Security Settings is unlocked and settings may be changed by all users. The crossed-out Key icon, shown above, means Security is unlocked. After pressing the Key button, it will disappear and the Security Settings will be locked. • **Security locked** = access to the Security Settings is locked and settings may only be changed by entering a password.

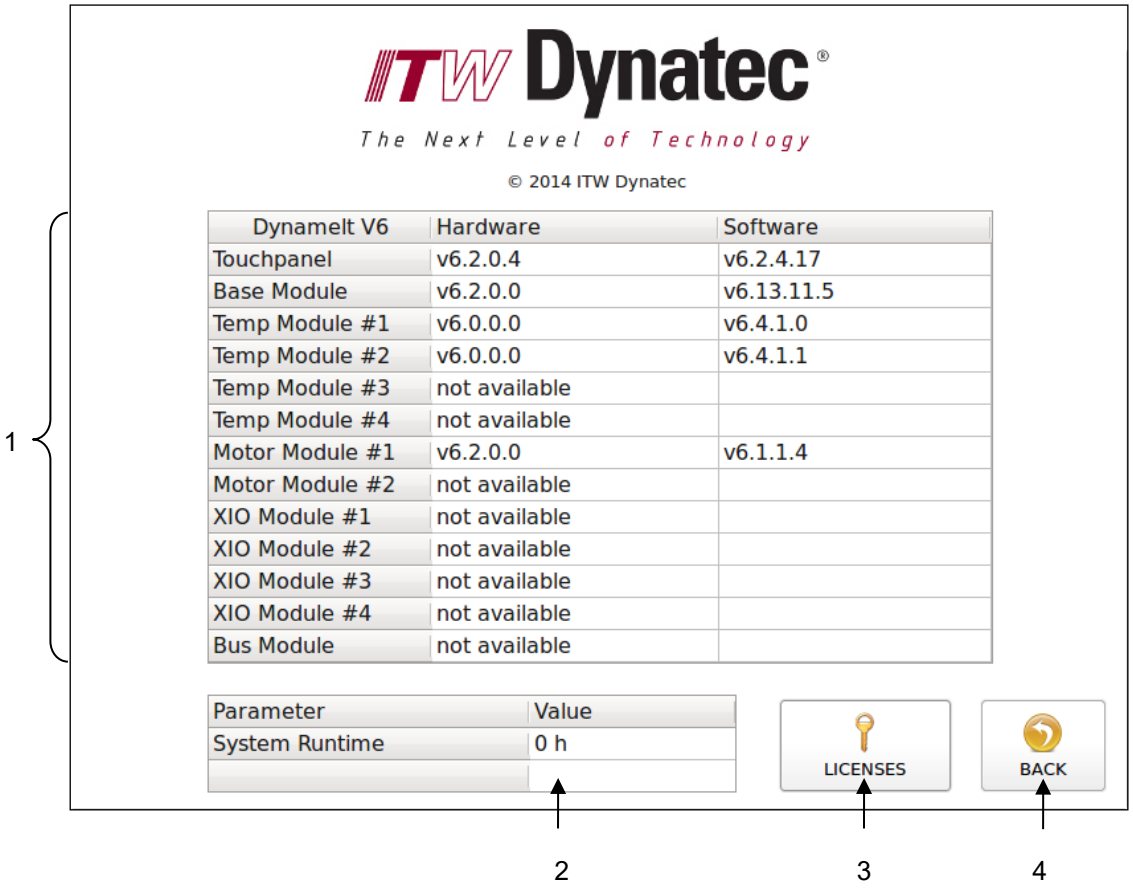
Continued on next page.



Item	*Description*
1	**Section Access** Press the buttons to select access to each parameter as follows: • **Unlock** = the parameter may be changed by all users. • **Operator** = the parameter may be changed by Operator personnel only, by using an Operator password. • **Maintenance** = the parameter may be changed by Maintenance personnel only, by using a Maintenance password.
2	Press the OK button to confirm your entered values and return to the previous screen.
3	Press the ESC button to discard any non-confirmed values and return to the previous screen.
4	**Change Maintenance Password Button** Touch the Change Password button and a numeric entry keypad will appear. Enter desired numeric password (at least one digit). Press OK to confirm.
5	**Change Operator Password Button** Touch the Change Password button and a numeric entry keypad will appear. Enter desired numeric password (at least one digit). Press OK to confirm.

6.11.10 System Info Screen

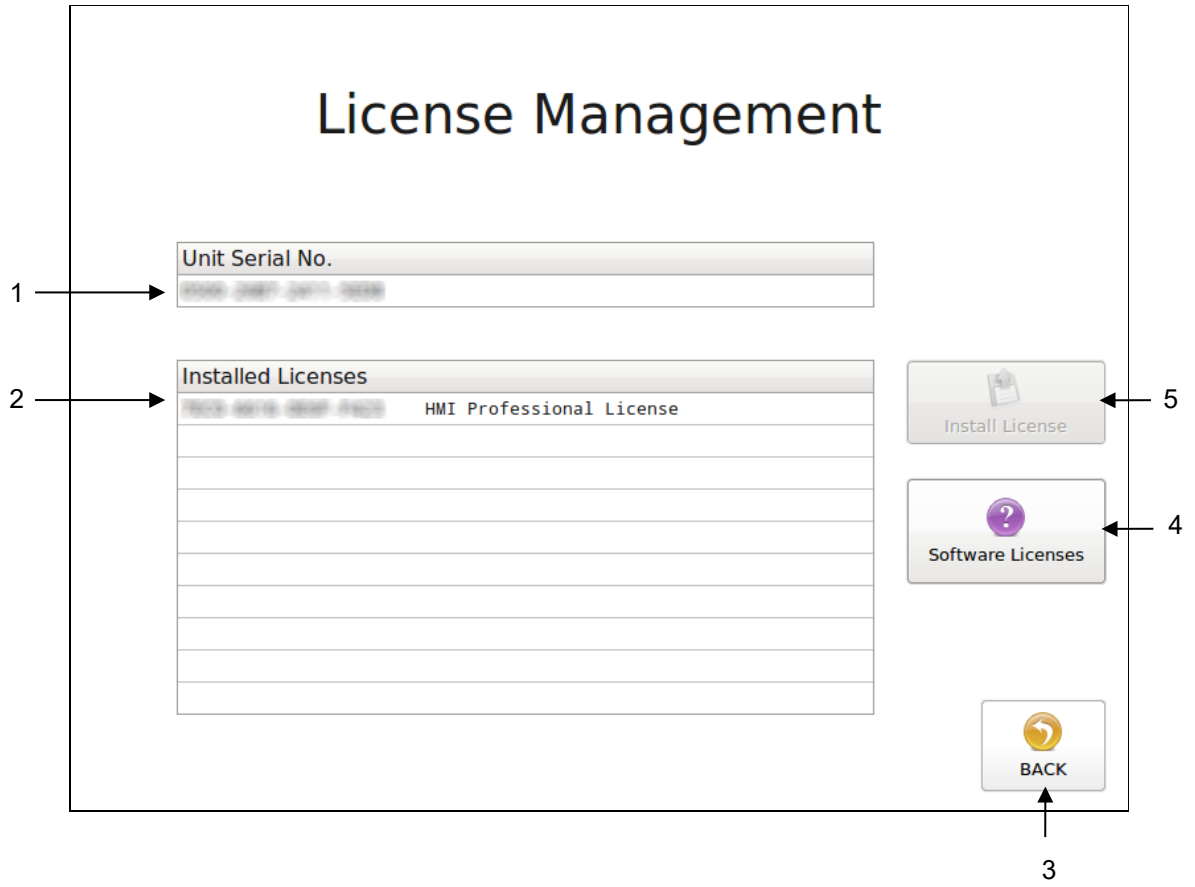
- To go to this screen, press the System Info button on the Settings Screen.
- This screen displays information about the V6 controller and its modules. The screen is read-only.



Item	*Description*
1	Information about the controller and its modules is displayed. The illustration above shows an example only.
2	The real System Runtime respectively pump runtime is displayed. The runtime of each day will be added.
3	**Licenses Button** Press to go to the License Management screen.
4	**BACK Button** Press to return to the previous screen.

6.11.10.1 License Management Screen

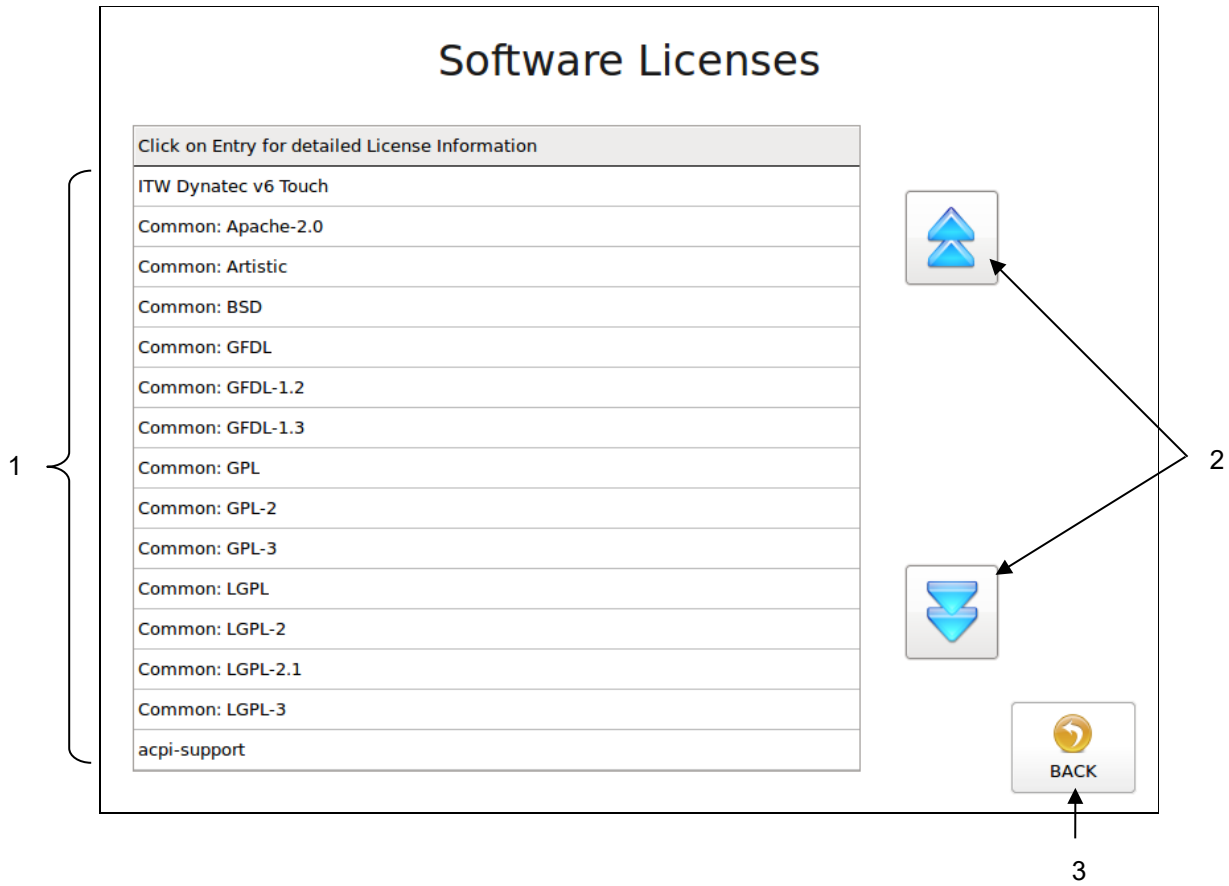
- To go to this screen, press the Licenses button on the System Info Screen.
- To purchase licenses with additional features, please contact ITW Dynatec Customer Service and provide your unit's serial number (provided on this screen). You will receive an USB Flash Drive with the license.



Item	*Description*
1	**Unit Serial No.** The serial number of your unit is displayed.
2	**Installed Licenses** The licenses installed on this unit are displayed (e. g. HMI Professional License). Note: The HMI Basic License with basic functions is installed on all units. The following licenses are available: • HMI Advanced License: activates additional features. • HMI Professional License: activates all available features. • HMI Feature License ARC: activates the Automatic Ramp Compensation (ARC) feature. HMI Feature License Multi-System: activates the Multi-System feature.
3	**BACK Button** Press to return to the previous screen.
4	**Software Licenses Button** Press to see the used Open Source Licenses.
5	**Install License Button** To install a new license: After connecting the USB Flash Drive to your controller/ touch panel, press the Install License button on this screen to install the new license. After installation, the new license will be displayed on the Installed Licenses list. Afterwards, remove the flash drive from the controller.

6.11.10.2 Software Licenses

➢ To go to this screen, press the Software Licenses button on the License Management Screen.



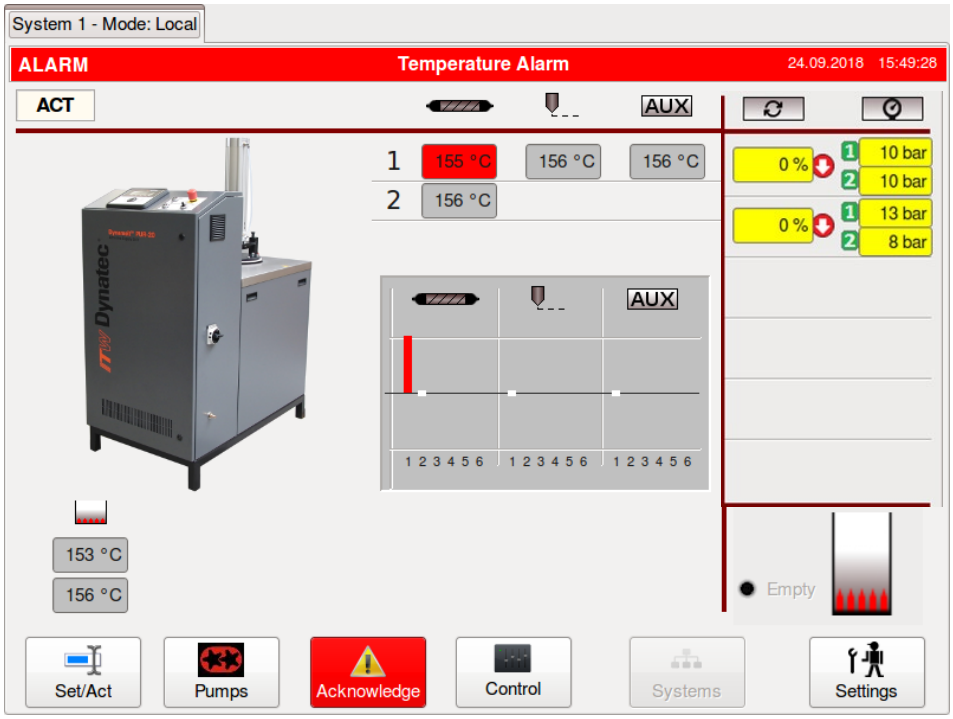
Item	*Description*
1	**Display Software Licenses** Click on Entry for detailed license information.
2	**Scroll Buttons** Press the arrow buttons to scroll up and down through licenses.
3	**BACK Button** Press to return to the previous screen.

6.12 Acknowledge Button

➢ The Acknowledge Button is on the Main Screen & Temperature Zones Set Screen.

1: no faults or alarms indicated

Fault/ alarm Description in Status Line



1: Fault indicated

Item	Description
1	**Acknowledge Button** If a fault/ alarm is indicated, the affected temperature zone and the Acknowledge button will be highlighted red. When this occurs, follow these steps: • Correct and clear the faults/ alarms. • Press the Acknowledge button in order to switch On the main contactor.

6.13 Faults/ Alarms

Among the Faults and Alarms that may be displayed are:

- **Temperature sensor Fault** = a hopper, hose or head sensor has an open circuit.
- **Temperature Alarm** = a temperature zone has exceeded its selected over-temperature setpoint, (which is the setpoint plus the Temperature Alarm Window and Temperature Alarm Hysteresis) or when it is below its selected under-temperature setpoint (which is the setpoint minus the Temperature Alarm Window and the Temperature Alarm Hysteresis).
- **Drive Failure** = a motor drive (frequency converter) has a fault.
- **Minimum Level** = adhesive level has dropped below the level sensor and the hopper is empty.
- **Feedback Failure Motor #** = (optional) speed monitor pump addressed.
- **Overtemperature** = hardware over-temperature indication.
- **Communication Error** = Communication error between the touch panel and controller.
- **Parameter CRC Error** = parameter memory is lost. Call ITW Dynatec Technical Service.
- **Other Faults or Alarms** = Call ITW Dynatec Technical Service.

When an alarm condition occurs, the current display will be interrupted only if a sensor (or motor drive) failure occurs. If more than one alarm condition occurs simultaneously, all alarm conditions will be displayed sequentially.

6.14 Operator Response to Error Indication Alarms

If an alarm occurs during operation, the controller will switch off the internal power to the heaters and an appropriate alarm indication will appear in the status line of the display.

Pressing the Acknowledge button resets the error. If several zones display alarms, each must be acknowledged. The operator must either switch OFF the indicated temperature zone(s) or troubleshoot to correct the problem.

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.

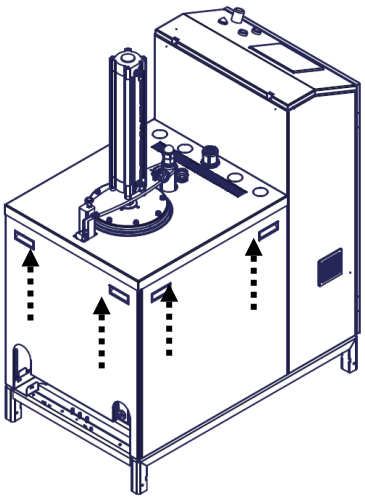
7.1.3 Cleaning Recommendation

- 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.



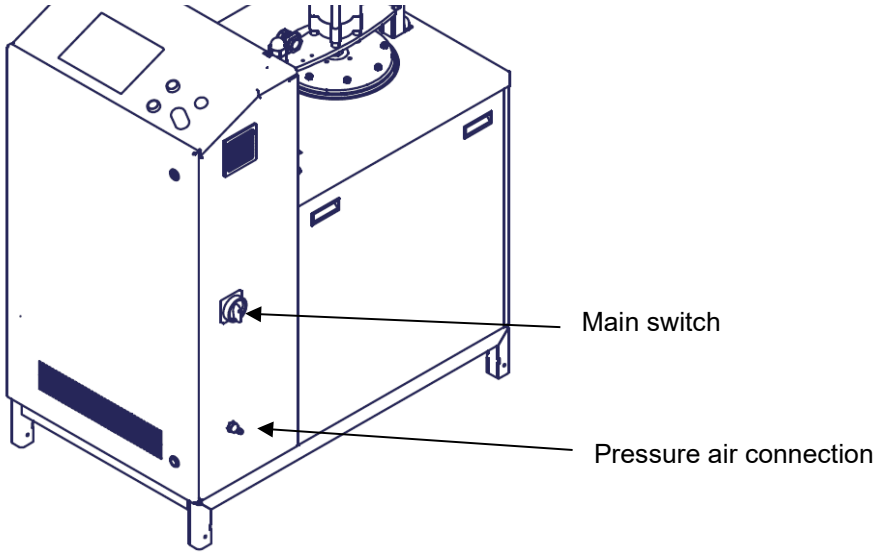
Demount:
- Lift the sidewalls at both grips.
- Pull the wall out of the bottom side of the base frame and pick it downwards.

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.

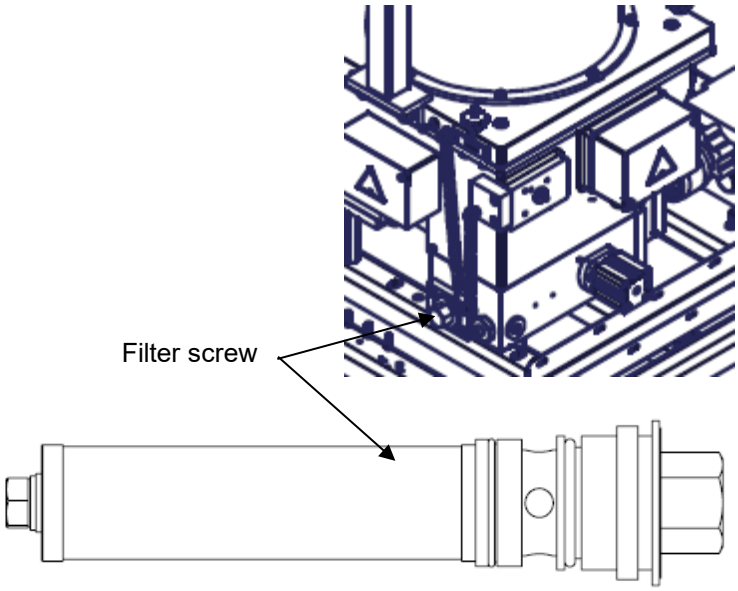


Illustration: Filter screw

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.

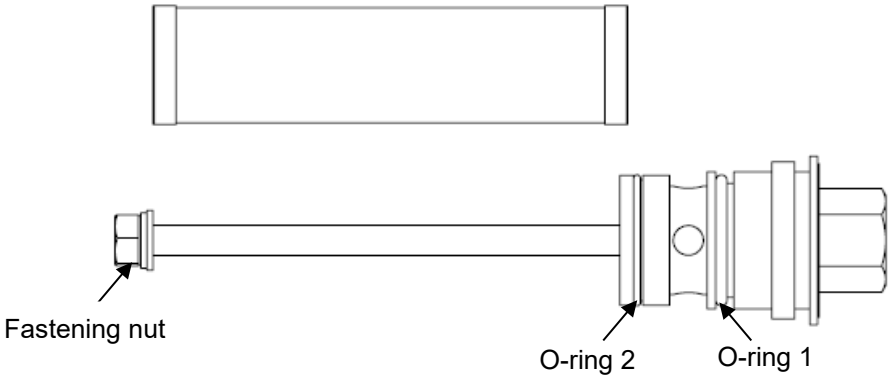


Illustration: Filter screw

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!

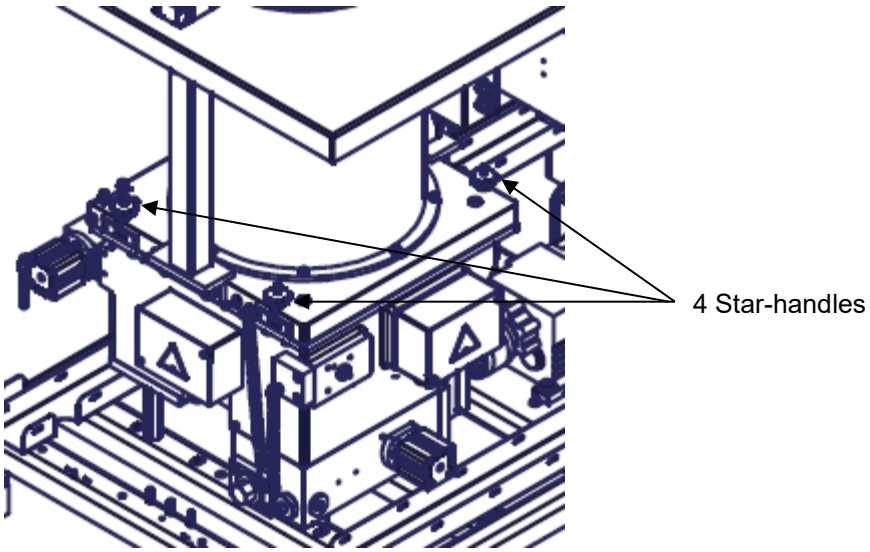


Illustration: Opening the basic tank – loosening the star handles

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.

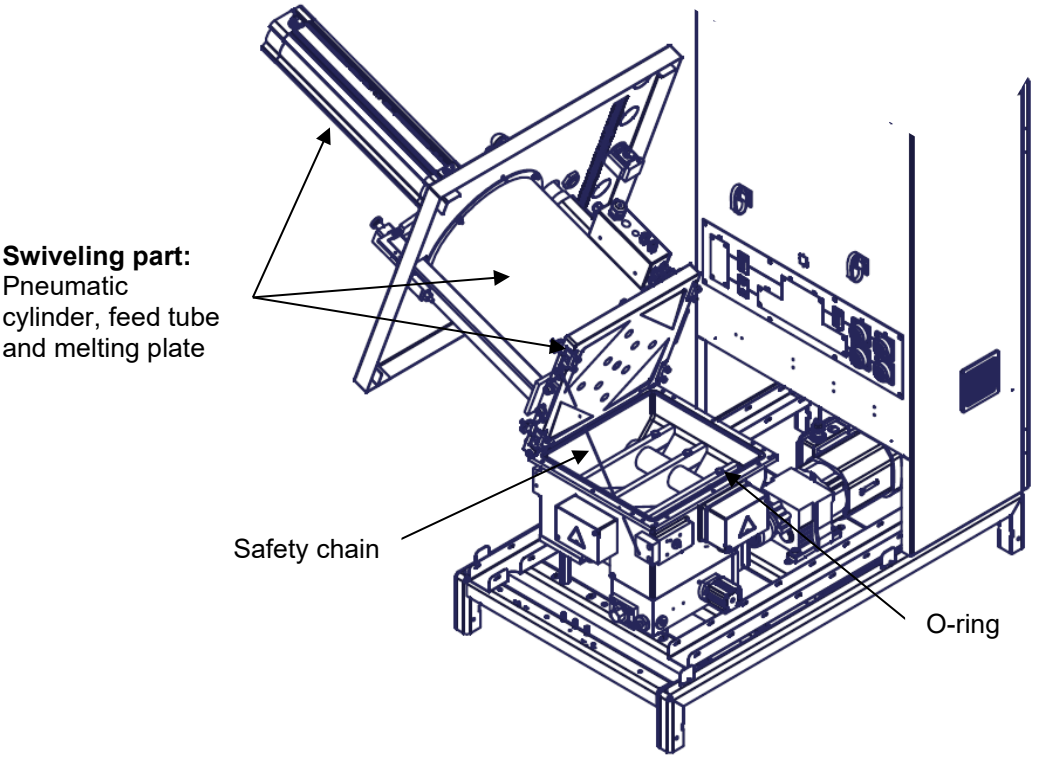


Illustration: Cleaning the basic tank - swiveling part

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 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 applicator and let the pump run until only cleaner comes out of the applicator.
15. Switch off the applicator 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 applicator.
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 applicator. 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 applicator.
17. Connect the air supply again and set the pressure regulator to 6 bar.
18. Start the pumps.
19. Open the applicator and let the pump run until only cleaner comes out of the applicator.
20. Switch off the applicator and stop the pumps.
21. Switch the unit pressureless.
22. Disconnect the hose from the applicator 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 applicator.
36. Let the pumps run as long as only clean adhesive comes out of the applicator.
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.

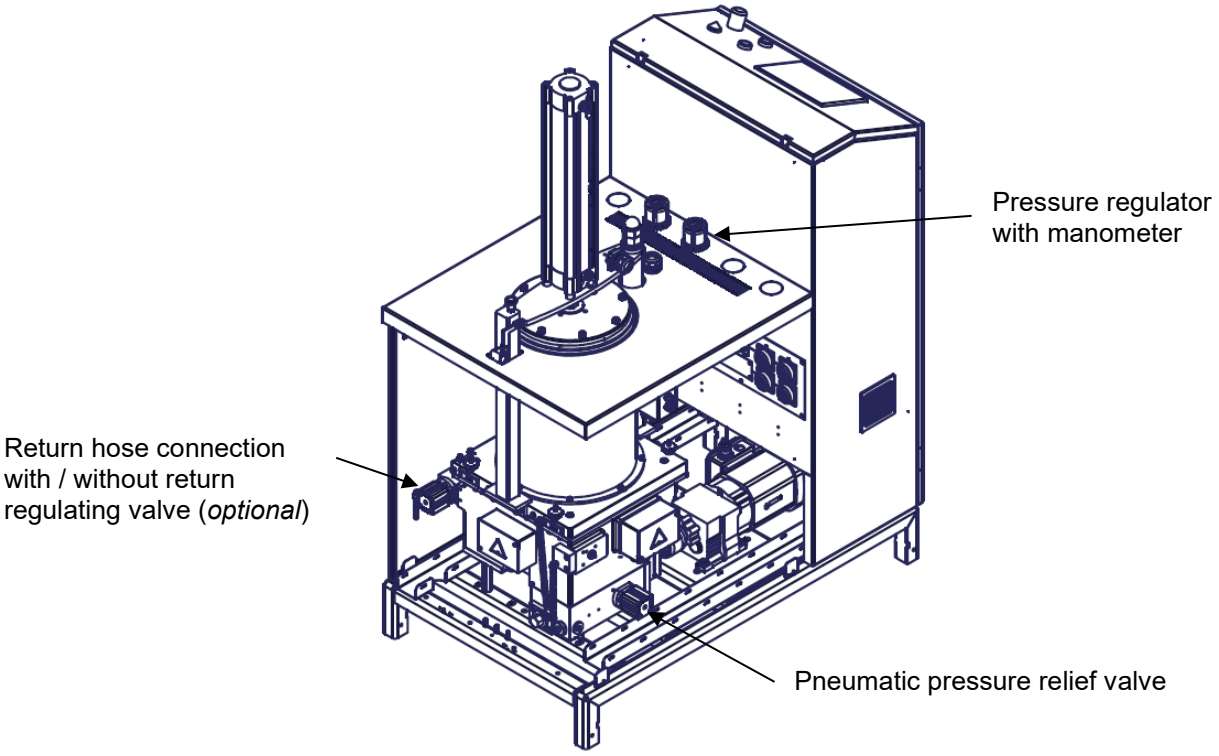
7.8 Replacement of the pneumatic pressure relief valve

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. Eco-Clean). 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.

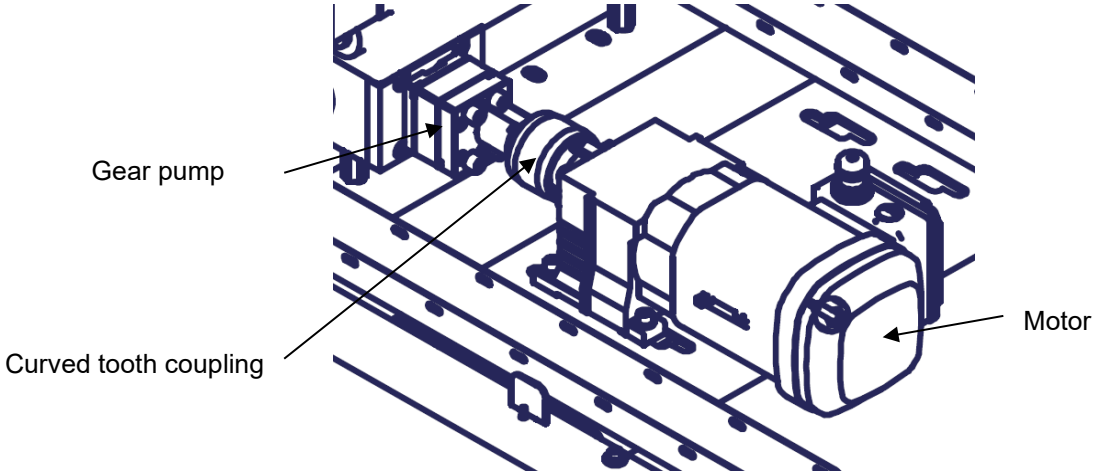


Illustration: Gear pump

Replacement of the gear pump

ADVICE

Before dismounting 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

ADVICE

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.

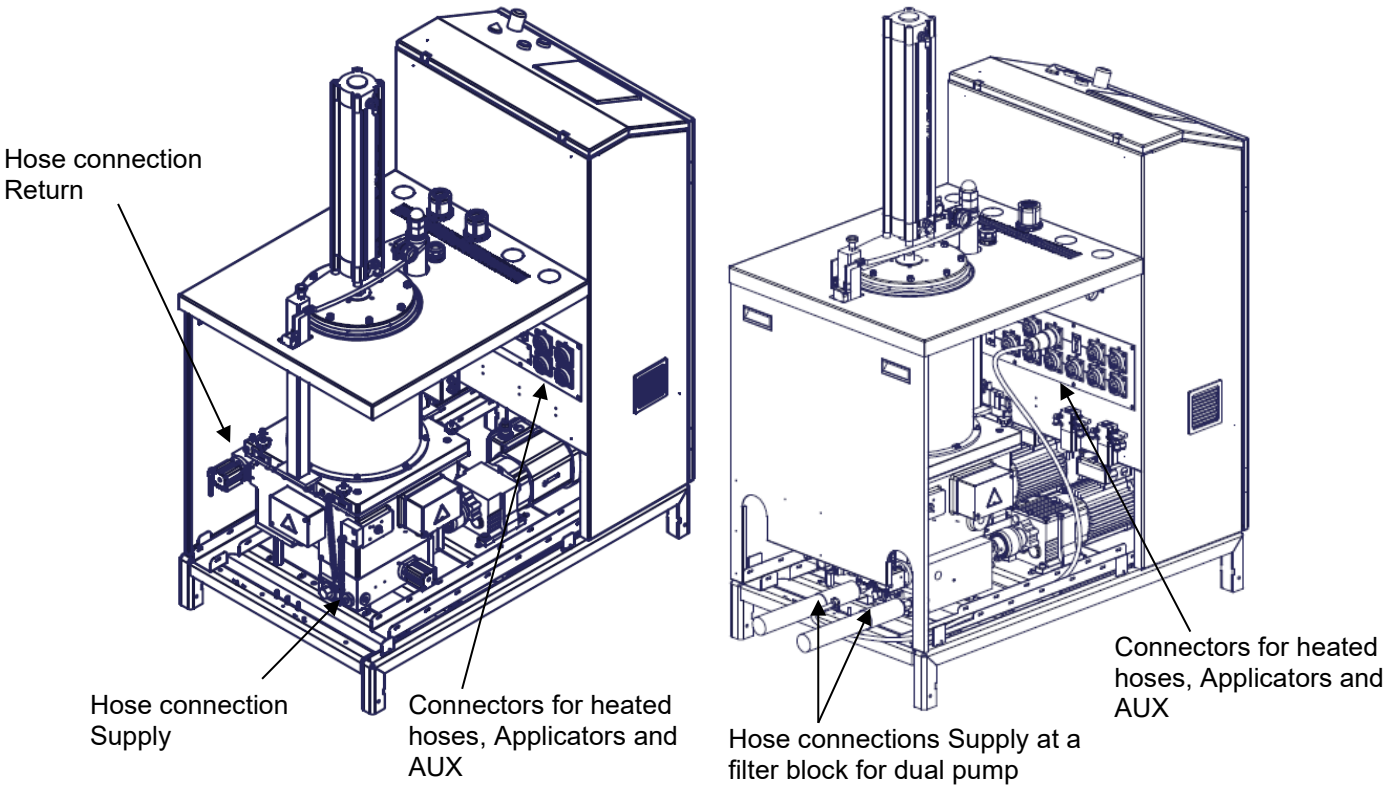


Illustration: Hose connections

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/motor.
12. Screw the hose end on the applicator and connect the cables of the hose and of the applicator.

ADVICE: If the heated hose is a **return hose**, connect it as follows:
- Screw the return hose on the 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.

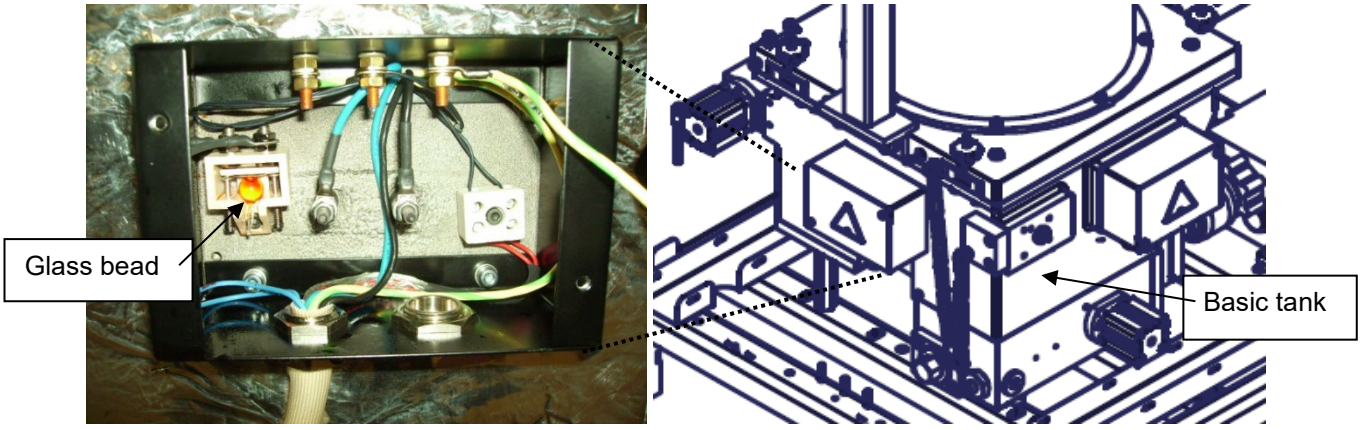
7.12 Over temperature protection, glass bead

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:

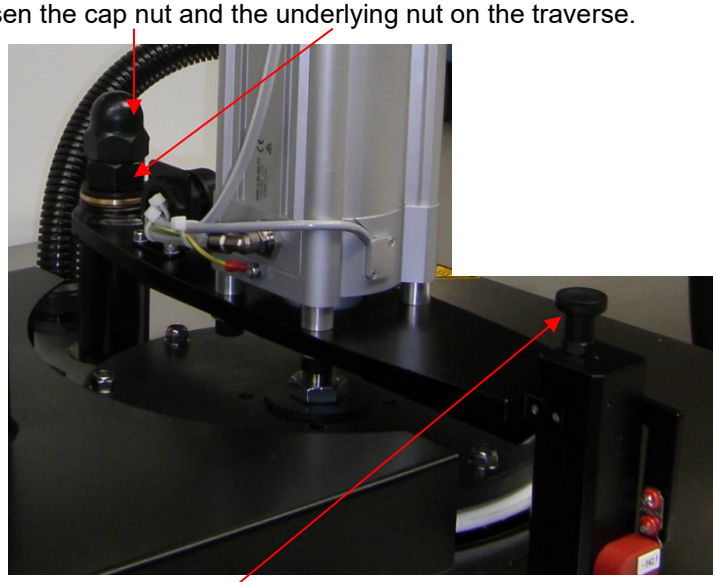
- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in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

7.13 Replacement of the Teflon disc

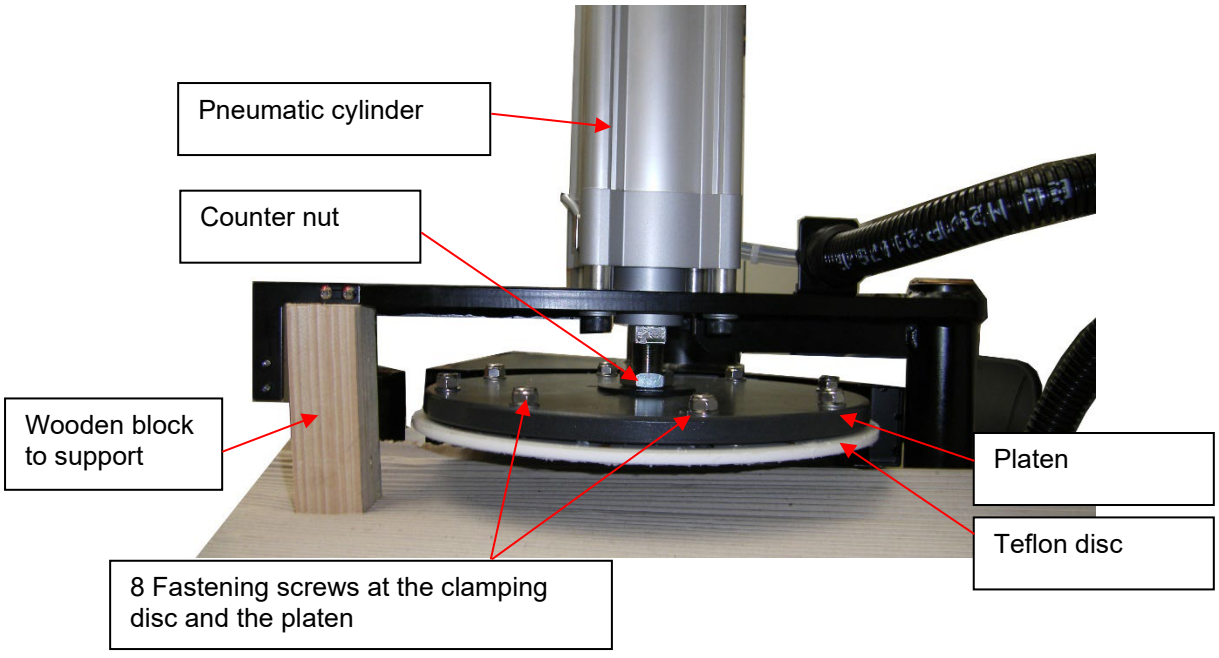
ADVICE

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.



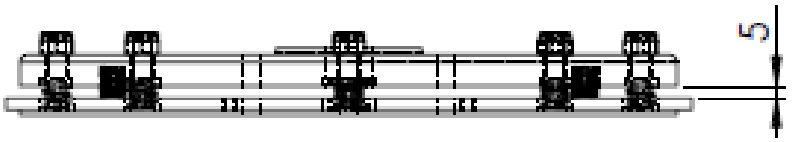
6. Pull up the locking bolt and turn the traverse to the side.
7. Lift the pneumatic cylinder with platen approx. 5cm and support the traverse with a wooden block, so that it is secured against lowering and you can disassemble the platen safely.



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

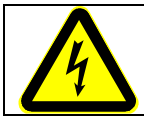
8.1 General Troubleshooting Notes

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 is 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 (16mm²).
	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

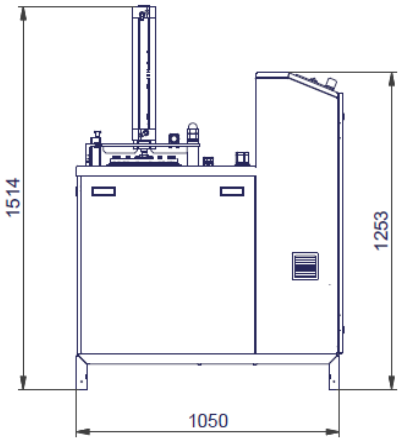
All parts must be periodically inspected and replaced if worn or broken. Failure to do this can affect equipment's operation and can result in personal injury.

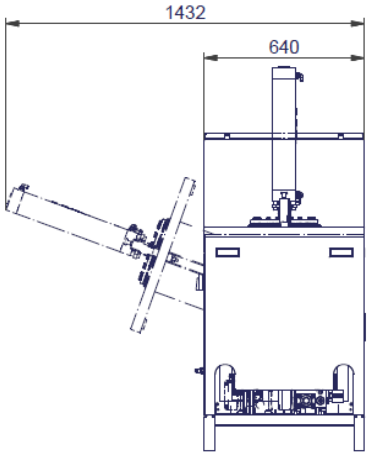
This chapter contains the component illustrations (exploded-view drawings) for each assembly of the Melter. These drawings are useful for finding part numbers as well as for use when maintaining or repairing the equipment.

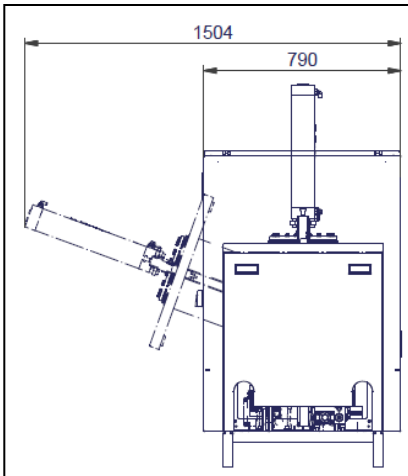
Note: Most common screws, nuts and washers called out in the manual are not for sale and they can be obtained locally at your hardware Store. Specialty fasteners are available by contacting ITW Dynatec's Customer Service.

9.1 Dimensions DYNAMELT™ PUR-20 Bag Melter

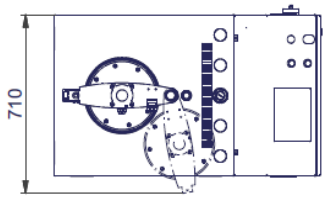
All dimensions in mm.

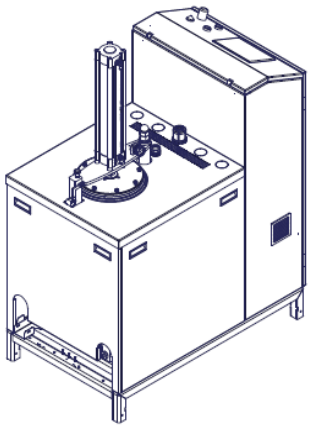






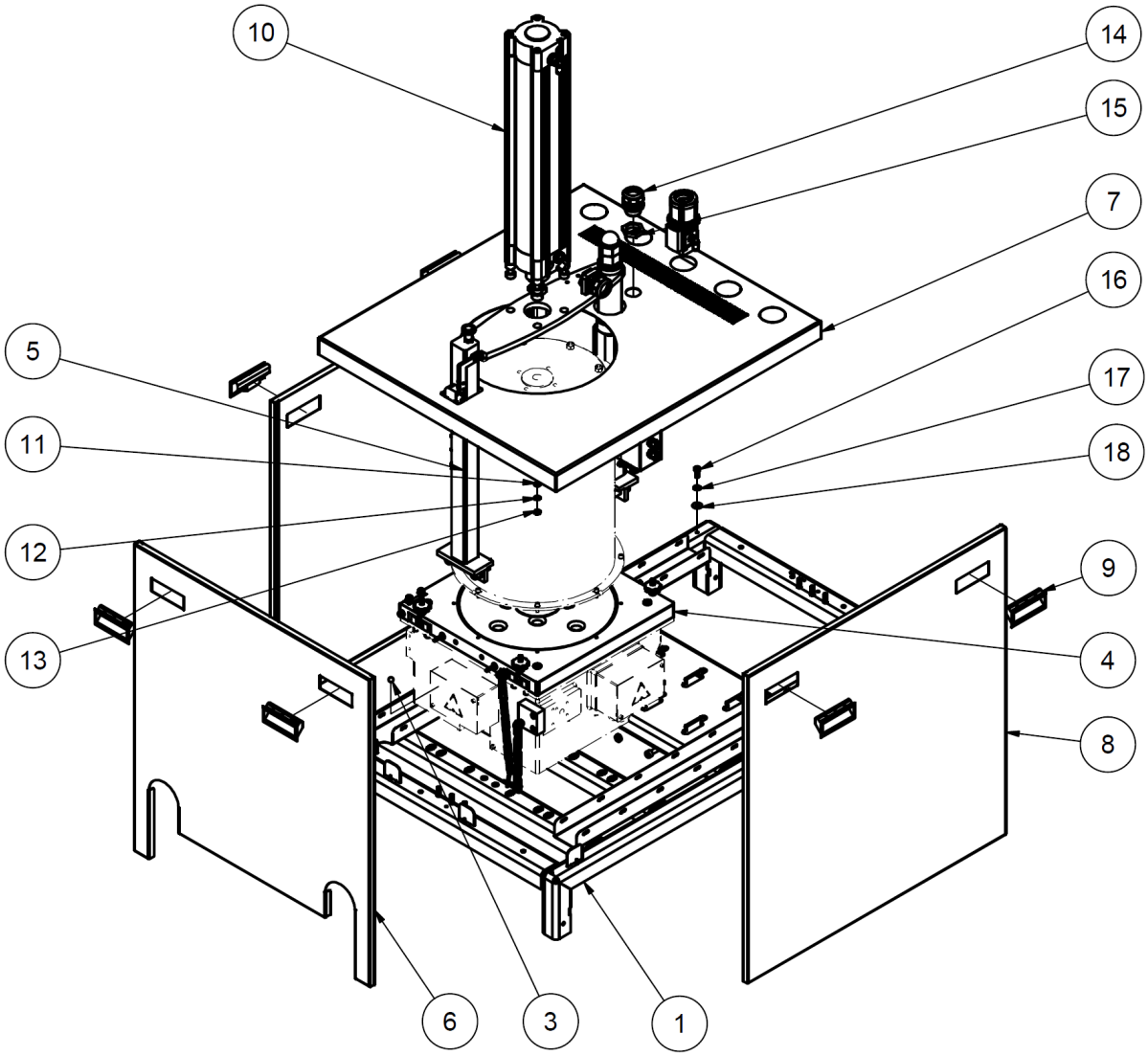
Option: Control cabinet large





9.2 Basic unit, PUR20

- 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



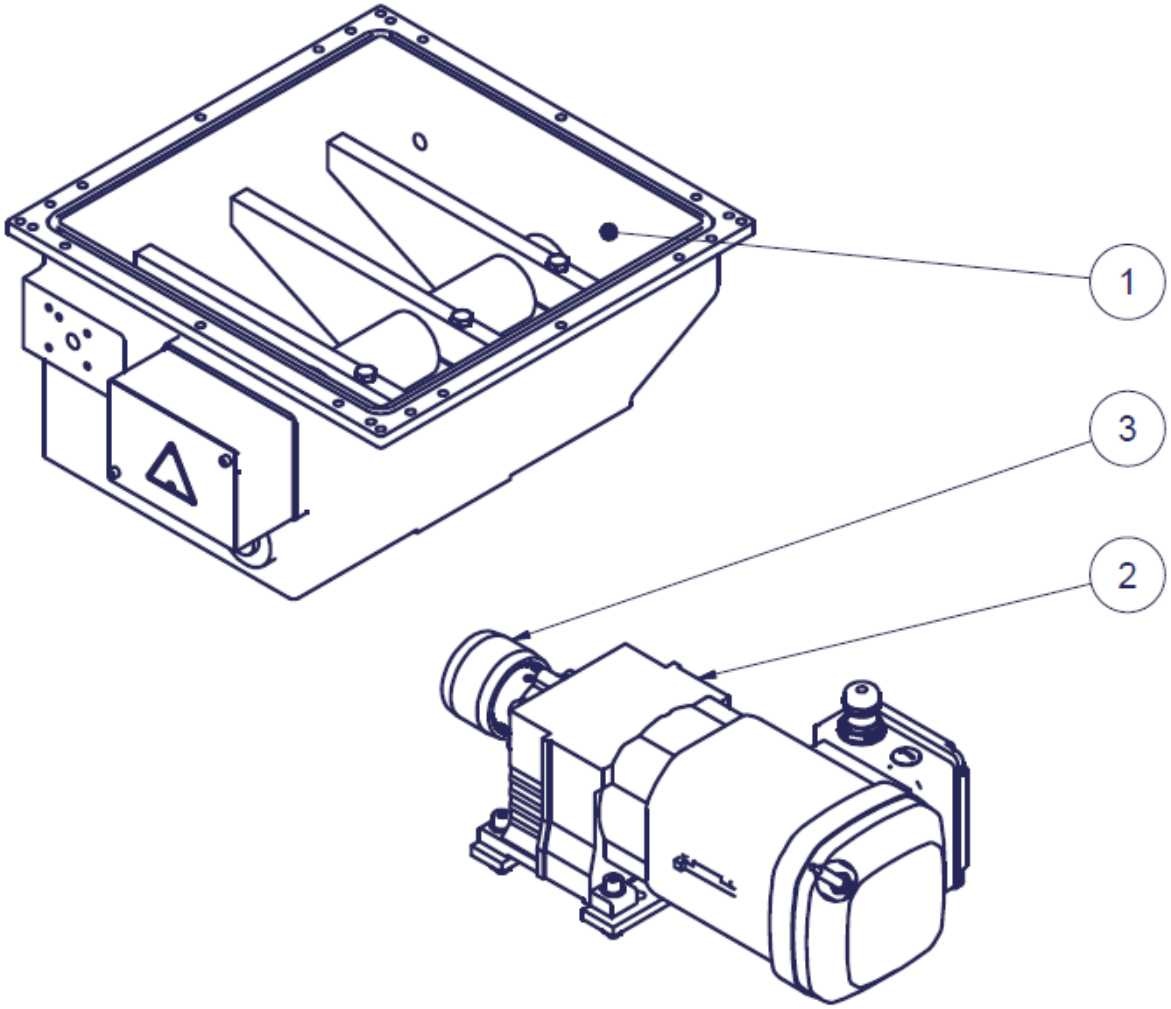
Pos.	Part no.	Description	Quantity
1	I10.00405.101	Base frame	1
3	I05.62190.001	Glass bead 190°C (374°F)	1
4	I13.00132.500 *	Melting plate 27 holes complete	1
5	I13.00129.500 *	Cylinder framing	1
6	I10.00408.100	Front panel BM20	1
	I10.00223.100	Front panel BM20D	1
7	I13.00113.100	Cover	1
8	I10.00413.101	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

9.3 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

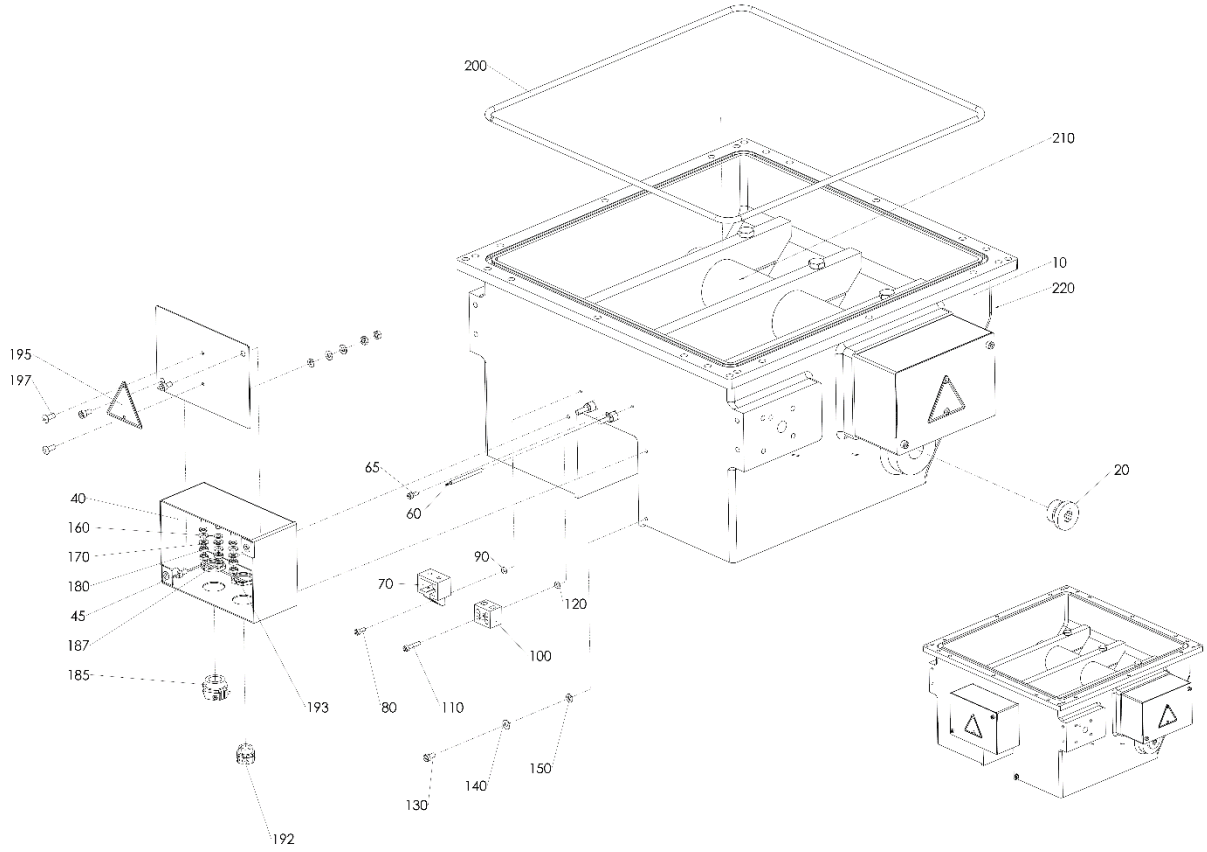


Pos.	Part no.	Description	Quantity
1	I10.00616.500 *	Basic tank 10L complete for 1 pump	1
	I10.00653.500 *	Basic tank 10L complete for 2 pumps	1
2	I10.00546.500 *	Three phase gear motor 0.5 KW with accessory	1
3	I09.20002.004	Coupling sleeve M28	1
4	I95.00005.501 **	Assembly for 1 frequency converter 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.

9.4 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



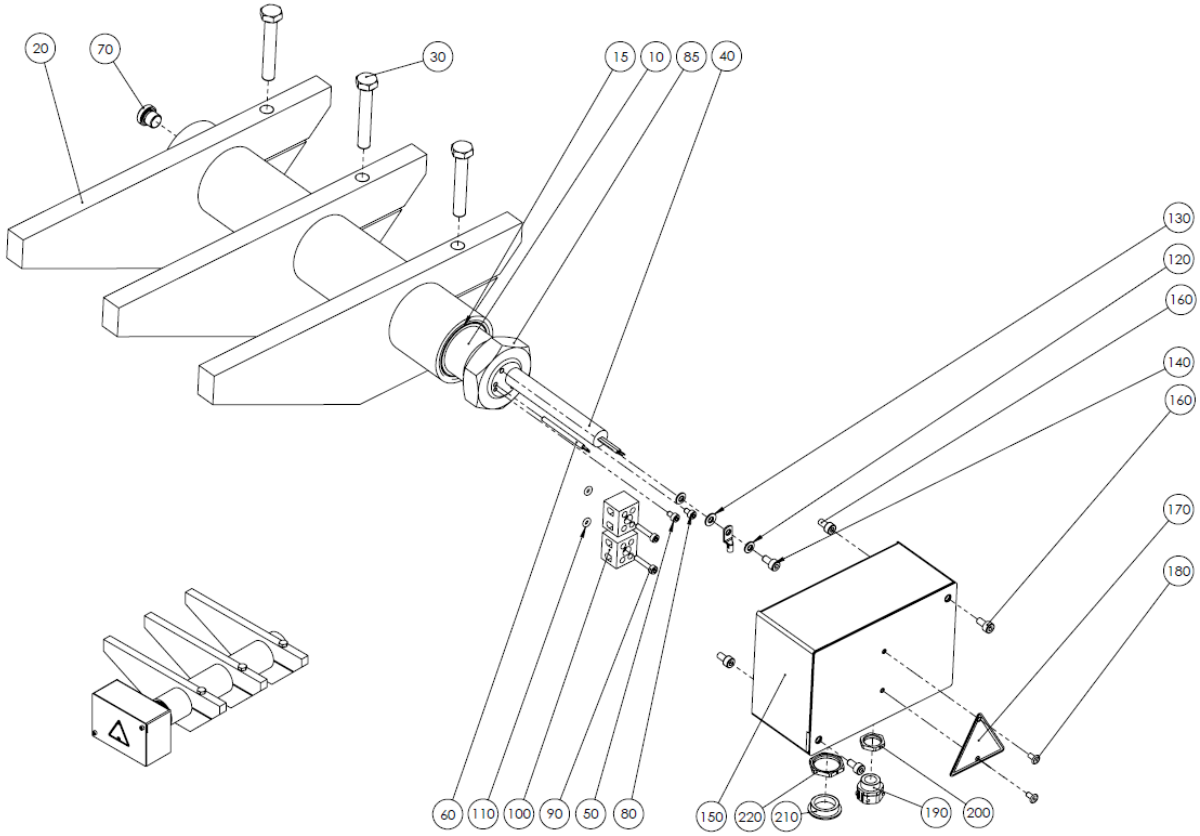
Pos.	Part no.	Description	Quantity
10	I10.00631.500	Basic tank 10 liters for 1 pump, coated	1
	I10.00651.500	Basic tank 10 liters for 2 pumps, coated	1
20	I00.62100.102	Plug screw G1/2"	1
40	I10.00465.300	Terminal box, small	1
45	I00.10408.912	Cylinder head screw M4x8	4
60	I05.63030.040	Temperature sensor 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

9.5 Melting aid

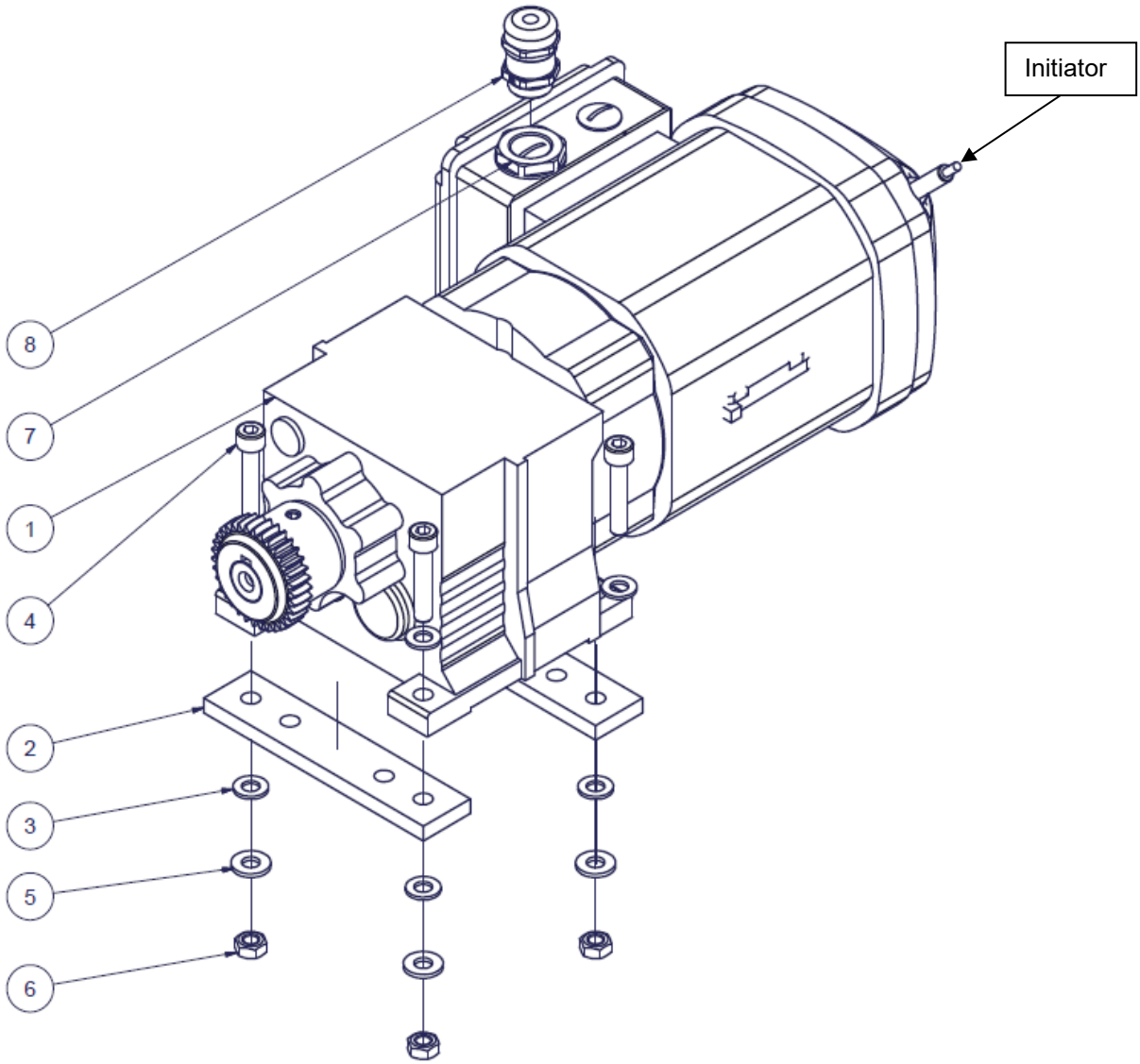
Melting aid complete, PN I10.00618.500



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

9.6 Motor

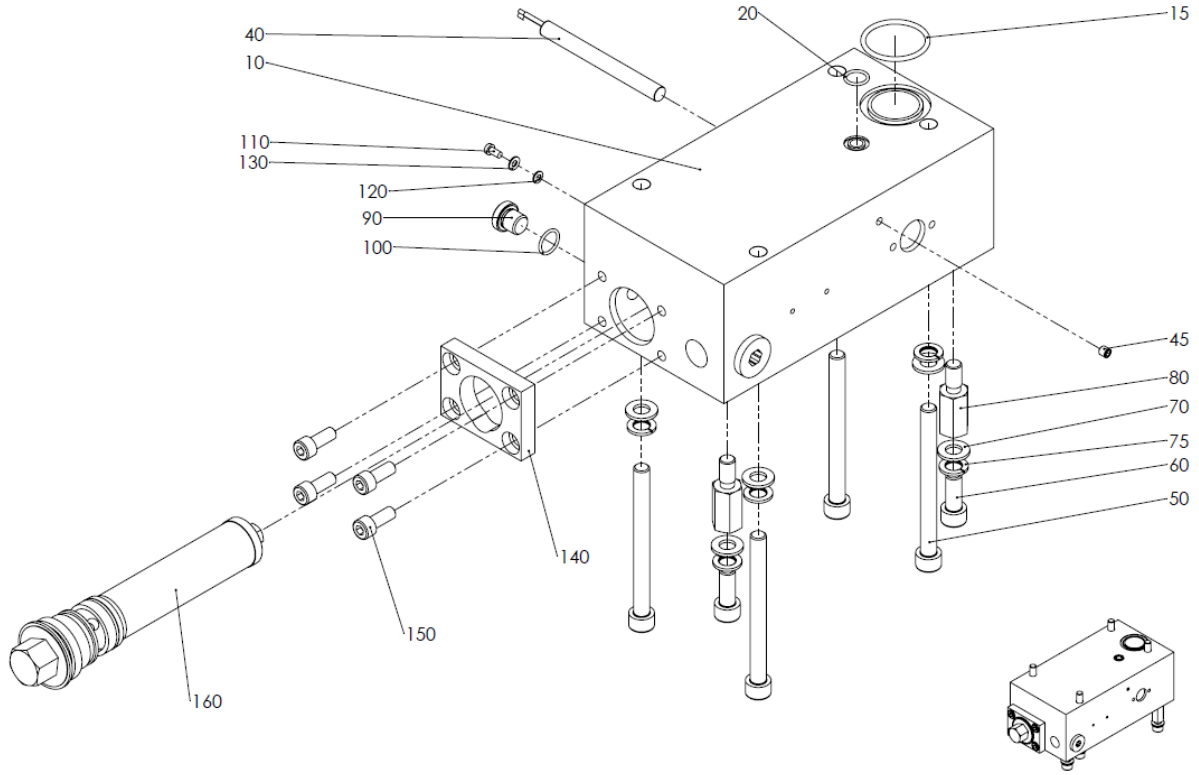
Three phase gear motor 0.5 KW with accessories, PN I10.00546.500



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

9.7 Filter block

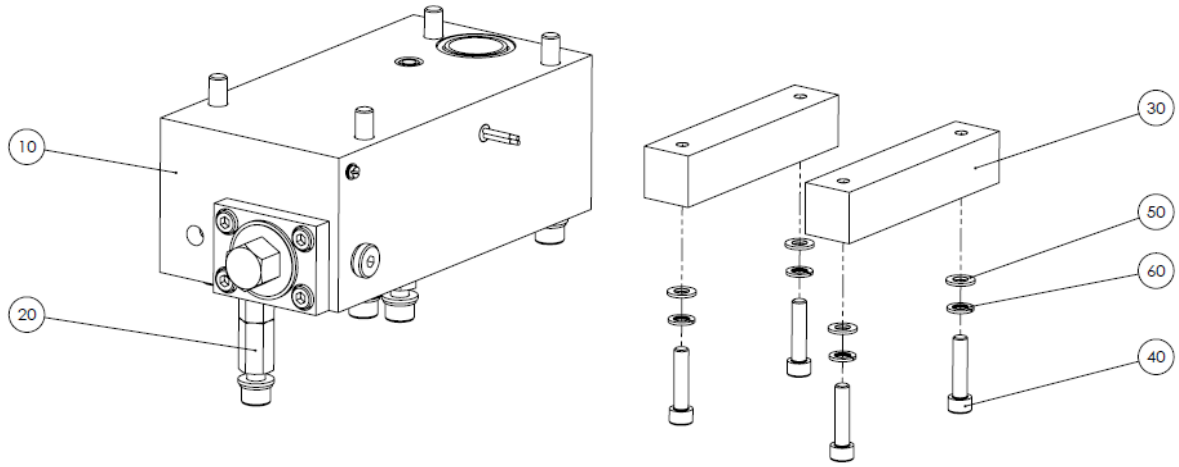
- Filter block right complete for DN 8, DN 10 and DN 16, for single pump, PN I10.00256.501
- Filter block left (inversely) complete for DN 8, DN 10 and DN 16, for single pump, PN I10.00257.501



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

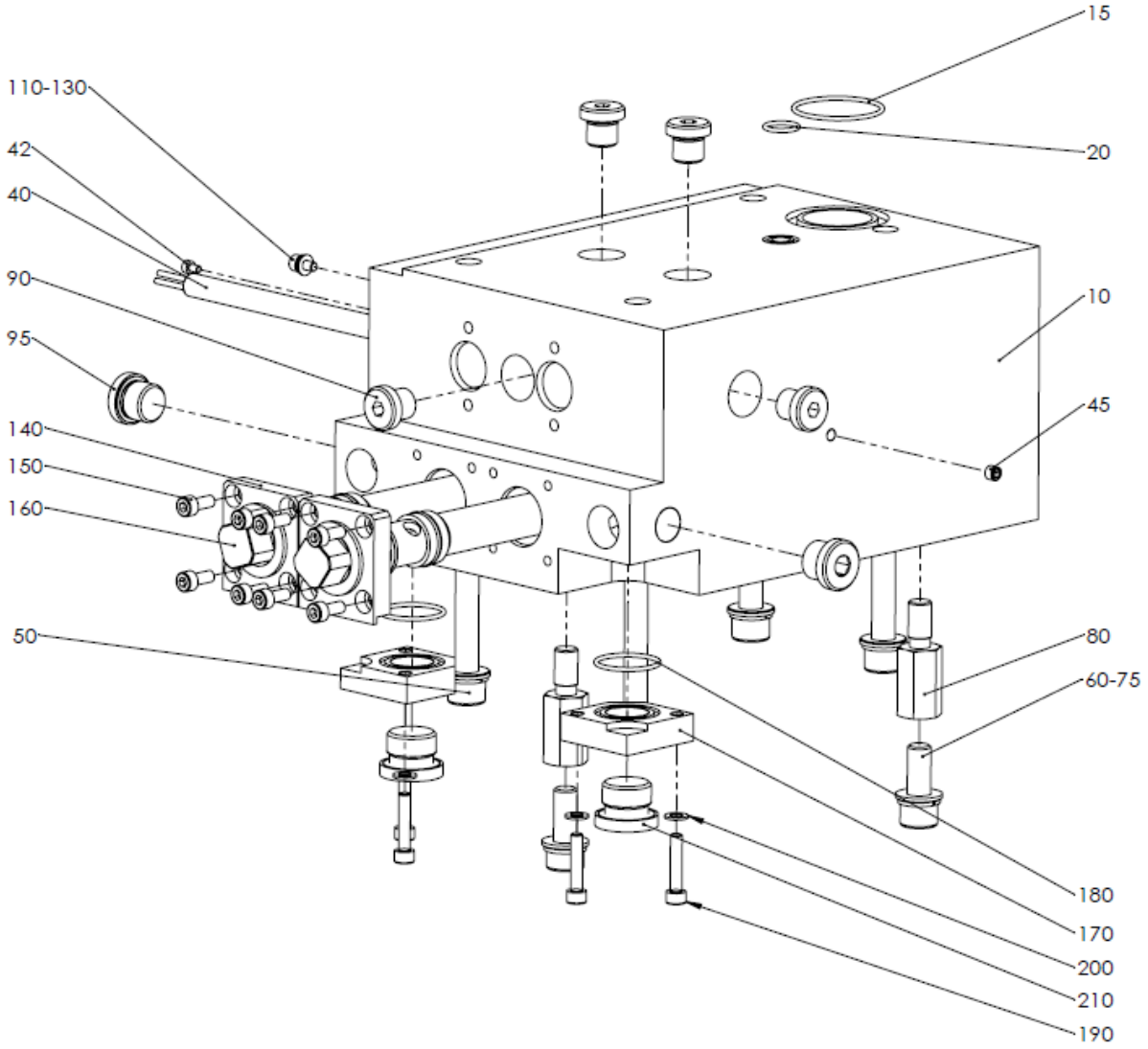
* see separate drawing and/or list of parts

- 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



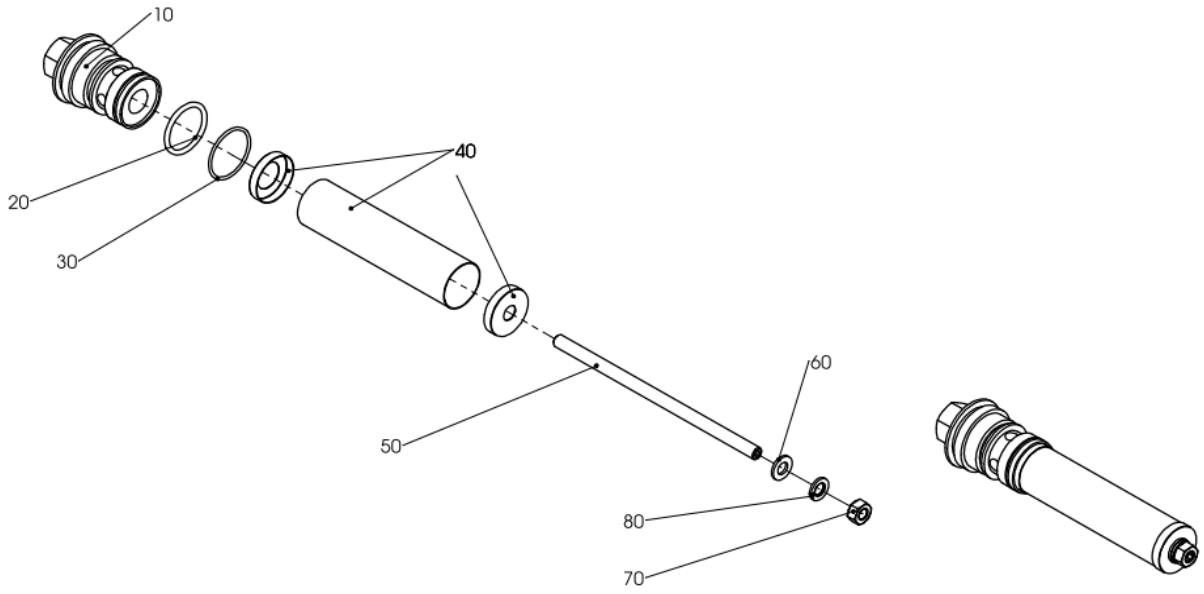
Pos.	Part no.	Description	Quantity
10	I10.00599.100	Filter block right for dual pump	1
	I10.00600.100	Filter block left for dual pump	1
15	I06.03609.222	O-ring 2-222	1
20	I06.01242.014	O-ring 2-014	1
40	05.30420.001	Heating cartridge Ø10 x 138 mm, 230 V, 420 W	1
42	I00.10305.912	Hexagonal socket head 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

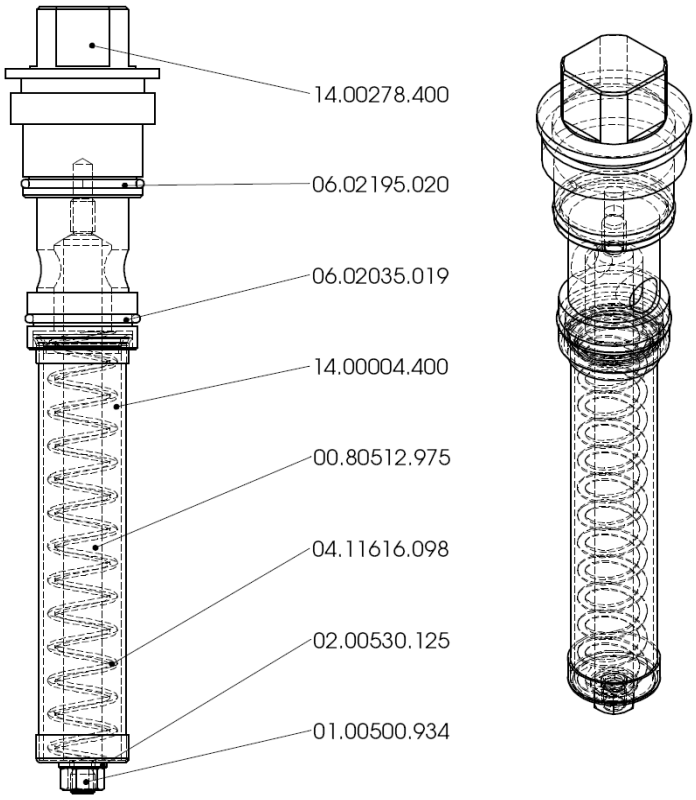
9.8 Filter screw

- 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

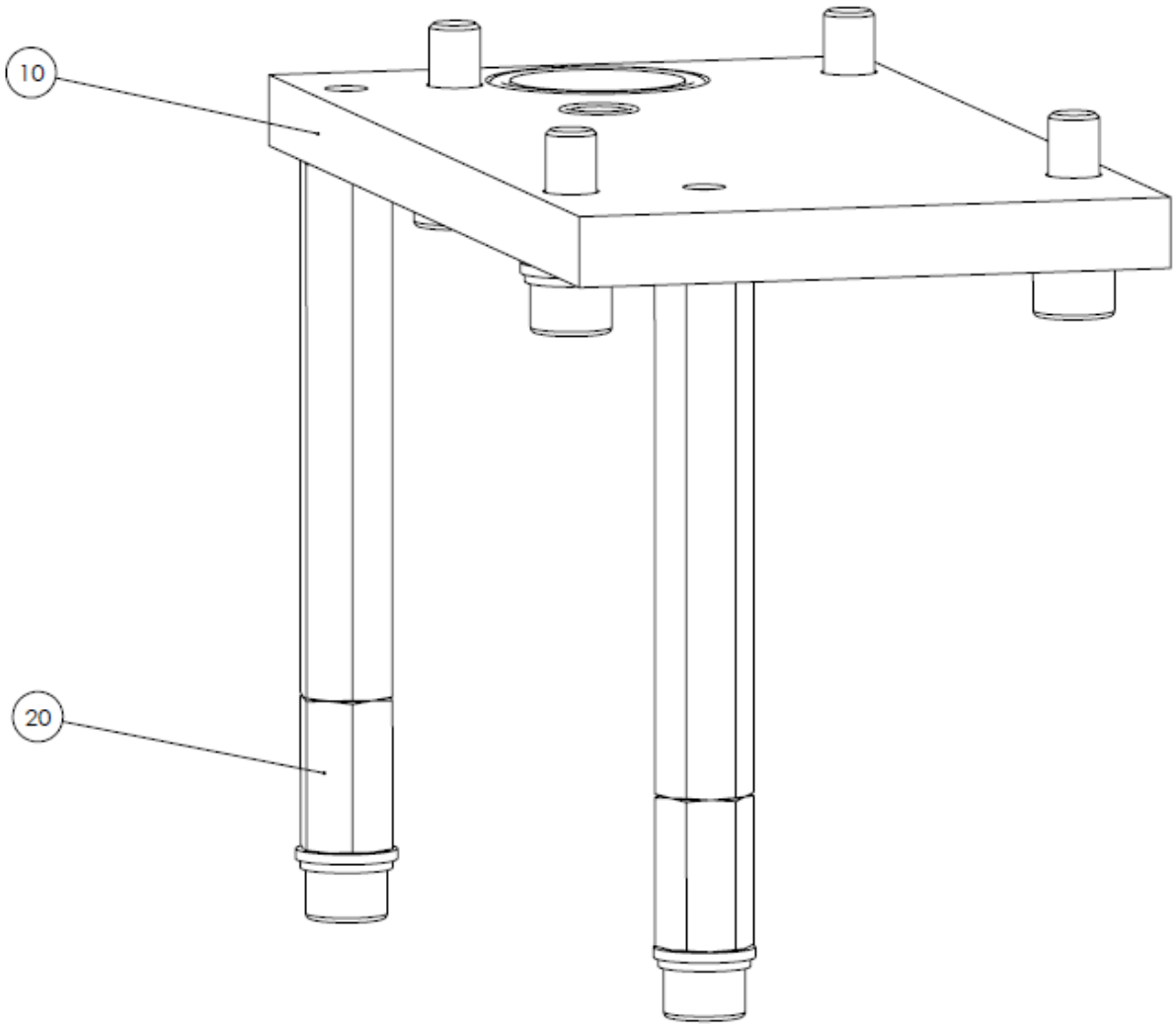
- Filter screw, complete 150µm, (for filter block for dual pump), PN I14.00282.500



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

9.9 Adapter filter block

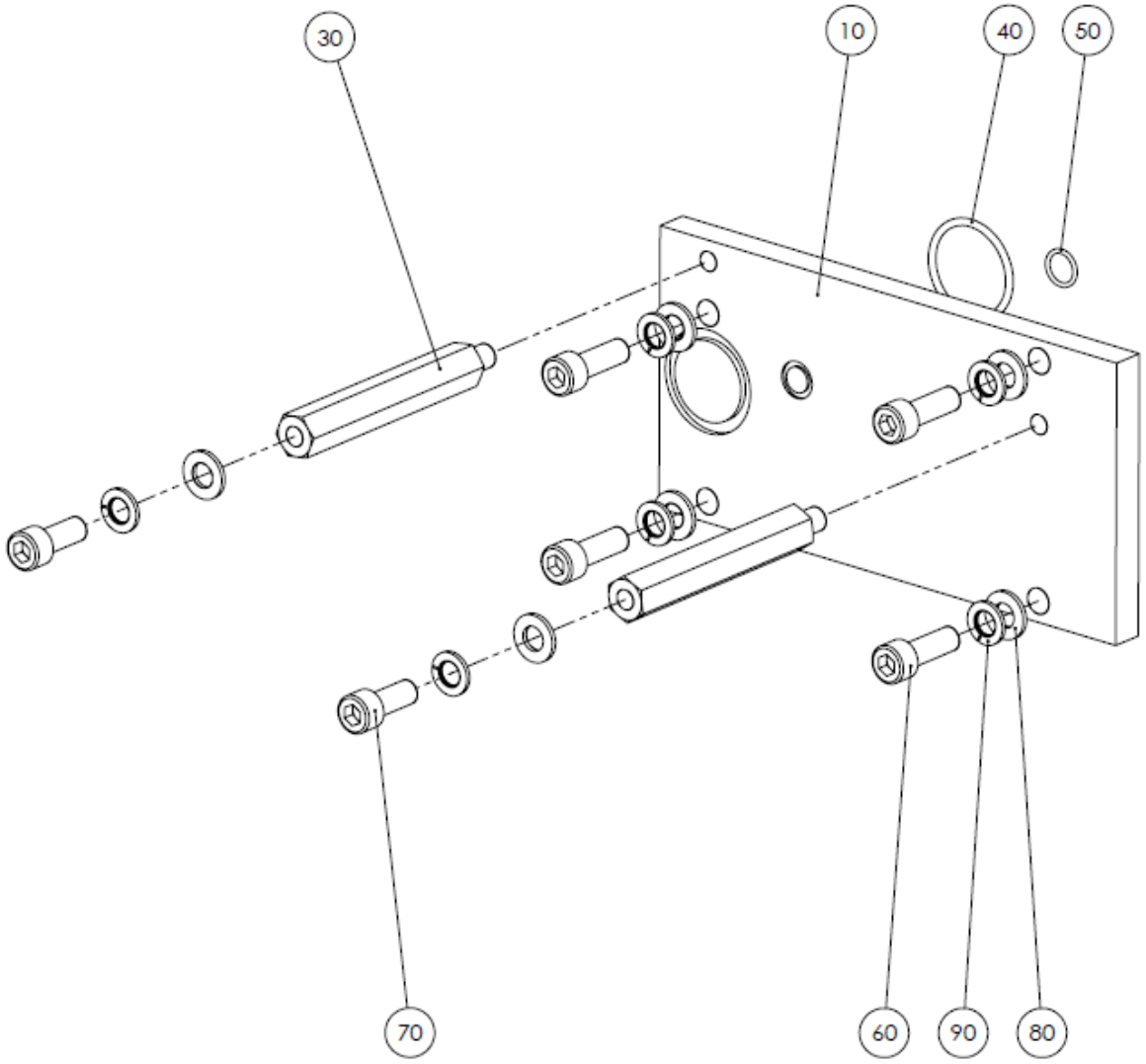
- Adapter complete, at 1 dual pump, PN I13.00242.500



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

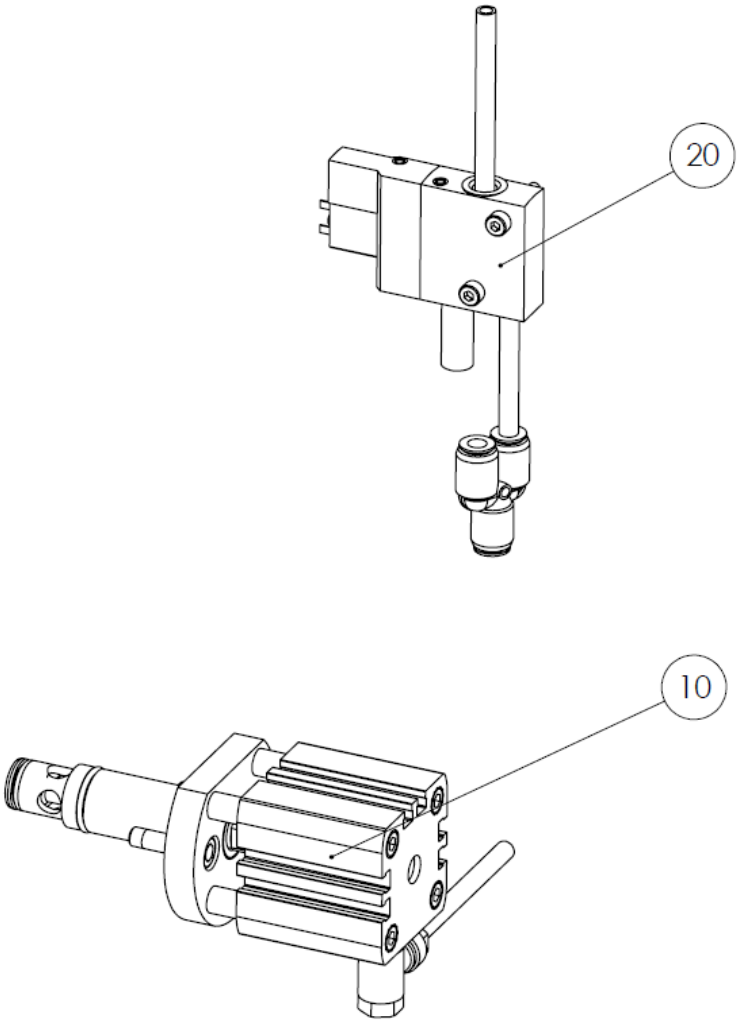
- Adapter filter block, complete, PN I10.00430.500



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

9.10 Pneumatic pressure relief valve incl. pneumatic

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

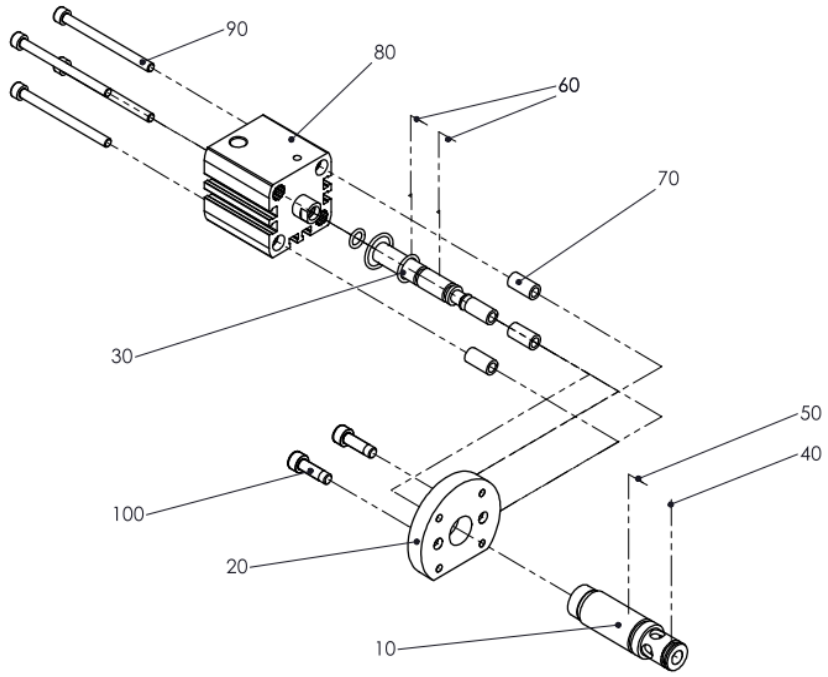


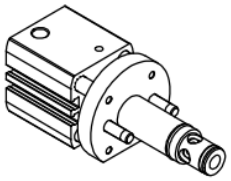
Pos.	Part no.	Description	Quantity
10	I14.00263.500 *	Pneumatic pressure relief valve *	1
20	I80.00112.501 *	Pneumatic for pressure relief valve *	1

* see separate drawing and/or list of parts.

9.11 Pneumatic pressure relief valve

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

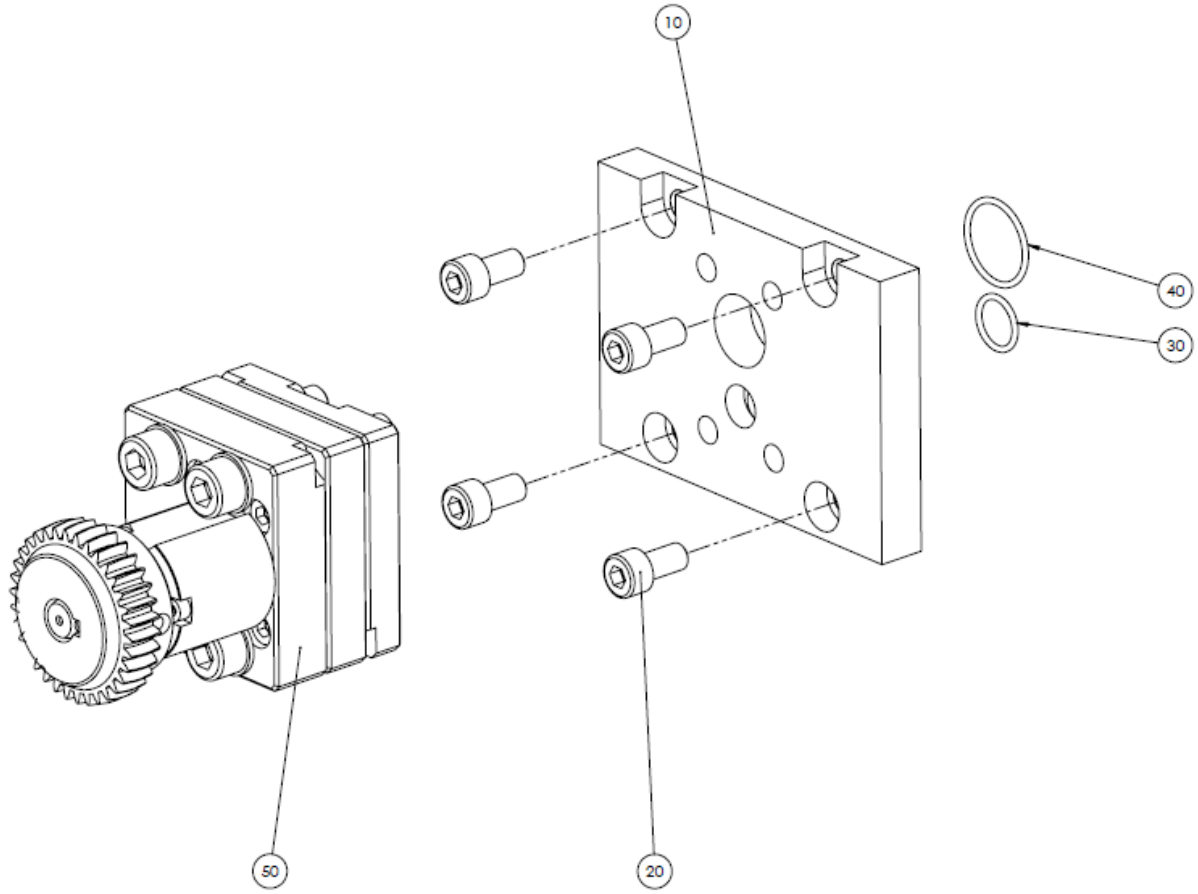




Pos.	Part no.	Description	Quantity
10	I14.00164.400	Casing	1
20	I14.00262.400	Adapter	1
30	I14.00165.400	Piston	1
40	I06.01242.014	O-ring 2-014	1
50	06.01717.017	O-ring 2-017	1
60	I06.00765.011	O-ring 2-011	2
70	I14.00264.400	Distance washer	4
80	I07.96008.050	Short stroke cylinder Ø32/5 single-acting-Viton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

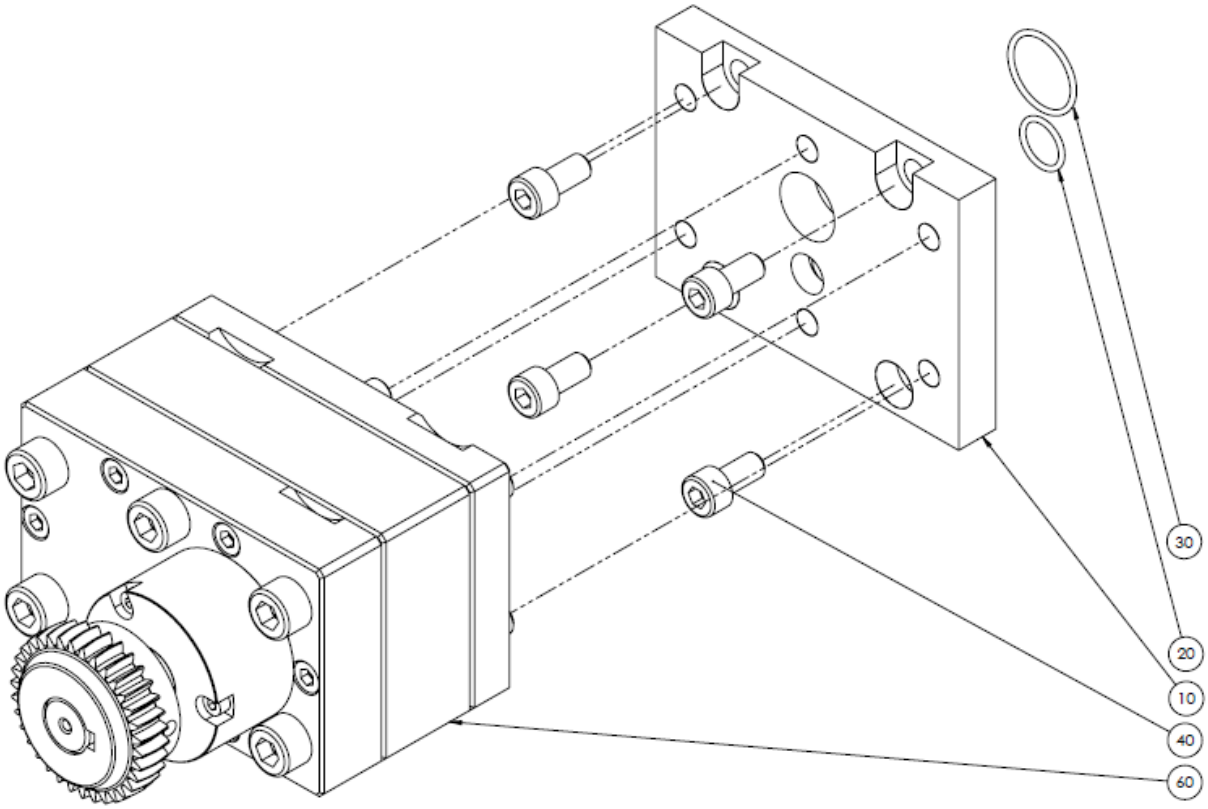
9.12 Gear pump

- 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



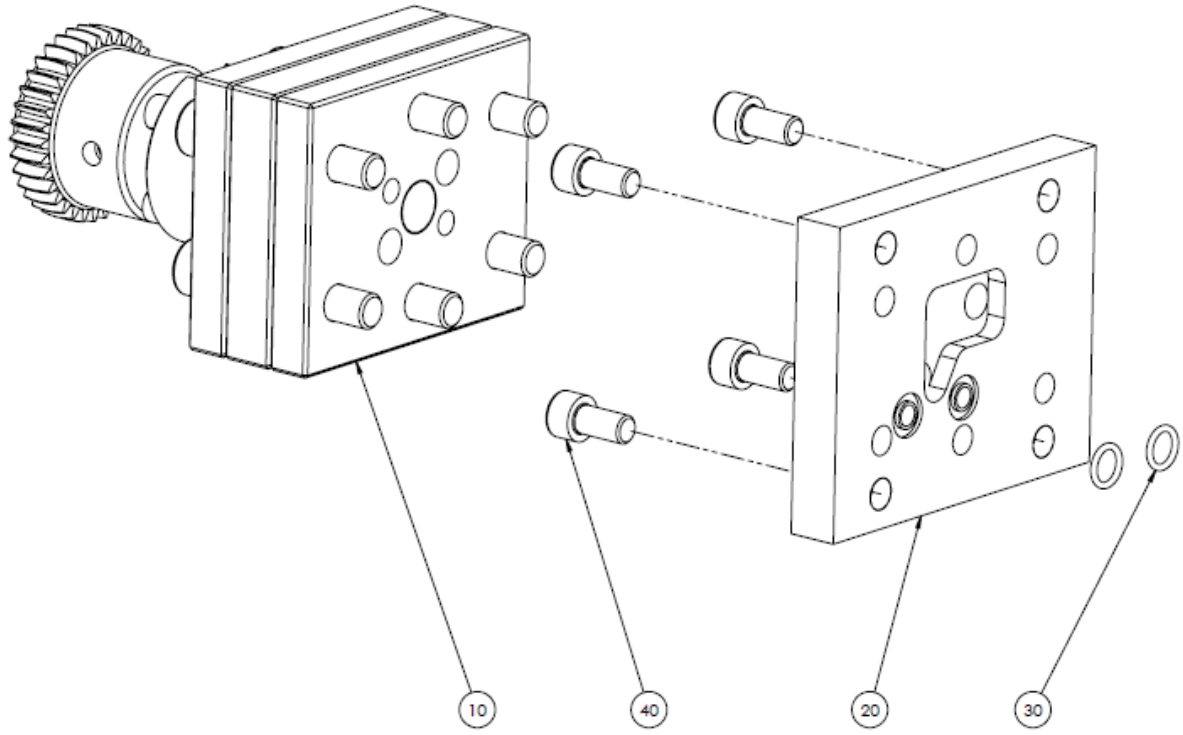
Pos.	Part no.	Description	Quantity
10	I10.00162.301	Adapter plate for 0.3-4.5 pump	1
20	I00.10816.912	Cylinder head screw M8x16	4
30	I06.01400.015	O-ring 2-015	1
40	I06.02352.021	O-ring 2-021	1
50	I07.99106.503	Gear pump 0.6ccm	1
	I07.99112.503	Gear pump 1.2ccm	1
	I07.99124.503	Gear pump 2.4ccm	1
	I07.99145.503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

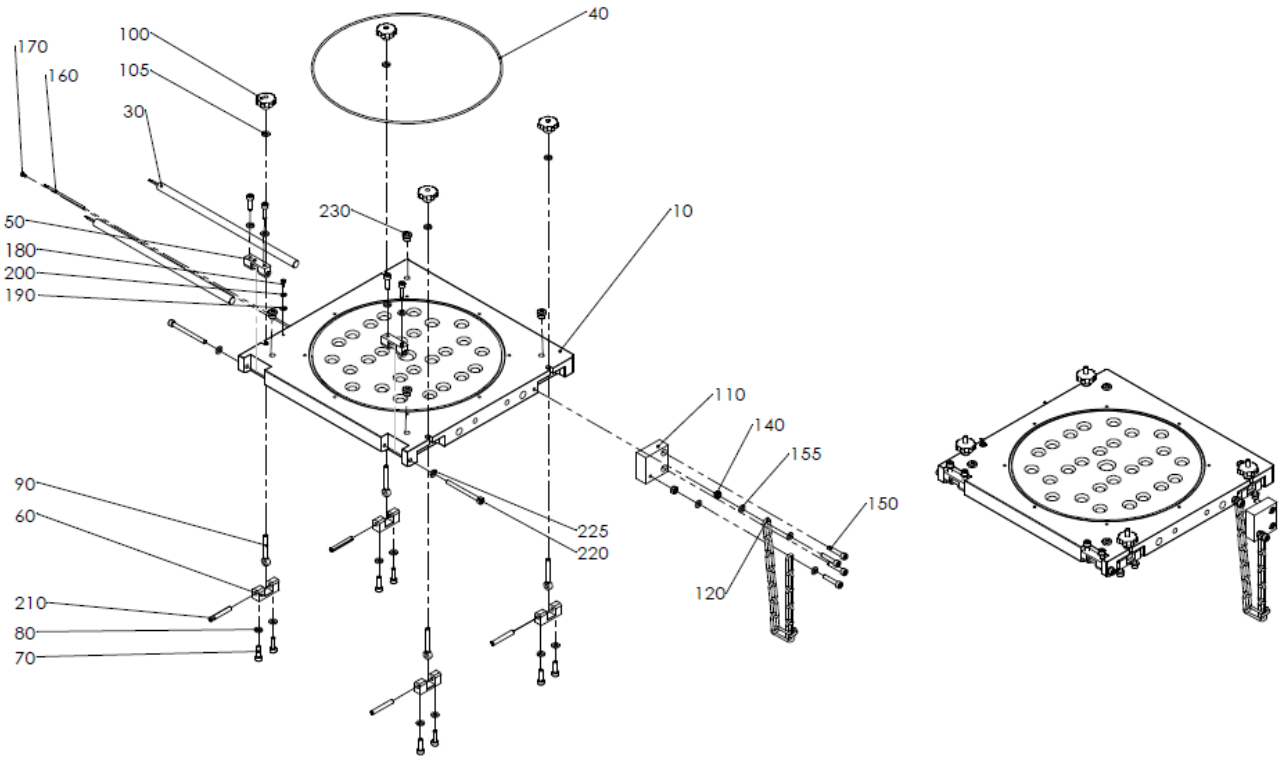
- Dual pump 2x0.6 ccm incl. adapter plate, PN I13.00233.501
- Dual pump 2x1.2 ccm incl. adapter plate, PN I13.00234.501
- Dual pump 2x2.4 ccm incl. adapter plate, PN I13.00235.501
- Gear pump 2x4.8 ccm incl. adapter plate, PN I13.00236.501



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

9.13 Melting plate

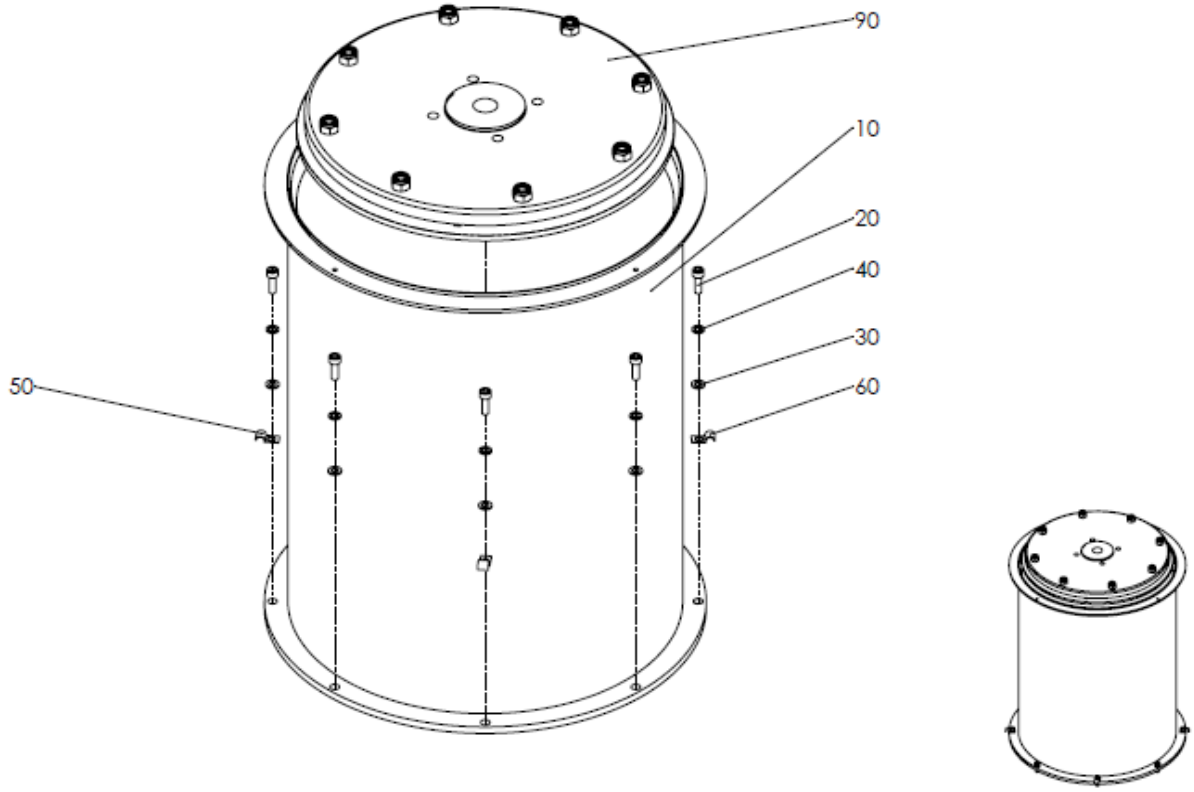
Melting plate 27 holes complete PN I13.00132.500



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

9.14 Feed tube

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

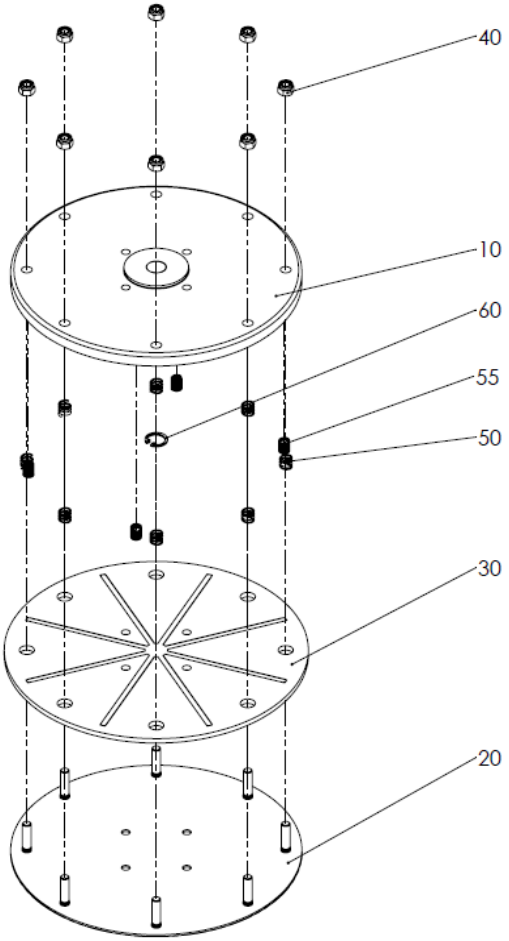


Pos.	Part no.	Description	Quantity
10	I13.00164.500	Feed tube with ring tube Ø 282mm	1
	I13.00170.500	Feed tube with ring tube Ø 288mm	1
20	I00.10516.912	Cylinder head screw M5x16	8
30	I02.00530.125	Washer 5.3	8
40	I02.50500.127	Lock washer A5	8
50	I05.99003.008	Fastening clamp 8mm	1
60	I05.99003.006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

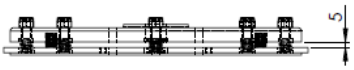
* see separate drawing and/or list of parts.

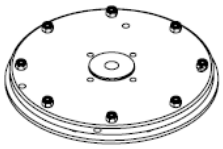
9.15 Platen

- 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!

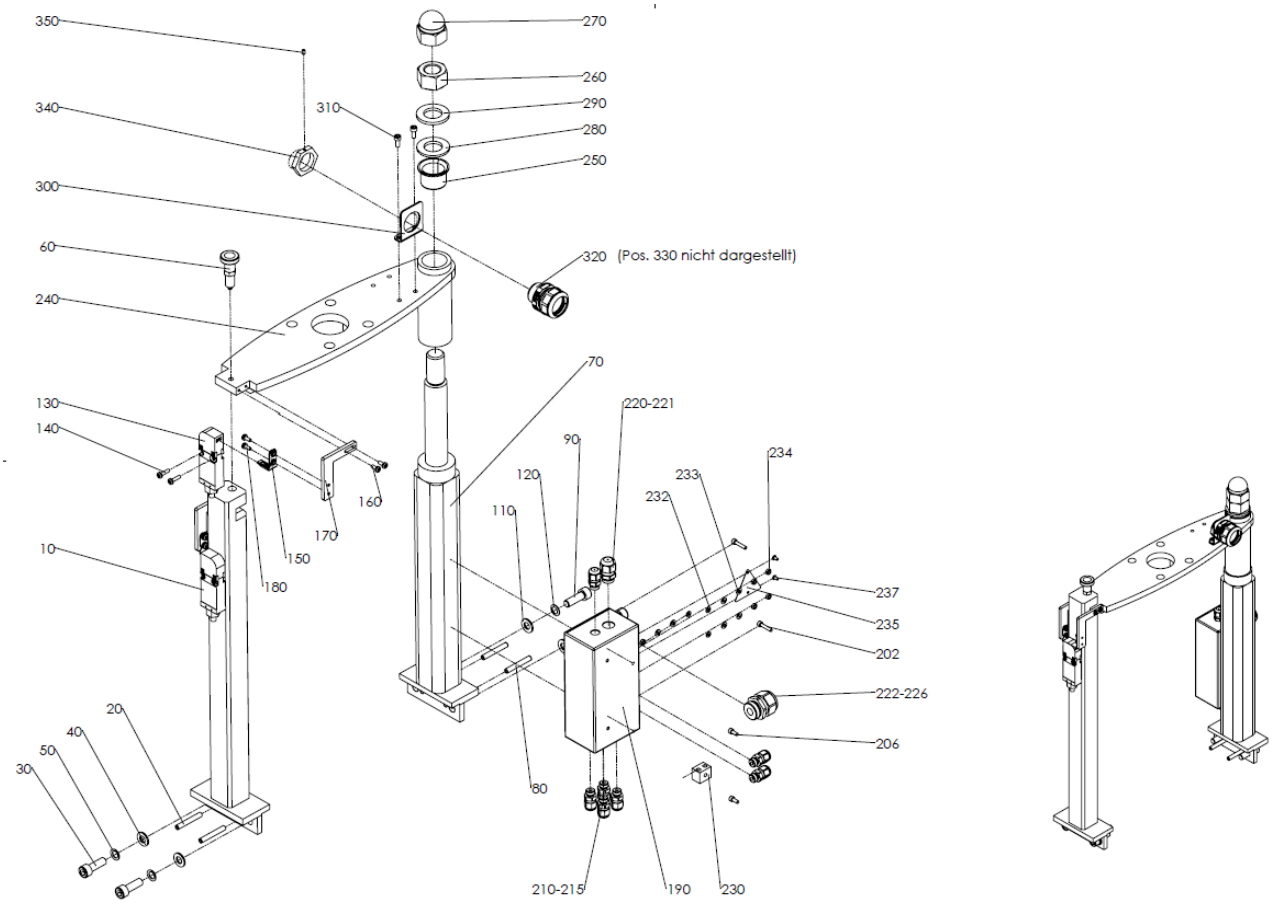




Pos.	Part no.	Description	Quantity
10	I13.00051.301	Platen Ø270mm	1
20	I13.00053.300	Clamping disc Ø270mm	1
30	I13.00092.501	Teflon disc Ø282mm, complete with star-sealing	1
	I13.00161.500	Teflon disc Ø288 mm, complete with star-sealing	1
40	I01.00800.985	Hexagon nut M8 self-locking	8
50	I04.11111.098	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

9.16 Cylinder framing

Cylinder framing, PN I13.00129.500



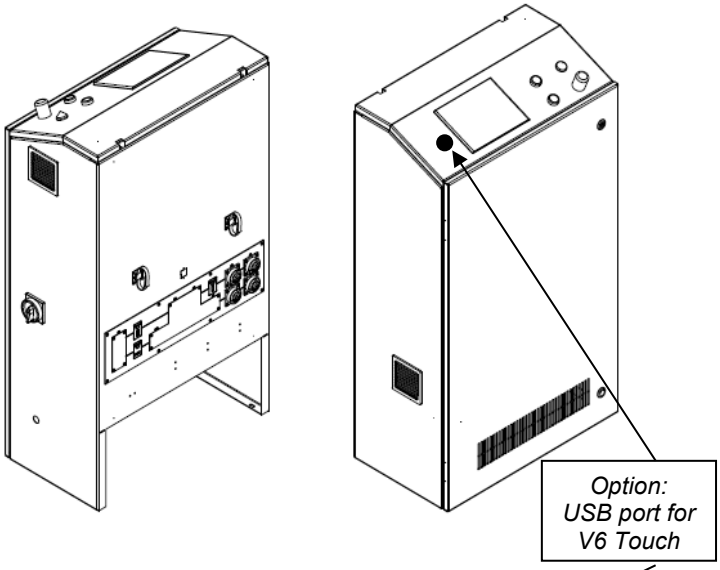
Pos.	Part no.	Description	Quantity
10	I13.00123.300	Pillar right	1
20	I03.30645.481	Heavy duty dowel pin Ø6x24mm	2
30	I00.11030.003	Cylinder head screw M10x30	2
40	I02.01040.125	Washer Ø10.4	2
50	I02.20010.000	Schnorr-washer ZN S10 retaining washer "S"	2
60	I00.86000.617	Stop bolt Ø6	1
70	I13.00062.300	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

9.17 Control cabinet

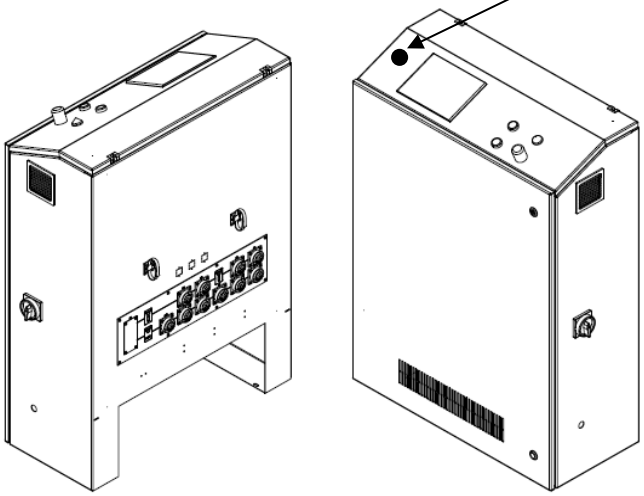
Standard, 640mm wide:

- Control cabinet EC1 400V/3/N/PE, PN I95.00030.500
- Control cabinet EC1 230V/3/PE, PN I95.00040.500



Option, 790mm wide, either for optional additional 8 zones or more than 2 Drive Controllers:

- Control cabinet EC2 400V/3/N/PE, PN I95.00035.500
- Control cabinet EC2 230V/3/PE, PN I95.00045.500



9.18 HMI Interface

- Color Touch Panel for Bag Melter, PN 118135

Chapter 10
Options / Accessories

10.1 Interface

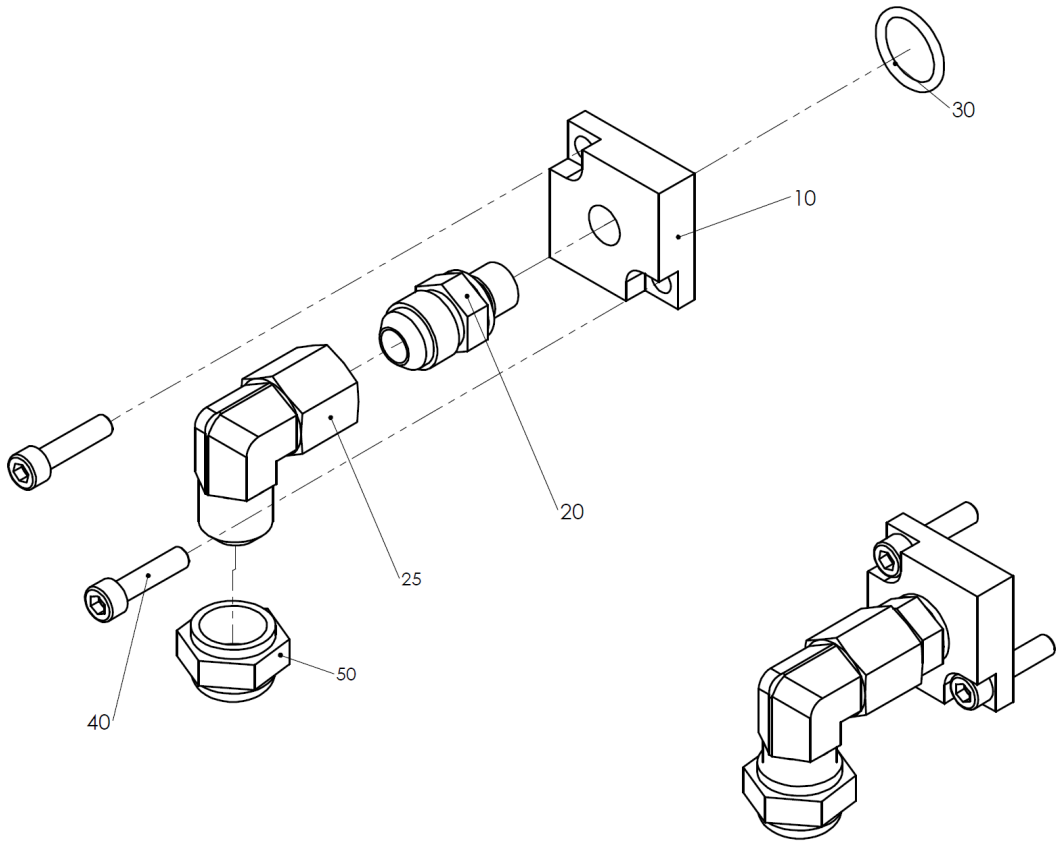
- Profibus-Kit V6, PN 117485
- Ethernet/IP-Kit V6, PN 117381
- EtherCAT-Kit V6, PN 118753
- ModBus/TCP

10.2 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

10.3 Return hose connection for 1 hose

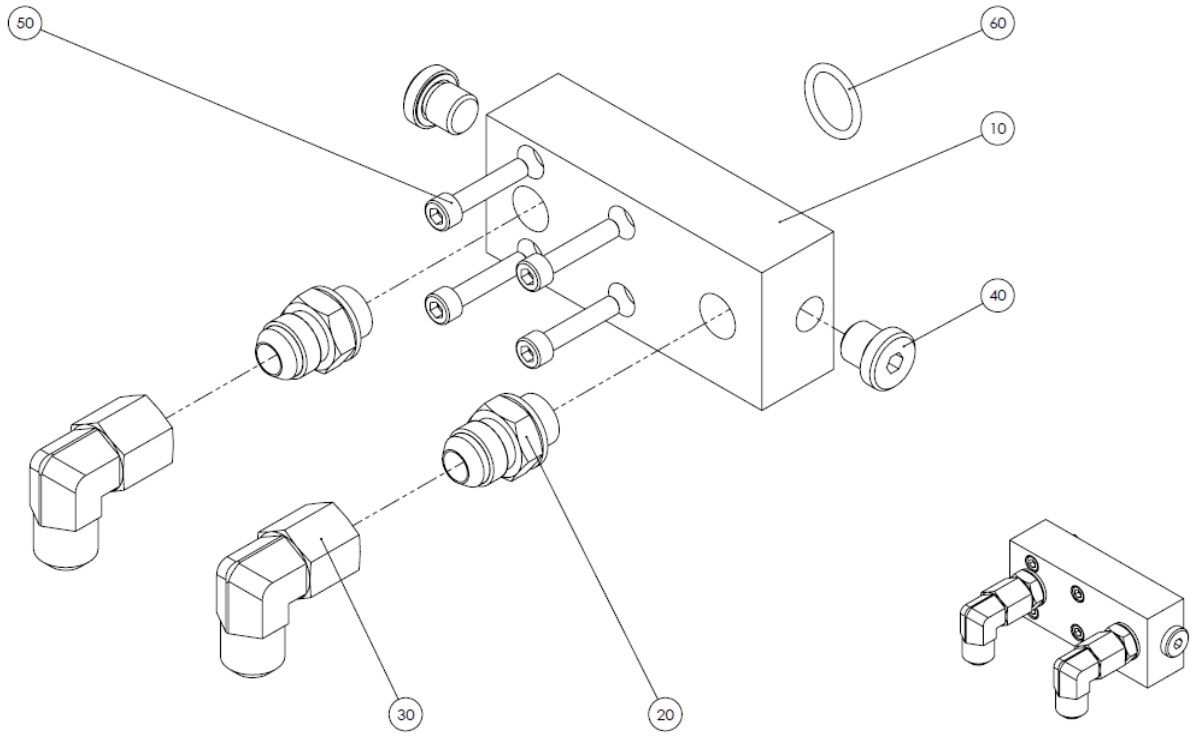
- Return hose connection DN 8, PN I10.00672.501
- Return hose connection DN 10, PN I10.00023.504
- Return hose connection DN 16 (Dynatec), PN I10.00705.500
- Return hose connection DN 16 (INATEC), PN I10.00151.502



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 mm	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

10.4 Return hose connection for 2 hoses

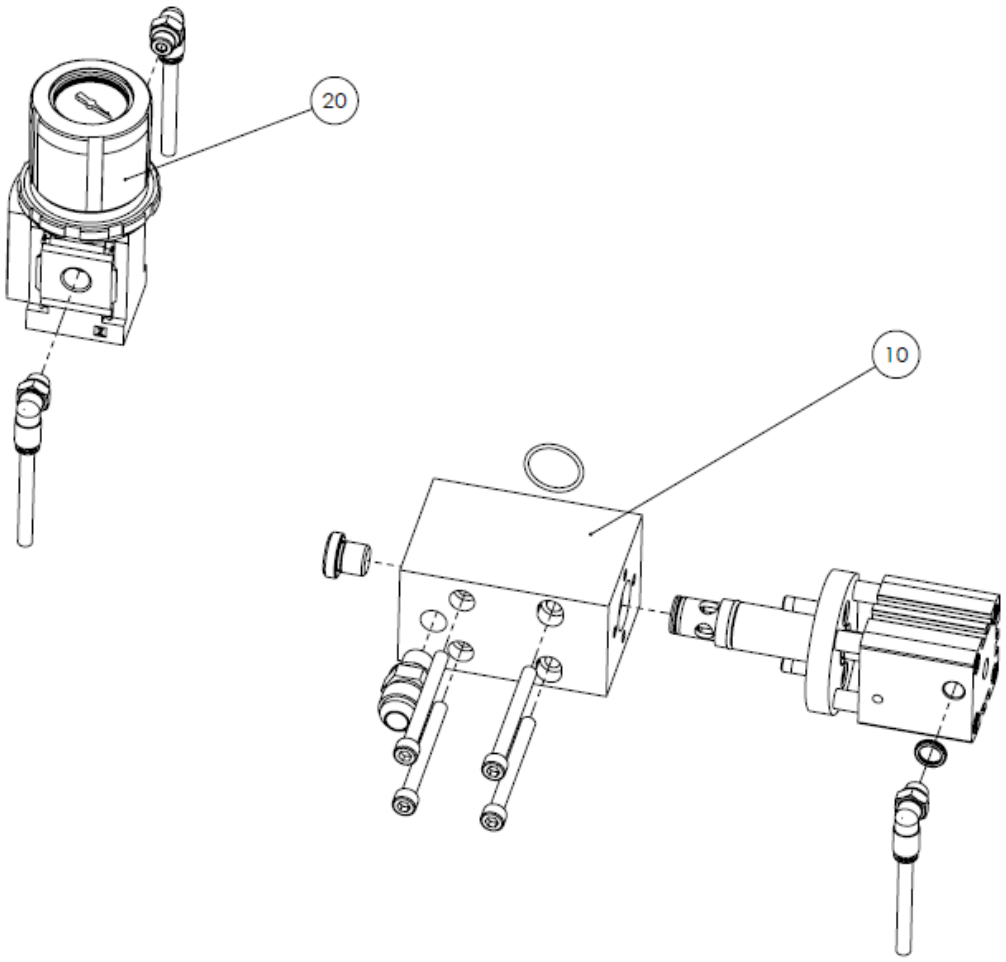
- Return hose connection for 2 hoses DN 8, PN I13.00225.501
- Return hose connection for 2 hoses DN 10, PN I13.00227.501
- Return hose connection for 2 hoses DN 16 (INATEC), PN I13.00229.501
- Return hose connection for 2 hoses DN 16 (Dynatec), PN I13.00230.500



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 DN16, 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 mm	4
60	I06.01872.116	O-ring 2-116	1

10.5 Pneum. Return regulating valve

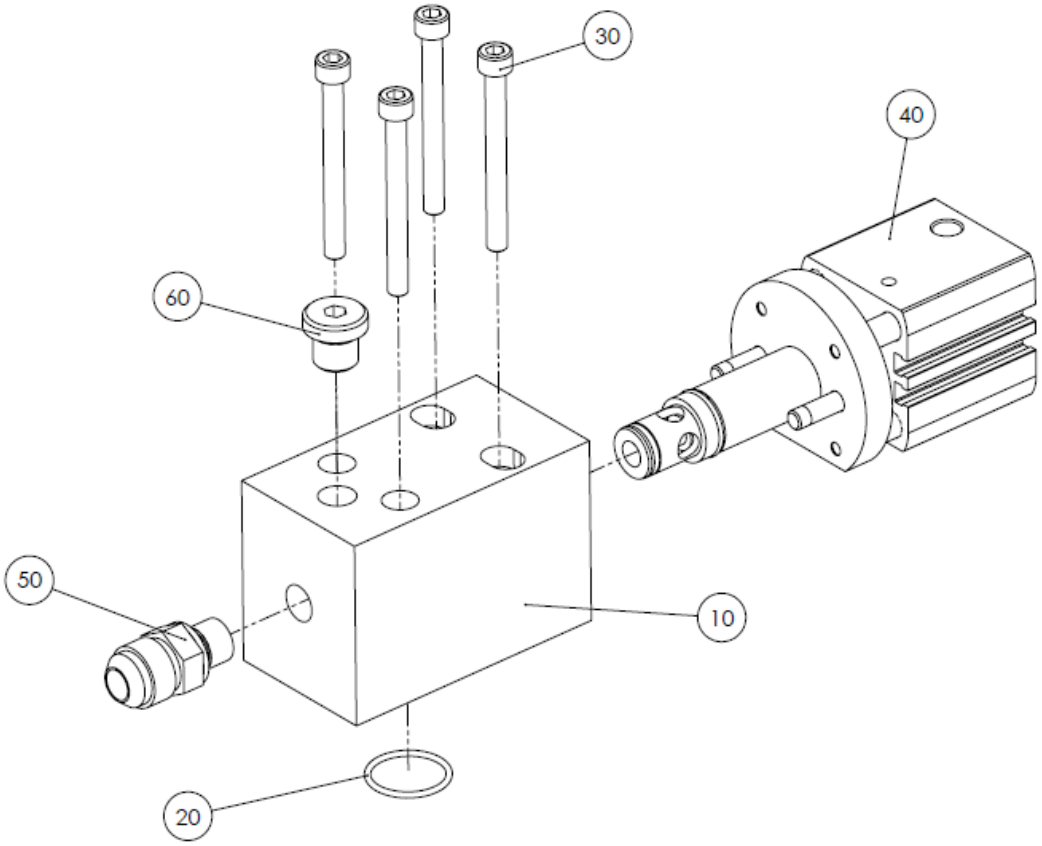
- Pneum. Return regulating valve DN 8 with pneumatic, PN I13.00197.501
- Pneum. Return regulating valve DN 10 with pneumatic, PN I13.00194.501
- Pneum. Return regulating valve DN 16 with pneumatic (INATEC), PN I13.00198.500
- Pneum. Return regulating valve DN 16 with pneumatic (Dynatec), PN I13.00255.500



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 mm	4
40	I14.00263.500 *	Pneumatic pressure 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

10.6 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 Stacklight, horn, proximity switch

Stacklight, horn, proximity switch, assembly PN I95.00047.500

10.10 XIO-Module V6

XIO-Module V6 for DynaControl V6, PN 117648

10.11 Light sensor

Reflection light sensor, switching time 1 msec, flat design, PN 05.65300.105

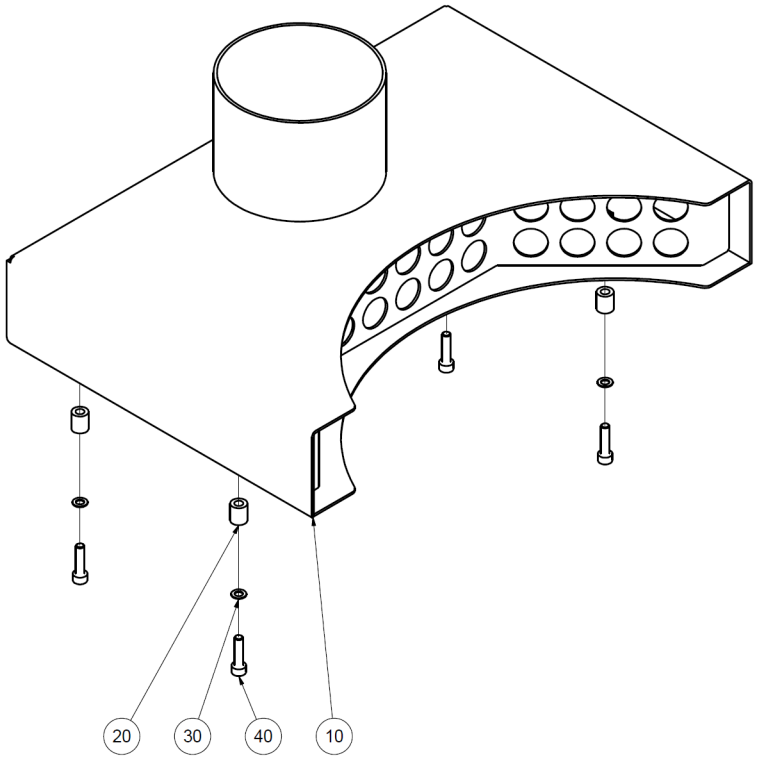
10.12 Encoder

Encoder 1000 Imp/rev., PN 05.66501.014

10.13 Exhaust-Kit

Exhaust-Kit, PN 826261, mounted on the cover

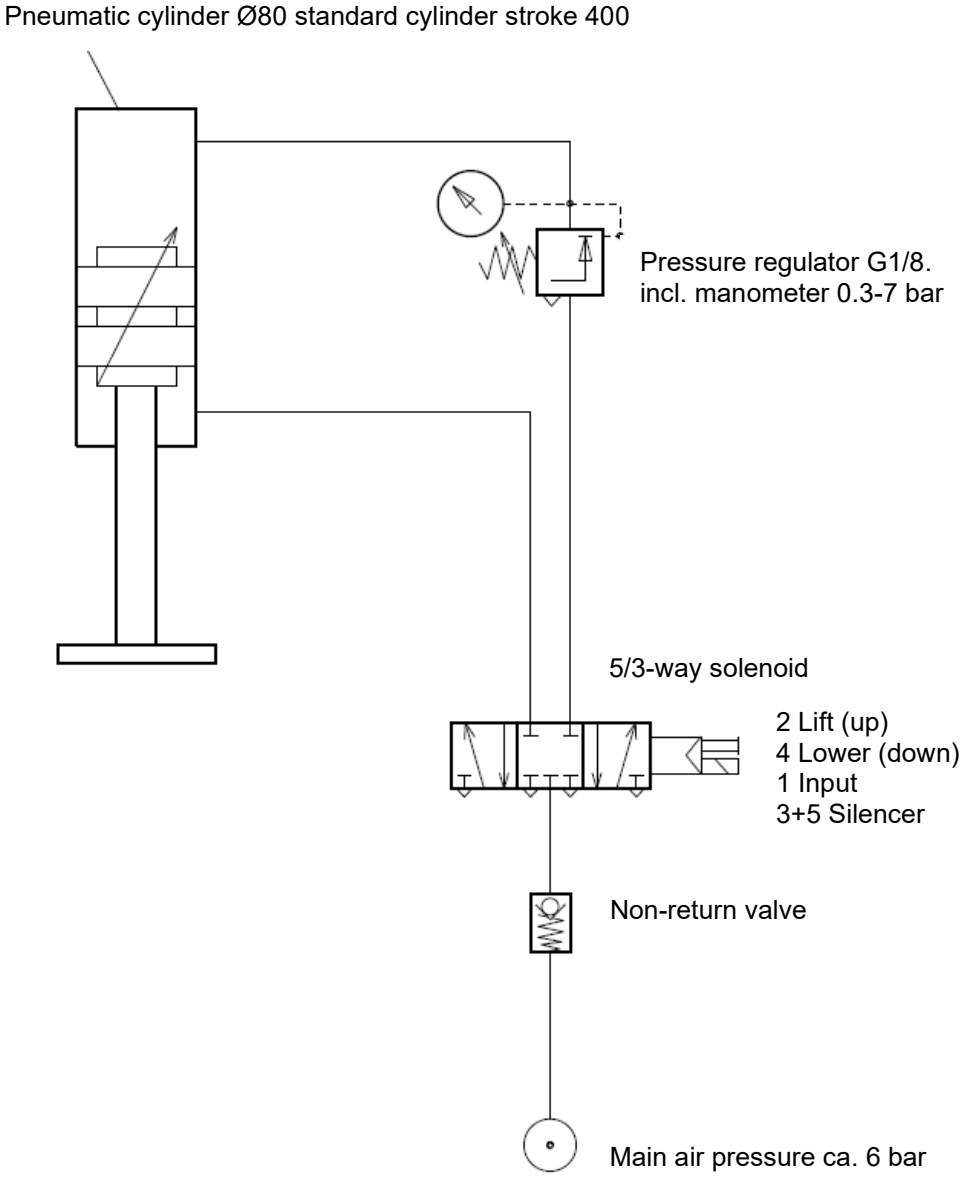
Pos.	Part no.	Description	Quantity
10	826262	Exhaust hood	1
20	02.10512.001	Ceramic isolation ring 5x12mm	4
30	I02.20005.000	Schnorr-washer S5	4
40	I00.10520.912	Screw M5x20mm	4



Chapter 11
Pneumatic plans and lists of parts

11.1 Pneumatic for Platen

Pneumatic for Platen, PN I80.00131.505

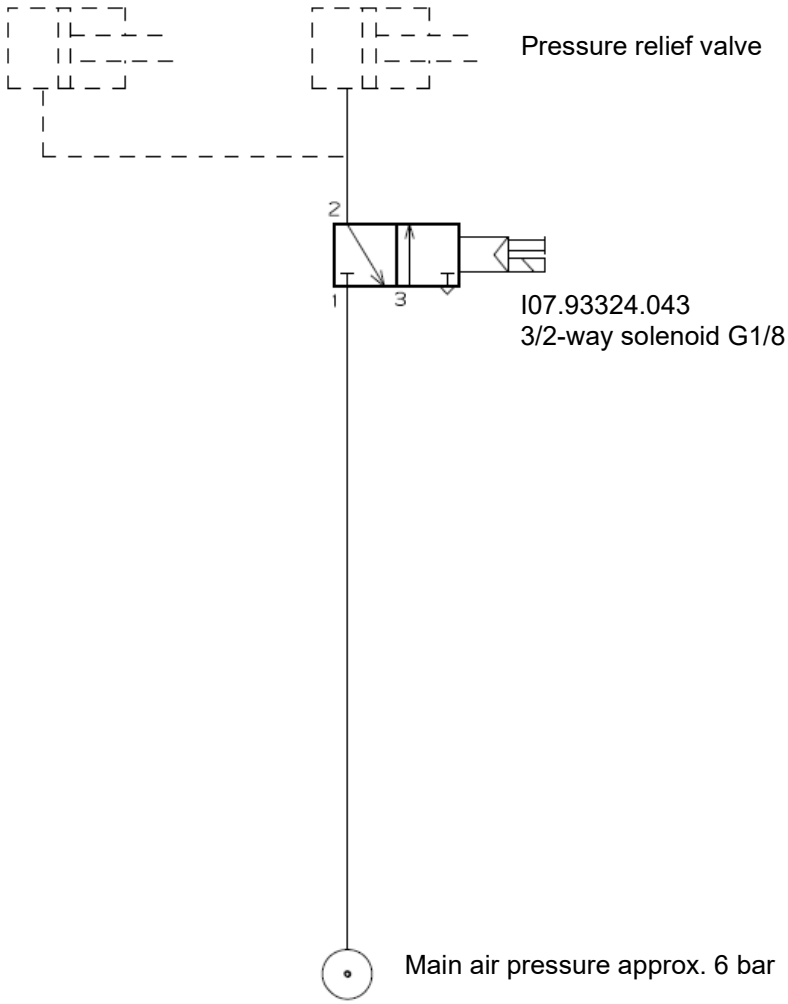


Pos.	Part no.	Description	Quantity
	I07.96007.018	Pneumatic cylinder Ø80 standard cylinder stroke 400	1
	I15.00101.400	Distance bushing for pneum. Cylinder	4
	I00.11050.003	Cylinder head screw M10x50	4
	I07.41014.401	Plug nipple DN7, G1/4 male thread	1
	I07.11400.006	Bulkhead fitting inside G1/4	1

	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

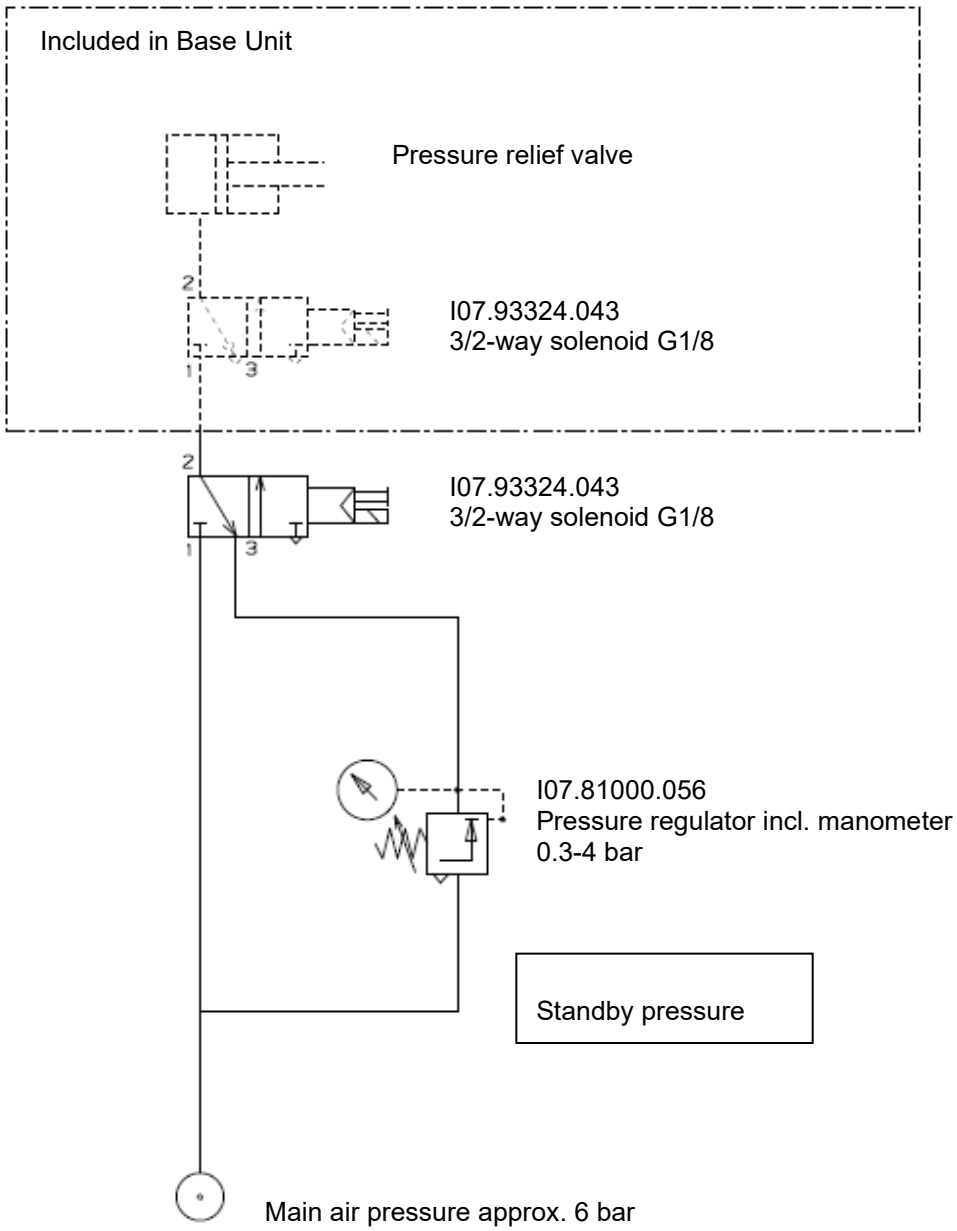
Pneumatic for pneumatic pressure relief valve, for supply, PN I80.00112.501



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)

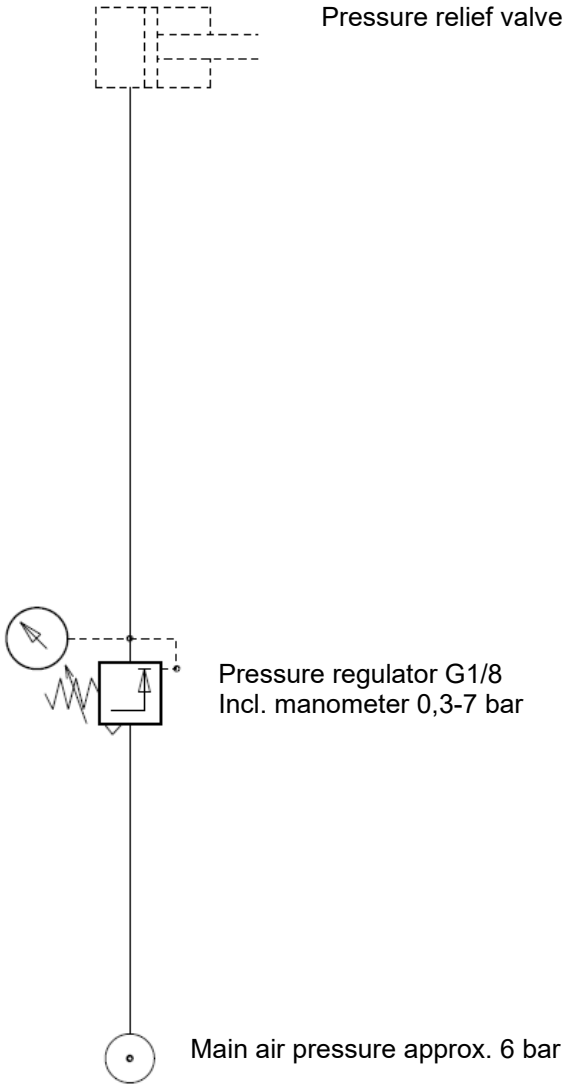
Pneumatic for tank circulation, PN I80.00228.500 (Option)



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, PUR20

- 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 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
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
40	I14.00263.500 *	Pneumatic pressure relief valve	1

* see separate drawing and/or list of parts.

12.14 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

12.15 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

12.16 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

12.17 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

12.18 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

12.19 Cleaner

- Eco-Clean 2.0, 5 liters container with 1 faucet cook and spray bottle, PN I06.90100.145.

Chapter 13
Wiring diagrams

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

Revisions of the Manual

Revision	Page/Chapter	Update description
Rev.2.19	Ch.5	V6 Touch: Pump status icons added to Pump Overview screen.
Rev.5.19	Ch.1	Ce Conformity Declaration updated.
	Ch.7.13	Teflon disc Replacement updated.
Rev.6.22	Ch. 6	Controller screen Zone settings updated.
		Documentation layout updated.
Rev.8.23	P.1	Manual language added.
Rev.6.24	Ch.3.2.1	Model Designation Guide Fieldbus options updated, R = Profinet and P = Profibus.

ITW Dynatec Service Parts and Technical Service:

AMERICAS

ITW Dynatec
31 Volunteer Drive
Hendersonville, TN 37075
USA
Tel. +1.615.824.3634
info@itwdynatec.com
service@itwdynatec.com

EUROPE, MIDDLE EAST & AFRICA

ITW Dynatec
Industriestrasse 28
40822 Mettmann
Germany
Tel. +49.2104.915.0
info@itwdynatec.de
service@itwdynatec.de

ASIA PACIFIC

ITW Dynatec
No. 2 Anzhi Street,
SIP, Suzhou, 215122
China
Tel. +86.512.6289.0620
info@itwdynatec.cn
service@itwdynatec.cn

ITW Dynatec
Tsukimura Building 5th Floor
26-11, Nishikamata 7-chome
Ota-ku, Tokyo 144-0051,
Japan
Tel. +81.3.5703.5501
info@itwdynatec.co.jp
service@itwdynatec.co.jp