ITW Dynatec®

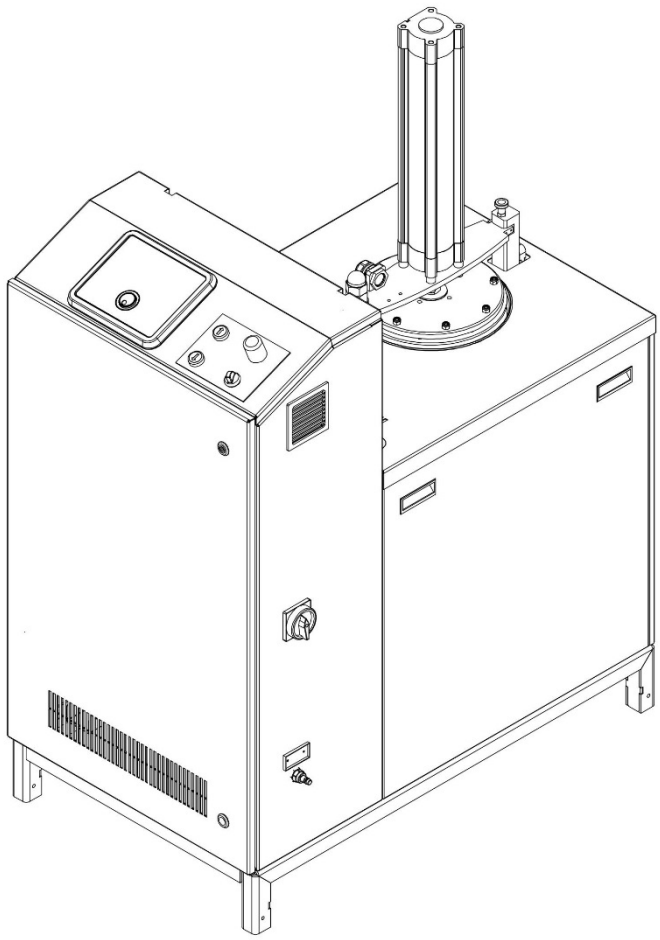
Adhesive Application Solutions | ISO 9001 certified

Dynamelt PUR20 Bag Melter

with DynaControl Controller V6 LCD

Technical Documentation, No. 20-69, 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	EUROPE, MIDDLE EAST & AFRICA	ASIA PACIFIC	
ITW Dynatec 31 Volunteer Drive Hendersonville, TN 37075 USA Tel. +1.615.824.3634 info@itwdynatec.com service@itwdynatec.com	ITW Dynatec Industriestrasse 28 40822 Mettmann Germany Tel. +49.2104.915.0 info@itwdynatec.de service@itwdynatec.de	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

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40822 Mettmann

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

Andreas Pahl

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Description and identification of the machinery

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

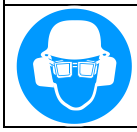
1. Read and obey all of the warning labels, signs and caution statements on the equipment.

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.

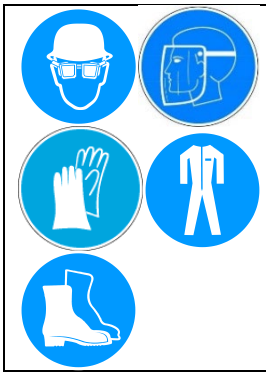
The ITW Dynatec system, especially applicators and nozzles, should be thoroughly purged of adhesive using a PUR neutralizing material if the system will be left dormant for extended time periods.

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,
- 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 lbs
Feed tube -∅: ..... EU: ∅ 282 mm or US / Japan: ∅ 288 mm
Adhesive bag reserve, bag size: ..... 20 kg
Number of heads/ hoses ..... max. 4 (supply) / max. 4 (return)
Number of internal temperature zones 3
Number of pumps ..... max. 2 single or dual pumps
Number of motors ..... max. 2 three phased gear motor, power: 0.5 kW
Hose connections ..... max. 4, screwed DN 8, 10 or 16 (for supply and/or return)
Proximity switch on pneumatic cylinder (Level control) ..... 1x indication “bag empty”, or 2x indications “bag almost empty” and “bag empty”
Pump sizes ..... 0.6 to 20 cm³/rev
Adhesive filter ..... Filter cartridge in filter block
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

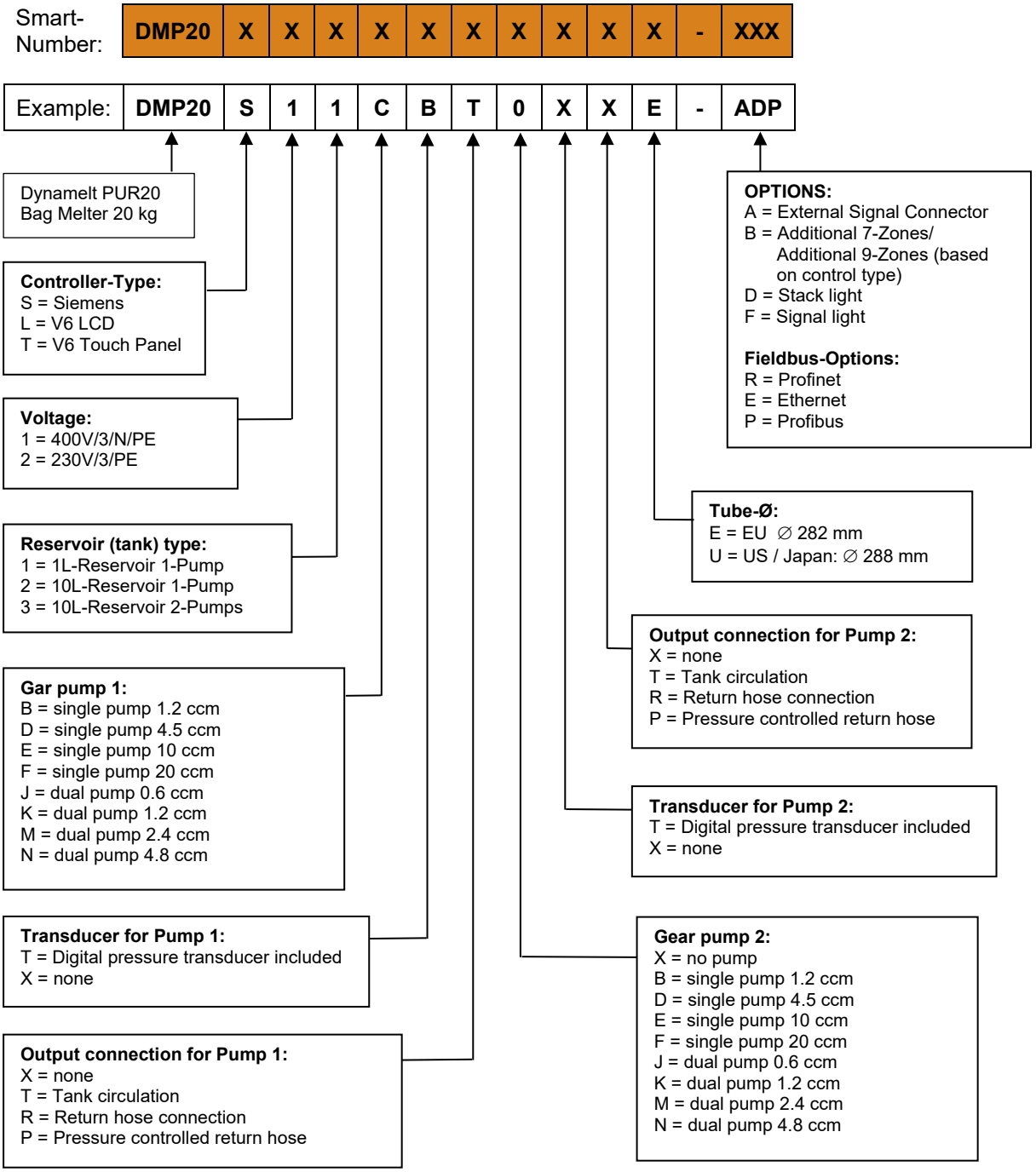
Controller:

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 / 16
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 controller, heated hoses and applicators. Within the Bag Melter, the adhesive will be molten and the melt will be fed.

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

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" to the operator. 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. Refer to 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 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!*

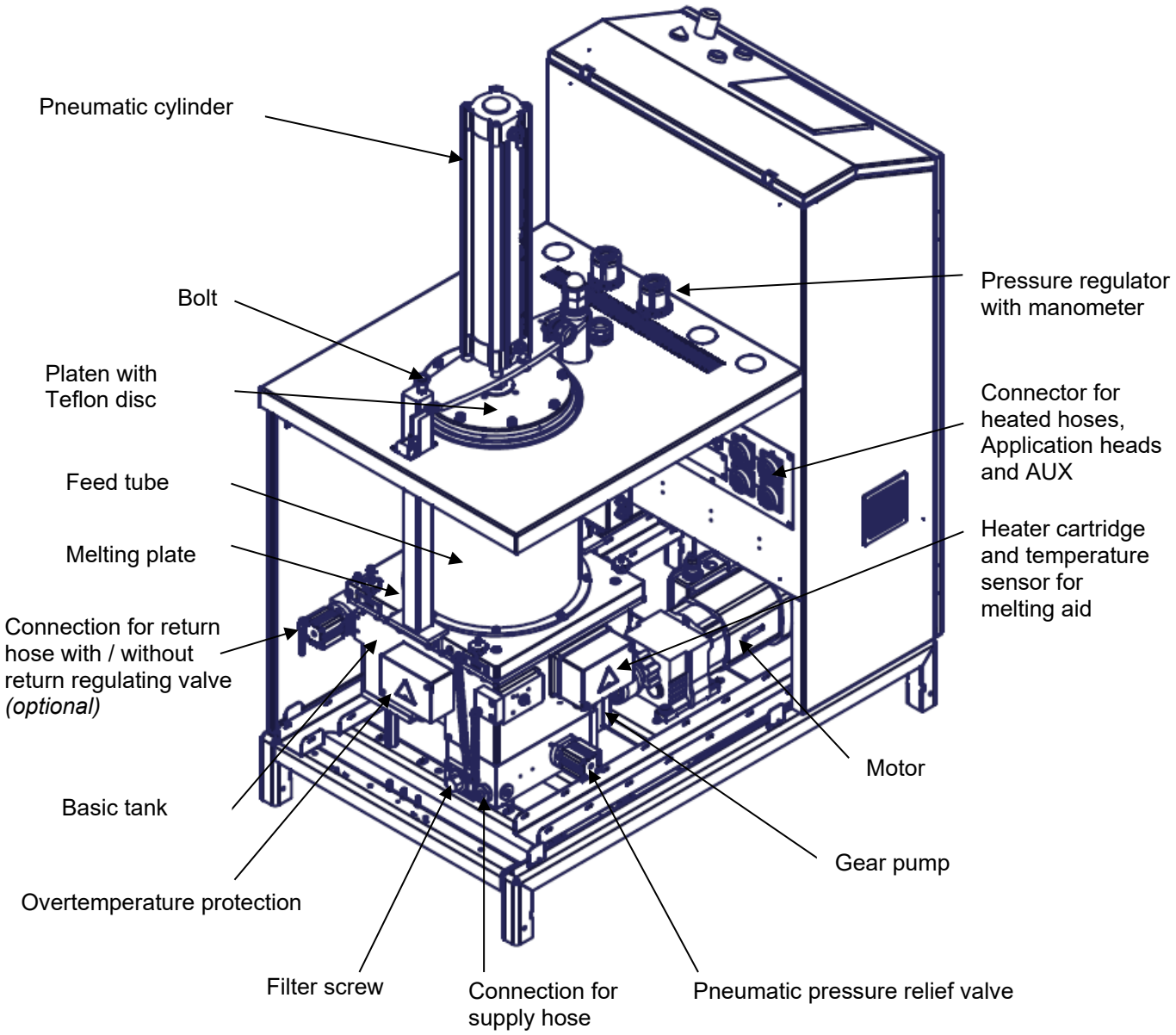


Illustration: Dynamelt PUR Bag Melter - components

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

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

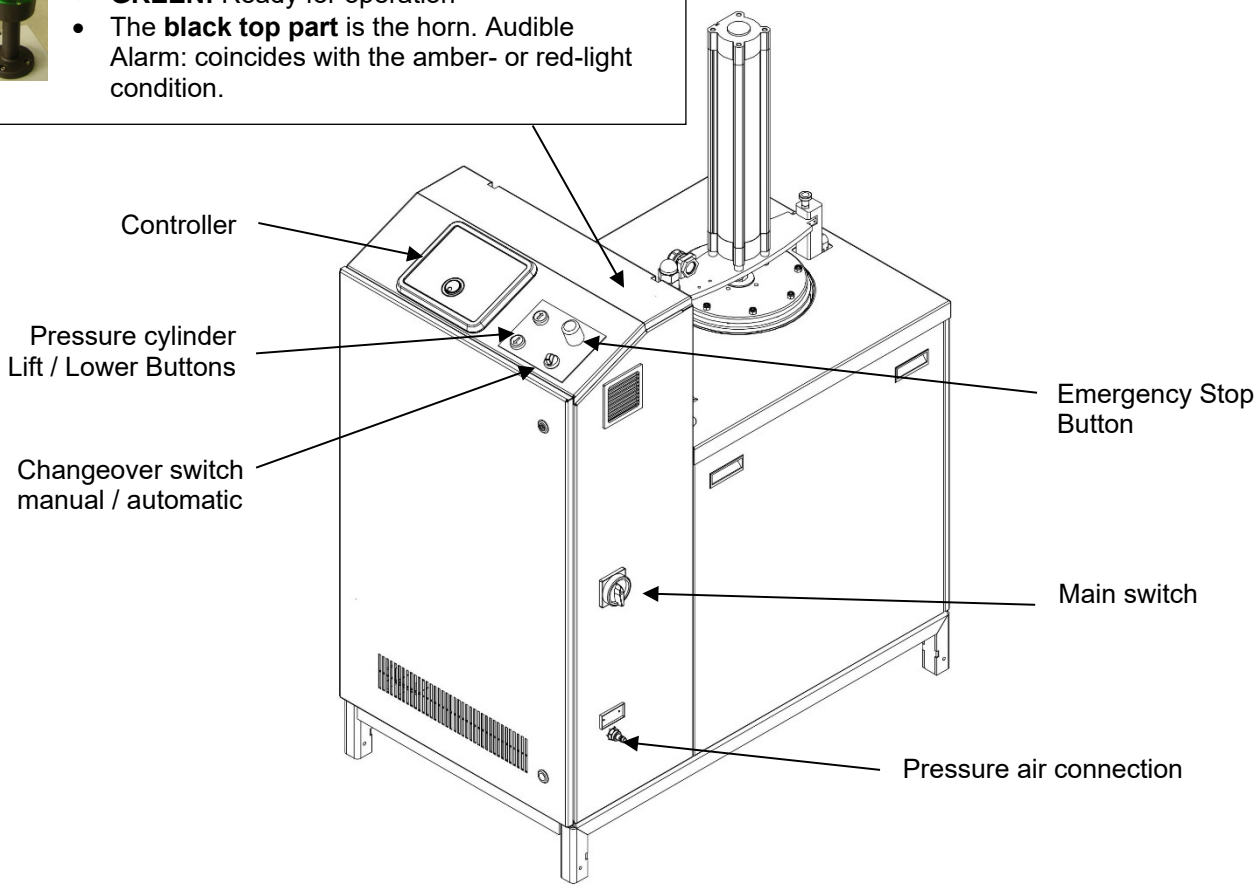


Illustration: Dynamelt PUR Bag Melter – components

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	All settings and controls are performed over the Controller. 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).

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

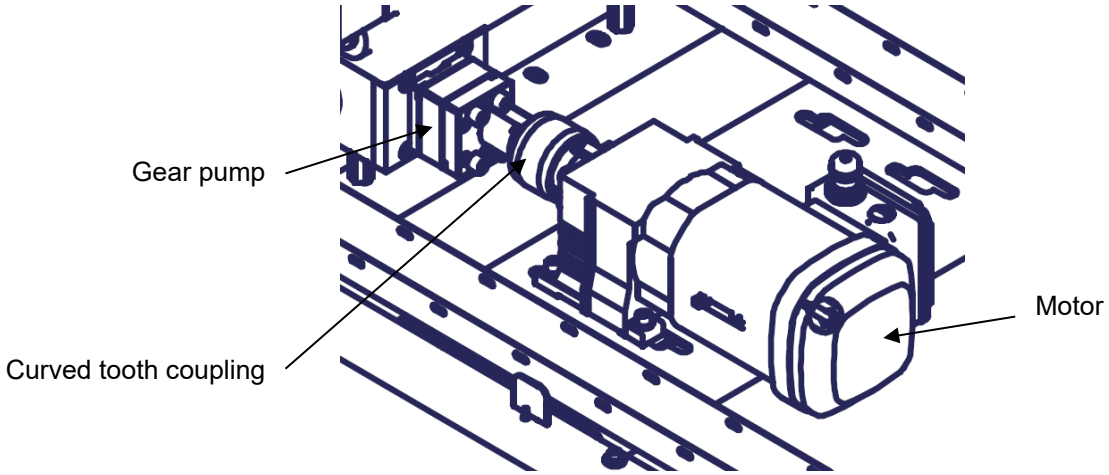


Illustration: Gear pump

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 of the gear pump is set and displayed in 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

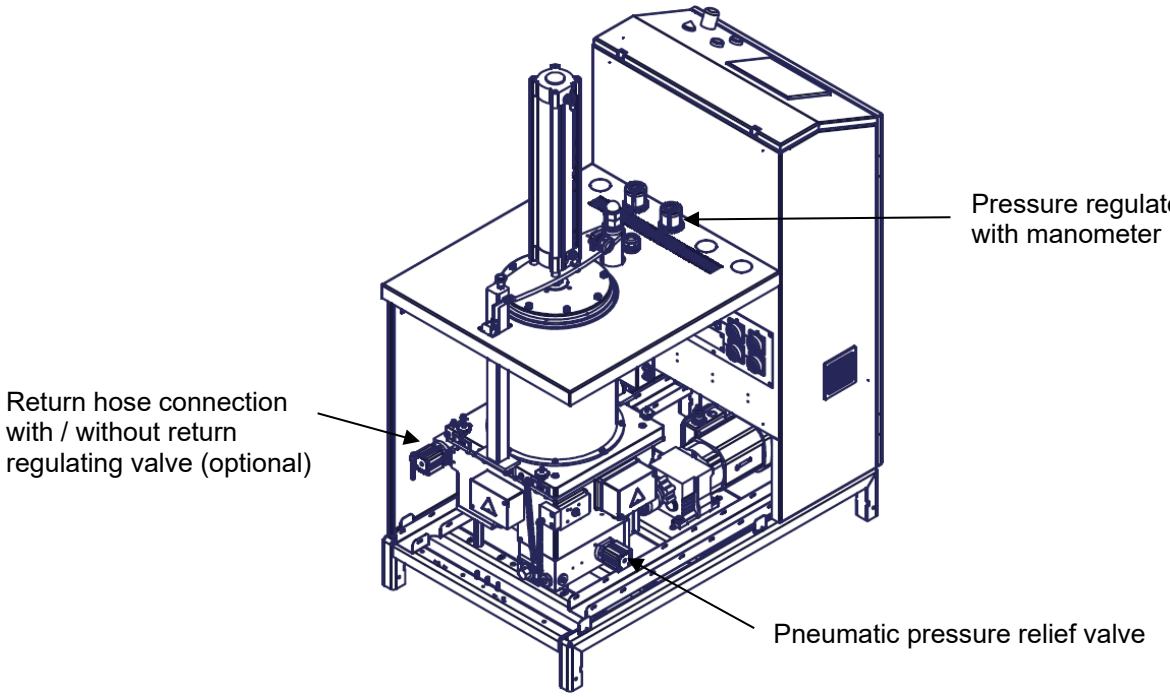
When you multiply the volume with the unit weight of the adhesive you will get the weight of the adhesive per minute.
Formula: Volume/min x unit weight of the adhesive = weight of adhesive per minute.

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:

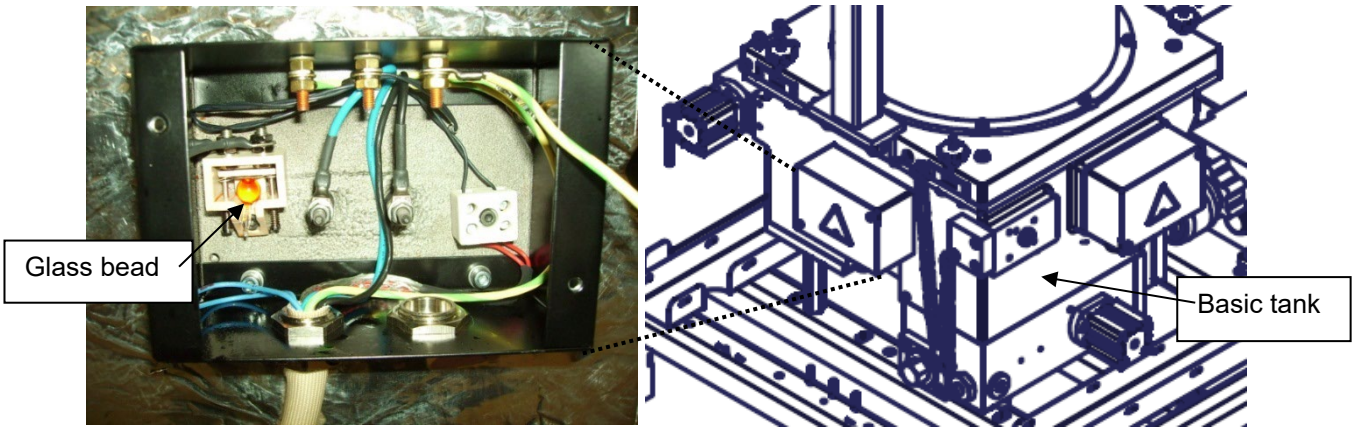
1. Pull up the pressure regulator.

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

Illustration: Proximity switches for level control on pneumatic cylinder

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.

Illustration: Control Cabinet

Level control in the feed tube

Up to two proximity switches are integrated to control the position of the pneumatic cylinder respectively the remaining quantity of the bag within the feed tube.
The proximity switches are mounted on the pneumatic cylinder that controls the platen. They sense the position of the platen within the adhesive feed tube. The proximity switch(es) trigger alarms when the platen reaches their position.

Upper Proximity switch, Position “bag almost empty” (optionally)

The “Bag almost empty” sensor is offered as part of the stack light option. A flashing, amber light along with an audible alarm are activated when the “bag almost empty” sensor is triggered.

Lower Proximity switch, Position “bag empty”

“BAG EMPTY!” is the alarm message displayed on the controller's status line when the sensor for “Bag empty” (lower proximity switch) is activated. Additionally, a continuous amber light and audible alarm are triggered for an empty bag condition, if the stack light option is included. Refer to Ch.6.3 Programming Instructions of Controller, Level Detection (P2).

CAUTION

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

Stack light

Stack light with horn can be mounted *optionally*.
The stack light shines in three colors:

- RED: General errors,
- AMBER: It flashes if bag almost empty and shines long-term if bag empty,
- GREEN: Ready for operation.
- The BLACK top part is the horn.

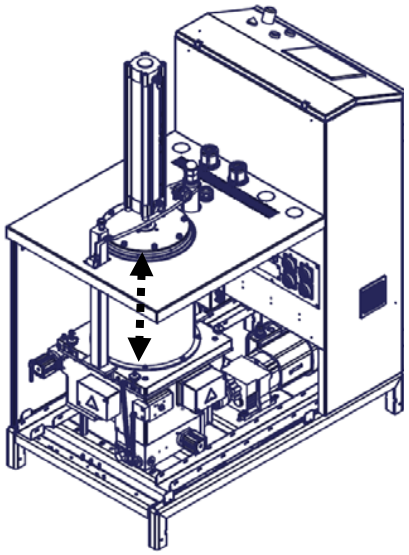
Horn

When the adhesive bag is empty, an acoustic signal will sound (optional).
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”.

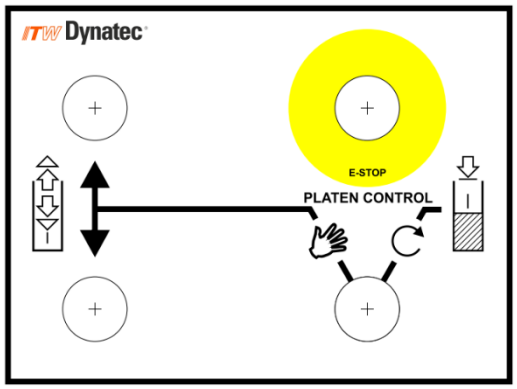


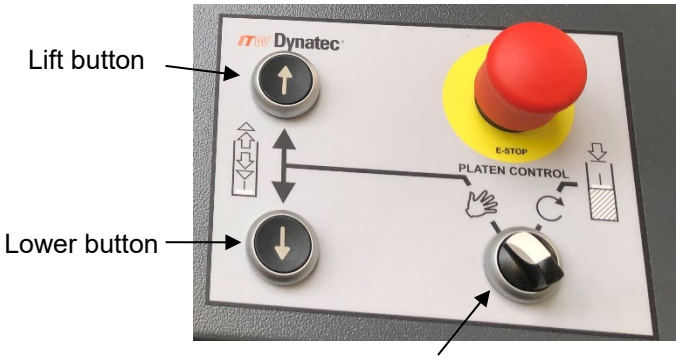
Cylinder pressure

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. When the pneumatic cylinder is turned to the side, the limit switch prevents the platen from being lowered outside of 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 respectively the air humidity and that may cause contamination or even blockage within the tank or the whole adhesive circular flow.

Lifting the platen

When the platen reaches the lowest point - the PUR bag is empty then - a message on the Controller's display will be displayed, that a new bag is needed.

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 with platen.

Inserting a new adhesive bag

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

3.9.1 Adjusting the pressure regulator

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

Adjustment of pressure regulator:

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

Adjusting the pressure regulator:

1. Pull up the pressure regulator.

2. Adjust the pressure value.

3. Push down the pressure regulator.

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

3.10 Control cabinet

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

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

For more information see the following chapters:

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

Chapter 4
Installation

CAUTION

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

4.1 Conditions for installation and mounting

Place requirement

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

There has to be sufficient space, so that

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

Mounting and alignment

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

Electrical connection

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

Pneumatic connection

Provide the necessary pneumatic connection.

- 6 bar air pressure are required.
- If the unit works with an applicator, the compressed-air supply to the unit has to be DN 15 at least.
  CAUTION: In any case the air has to be clean and dry! See advice in chapter 4.4 „Quality of compressed air“.
- If the unit works without an applicator (e.g. for filling a roller tray/pot), 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 connected and operated secured and according to the valid regulations.

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

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

   Heed the instructions given in the Applicator's manual.

WARNING

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

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

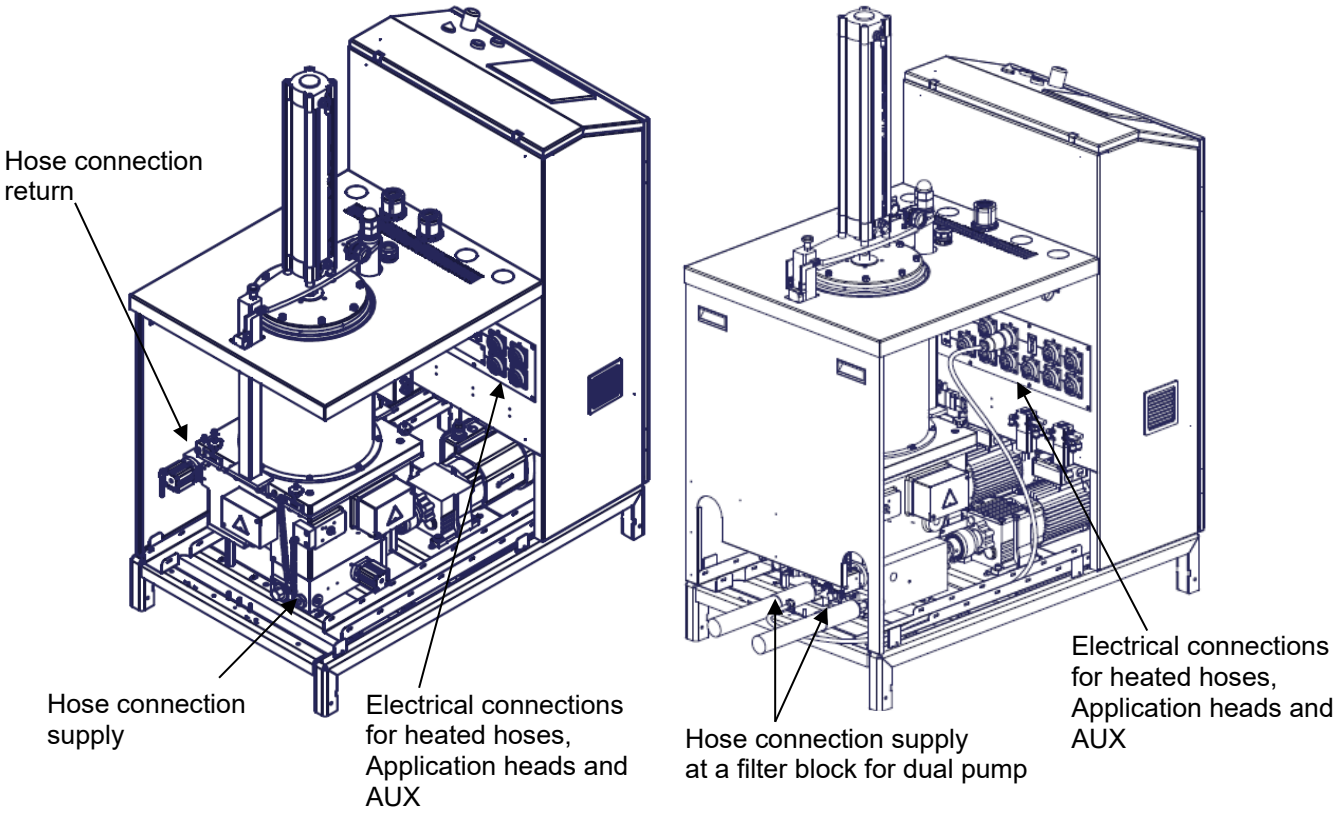
ADVICE

6 bar air pressure are required.

- Lower air pressure causes uneven adhesive application.
- The modules do not switch or switch with delay, respectively 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.
   See Applicator's manual.

   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 respectively 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 plug connections under load!

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

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

4.3 Alarm and machine contacts

CAUTIONS

- The alarm contacts will be released, if the unit has over- respectively under-temperature.
  The motors have an automatic electrical lock in the case of over- and under-temperatures.
  All the heatings will be immediately switched off in the case of over-temperature.

- The alarms and machine contacts are located on the terminal strip X01. See wiring diagram in the appendix.
- Take the interfaces you have to use from the wiring diagram in the appendix.
- Install a potential equalization according to EN 60204-1 8.2.8, because the earth leakage current of the unit exceeds 10 mA. See wiring diagram.
- **ADVICE:** A preparation of exchanging the bag and / or refilling shortens the time that is pending when the message "bag empty / level min. fallen below" appears.

4.3.1 Reference voltage

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

4.3.2 Proximity switch at the pneumatic cylinder

There are one or two proximity switches at the pneumatic cylinder. These switches operate at the lower position of the pneumatic cylinder. The switches 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 (this is configurable, by default the heaters start automatically).

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

   See pictures under Description, point 3.3.

ADVICES

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

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

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 LCD panel will display “READY” in the upper left-hand corner when all zones are within their hi-lo tolerance range of the setpoint temperature. More information about the display can be found in Chapter 6.

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.

Inserting / replacing an 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.

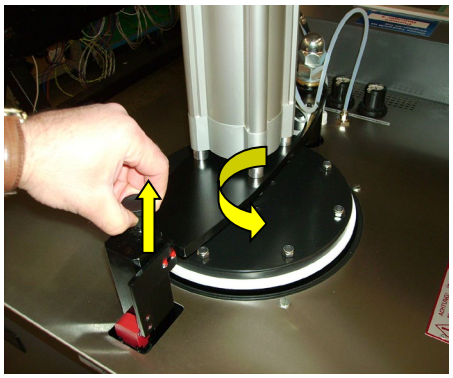
Remove adhesive residues from the walls of the feed tube obligatory, because otherwise the slipping of the bag will be prevented while pressing the bag. Then the bag can move over the platen, be filled with adhesive and burst.

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.

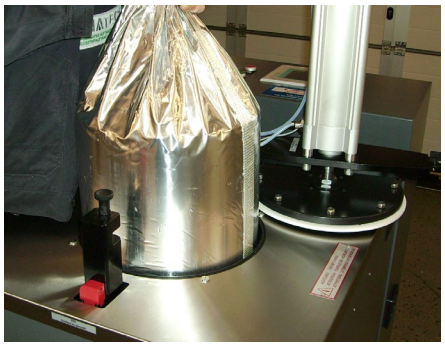
7.2 The whole bottom has to be removed up to 2 cm edge using a template.

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

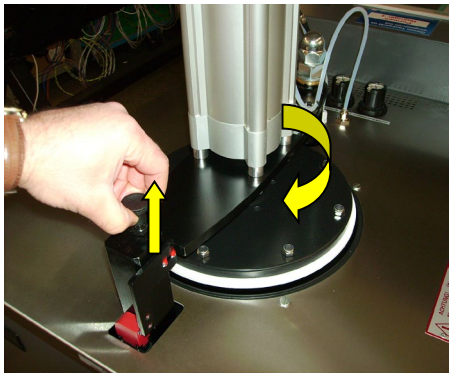


7.4 Place the adhesive bag with the adhesive side downward into the feed tube.

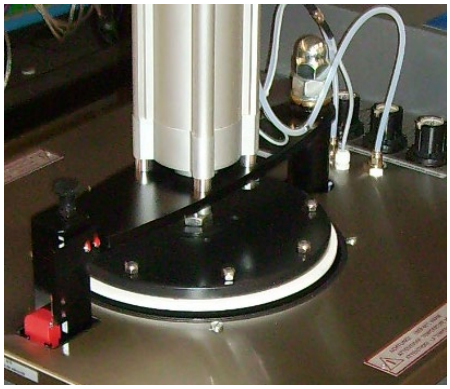
(**Before that step** the old bag has to be removed. See point **Removing the adhesive package** on next page).



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 respectively 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:

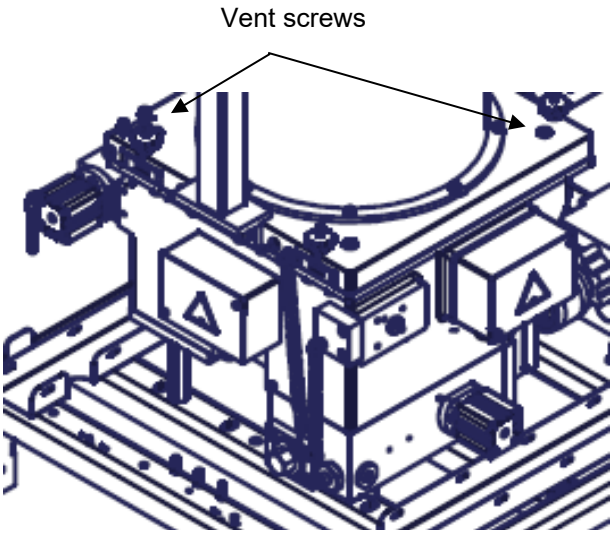
- Always wear heat-resistant protective gloves, protective clothes and safety goggles!
- Grab the empty adhesive bag in the middle by hand and press it slightly downwards by turning it at the same time in one direction several times. The empty adhesive bag will be crimped to a spiral.
- Take the empty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

Deaerating (venting) of the basic tank

ADVICE: Deaerate (vent) absolutely the basic tank immediately after the first melt of the adhesive bag and/or after each changing of the adhesive bag!
Thus, it is ensured that no air is enclosed and does not circulate in the system.
Otherwise, the PUR adhesive would react with the humidity!

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

- 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.
- Remove two vent screws on the melting plate, which are diagonal to each other.
- Wait until adhesive comes out from both holes (i.e. then the air is escaped).
- Lubricate the vent screws with copper paste and tighten them again.



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

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

After reaching the operating temperature

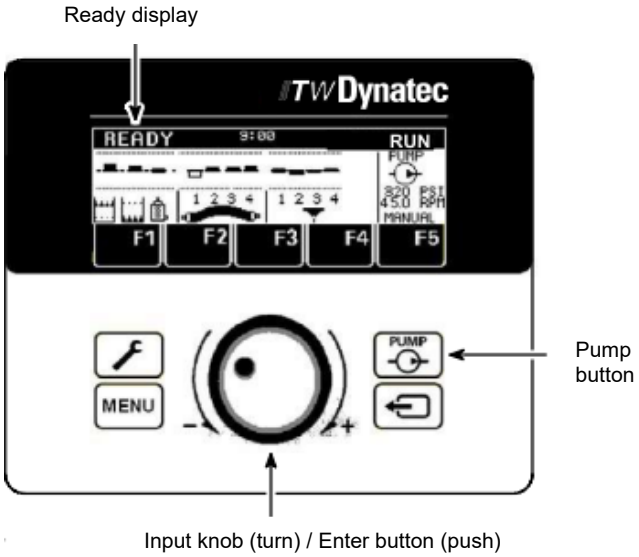
NOTE

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

10. When temperatures are “Ready”, the pump/ motor is enabled to pump adhesive.

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

b. If Pump is in Manual Program:
1. Press Pump button.
2. Press Manual (F2).
3. Select desired speed by turning input knob or select a preset speed (F5).
4. Adhesive will begin to pump after Ready condition is attained.



Optional: If an <u>Application Head 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 "Application Head".

- Switch off all pumps/motors.
- Put a heat-resistant catchment tank under the application head.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!
- Switch on the adhesive.
- Let the adhesive 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 Application Head with circulation is used, proceed as follows in order to purge it before production with adhesive respectively in order to fill the system with adhesive:
Follow all instructions in the manual "Application Head".

- Switch off all pumps/motors.
- Loosen the return hose from the unit.
- Put the open end of the return hose into a heat-resistant catchment tank to collect the adhesive.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!
- Let the pumps run as long as the adhesive comes out of the return hose clean and bubble free.
- Switch all pumps off and mount the return hose again to the return hose connection of the unit.
- Put a heat-resistant catchment tank under the application head.
- Switch on the pumps/motors in the unit. Switch on the motors of the application head (if existing)!
- Switch on the adhesive.
- Let the adhesive 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 Circulating Slot Die Applicator with slot nozzle is used, proceed as follows in order to purge it before production with adhesive respectively in order to fill the system with adhesive:
Follow all instructions in the manual "Circulating Slot Die Applicator ".

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

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!

Carry out the following steps for switching the unit off

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 Pump button, then scroll to STOP.
   b. Turn OFF the Main Switch.

3. *If 7-Day Scheduler is in use: Turn the unit ON and OFF with the Scheduler On/Off:*
   a. Press Menu
   b. Press 7-Day Scheduler (F4)
   c. Press F2 for Sleep Mode (Off). (To cancel Sleep Mode, press the Input knob.)

ADVICES

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

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

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

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

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

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

5.4 Safety Instructions Adhesives

5.4.1 Instructions for processing of application materials

Definition

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

Manufacturer information

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

Liability

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

Risk of burns

When handling with heated materials exists risk of burns.
When refilling, be aware that no hot material injects from the tank. Work carefully and wear appropriate protective equipment such as safety goggles and heat-resistant protective gloves.

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

Smokes and gases

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

Substrate

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

Processing (working) temperature

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

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

If the working temperature is set too high, this will cause a longer wet life and a longer conditioning time. Thereby the bonding may open again. The product quality will be derogated.
If the working temperature is set too low, the wet life will shorten. The adhesive will get pasty and the adhesive application will get patchy. This has a negative effect on the bonding.

Melter Unit

At Gear Pump Melter: Keep the adhesive tank always filled. To avoid adhesive-coking, refill continuous small quantities of adhesive. Keep the tank always closed.
At Bag Melter: Keep the adhesive tank always closed respectively the pneumatic cylinder always lowered.
Aerial oxygen affects the polymeric chains of the adhesive, which causes oxidation.

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

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

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

Heed the following additional instructions when processing of PUR adhesives:

ADVICE

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

- Do not exceed the prescribed processing (working) temperature.
- Do not use PUR adhesives, as long as uncertainties in the implementation of all security measures exist.
- The isocyanates in PUR-adhesives are among the dangerous substances and irritate the skin, mucous membranes of the eyes and respiratory tracts.
- Persons with asthmatic complaints may have a shortness of breath.
- Since isocyanates occur in different concentrations in PUR adhesives from different manufacturers, it is imperative to read and follow the safety data sheets and product information of the manufacturer before using. Note especially the indication of toxicity, health hazards and reaction behavior.
- Use suitable respiratory protective equipment if the risk of inhalation of isocyanates or other hazardous substances exist, which were used in the polyurethane production and are present in concentrations above the limits.
- At very high pollutant concentrations or unclear circumstances, use respiratory protective equipment independent of the ambient air.
- Exhaust the adhesive smokes with suitable exhaust and ventilation devices.
- When spraying an efficient exhaustion is imperative because of the smokescreen-risk.
- Nevertheless, it is advisable to exhaust the vapors, to encapsulate the machine or to reduce the temperature.
- If evaporating of isocyanates cannot be 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 LCD

6.1 Security advice

CAUTION

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

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

All settings and controls can be done using the Display; e.g.
- temperatures,
- times,
- speed, etc.

6.2 DynaControl V6 Controller Set-Up

6.2.1 Temperature Control Functions in General

The DynaControl microprocessor-based proportional temperature control in the Bag 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 such as the maximum temperature setpoint. It enables the user to program temperature settings and heater on/off sequencing appropriate for specific applications. It displays all programmed values, and 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.

6.2.2 Defining DynaControl Temperature Control Terms

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

Default Settings
Factory-set, programmable system values that will be in effect if the user does not enter new values. See controller's defaults.

Error Indication Alarms
Controller alarms which indicate that the programmed over-temperature values have been exceeded for one or more hopper (tank), hose or head zones or that a zone temperature has fallen beneath its hi-lo tolerance. Alarms may also indicate an open or short-circuited sensor.

Main Power & Aux Power PCBs

The Power printed circuit board (PCB) and Auxiliary PCBs provide power to all the temperature zones in the Bag Melter system.

Mechanical High-Temperature Protection

A mechanical thermostat located on the hopper (tank) which turns OFF the system at 190°C (374°F).

Microprocessor-based Proportional Temperature Control

The built-in system that controls, monitors and displays all system temperature values.

Over-Temperature Setpoint

The programmable temperatures that will cause alarms to occur when those temperatures are exceeded (over-temp icon is shown at right).

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 from damage by not allowing the pump to activate until a low limit (the programmed pump enable temperature) is achieved. This feature serves as a redundant safety measure and the enable temperature is independent from the temperature setpoints.

RTD Temperature Sensors

The standard Dynamelt system uses 100-ohm platinum resistance temperature sensors for all temperature controls.

Ready Temperature (Hi/Lo-Tolerance)

A programmable temperature which allows the Bag Melter to go into a Ready condition. The default ready temperature range is a deviation of + 10°C (18°F) from the setpoint. The setpoint minus the deviation is the low limit of the range, and the setpoint plus the deviation is the high limit of the range.

Sequential Heating

The heating sequence which allows the slower-heating hopper (tank) to reach operating temperature without unnecessary use of electricity for faster-heating hoses and applicators. Sequential heating is the time period during which the melting plate (melt grid), hoses and applicators remain OFF while the hopper (tank) and auxiliary heater come up to their setpoint temperatures. Melting plate (melt grid), hoses and applicators may be independently programmed. If the hopper (tank) temperature is above ready temperature when the Bag Melter is turned ON, the melting plate (melt grid), hose and applicator sequence is bypassed and they will be turned ON. Sequential heating is restored after Standby is turned from ON to OFF.

Setpoints

The operator-programmed settings for each of the temperature zones.

Setpoint Limitation

This is a universal maximum temperature for all zones. The operator cannot program a temperature setpoint higher than the Setpoint Limitation. All heating zones will shut down if the actual temperature of any zone climbs higher than the setpoint limitation plus deviation temperature.

Standby Condition

The system condition where the hopper (tank), 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 conditions are selected. When standby mode is activated, the controller will display STANDBY.

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 Offsets

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.

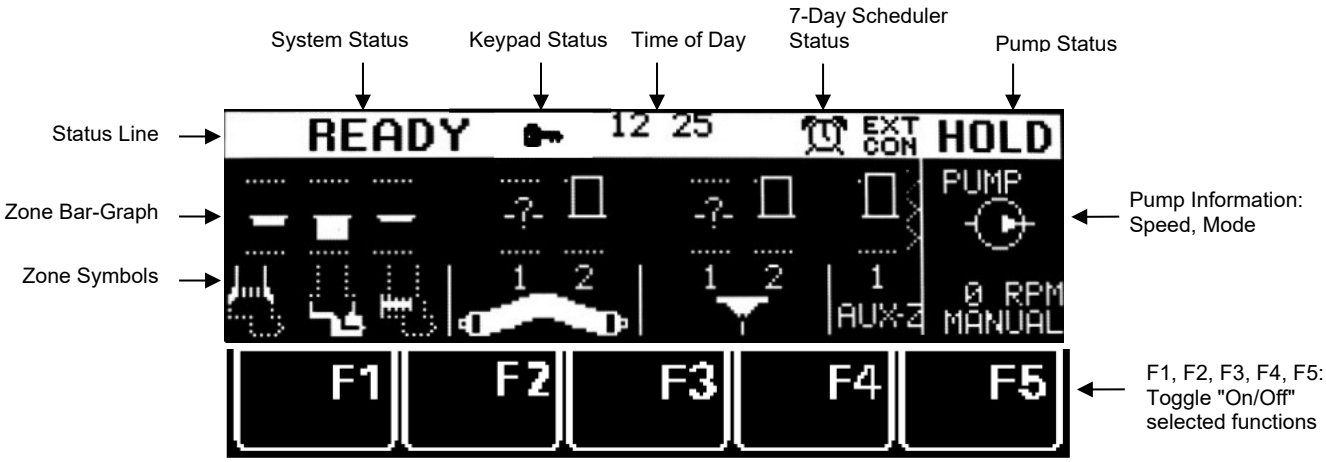
V6 Base Module

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 Temperature Module

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

6.2.3 DynaControl V6 LCD Display During Normal Operating Mode



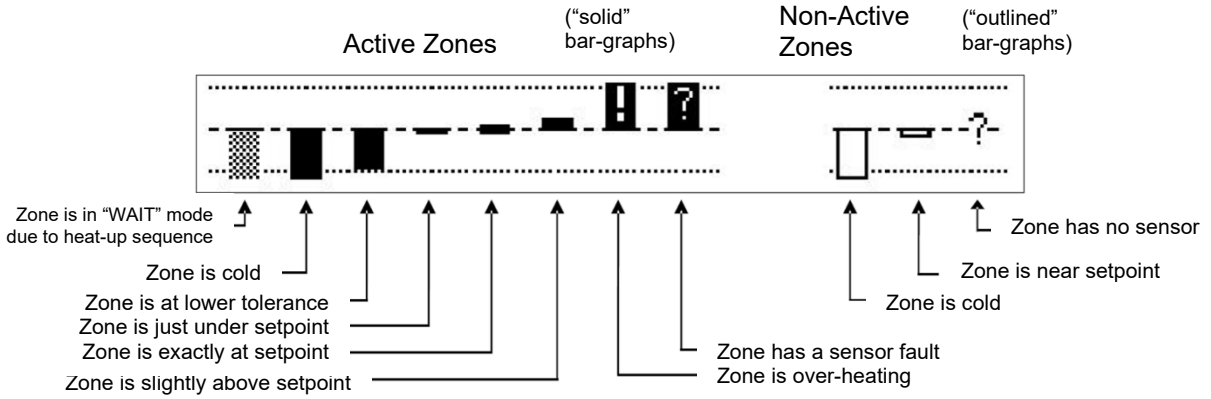
6.2.4 Error Indication Alarms

The following illustration shows the display screens that will be activated when one or more error indication alarm conditions occur. The conditions that will trigger an alarm are:

- When a hopper (tank), hose or head has exceeded its selected over-temperature setpoint, which is the setpoint plus its Hi/Lo alarm setting, or when it is below its selected under-temperature setpoint, which is the setpoint minus its Hi/Lo alarm setting.
- When a hopper (tank), hose or head sensor has an open circuit.
- The motor drive has a fault.

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.

Error Indication Alarm Display Examples:



6.2.5 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 error indication display will appear.

Pressing the RETURN button resets the error. If several zones display alarms, each must be acknowledged by pressing RETURN. The alarm display is switched off. The operator must either switch OFF the indicated temperature zone(s) (via the DynaControl keypad) or troubleshoot to correct the problem.

Low temperature alarms will not open the main contactor and are only indicated on the bar-graph display and auxiliary alarm output contacts.

A sensor failure is displayed as a "?" on the bar-graph and power is immediately switched off to the zone. Power to all zones will be switched off after 20 seconds.

When the actual temperature exceeds the setpoint limitation plus a tolerance of a few degrees, a "!" is displayed on the bar-graph and heater power is switched off.

6.2.6 Optional System Status (Stack) Lights

Stack lights ease remote monitoring of the system's status. Refer to Level Detection (P2). The stack light option has the following indications:

- Green Light: the Bag Melter is in a ready condition
- Amber Light: some type of warning condition exists
- Red Light: some type of error condition exists
- Audible Alarm: coincides with the amber or red light condition

6.2.7 Settings for a Typical Operation

Note: The values given here are approximate settings for a typical application. The values you choose will be based on the type of equipment and adhesive you are using and the nature of your particular operation.

If Application Temperature is 130°C (266°F):

- Hose and head temperature: 130°C (266°F).
- Hopper (tank) temperature: 120°C (248°F).
- Melting plate (melt grid) temperature: 110°C (230°F).
- Hi/ Lo limit deviation: 10°C (18°F).
- Standby condition temperature (deviation): 55°C (100°F).

For most operations, temperature fluctuations will be very small and of short duration. For these reasons, the settings above are recommended.

System Values That Are Factory Programmed (not customer programmable):

- Minimum setpoint value: 10°C (50°F).
- Maximum setpoint value: 190°C (374°F).
- Maximum alarm deviation: 50° (C or F).
- Minimum alarm deviation: 5° (C or F).
- Maximum standby temperature: 150° (C or F) less than setpoint.
- Minimum standby temperature: 30° (C or F) less than setpoint.
- "Actual" temperature indication range: 0°C to 260°C (32°F to 500°F).

Customer Programmable System Values Preset At The Factory:

ITW Dynatec can set the controller's system values to customer's specs, if provided. If customer's specs are not provided, the following values will be programmed into the DynaControl at the factory. They may be changed by reprogramming the controller.

- Applicator (head) and hose setpoints: 132°C (270°F).
- Hopper (tank) setpoint: 132°C (270°F).
- Melting plate (melt grid) setpoint: 132°C (270°F).
- All zones are switched off, except for the hopper (tank) and aux. heating.
- Motor rpm: 0 in the “Manual" mode.
- Setback: 55°C (100°F) under setpoint.
- Hi and low alarms: ±10°C (±20°F) from setpoint.
- Pump enable temperature: 110°C (230°F).

Default Settings of the DynaControl V6 Controller:

- Language: English
- Setting for Customer Access Code: “1111".
- Setback temperature for all zones: 55°C (100°F) lower than programmed setpoints.
- Hi/ lo limit deviation for all temperature zones: ±10°C (±20°F).
- Temperature zone offset: 0°C (0°F).
- Setpoint limitation: 190°C (374°F).
- Pump enable temperature: 110°C (230°F).
- Automatic sleep mode: Off.
- Sequential heat-up: Off.
- Power-On motor stop: Yes.
- Power-On heater start: Yes.
- Global setpoints: No.
- Minimum pump speed: 3 RPM
- Maximum pump speed: 70 RPM
- Heat soak: activated, threshold 80°C (176°F), duration 30 minutes
- Bag empty - pump stop: is not activated, delay time 0 minute
- Low bag warning indicators: 1 second on / 3 seconds off audible alarm, flashing amber stack light (optional)
- Empty bag warning indicators: 1 second on / 1 second off audible alarm, continuous amber stack light, repetition time 1 min (optional)

6.2.8 Helpful Tips for the User

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

- When the Bag Melter is turned ON, all system heaters go ON unless they have previously been de-activated (in which case they will be turned OFF) or if sequential heat-ups have been set. However, if hopper (tank) temperature is above ready temperature when the Bag Melter is turned on, all hose and head sequential heat-ups will be bypassed and hoses and heads will be turned ON.

6.2.9 Controller Features

One-button Shortcuts

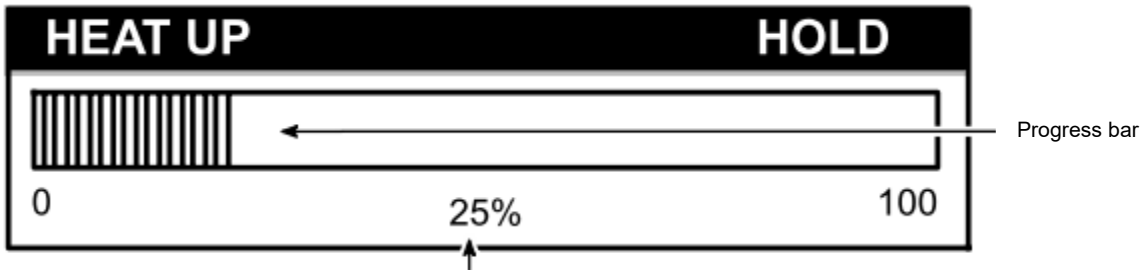
Press the “F” (function) buttons to go to:
F1 = the Hopper (tank) temperature zone
F2 = the Hose temperature zone
F3 = the first Applicator temperature zone
F4 = none
F5 = toggle On / Off

Shortcut to Advance to System Configuration Parameters

Press the System Configuration button (wrench button) on the Overview Screen once to advance to the System Configuration parameters. Press it again, repeatedly, to advance through the pages of parameters.

Initial Heat-up Progress Bar

During heat up from a cold start, press the Input Wheel/ Knob for 5 seconds to see a progress bar which graphically tracks heat-up until Ready status is attained and production can start. The scale shown is 0% to 100% fully heated. This does not include the “Heat Soak Delay”.



Numeric Readout of Progress

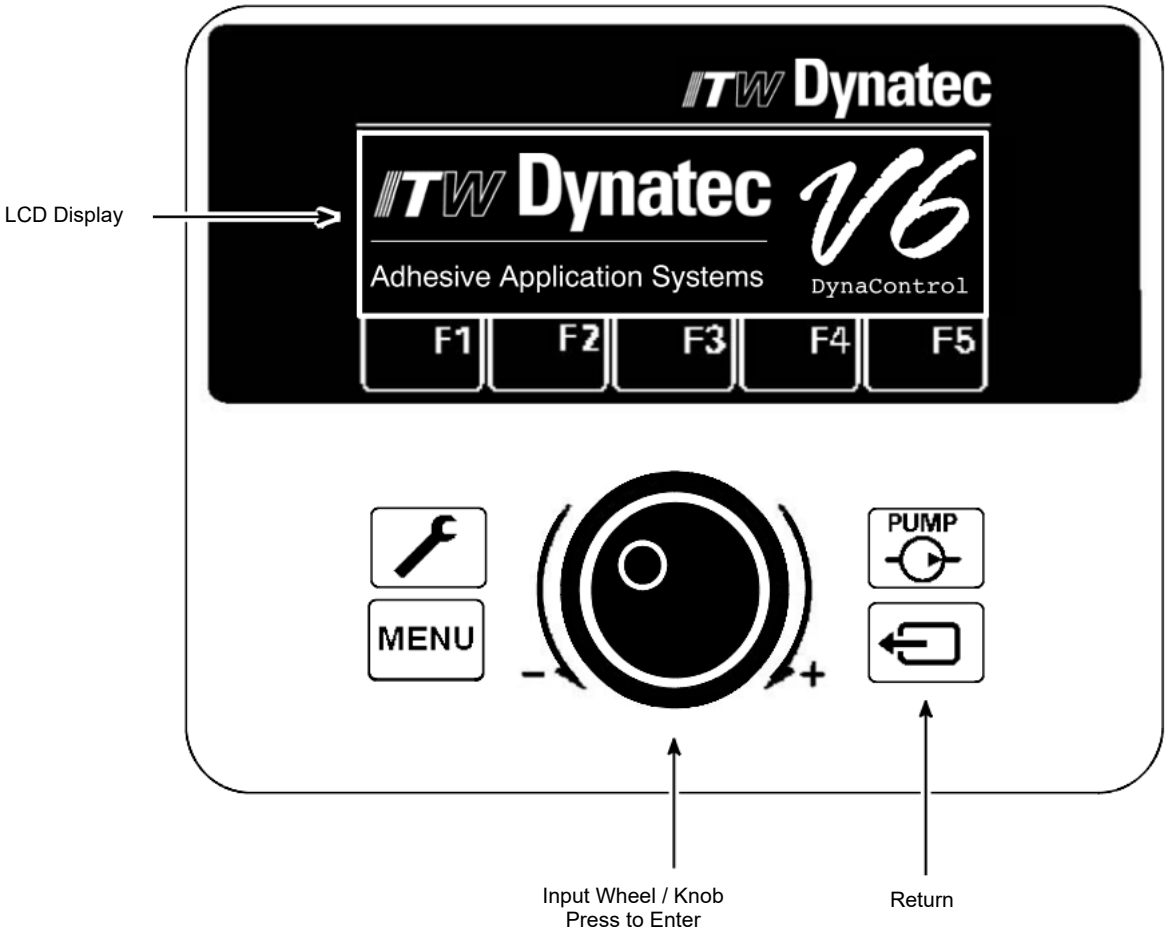
The above illustration indicates the system is one-quarter heated.

If you would like to display the controller's Scan Mode in order to watch the active temperature zones scroll while the unit is heating, press the Input Knob once more.

6.3 Programming Instructions of DynaControl Controller V.6.00 and Up

6.3.1 DynaControl (DCL) V6 LCD Interface

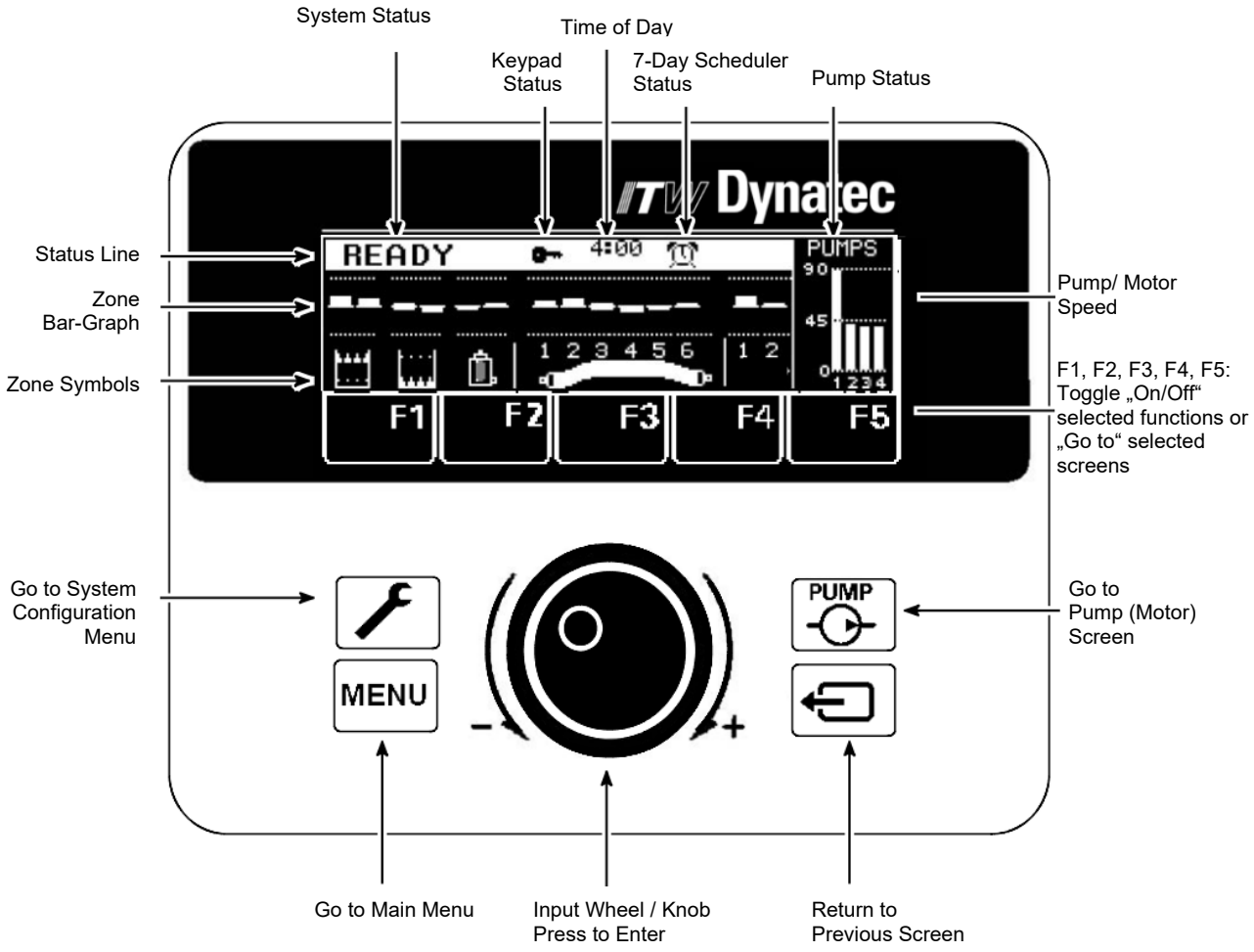
DynaControl V6 controller technology is available as a liquid crystal display (LCD), which allows an instant overview of temperature zone and pump status, and with a combination Input Wheel/Enter Knob to facilitate fast programming.



6.3.1.1 In General

- Press the Return button to return to the Overview Screen (seen on next page).
- This controller utilizes the graphics ■ (indicating YES or ON or selected) and □ (indicating NO or OFF or not-selected).
- When there is no operator activity on a screen for approximately 30 seconds, the controller will automatically return to the Overview Screen.

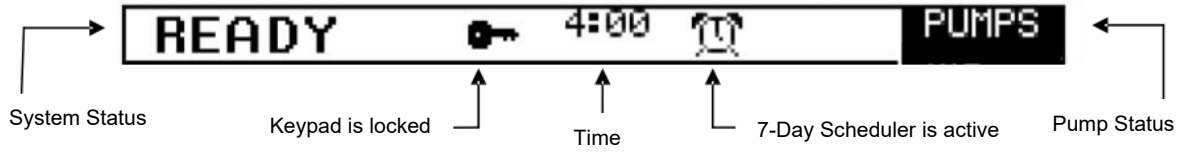
6.3.1.2 Overview Screen Reference



The Overview Screen gives a comprehensive view of the status of each of the temperature zones and the system as a whole. It gives the status and speed of the pump.

6.3.1.3 Status Line

The status line is the top line of the display. It always lists the System Status, the Time-of-Day and the Pump Status. It can also include the status of the Keypad (if locked) and the 7-Day Scheduler (if active). An example of an Overview Screen status line is seen below.



6.3.1.4 System Status

The status of the “system”, i.e. the Bag Melter, its hoses and applicators, is listed as one of the following:

HEAT-UP	No faults present, zones are heating but haven't reached their setpoint window.
READY	No faults present and all zones are within the setpoint window.
ALARM	At least one zone is outside the setpoint window (over or under temp).
STANDBY	The system is in standby mode.
OVER-TEMP	The hopper (tank) is in over temperature condition, all power circuits are shut off.
FAULT	A temperature zone has a fault and all power circuits are shut off or the motor drive has faulted.
HEAT SOAK	All zones are at temperature, however the 30 minutes of additional heat soak time in progress to assure all the adhesive in the hopper (tank) and pump is at the proper temperature prior to pump activation. A count-down time will also be displayed, indicating the amount of Heat Soak time left before a Ready condition is possible.
BAG EMPTY	Adhesive bag in the feed tube is empty and must be exchanged.

If the Emergency-Stop button had been pressed, "E-STOP ACTIVE - ACK. WITH " will be displayed in the status line of the display.

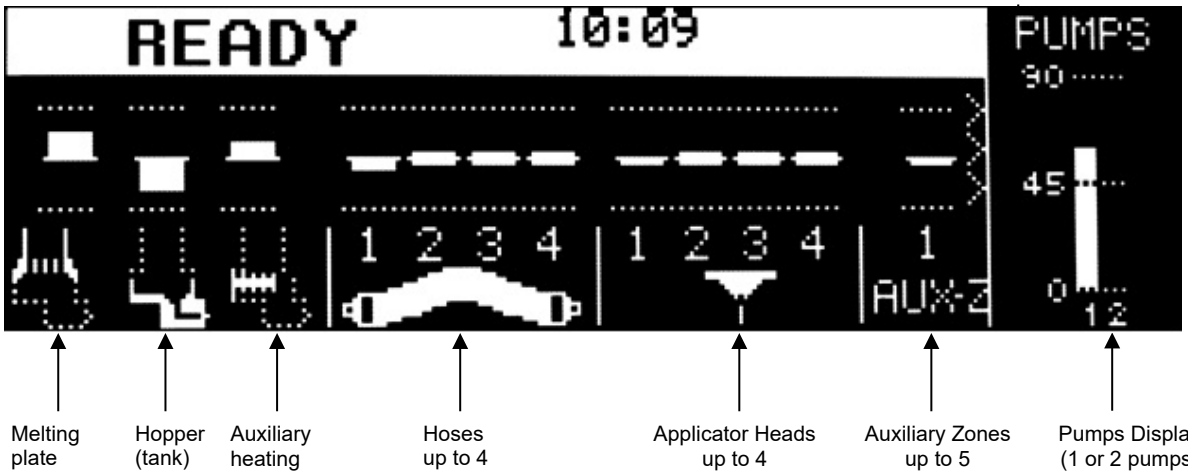
6.3.1.5 Pump Status

The status of the adhesive pump is indicated as follows:

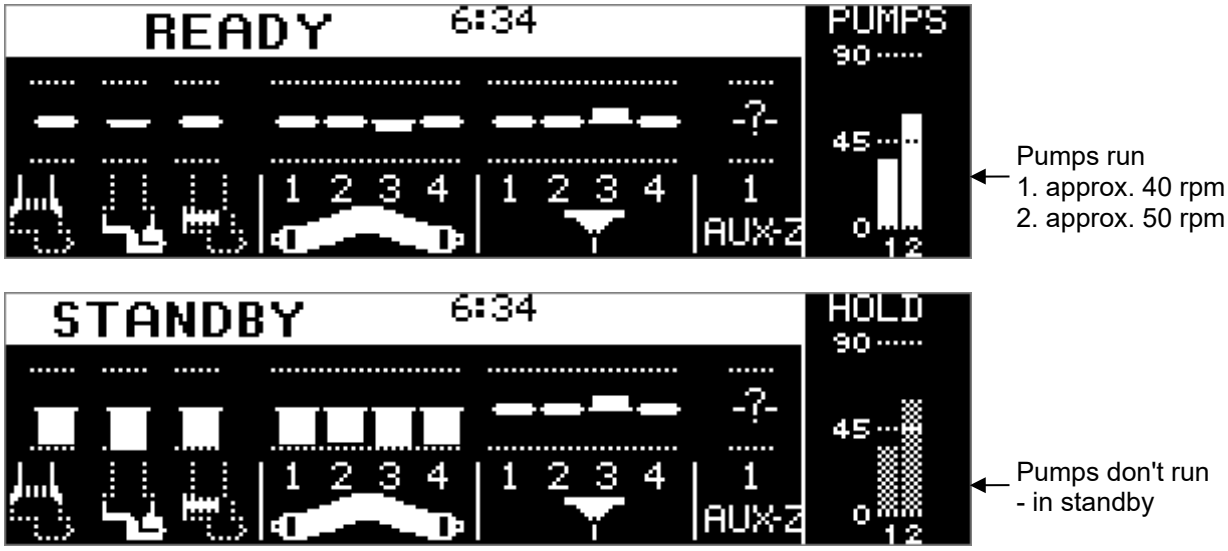
PUMPS	Pump has start signal and is actually running (seen on Overview Screen, upper right corner).
HOLD	Pump is in Run mode (auto or manual) but a low temperature condition prevents it from running.
STOP	Pump is in Stop mode.

6.3.1.6 Main Display / Temperature Zone Symbols

Each temperature zone is represented by a symbol on the display, as follows:

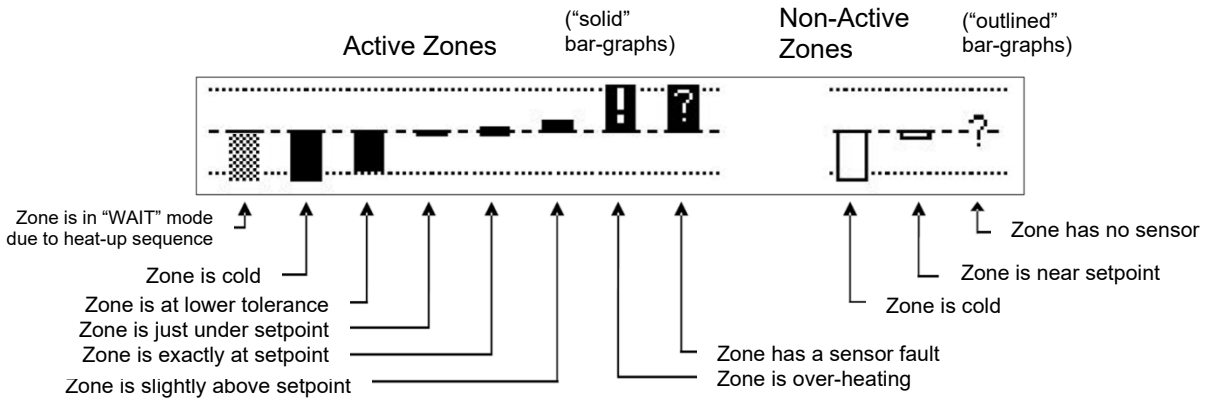


Main display when multiple pumps:



6.3.1.7 Bar-Graphs

The temperature status of each zone is shown by a bar-graph.
A solid bar-graph indicates that the temperature zone is activated.
An outlined bar-graph indicates a temporarily de-activated temperature zone.
A question mark indicates that the zone's RTD temperature sensor is not valid.
An exclamation mark inside a solid bar-graph means that the temperature of the zone is significantly outside its setpoint window.



6.3.1.8 Scan Mode

Scan Mode allows the operator to watch the currently active temperature zones scroll one at a time on the Overview Screen. Each zone is displayed with its name, programmed setpoint, actual temperature and bar graph.

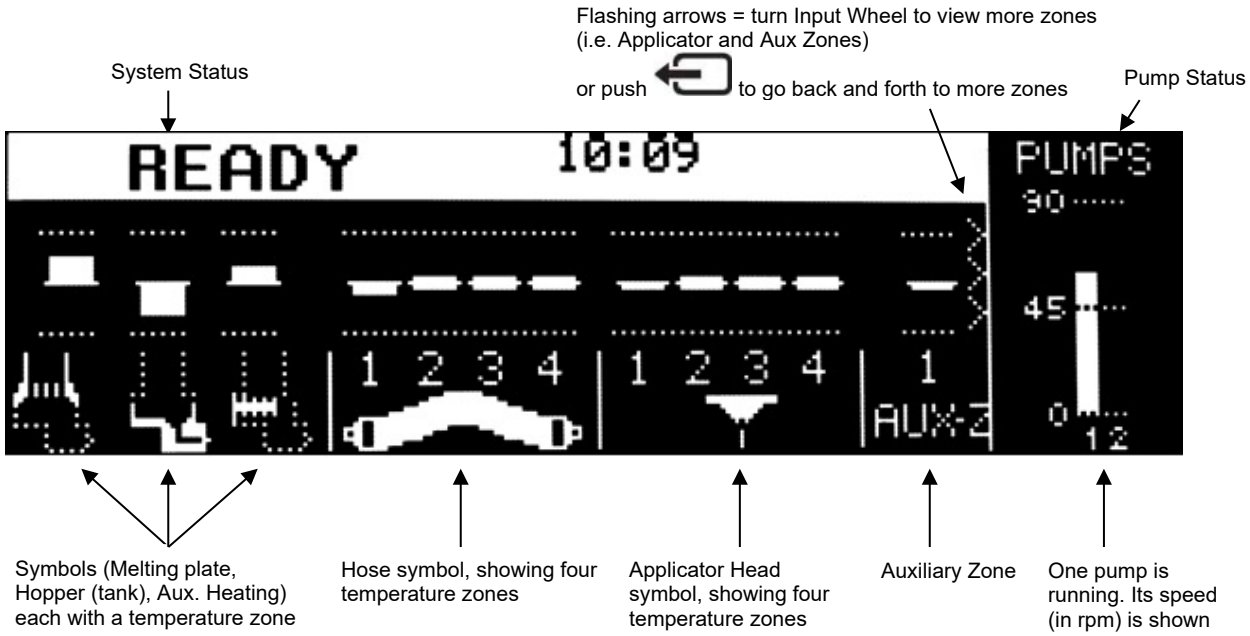
To activate Scan Mode: On the Overview Screen, push the input knob.

To stop Scan Mode: Turn the input wheel.

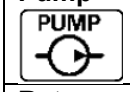
6.3.1.9 Overview Screen Example

The Overview Screen illustrated below illustrates an example of a typical system. The Bag Melter has a melting plate (melt grid), a hopper (tank) and an auxiliary heater each with independent temperature sensors.

The screen also shows four hoses, four Applicator heads and a pump/ motor. There are additional temperature zones in this system, not seen on this screen, as indicated by the flashing arrows.



To Navigate Away from the Overview Screen

Press This Button	To access the following functions::
System Configuration 	Go to the System Configuration Menu to program the temperature unit, language, setpoint limitation, hi/ low tolerance, setback temperature, level detection, heat-up sequence, pump enable temperature, access code, 0.5 RPM increments, temperature offset, zone names, power-on configuration or view the logbook.
Menu 	Go to the Main Menu screen to program recipes, set-back mode, keypad locking and the 7-day scheduler or to go to the Help Screen.
Pump 	Go to the Pump/ Motor screen to program pump parameters.
Return 	Return to the previous screen. Acknowledgment, reset (reset) of an error or alarm.
F1, F2, F3, F4	Go to the temperature zones (use as shortcuts).
F5	Go to the Pump/ Motor screen (alternative method).

6.3.1.10 Setup Your System's Parameters

System Parameter Setup refers to the process of programming the controller to meet the specific temperature requirements of your production. Setpoints for each temperature zone must be programmed as well as a standby temperature and high/ low alarm tolerances.

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

The following is a step-by-step procedure for setting up the DynaControl with your system's parameters.

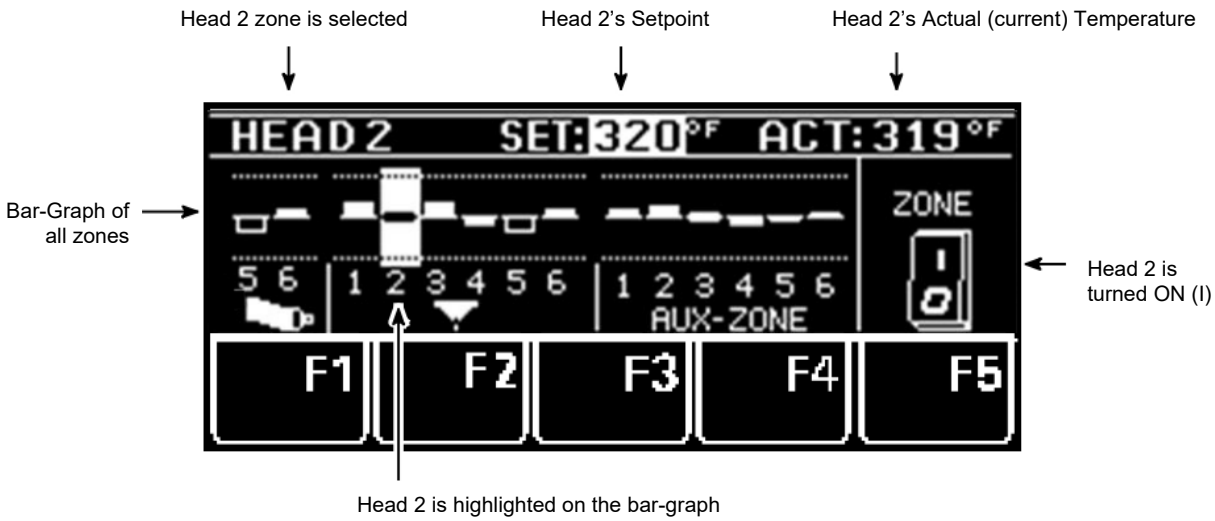
6.3.2 Temperature Zones

6.3.2.1 Selecting Temperature Zones

From the Overview Screen, turn the Input Wheel slowly to view each temperature zone. As the wheel is turned, you will see the names of the individual temperature zones on the top line of the display. Zone names may be re-programmed to suit the user, but ITW Dynatec's typical zone names are: MELTING PLATE (MELT GRID), HOPPER (TANK), AUX. HEAT., HOSE, HEAD and AUX.

To select a zone, simply stop turning the wheel when the desired zone's name appears (example below: HEAD 2). To the right, displayed on the top line, is this zone's programmed setpoint (ex. SET: 320°F) and the actual current temperature of the zone (ex. ACT: 319°F).

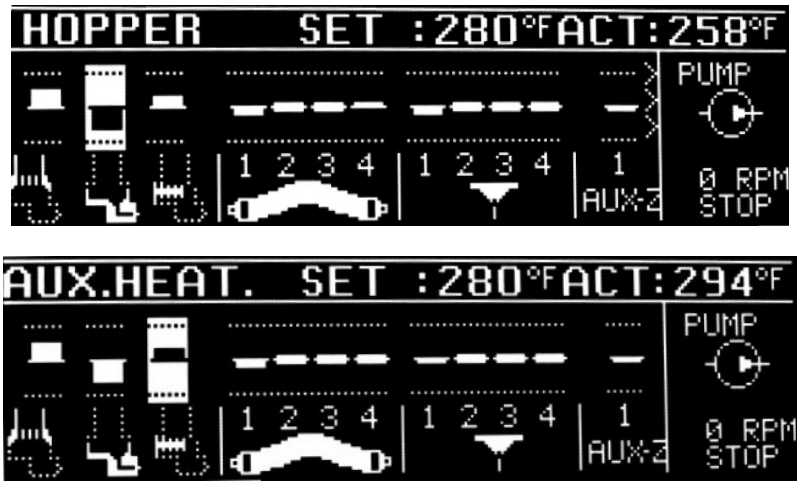
Below the zone's name is the bar-graph with the selected zone highlighted. Below the bar-graph you can see that this zone is #2 of the system's applicators. At the far right of the display, you can see that this zone is turned ON.



6.3.2.2 Selecting Temperature Setpoints

After selecting a temperature zone, press the Enter Knob to highlight the setpoint. Turn the Input Wheel to your desired value. To enter the new value, press the Enter Knob. Continue programming by entering a setpoint for each zone.

NOTE: Hopper (tank) and Aux. Heating require only one temperature setpoint. If one is changed, the other changes accordingly.

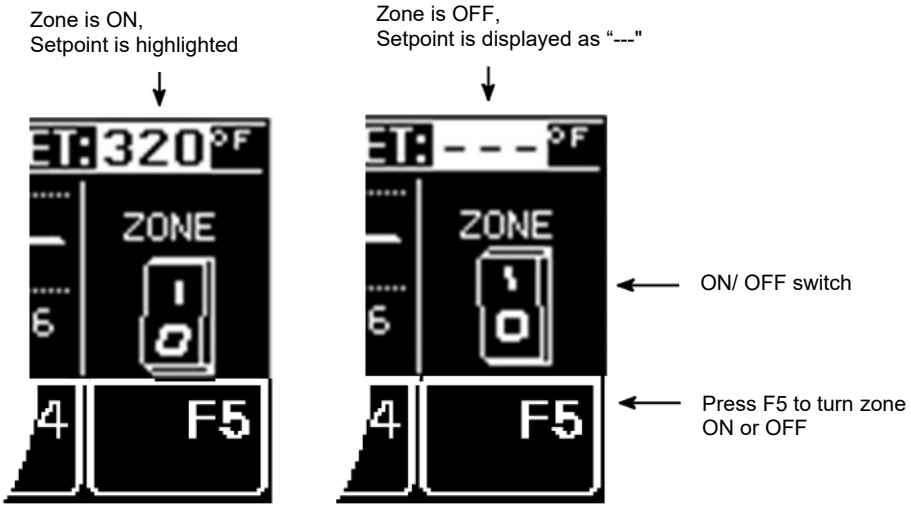


6.3.2.3 Turning a Temperature Zone ON or OFF

When a temperature zone is not used, it can be de-activated (turned OFF). A zone that is turned off no longer heats and is not monitored by the controller for over or under temperatures.

Even when a zone is turned off, the controller remembers its temperature setpoint and it will be restored when the zone is turned back on.

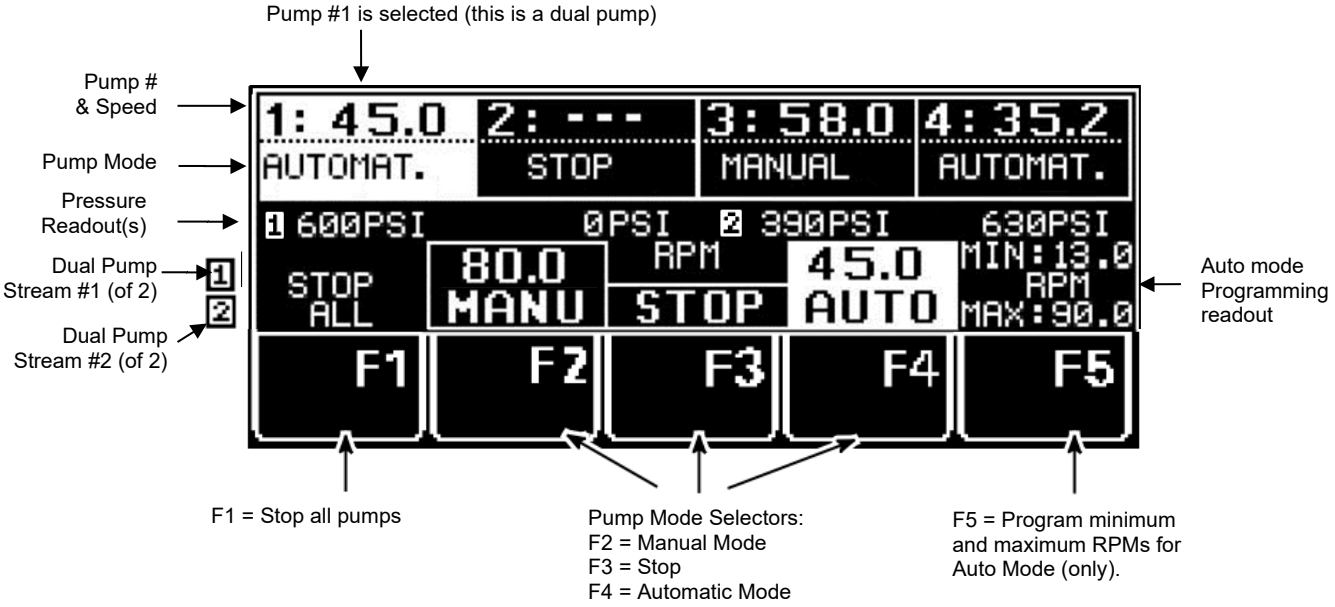
To toggle a temperature zone ON or OFF, press the Enter Knob. Then press F5. You will see the ON/OFF switch change position. Press the Enter Knob.



6.3.3 Pump Screen

Return to the Overview Screen if necessary, by pressing the RETURN button. Then press the Pump button (or F5) to go to the Pump Screen.

The Pump Screen illustrated below shows the maximum number of pumps (two). The display shows the pump mode and speed for each pump. If dual pumps with pressure readouts are in use, the display toggles between the two pump stream's PSI readouts. In the example below, pumps #1 and 2 are dual pumps.



6.3.3.1 Pump Settings

While on the Pump Screen, all changes are immediate; you do not have to press the Enter Knob.

The Pump Screen allows you to program the pump mode (Manual, Stop or Automatic) and the pump speed.

6.3.3.2 Selecting a Pump

Turn the Input Wheel to scroll through the pumps. The selected pump will be highlighted. You may also press the PUMP button again to select another pump.

6.3.3.3 Selecting Pump Mode

Each pump in the system must be programmed with a Pump Mode. The three choices are:

AUTO Mode	The pump speed is controlled via a 0 – 10VDC signal that is provided by an external device (pattern control equipment or parent machine input).
MANUAL (MANU) Mode	The pump speed is adjusted manually by the Bag Melter operator.
STOP Mode	The pump is stopped, until AUTO or MANUAL is selected.

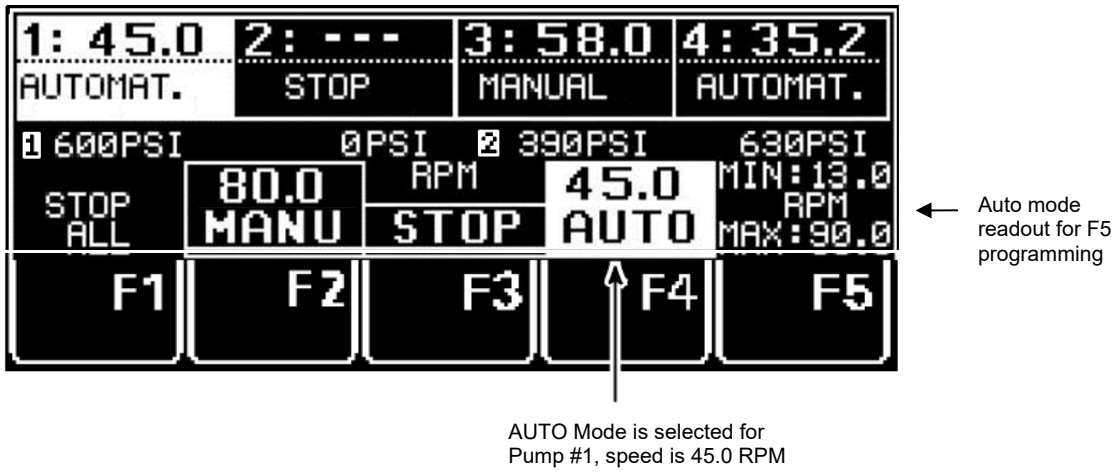
To select a pump mode,

a. Use the function buttons:
F2 = MANUAL Mode, F3 = STOP or F4 = AUTO Mode, or

b. Use the Input Wheel:
If Auto or Stop modes are desired, simply turn the Input Wheel to highlight that function.

However, to select Manual mode, press the Enter Knob before turning the wheel. Pressing the Enter Knob here toggles between mode selection and RPM selection.

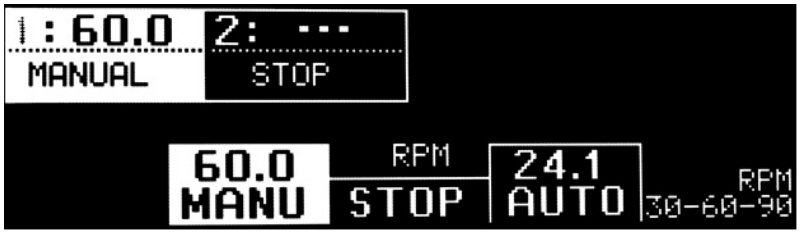
Once you are in Manual mode and you have highlighted the RPM selection, turn the Input Wheel to your desired RPM value.



6.3.3.4 Manual Mode Adjustments

In Manual Mode, press the Enter Knob to program the pump speed. Then turn the Input Wheel to increase or decrease the pump speed. If desired, you may adjust the RPM increments at the “0.5 RPM Increments” parameter on the System Configuration Menu.

Or press F5 to scroll through the pre-set speed shortcuts. The pre-sets are 0, 30 RPM or 60 RPM. Press F5 again until desired pre-set is selected. No entry confirmation is necessary.



6.3.3.5 Auto Mode Adjustments

The Bag Melter's pump must be programmed with a minimum and maximum percentage of full (maximum) speed when Auto mode is used. The maximum speed is used as a scaling factor for a 0 to 10VDC motor speed control signal provided as an external input to the Bag Melter.

The 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.

To Adjust: Press the F5 button once to open a minimum RPM input field. Turn the Input Wheel to select the desired minimum speed. Press the Enter Knob to confirm. Press F5 again to open the maximum RPM field. Turn the Input Wheel to select the desired maximum speed. Press the Enter Knob to enter the value.

6.3.3.6 F1 = Stop All Pumps

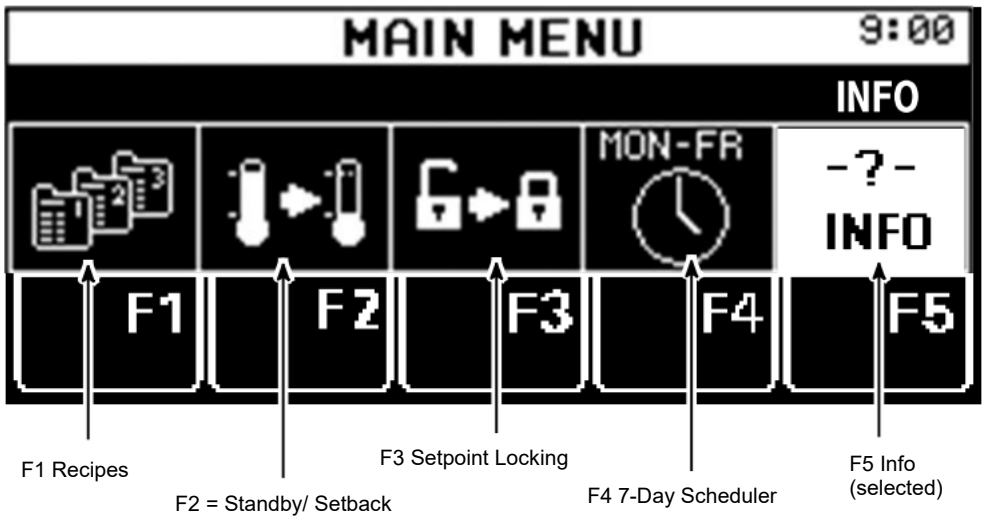
Press the F1 button to stop all the pumps. The controller will memorize the previous setting.
Press F1 again and the pumps will re-start accordingly.

Press the RETURN button to return to the Overview Screen.

6.3.4 Main Menu

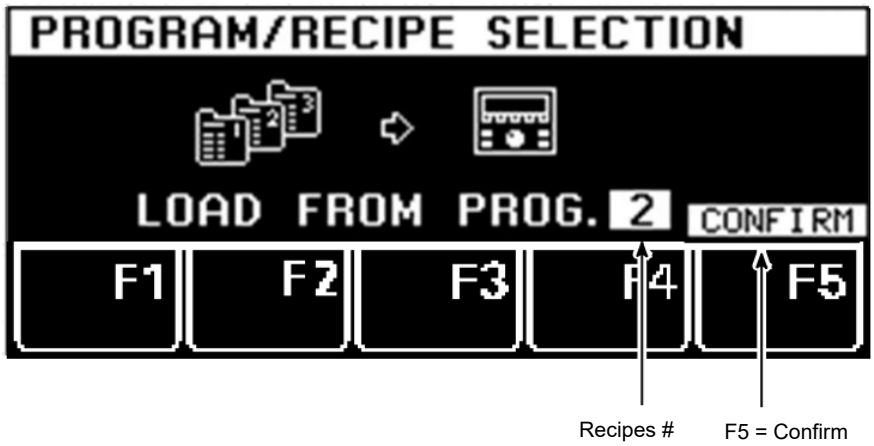
Press the Main Menu button on the Overview Screen to go to the following functions:
F1: Recipe Management
F2: Standby Mode
F3: Setpoint Locking
F4: 7-Day Scheduler
F5: Info Menu

To select a function, press its appropriate F-button below the menu icon or turn the Input Wheel to highlight the desired function and then press the Enter Knob.



6.3.4.1 Recipe Management (F1)

A recipe (or “program”) is a set of temperature setpoints and parameters which the user has programmed and stored in the controller for future use. Up to four recipes may be stored in the DynaControl controller.



6.3.4.1.1 To Save a Recipe (SAVE TO PROG):

1. Program the controller as you wish it to be setup for a recipe. Program the following parameters: temperature setpoints, zone On/Off settings and motor mode and speed.

2. Press the Main Menu button, then press F1: Recipe Management. Turn the Input Wheel to SAVE TO PROG. Press the Enter Knob to enter. Turn the Input Wheel to select a program number (up to four recipes may be created and stored). Press F5 to confirm.

6.3.4.1.2 To Load a Stored Recipe (LOAD FROM PROG):

1. Press the Main Menu button, then press F1: Recipe Management. Turn the Input Wheel to LOAD FROM PROG. Press the Enter Knob to enter.

2. Select the desired recipe by turning the Input Wheel until its recipe number is highlighted. Press F5 to confirm the selection.

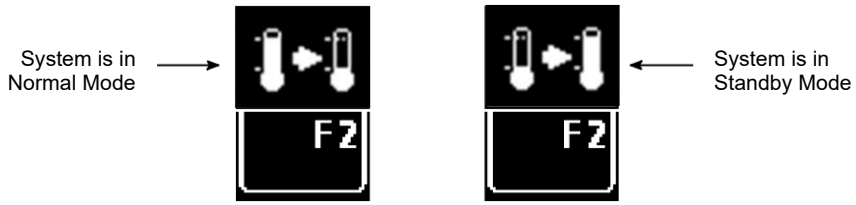
Notes:

1. Recipes containing temperature zones that do not show valid RTD temperature sensors (i.e., zones with “?” in their bar-graphs) will be turned Off after re-loading, because the controller assumes those zones will not be used.

2. If you have loaded a recipe, any changes you make to the temperature or motor settings are not automatically stored in that recipe. If your changes need to be stored, go to the Recipe Management Screen and follow the steps to SAVE TO PROG.

6.3.4.2 Standby (F2)

In Standby mode, the temperatures of all active temperature zones will decrease by a pre-defined amount and the pump will stop (Note: the pre-defined amount is programmed on page 2 of the System Configuration Menu).



Press the Main Menu button, then press F2 to toggle between Normal mode (setpoints and pump are active) and Standby mode (setpoints are lowered and pump is stopped.) Confirm Standby mode by pressing F2 again. After making a change, a screen message will indicate, “Standby ON” or “Standby Off”.

Notes: Standby can also be activated via a buss connection, external contact closure, the 7-Day Scheduler, or motor inactivity.

See also Standby Configuration in this chapter.

6.3.4.3 Setpoint Locking (F3)

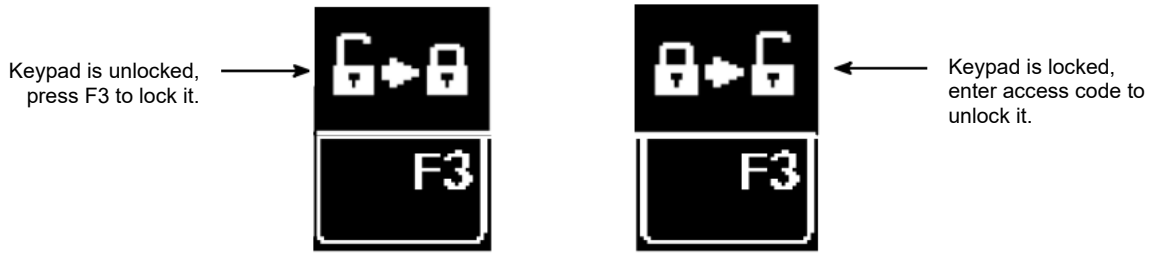
When Setpoint Locking is on, temperature and motor setpoints and the System Configuration Menu are locked and cannot be changed. But even when locked, the pump can be stopped and the setpoints can be monitored.

When Setpoint Locking is on, a small key symbol can be seen on the Overview Screen, near the time-of-day display.

Setpoint Locking is activated by pressing F3 twice when in the Main Menu.

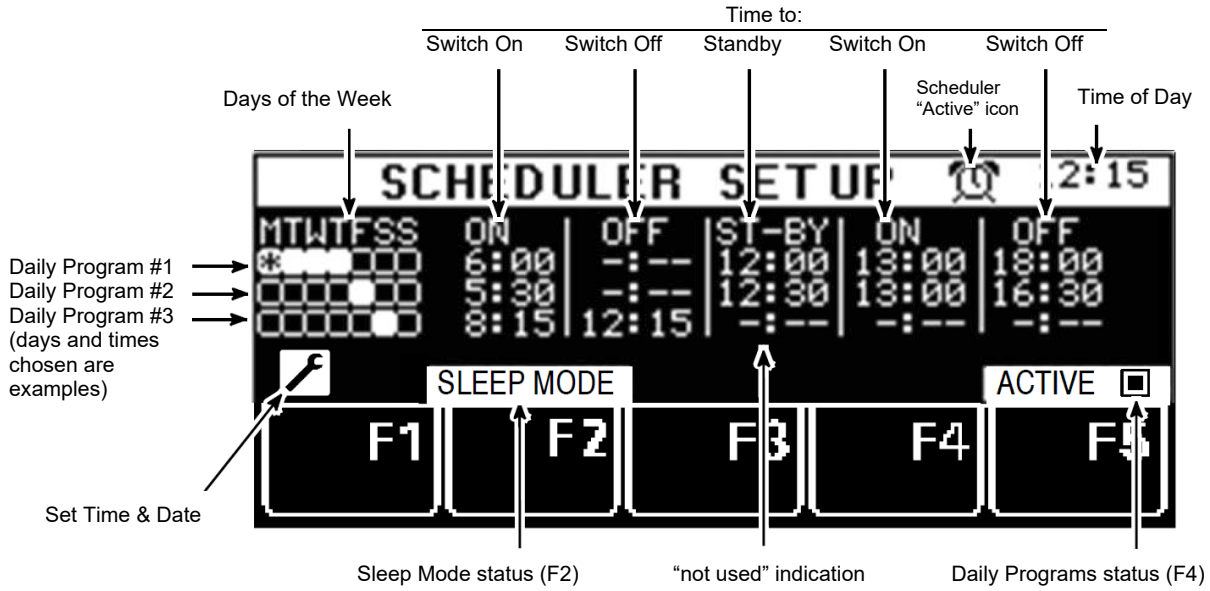
The controller's access code must be keyed-in to unlock setpoints. To do so, press the Main Menu button, press F3, then enter your access code using the F1 thru F5 buttons. For example, if your access code is 2453, press the sequence “F2, F4, F5, F3” (Note: setup an access code on page 3 of the System Configuration Menu).

The Controller has a default access code of “1111”.



6.3.4.4 7-Day Scheduler (F4)

The 7-Day Scheduler allows the user to program the Bag Melter to automatically switch on or off at pre-programmed times and days of the week. Up to three daily programs may be setup. Each daily program can have two “on” periods with a standby period between them.



6.3.4.4.1 Programming Sequence

Set-up each Daily Program entirely before moving on to the next Daily Program. Up to three Daily Programs may be setup. All time selections are based on a 24-hour clock.

6.3.4.4.2 To Program Active Days of the Week

Turn the Input Wheel to the Days-of-the-Week (Note: if you can no longer see the cursor when turning the wheel, turn the wheel in the opposite direction). The Days-of-the-Week may be toggled Active (registers as “selected” on the display) or Inactive by pressing the Enter Knob.

Each day of the week can only be assigned to one program.

6.3.4.4.3 To Program On/ Off Times

Turn the Input Wheel to select the first Switch-On time; press the Enter Knob to highlight the time. Turn the Input Wheel to program your desired Switch-On time (in hours and minutes) and press the Enter Knob.

Turn the Input Wheel to select a Switch-Off time or a Standby time, then press the Enter Knob to highlight it. As above, turn the Input Wheel to program your desired time (in hours and minutes), then press the Enter Knob.

In the same manner, if desired, program another Switch-On time and/or Switch-Off time.

6.3.4.4.4 To Program Additional Daily Programs

Turn the Input Wheel to the second or third set of Days-of-the-Week to program Switch-On and Switch-Off times for Daily Program #2 or #3. Program in the same manner as above.

6.3.4.4.5 To Choose Activate, Deactivate or Sleep Mode

Once the 7-Day Scheduler's Daily Programs are setup, press F5 to Activate. This is indicated by the clock symbol in the status line. To deactivate the scheduler, press F5 again.

Press F2 to put the Bag Melter into SLEEP MODE (indicated below). In this state, the Bag Melter will be activated at the next programmed Switch-On time of the scheduler or it can be manually started.

6.3.4.4.6 7-Day Scheduler Examples

(as shown on the illustration on the previous page)

- Daily Program #1: On Mondays, Tuesdays, Wednesdays and Thursdays, the Bag Melter will Switch-On at 6:00am. It will go into Standby at 12:00 noon. It will come out of Standby at 1:00pm and Switch-Off at 6:00pm.

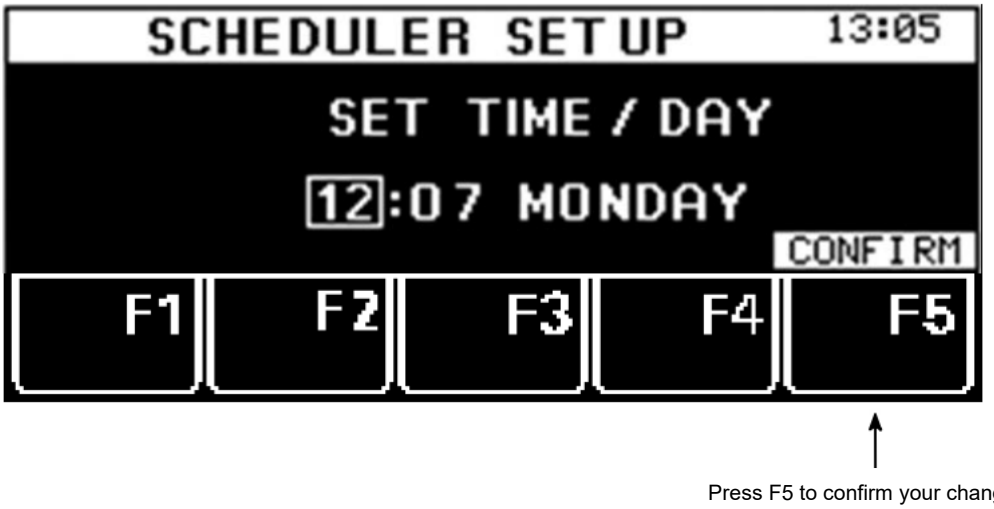
- Daily Program #2: On Fridays, the Bag Melter will Switch-On at 5:30am. It will go into Standby at 12:30pm. It will come out of Standby at 1:00pm and will Switch-Off at 4:30pm.

- Daily Program #3: On Saturdays, the Bag Melter will Switch-On at 8:15am and Switch-Off at 12:15pm.

NOTE: Programming the Standby temperature for the hopper (tank) below 80˚C (176˚F) will cause the Bag Melter to enter into a 30 minute heat soak period after attaining the hopper (tank) setpoint temperature.

6.3.4.5 Set Current Time-of-Day and Day-of-Week

While in the 7-Day Scheduler Set Up screen, press the Configuration button ( ) or F1 to set the current time and day.



Press F5 to confirm your changes

Turn the Input Wheel to select the item to be changed.
Press the Enter Knob.
Turn the Input Wheel to the desired time/ day and press F5 to confirm your entry.

6.3.4.6 Info Screen (F5)

The info screens contain details about the hot melt system and can aid in troubleshooting.

6.3.4.6.1 Info Screen #1

The first Info Screen lists temperature zone and pump configuration. It also provides the revision level of the controller's modules and the elapsed time on the Bag Melter's controller.

Press F5 to go to the next Info Screen.

Press F5 to go to the next Info Screen

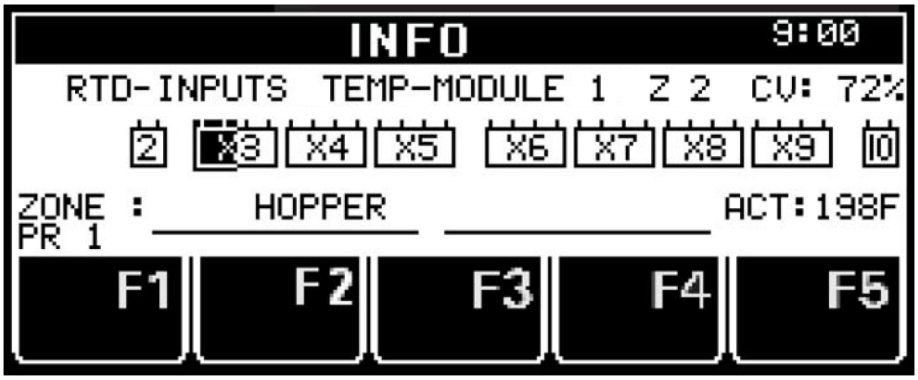
6.3.4.6.2 Info Screen #2

The second Info Screen lists each temperature zone individually. Scroll through the zones using the Input Wheel. The zone's description (ie, HOPPER (TANK)), actual temperature and location of its corresponding RTD temperature sensor is given.

The screen also shows the physical location of the RTD temperature sensor connectors of the temperature module.
This information can help in troubleshooting errors in wiring.

All zones are shown here, even those that are not in use on the Bag Melter.

CV in %: CV (Control value) indicates how much power is currently applied to the corresponding heater zone.



6.3.4.6.3 Info Screen #3

The next Info Screen provides set-up information for the unit's optional Profibus or Ethernet communication module. If that module is installed on your Bag Melter, the set-up info is provided on a supplemental CD. If the module is not installed, the Info Screens end with Screen #2.

Press RETURN to exit the Info screens and press RETURN again to return to the Overview Screen.

6.3.5 System Configuration Menu

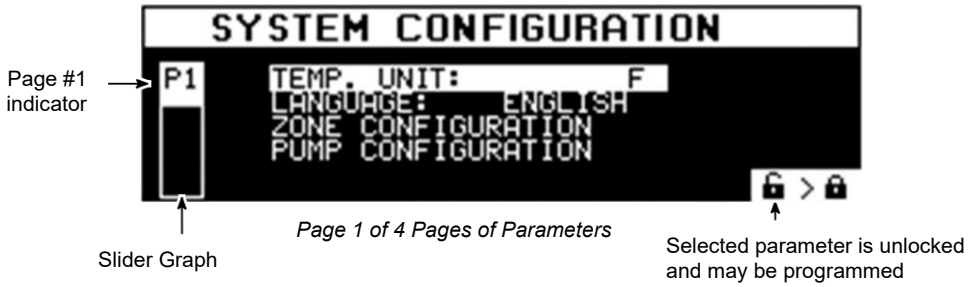
Press the System Configuration Menu button on the Overview Screen to program the following parameters:

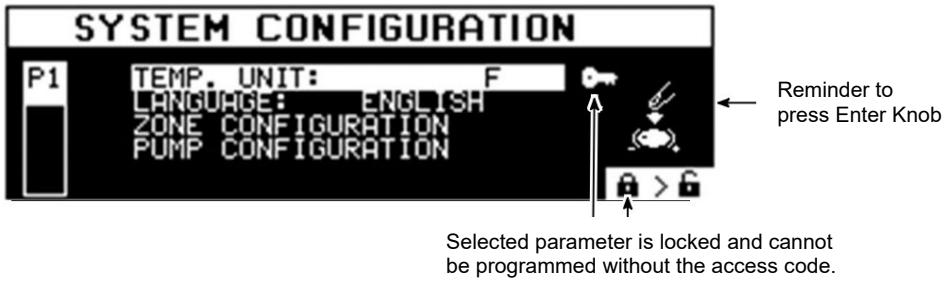
- Temperature/ Pressure Conversion - Fahrenheit or Celsius / PSI or BAR
- Language Selection - English, German, Spanish, French, Chinese or Japanese
- Zone Configuration - typically configured by ITW Dynatec
- Pump Configuration - typically configured by ITW Dynatec
- Setpoint Limitation - sets a limit on the maximum setpoint
- Hi/Low Tolerance - the high and low temperature window which defines the Ready temperature
- Standby Configuration - amount of temperature difference, time delay, activation method and sleep mode for the standby function
- Level Detection - activates or de-activates the low adhesive level detector
- Heat-up Sequence - simultaneous or sequential heat-up of temperature zones
- Access Code - setup an access code to prevent un-authorized programming
- 0.5 RPM Increment - allows faster manual mode programming of the pump speed
- Temperature Offset - fine-tuning allows compensation for temperature gradients
- Customer Zone Names - allows personalization of the temperature zone's names
- Logbook/ Fault History - records the time and date of controller events and faults
- Power-On Configuration - allows custom settings for pump/motor and heaters at startup
- Global Setpoints - allows easy one-temperature programming of setpoints

6.3.5.1 Accessing the Parameters

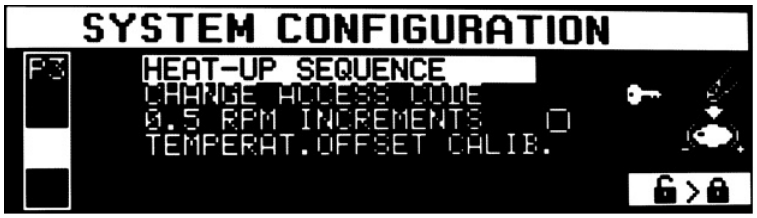
There are four pages of configuration parameters. Four parameters are on each page.

Turn the Input Wheel to select the parameter to be programmed. The slider graph (on the left) indicates the page # of the System Configuration Menu. Once you select (highlight) your desired parameter, many parameters can be changed simply by pressing the Enter Knob.





You may also progress through the pages by using the Configuration button ( ) or F1.



When in the System Configuration Menu pages, you may return to the Overview Screen at any time by pressing the RETURN button twice.

6.3.5.2 Temperature/ Pressure Conversion (P1)

After turning the Input Wheel to select the Temperature/ Pressure parameter, toggle between Fahrenheit with PSI or Celsius with BAR readouts by pressing the Enter Knob.

6.3.5.3 Language Selection (P1)

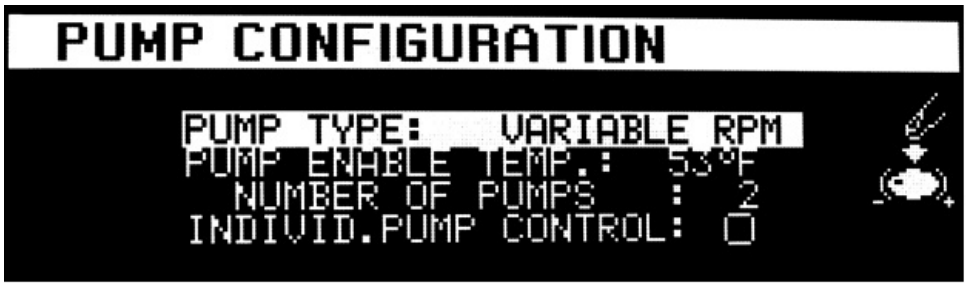
After turning the Input Wheel to select the Language parameter, press the Enter Knob. The current language will flash. Turn the Input Wheel to select a language from the ones listed. Confirm your choice by pressing the Enter Knob.

6.3.5.4 Zone Configuration (P1)

This menu configures the controller's temperature zones by listing the number of each type of zone. Zone configuration is typically done at the ITW Dynatec factory and does not require programming by the user.

6.3.5.5 Pump Configuration (P1)

This menu configures the Bag Melter's pump by listing pump type. Most pump parameters are setup at the ITW Dynatec factory. There are two user-programmable pump parameters: Pump Enable Temperature and Individual Pump Control.



6.3.5.5.1 Pump Enable Programming

The Pump Enable Temperature serves as a low limit value. The controller will not allow the pump to come on until its enable temperature is achieved. By doing so, it protects the pump, pump shaft, motor and motor control module. The default pump enable temperature is 110˚C (230˚F). Caution should be taken to avoid setting this value too low! Attempting to rotate the pump when the adhesive inside it is still solid will result in damage to the pump and, possibly, to the pump motor.

After pressing the Enter Knob to select the Pump Enable parameter, turn the Input Wheel to increase or decrease the pump enable temperature. Confirm your choice by pressing the Enter Knob.

6.3.5.5.2 Individual Pump Control Programming

When there are multiple pumps on a unit, the pump enable and automatic motor speed may be controlled individually (Individual Pump Control is active) or these functions can be tied together so only one pump enable or motor speed input controls both pump motors (Individual Pump Control is inactive).

After pressing the Enter Knob to select the Individual Pump Control parameter, turn the Input Wheel to select individual control, if desired, by choosing YES or NO. Confirm your choice by pressing the Enter Knob.
Individual pump control is activated by default.

NOTE: Independent manual motor speed control is possible, regardless of whether Individual Pump Control is active or inactive.

6.3.5.6 Setpoint Limitation (P2)

This parameter sets the maximum temperature zone setpoint. The Setpoint Limitation is useful for an adhesive with a low melt temperature. In this case, the maximum selectable setpoint could be lowered in order to avoid over-heating the adhesive.

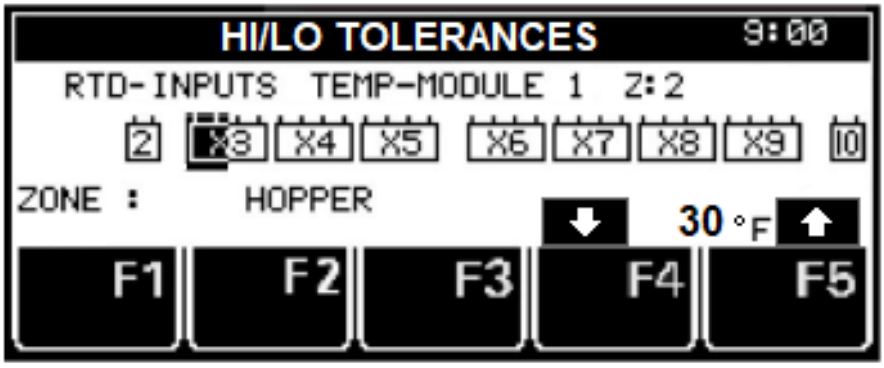
After turning the Input Wheel to select Setpoint Limitation, press the Enter Knob and turn the Input Wheel to select your desired Setpoint Limitation value. Confirm your choice by pressing the Enter Knob. The default Setpoint Limitation value is 190˚C (375˚F).

6.3.5.7 Hi/Lo Alarm Tolerance (P2)

The high and low temperature tolerances can be set for each temperature zone. During operation, those tolerances activate the alarm which alert the operator to overtemp and under-temp conditions.

The hi/lo tolerances are a range (+ and -) from the setpoint. Thus, a setpoint of 150°C which has been programmed with a 10°C hi/ lo tolerance will activate an under-temp message when the zone's temperature falls below 140°C and will activate an over-temp alarm when the zone's temperature rises above 160°C. When this zone's temperature is within the tolerances (140°C and 160°C), it is considered “Ready”.

Tolerances can be set individual for each zone. After turning the Input Wheel to select the Hi/Lo Tolerances parameter, press the Enter Knob to access the set-up screen:



On this screen, use the Input Wheel to select the zone and buttons F4/F5 to change the tolerance for the selected zone. Picture above shows the hopper (tank) zone is selected and the tolerance is +/-30°F. It is not necessary to confirm with the Enter Knob. After all zones have been programmed, leave this screen by pressing the Return button.

6.3.5.8 Standby Configuration (P2)

There are five ways to activate standby mode:

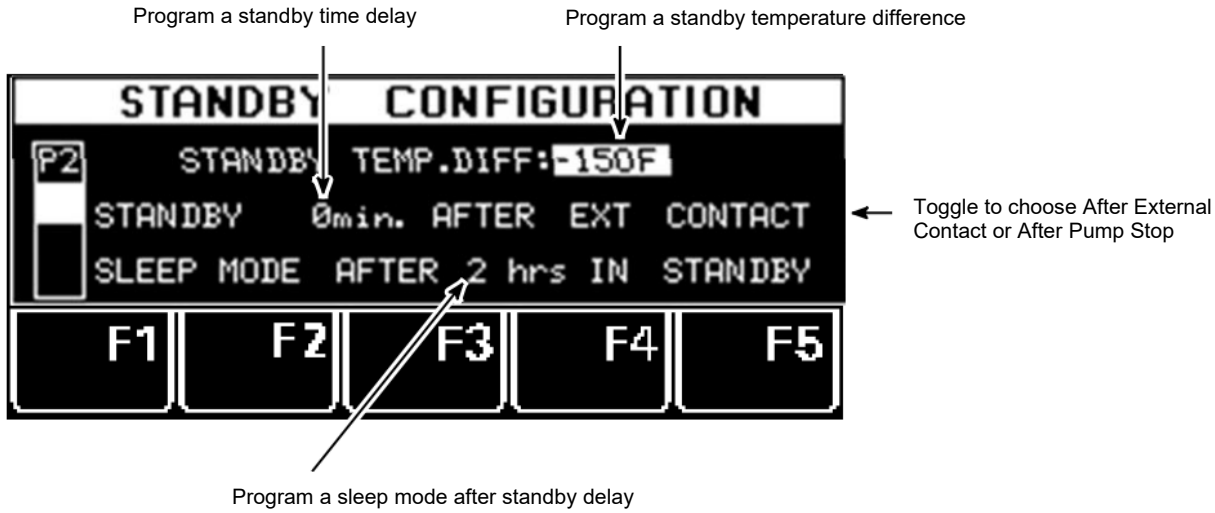
1. External Input

I. Field-Buss – Customer to determine via a Profibus or Ethernet signal input.
II. Contact Closure – Normally closed contact (open to activate Standby timer). Terminals will be bridged, by default, in the electrical cabinet. The time duration before going into Standby, after contact opens, is user-programmable.

NOTE: Contact closure will need to be bridged in the Bag Melter electrical cabinet if a parent machine is controlling the standby condition and the Bag Melter needs to be operated for any reason while parent machine is not operational.

2. Front Panel Input

III. Pump inactivity (the duration after pump stops is user programmable).
IV. Manually, using the F2 button on the Main Menu.
V. Automatically, via the 7-Day Scheduler.



6.3.5.8.1 Standby Temperature Difference

In Standby mode, the temperatures of all active temperature zones decreases by a programmed amount and the pump(s) is(are) disabled.

The programmed decrease in zone temperatures is the standby temperature difference. The standby temperature difference applies to all zones once standby is activated. For example, if the temperature difference is 55°C, and setpoints are 140°C, then all zones will reduce to 85°C (140 - 55 = 85) when standby is activated.

After turning the Input Wheel to select Standby Configuration, press the Enter Knob to advance to the screen. Press the Enter Knob to select the first parameter, i.e. temperature difference. Press the Enter Knob again to highlight the temperature difference value. Then turn the Input Wheel to program your desired value. Confirm your choice by pressing the Enter Knob. The default Standby Temperature Difference is 55˚C (100˚F).

6.3.5.8.2 Standby Time Delay and Activation

The standby time delay is the programmed number of minutes until standby takes place after activation by either an external contact (for example: a PLC or an external switch) or pump motor inactivity. The default time delay is 0 minutes (immediately!). The programmable range of the standby time delay is 0-150 minutes.

Turn the Input Wheel to select the time delay parameter (i.e. Standby X min. After…). Press the Enter Knob. Turn the Input Wheel again to select your desired minutes value. Confirm your choice by pressing the Enter Knob.

Now turn the Input Wheel to select the After Ext Contact/ After Pump Stop field. Press the Enter Knob and then turn the Input Wheel to highlight your choice of activation. Confirm your choice by pressing the Enter Knob.

6.3.5.8.3 Sleep Mode After Standby

Sleep mode shuts the Bag Melter off after it has been in standby for a programmed length of time. This length of time can be from one hour to 99 hours. Or you can choose to program the unit to have no sleep mode by programming " - ". When the unit is in sleep mode, the Main Screen displays
"System Off, Switch On with Enter Knob".

Turn the Input Wheel to select the Sleep Mode After # Hrs In Standby field. Press the Enter Knob to highlight the hours value. Turn the Input Wheel to select your desired hours value. Confirm your choice by pressing the Enter Knob.

Press the RETURN button to return to the System Configuration Menu.

6.3.5.9 Level Detection (P2)

Up to two proximity switches for Empty Bag (standard) and Low Bag (optional) indication may be mounted on the pneumatic cylinder that controls the Bag Melter's feed tube platen. They sense the position of the platen within the adhesive feed tube. The proximity switch(es) trigger alarms when the platen reaches their position. The "Low Bag" sensor is offered as part of the stack light option only. A flashing, amber light along with an audible alarm are activated when the Low Bag sensor is triggered.

BAG EMPTY! is the alarm message displayed on the controller's status line when the Empty Bag (lower) sensor is activated. Additionally, a continuous amber light and audible alarm are triggered for an empty bag condition, if the stack light option is included.

The level detection parameter allows the user to:

- Turn the level detection function On or Off,
- Disable the pump when an empty bag condition is sensed and
- Set a time delay before the pumps are disabled.

After turning the Input Wheel to select the level detection parameter, press the Enter Knob to change the function from activate or deactivate.

To program the controller to disable the pump(s) upon sensing an empty bag condition, first press the Configuration button ( ) or F1 to bring up the parameter, then press the Enter Knob to activate or deactivate this function. Next, press the Enter Knob and then turn the Input Wheel to select the desired length of the delay after the empty bag condition is sensed before the pump(s) are disabled.

Further explanations:

a. Low Bag and Empty Bag conditions have normally-open (closed when condition exists) contacts in the Bag Melter's electrical panel box for customer use with external devices. The contact does not open until the platen is raised.

b. Low Bag Warning Indicators: (NOTE: the low bag sensor is only offered as part of the stack light option).

I. The optional stack light flashes <u>amber</u>. This cannot be cleared unless the platen is raised.

II. 1 second on, 3 seconds off audible alarm (stack light horn). Alarm can be cleared by pressing the RESET button on the front panel of the Controller. No additional alarm will sound until an empty bag condition occurs.

III. There is no visual indication on the Controller V6 display.

c. Empty Bag Warning Indicators:

I. Stack light (option) shines continuous amber. This cannot be cleared unless the platen is raised.

II. 1 second on, 1 second off audible alarm (stack light horn). Alarm can be cleared by pressing the RETURN (RESET) button on the front panel of the Controller. The audible alarm will occur again one minute after the RETURN (RESET) button is pressed unless the platen is raised.

III. Visual indication on the Controller display of a BAG EMPTY! condition. This cannot be cleared unless the platen is raised.

d. Stop Pump When Empty (Pump Shutdown Due to Empty Bag Condition):

I. Default: Stop Pump (Motor Disable) feature is "off". Timer for Stop Pump is “zero minutes”.

II. Lifting platen from tube will clear the bag empty condition and motors may be operated if they were disabled due to the bag empty condition.

III. Optional stack light shines continuous red. This cannot be cleared unless the platen is raised.

IV. 1 second on, 1 second off audible alarm (stack light horn). This cannot be cleared unless the platen is raised. Audible Bag Empty Alarm (horn) will resume one minute after the RETURN (RESET) button has been pressed if the platen has not been raised to actually clear the empty condition. The reset of the audible alarm will not affect the pump stop timer.

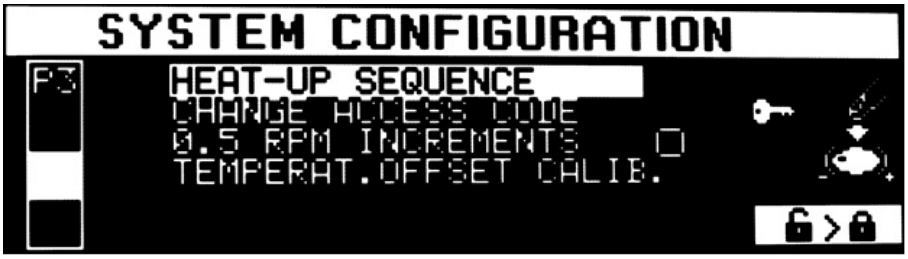
V. Visual indication on the Controller V6 display of a BAG EMPTY! condition. This cannot be cleared unless the platen is raised.

6.3.5.10 Heat-Up Sequence (P3)

It is preferred that the larger mass of adhesive in the hopper (tank) zones (including the hopper (tank) and aux. heating) get a head start on the other zones (melting plate (melt grid), hoses, applicators and auxiliary zones).

Sequential heating is the choice that allows the hopper (tank) zones to heat to their ready temperature before the other zones begin heating.

After turning the Input Wheel to select the Heat-Up Sequence parameter, press the Enter Knob again to select On or Off.



6.3.5.11 Access Code (P3)

An active access code prevents unauthorized programming of setpoints and other configuration parameters. To utilize the Setpoint Locking feature of the controller, your access code must be keyed in at the Main Menu, F3.

The Bag Melter is shipped from ITW Dynatec with a default code of 1111. To re-program the access code, the current access code must be entered. All access codes must be 4-digit numbers using the digits 1, 2, 3, 4 and 5 only.

After turning the Input Wheel to select the Access Code parameter, enter the current access code using the F1 thru F5 numerals. Press the Enter Knob. Then enter your desired access code using the F1 thru F5 numerals. Confirm your choice by pressing the Enter Knob.

6.3.5.12 0.5 RPM Increment (P3)

When setting the pump RPM in Manual Mode on the Pump Screen, the default increment for RPM is 0.1. If a coarser adjustment is desired, it may be changed to 0.5 RPM at this parameter.

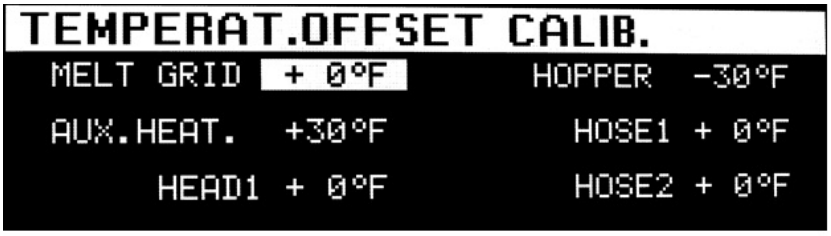
After turning the Input Wheel to select the 0.5 RPM Increment parameter, press the Enter Knob to toggle the parameter active or inactive.

6.3.5.13 Temperature Offset (P3)

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.

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 300°F. An offset of +10°F is programmed. Initially the display will read 310°F, but the controller will lower the output power until the actual temperature value is back to 300°F.



After turning the Input Wheel to select the Temperature Offset parameter, press the Enter Knob to display a list of all temperature zones. Turn the Input Wheel to select a zone for programming and press the Enter Knob. Turn the Input Wheel to program the desired temperature offset for that zone. Press the Enter Knob to confirm your selection.

If desired, turn the Input Wheel to select another zone for programming. Program this zone as outlined above.

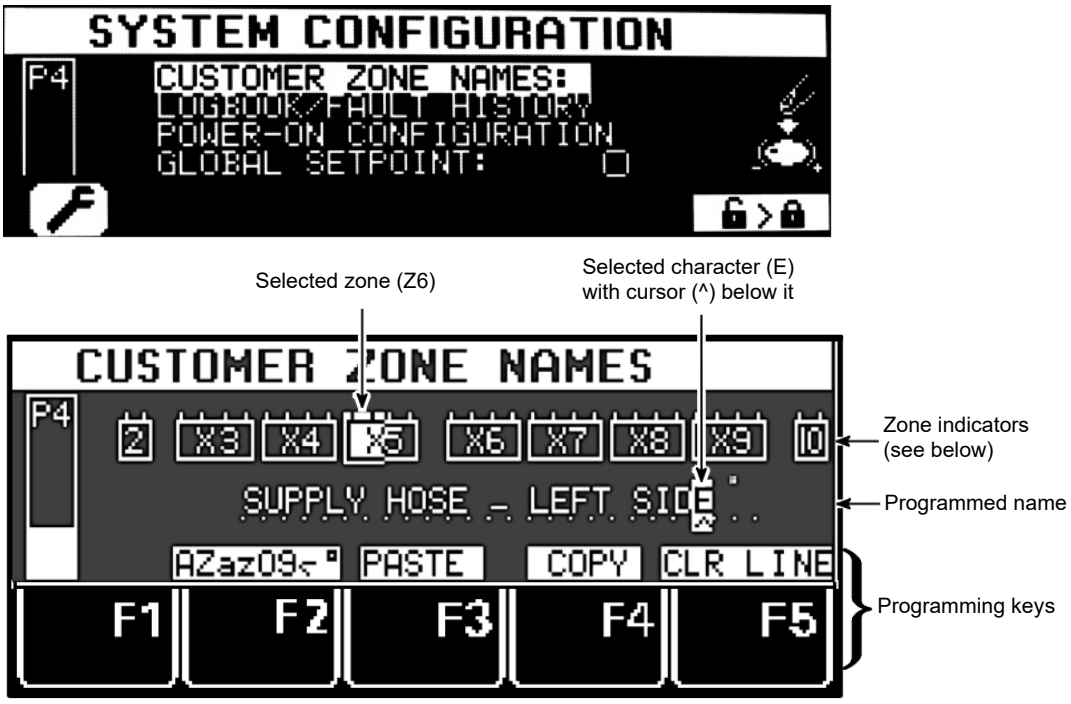
When all desired zones are programmed, press RETURN to go to the System Configuration Menu (page 1), then press RETURN again to go to the Overview Screen.

6.3.5.14 Customer Zone Names (P4)

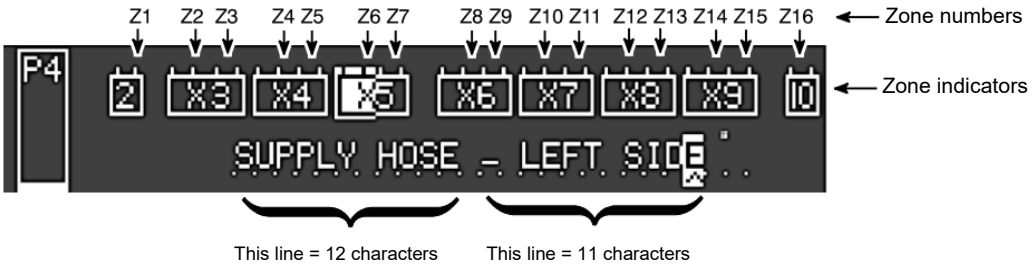
With this configuration parameter, the user may personalize the names of the temperature zones with names that are more descriptive for his application. That is, instead of the factory-set zone names of Z01, Z02, Z03, etc., the customer may prefer temperature zone names such as “HOPPER (TANK)”, “MELTING PLATE (MELT GRID)”, “HEAD 1”, “SUPPLY HOSE - LEFT”, etc.

After turning the Input Wheel to select the Customer Zone Names parameter, press the Enter Knob to display YES. To enter programming mode, press F3 (Change Text).

Now, by turning the Input Wheel, you can scroll through the zones and see their current zone names (or numbers). These names can be re-programmed one at a time. Each new name may consist of two lines, with a maximum of 12 characters in each line. Note: the factory-set numeric "names" correspond to RTD temperature sensor inputs.



Customer zone name programming screen



“Supply hose characters - Left Side” = Zone #6 (highlighted zone indicator

6.3.5.14.1 Using F2, F3, F4 & F5 Programming Keys

F5 = press to Clear the entire zone name.
F2 = press to select upper or lower case letters, to select numbers or to select special characters.
F3 & F4 = press to Copy (F4) and Paste (F3) the name of one zone into another.

6.3.5.14.2 Programming the Zone Names

After selecting the Customer Zone Names parameter and pressing the Enter Knob to display YES, press F3 (Change Text) to begin programming.

1. Turn the Input Wheel to select desired temperature zone (refer to corresponding RTD temperature sensor). The selected zone is highlighted.

2. Press the Input Knob to confirm zone.

3. Turn the Input Wheel to select the character to be re-programmed.

4. Press the Input Knob to confirm selection. The cursor highlights the selected character.

5. Turn the Input Knob to select the new character.

6. Press the Input Knob to confirm the new character.

7. Repeat steps 3 through 6 to spell desired zone name.

8. Press the Return button  to select another zone to program. Repeat steps 1 through 6 for each zone desired.

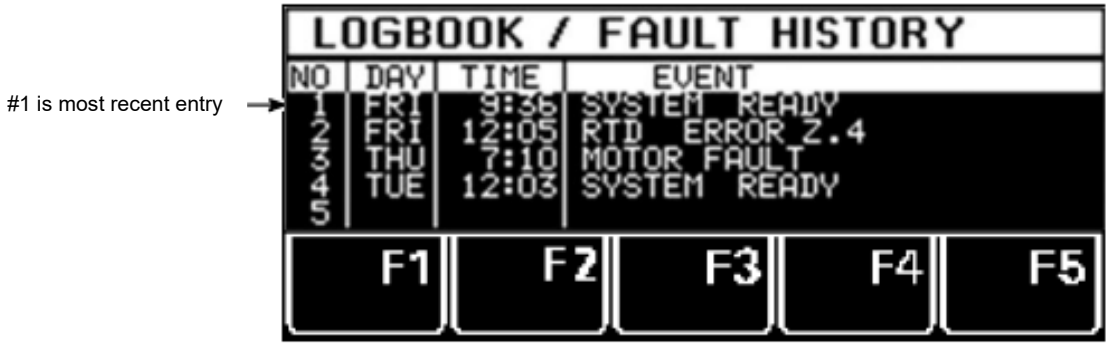
9. Press Return again when all temperature zone name programming is completed.

6.3.5.15 Logbook/ Fault History (P4)

The Logbook provides a read-only history of the last 250 (maximum) controller faults and events. Controller faults include sensor or temperature errors or motor faults. Examples of an event include switching the Bag Melter on/off or System Ready. The most recent event is recorded at the top of the list (No. 1).

Day, Time and Event are listed for each item in the Logbook. This information can be valuable when troubleshooting controller problems.

After turning the Input Wheel to select the Logbook parameter, press the Enter Knob to display the Logbook. Turn the Input Wheel to scroll through the list.



6.3.5.16 Power-On Configuration (P4)

Two start-up parameters are programmed at the Power-On Configuration screen, and they are set by choosing YES or NO:

6.3.5.16.1 Power-On Motor Stop

At the Power-On Motor Stop parameter, you decide if you prefer the motor to be stopped when the Bag Melter is turned on (if so, choose YES) or if you prefer that the motor remain in its previous mode when the Bag Melter is turned on (choose NO). The default is YES ■.

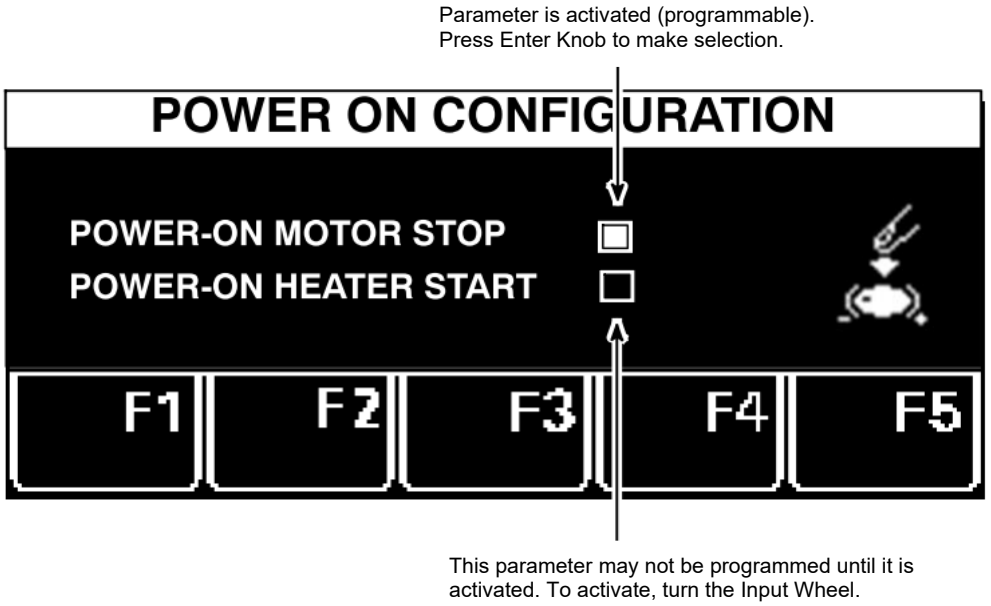
6.3.5.16.2 Power-On Heater Start

At the Power-On Heater Start parameter, you decide if you prefer that the temperature zones start heating automatically when the Bag Melter is turned on (if so, choose YES) or if the heaters should require a manual start when the Bag Melter is turned on (choose NO). NOTE: If you choose NO, the heaters will not begin to heat until the Enter Knob is pressed at start-up. The default is YES ■.

From the System Configuration Menu: after turning the Input Wheel to select Power-On Configuration, press the Enter Knob. The first parameter (Power-On Motor Stop) will be highlighted (see illustration below). Press the Enter Knob to choose YES or NO.

Turn the Input Wheel to highlight the second parameter (Power-On Heater Start). Press the Enter Knob to choose YES or NO.

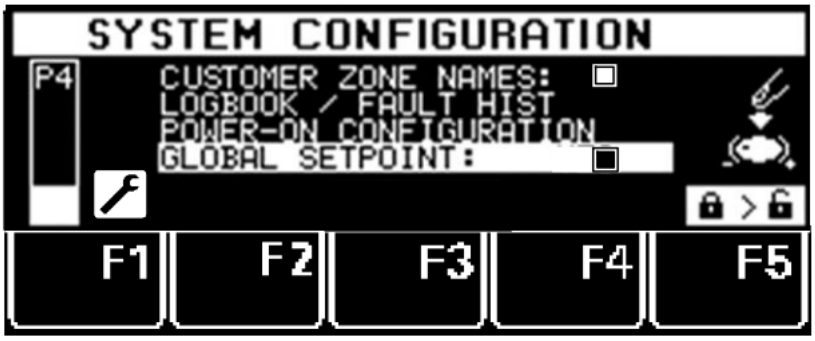
After programming, press RETURN twice to return to the Overview Screen.



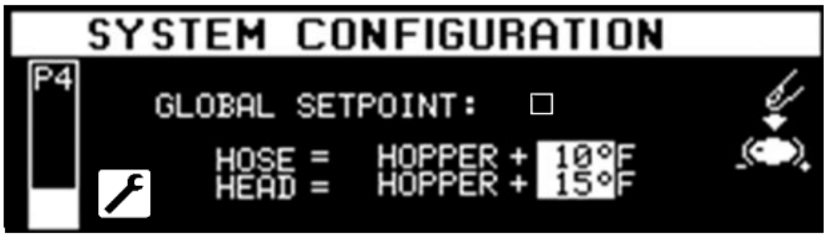
6.3.5.17 Global Setpoints (P4)

Setpoint programming may be simplified by programming Global Setpoints. With this parameter, the user programs a hopper (tank) setpoint and the controller configures all of the other zones. However, to do so, it must be appropriate for all your hoses to be programmed to one setpoint, and for all your applicator heads to be programmed to one setpoint.

After turning the Input Wheel to select the Global Setpoints parameter, press the Enter Knob to turn Global Setpoints On or Off.



Then press F3 to open the Global Setpoints menu.



On the Global Setpoints menu, you set up simple mathematical relationships (increases) between the hopper (tank), hose and applicator setpoints. Pressing the Input Knob increases the temperature of the hose (or head) by 5 degrees, or, if you press again, by 10 degrees (press again for 15 degrees, and press again for 20 degrees). Once setup, all of the hoses will increase over the hopper (tank) setpoint by the same amount (0, 5, 10, 15 or 20 degrees) and likewise, all of the heads will increase over the hopper (tank) setpoint by the same amount as you program here.
NOTE: The Melting plate (melt grid) temperature zone is still independently programed when Global Setpoint is active.

Once Global Setpoints are setup, you simply program the hopper (tank) and your hoses and heads will automatically be programmed to the increases you specified on the Global Setpoints menu.

For example: If you setup a Global Setpoint increase of 10 degrees for Hoses and 15 degrees for Heads, and you program your Hopper (tank) setpoint to 110 degrees, then the controller will automatically program all of the hoses to 120 degrees and all of the heads to 125 degrees.

When Global Setpoints are turned On (YES) and a hose or head temperature setpoint change is attempted, the display will not show the selected zone's name. Instead it will display GLOBAL SET:.

You can still turn individual zones Off and On while using Global Setpoints.

6.3.5.18 Heat Soak (release delay)

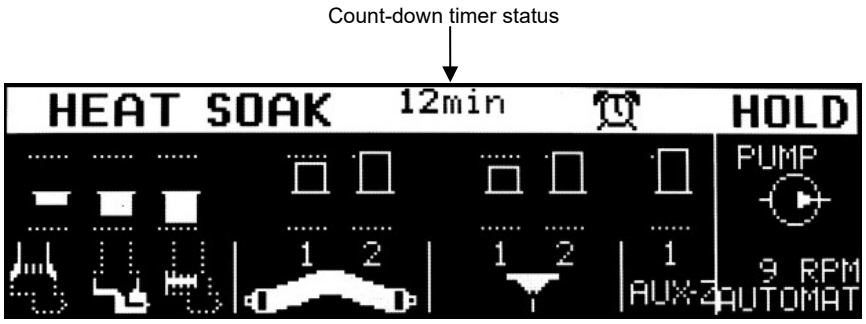
The heat soak time is fixed to 30 minutes. At first heating of the Bag Melter (unit is powered on) Heat Soak will start after reaching the ready temperatures for the Hopper (tank) and Auxiliary Heating. The remaining Heat Soak delay will be displayed at the Status Line of the Main Display. During this time, the unit maintains the setpoint temperatures to ensure the adhesive is sufficiently melted through the pump and hopper (tank) before starting production. This avoids possible damage to the melt system when the hopper (tank) first comes up to temperature. During this time, no production is possible. You cannot program, activate or deactivate this time. When this time expires the pumps are enabled and can be started at any time.

The heat soak time will be activated again if the temperature of one of 2 internal control zones (hopper (tank) and Aux) drops below 176˚F (80˚C). The heat soak time restarts again for 30 minutes after reaching the ready temperatures.

Note: The Bag Melter will NOT go into a heat soak condition if it enters Standby mode and is taken out of Standby mode prior to the hopper (tank) temperature dropping below 80˚C (176˚F), even if the Standby setback would take it below this temperature, given enough time.

The Bag Melter will go through a heat soak period if the unit is powered down, then restarted, regardless of the hopper (tank) zone temperatures upon restart.

Count-down status timer will be displayed when Heat Soak is active.



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.

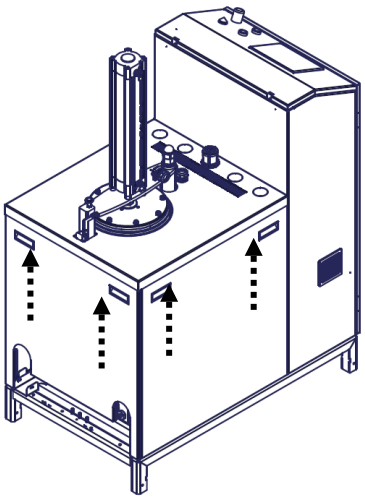
7.1.3 Cleaning Recommendation

- 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.



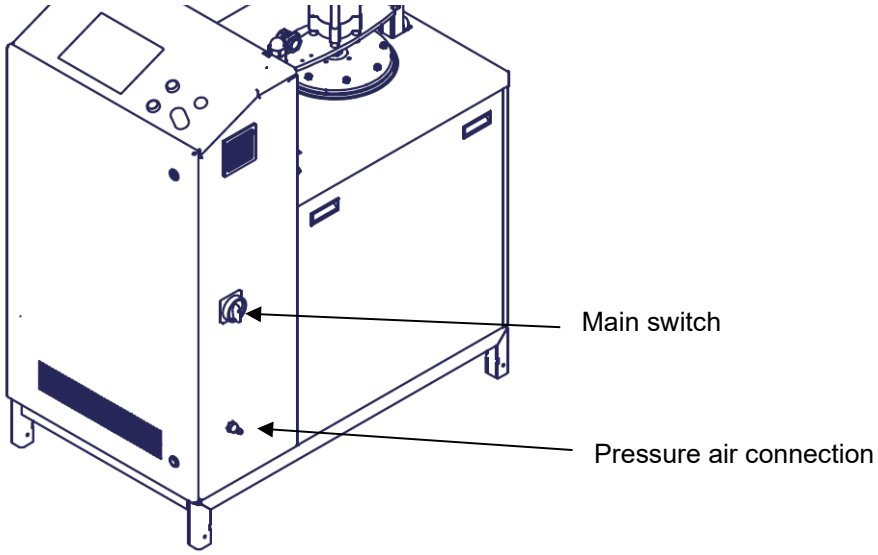
Demount:
- Lift the sidewalls at both grips.
- Pull the wall out of the bottom side of the base frame and pick it downwards.

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

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 tank / filter block.

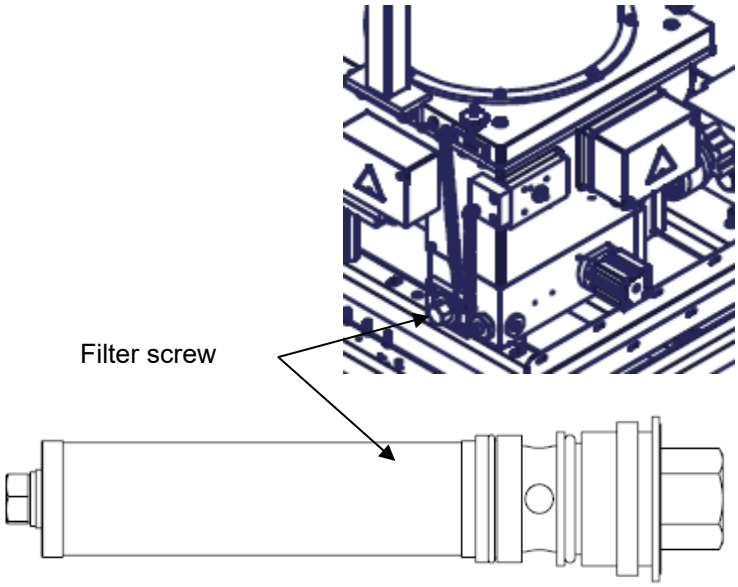


Illustration: Filter screw

Dismounting the filter screw

1. Stop all 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.

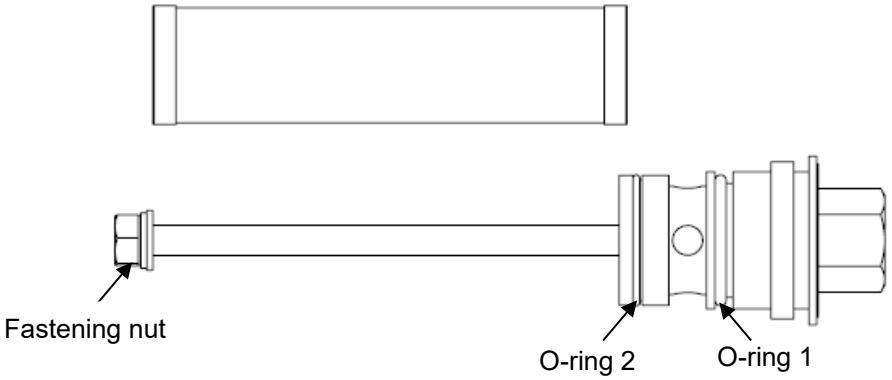


Illustration: Filter screw

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

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

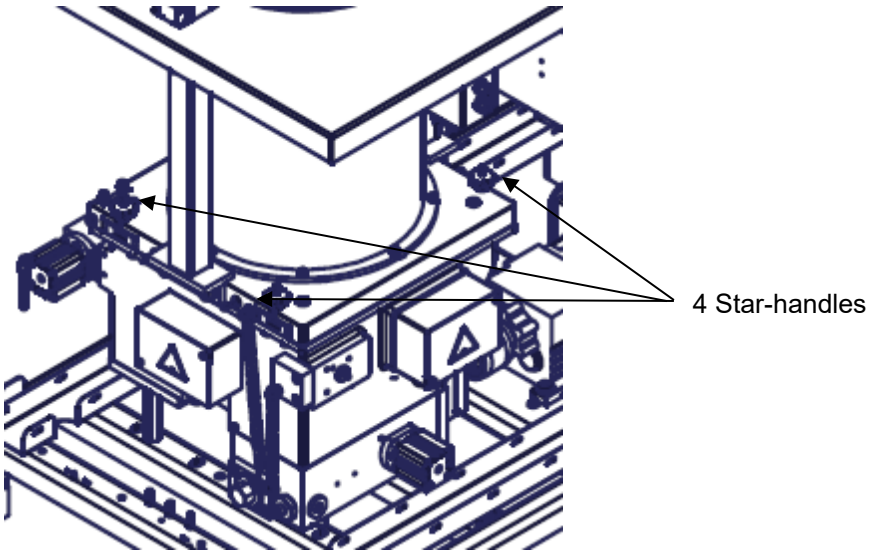


Illustration: Opening the basic tank – loosening the star handles

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

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

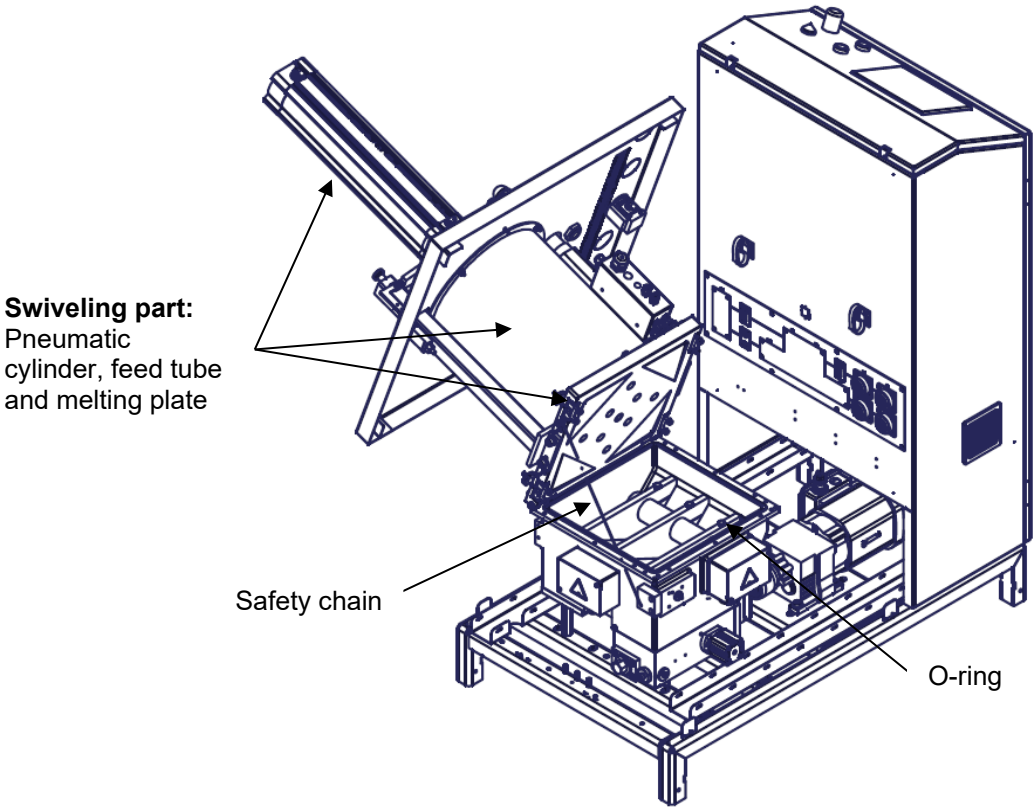


Illustration: Cleaning the basic tank - swiveling part

WARNING!

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

Tank cleaning

9. Clean the basic tank as follows:

   - Place a heat-resistant catchment tank under the basic tank. Hot adhesive may come out!

   - ***If circulating system:*** Unscrew the return hose from the tank and put the hose end into a heat-resistant catchment tank.
     Place a heat-resistant catchment tank under the hose nipple or close this with a cap. Hot adhesive may come out!

     If non-circulating system: Unscrew the feed hose from the Applicator and put the hose end into a heat-resistant catchment tank.
     Place a heat-resistant catchment tank under the hose nipple or close this with a cap. Hot adhesive may come out!

   - Switch on the main switch and the controller, turn the pump on to slow speed and empty the basic tank as much as possible.

- Bring the swiveling part temporarily into upright position (closed), switch off the motor, the controller and the main switch and wait 30 seconds.

- Swivel the swiveling part again (open the melting tank).

- Remove the three heat-conducting melting arms of the melting aid by loosening the screws, moving the melting arms to the side and taking them off.

- Clean immediately the melting arms with lint-free clothes (towels) and suitable cleaner. Do not scratch above the parts with sharp-edged tool, to not damage the coating.

- ***Shorter cleaning-procedure of the tank:***
  Switch on the main switch and the controller, turn the pump on to slow speed and move all remaining adhesive by using a wooden scraper to the pump feed hole at the bottom of the tank. Clean immediately the tank and the cylindrical heating element of the melting aid with lint-free clothes (towels) and suitable cleaner and wooden scraper. Do not scratch above tank and parts with sharp-edged tool, to not damage the coating.

- ***Longer cleaning-procedure of the tank:***
  Let the basic tank cool down to room temperature.
  Switch on the main switch and the controller and warm the basic tank up to 50-60°C.
  While warming up, the disposal could be removed with a pincer like skin in one piece.
  Remove further soiling or disposal with a wooden scraper.
  Do not ***damage*** the coating of the tank by using sharp-edged tools.

- Reinstall the three melting arms to the cylindrical heating element of the melting aid, position these at equal distances and retighten the fastening screws.

- Check if the O-ring of the tank is damaged and replace it if necessary.

10. Swivel the swiveling part back into upright position (close) and switch off the unit.
11. Tighten the four star-handles nuts at the melting plate.
12. If necessary, plug the cables on the control cabinet again.

After finishing the maintenance or repair works:

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

7.7 Cleaning the unit

ADVICES

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

Cleaning of circulating systems:

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

Cleaning of non-circulating systems:

1. Take the bag out of the tank or melt the bag completely at first.
2. Run down (empty) the tank during production as good as possible.
3. Switch the unit over to manual mode (see chapter Controller).
4. Stop the pumps.
5. Switch the unit pressureless.
6. Demount the sidewalls. See point 7.2.
7. Swivel the whole swiveling part (see swiveling the feed tube) and open the basic tank.
8. Check the tank for possible contamination and remove it.
9. Fill the tank with a PUR-cleaner recommended by the adhesive manufacturer.
10. Disconnect the hose from the 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.

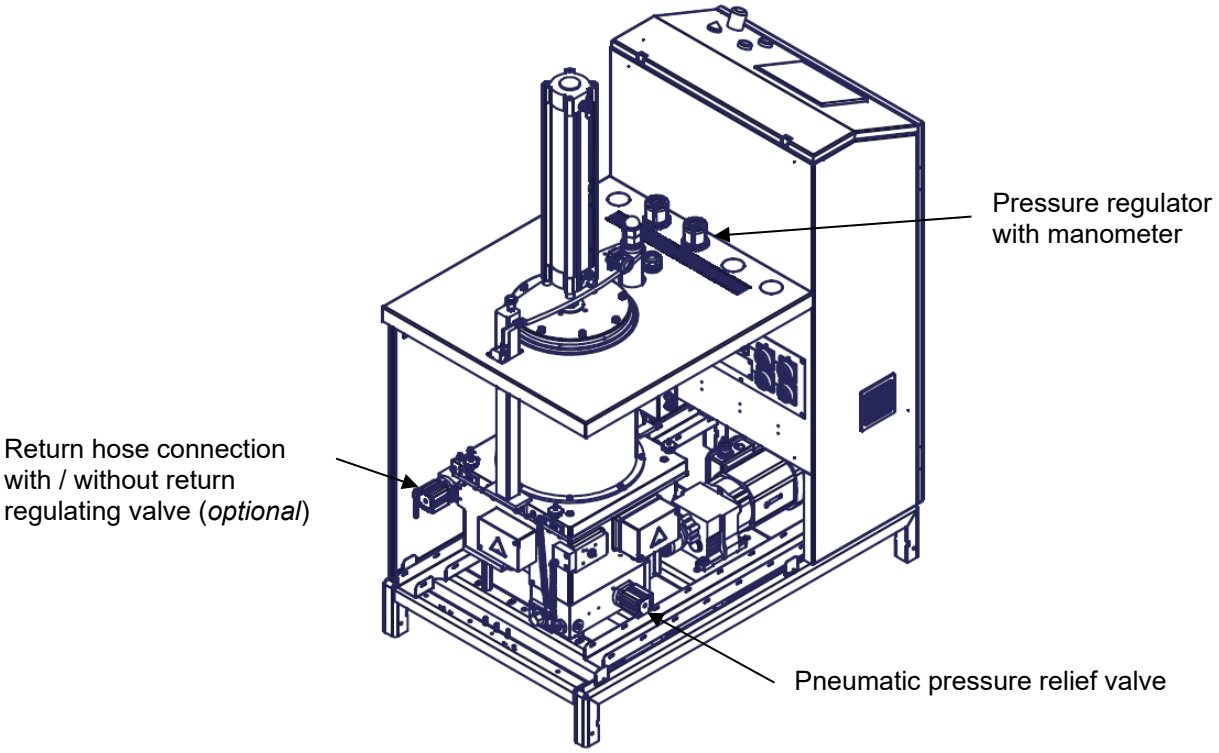
7.8 Replacement of the pneumatic pressure relief valve

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 all 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.

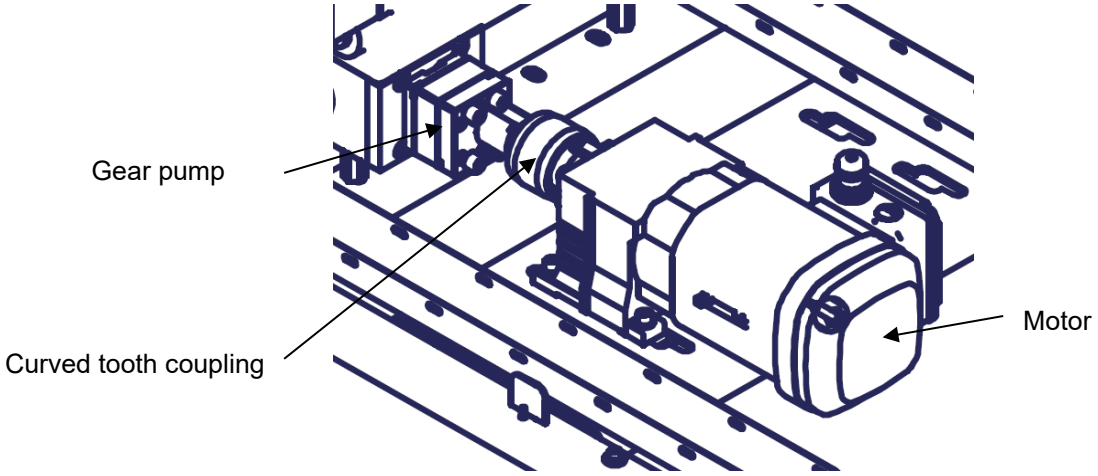


Illustration: Gear pump

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 all 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 respectively 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 all 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.

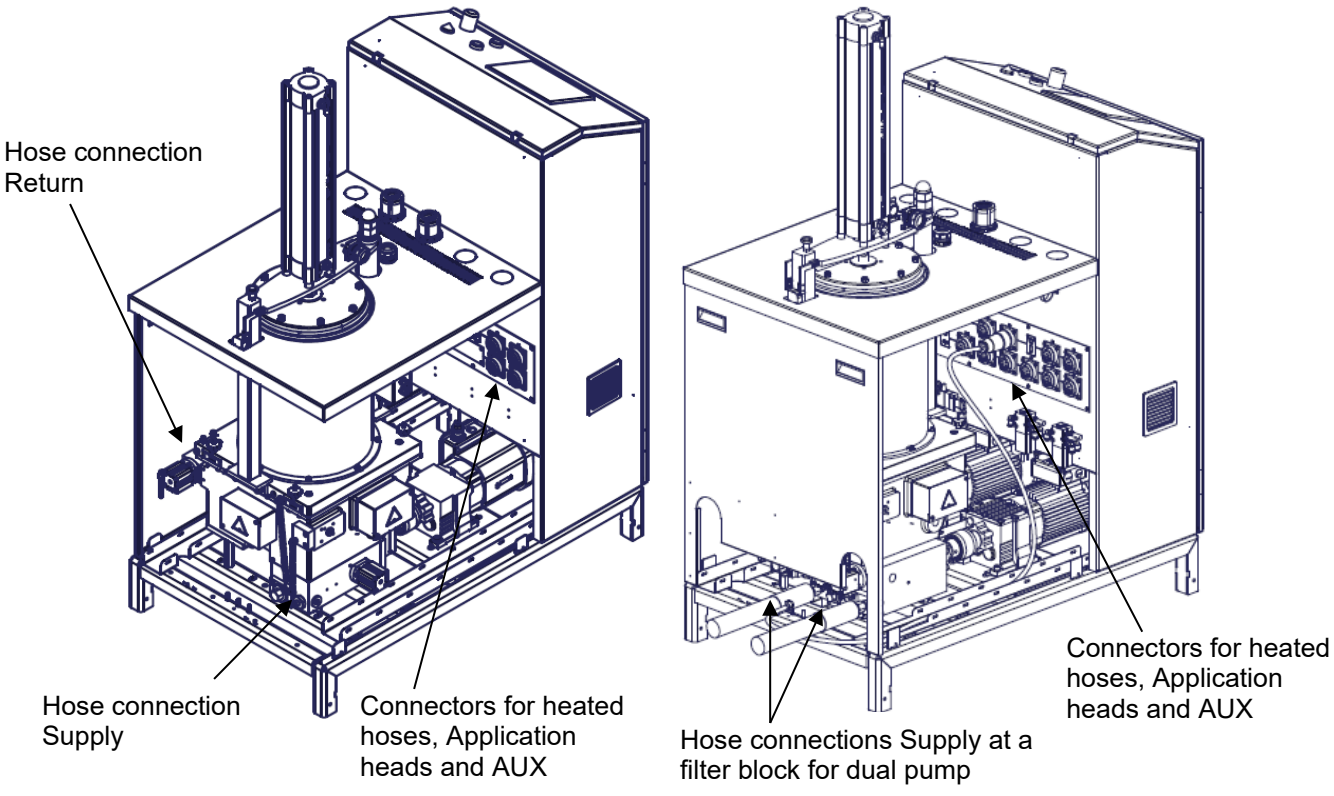


Illustration: Hose connections

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

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

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

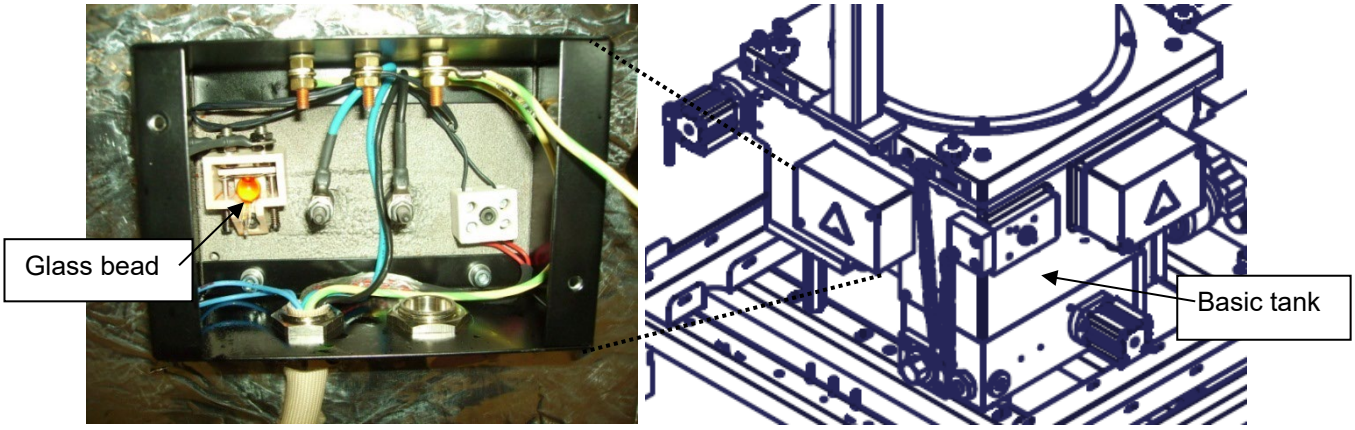
7.12 Over temperature protection, glass bead

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 all 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:

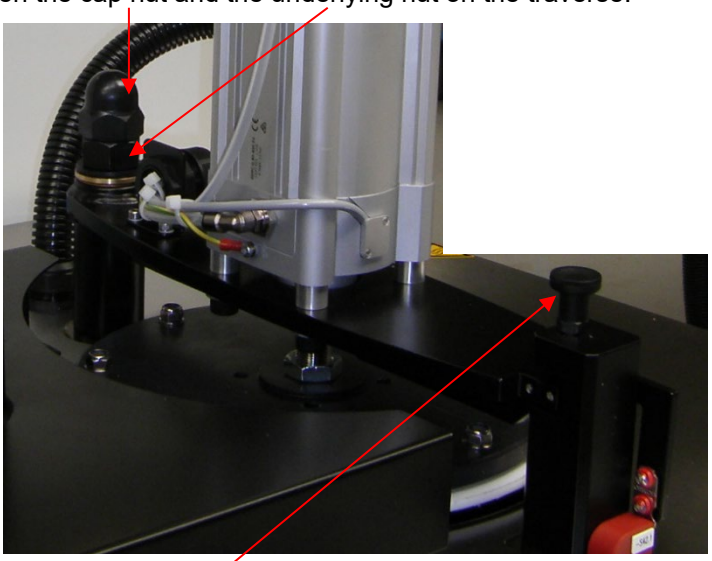
- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Mount the side panels again. See point 7.2.
- Connect the voltage supply and the compressed air supply. Heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in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

7.13 Replacement of the Teflon disc

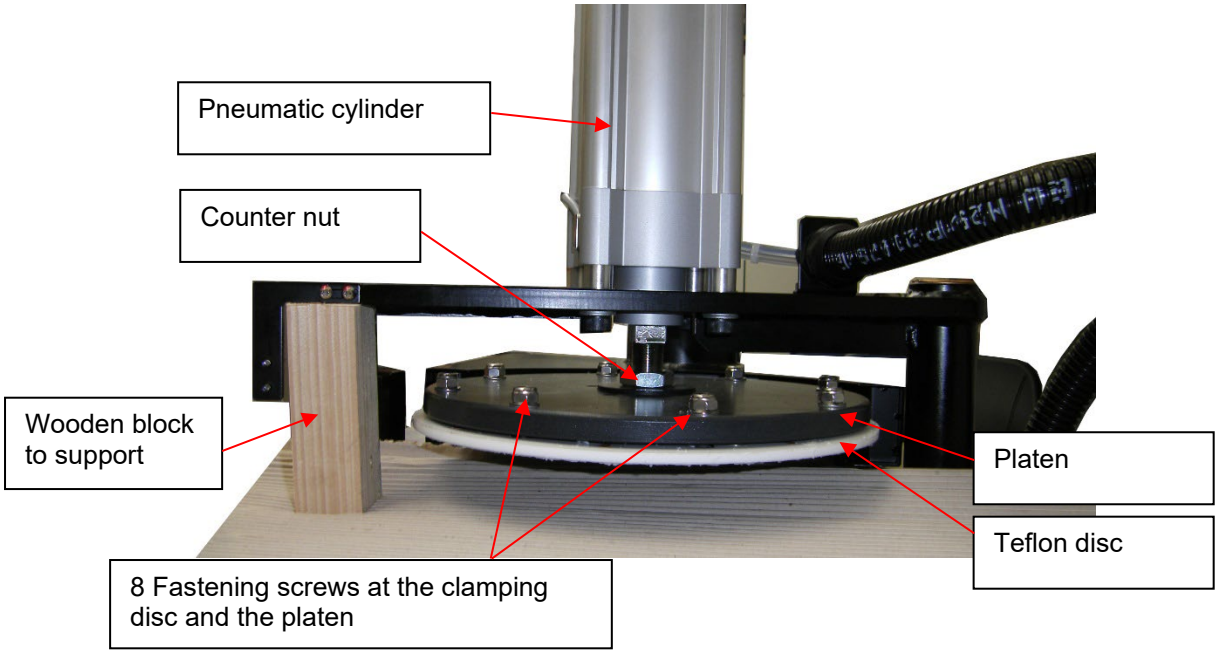
ADVICE

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.



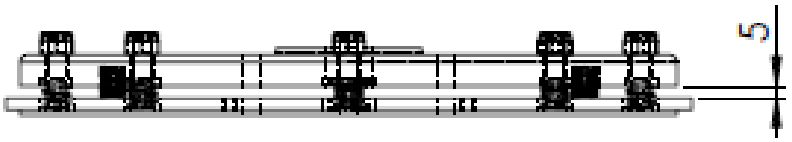
6. Pull up the locking bolt and turn the traverse to the side.
7. Lift the pneumatic cylinder with platen approx. 5cm and support the traverse with a wooden block, so that it is secured against lowering and you can disassemble the platen safely.



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.
- 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' shaft 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. • Deaerate (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

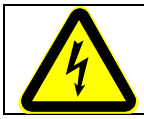
8.1 General Troubleshooting Notes

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 Controller Display.	• Accept fault report and clear the disturbance.
	Heating zone "Tank" has been switched off.	• Switch on the heating zone at the Controller Display.
	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 respectively 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 respectively 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 Controller Display.	• Accept fault report and clear the disturbance.
	Heating zone "Tank" has been switched off.	• Switch on the heating zone at the Controller Display.
	Fault report “Over Temperature” on the Controller Display.	• 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 Controller Display	• 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 Controller Display.	• Change to „Operation Temperature“.
	Information "Level Low" on the Controller Display.	• 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 respectively the pumps off during production.	Fault report on the Controller Display.	• Accept the fault report and correct the fault.
	Fault report “over or under temperature” for one of the heating zones on the Controller Display	• 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 respectively sealing face. Sealing damaged.	• Clean the sealing face and check if the O-ring is damaged. Check if the O-ring fits perfectly.
	Inserted Bag is too small.	• Heed the minimum diameter!
	Inserted Bag is damaged.	• Replace the bag.
11. With level control: "Bag empty" will not be displayed.	Proximity switch setting wrong	• Adjust the settings.
	Proximity switch defective	• Replace proximity switch.
12. Application weight varies.	Compressed air varies.	• Keep compressed air constant.
	Not enough molten adhesive within the tank.	• Let more adhesive be molten. Consider the melting time!
	Track speed varies.	• Keep the track speed constant.
	Application modules defective.	• Replace application modules.

Chapter 9
Drawings and lists of parts

WARNING

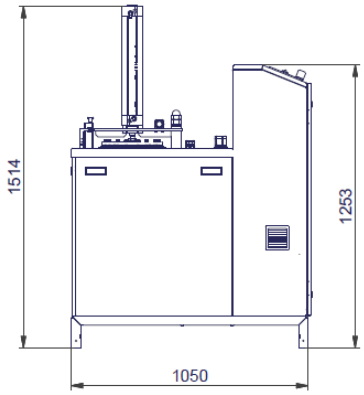
All parts must be periodically inspected and replaced if worn or broken. Failure to do this can affect equipment's operation and can result in personal injury.

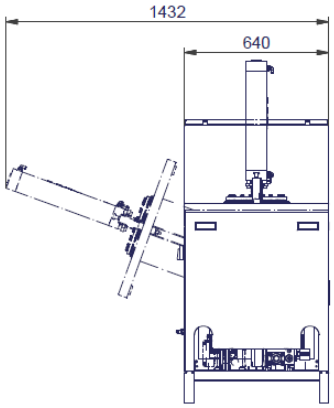
This chapter contains the component illustrations (exploded-view drawings) for each assembly of the Melter. These drawings are useful for finding part numbers as well as for use when maintaining or repairing the equipment.

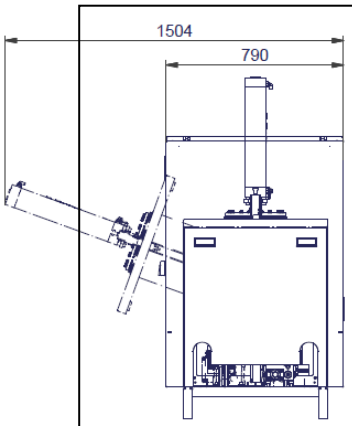
Note: Most common screws, nuts and washers called out in the manual are not for sale and they can be obtained locally at your hardware Store. Specialty fasteners are available by contacting ITW Dynatec's Customer Service.

9.1 Dimensions, Dynamelt™ PUR Bag Melter

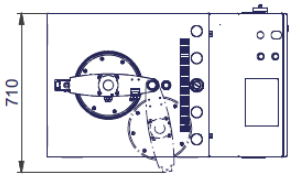
All dimensions in mm.

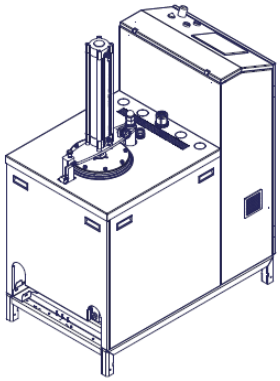






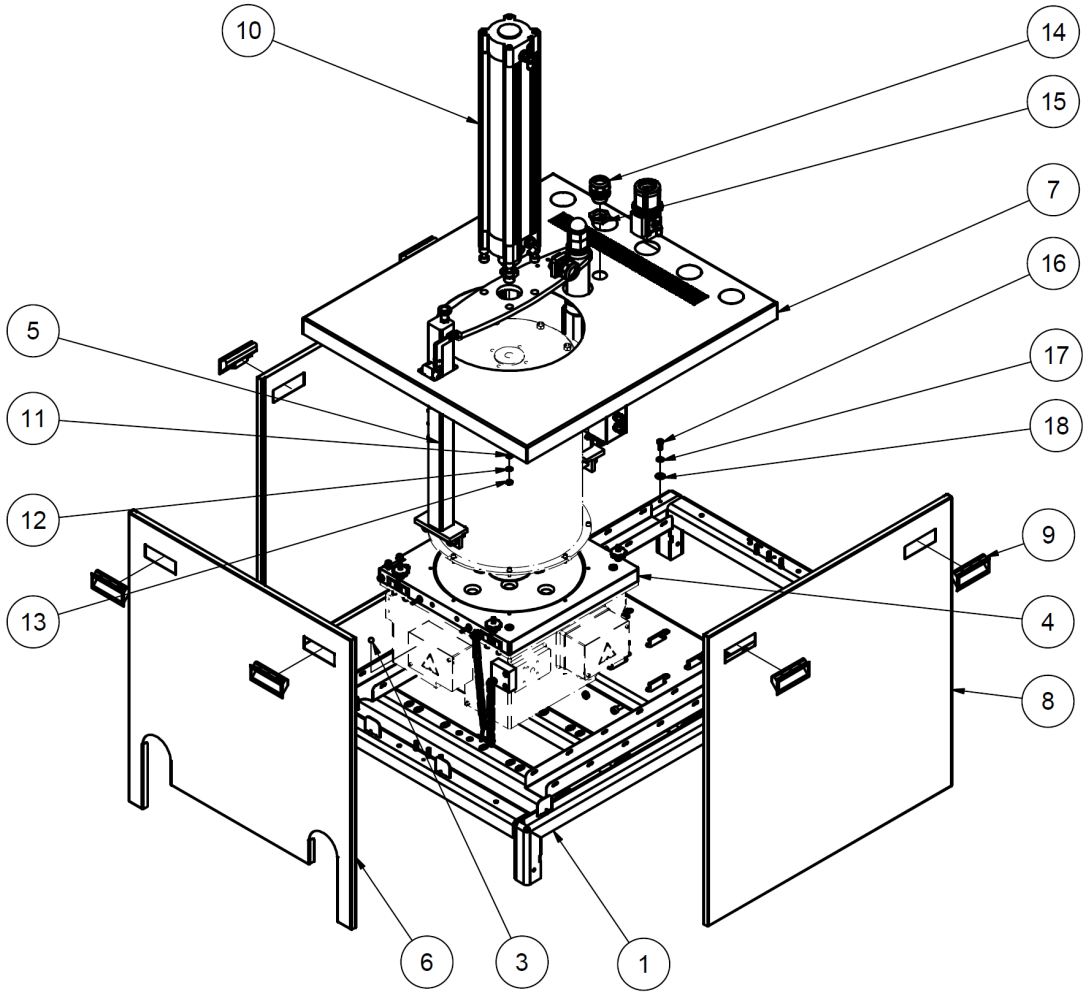
Option: Control cabinet large





9.2 Basic unit, PUR20

- Dynamelt PUR20 Bag Melter, Basic unit for 1 or 2 single pumps, PN I13.00200.500
- Dynamelt PUR20D Bag Melter, Basic unit for 1 or 2 dual pumps, PN I13.00215.500

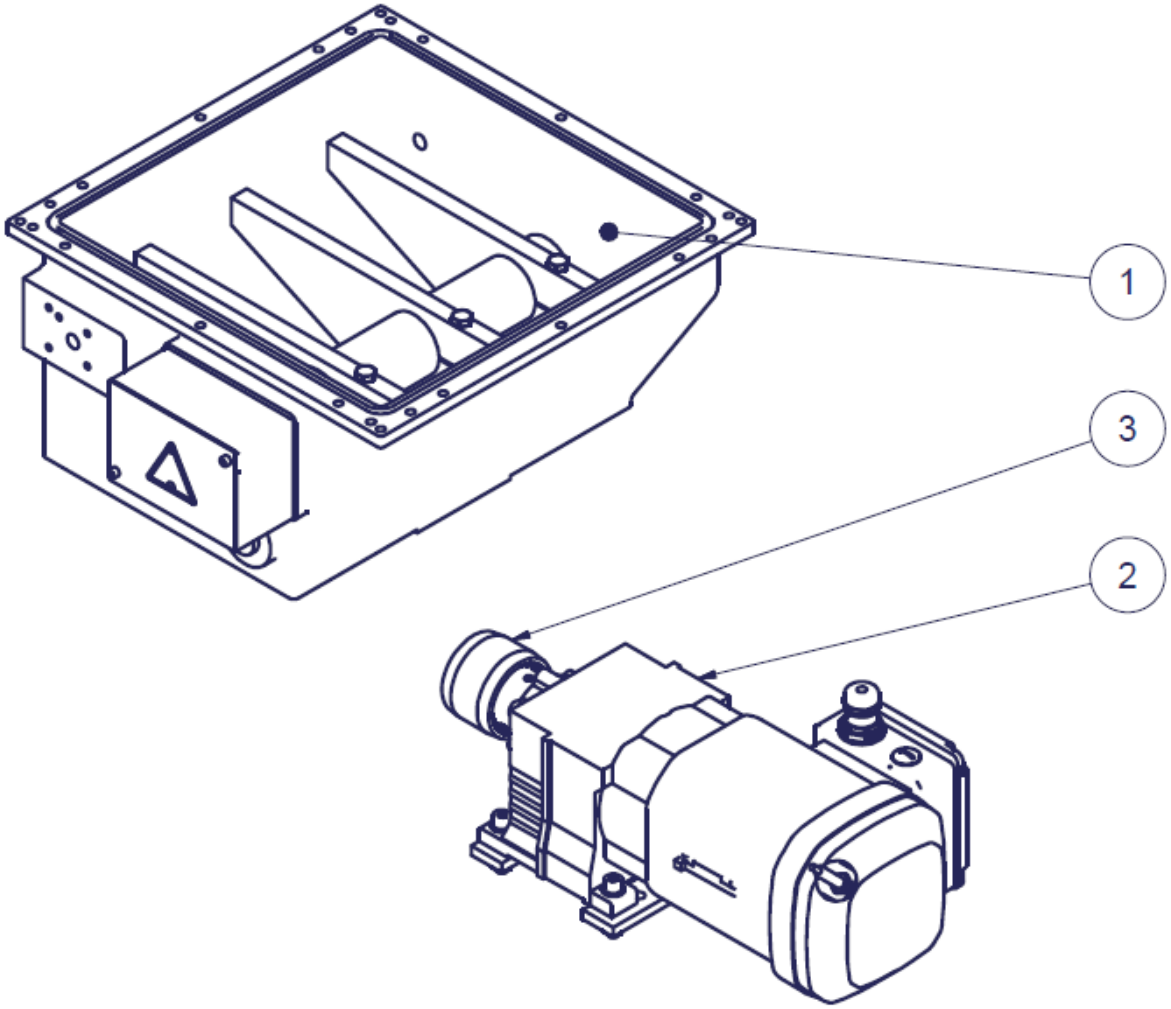


Pos.	Part no.	Description	Quantity
1	I10.00405.101	Base frame	1
3	I05.62190.001	Glass bead 190°C (374°F)	1
4	I13.00132.500 *	Melting plate 27 holes complete	1
5	I13.00129.500 *	Cylinder framing	1
6	I10.00408.100	Front panel PUR20	1
	I10.00223.100	Front panel PUR20D	1
7	I13.00113.100	Cover	1
8	I10.00413.101	Side panel right + left PUR20	2
	I10.00222.100	Side panel right + left PUR20D	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 6,4	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

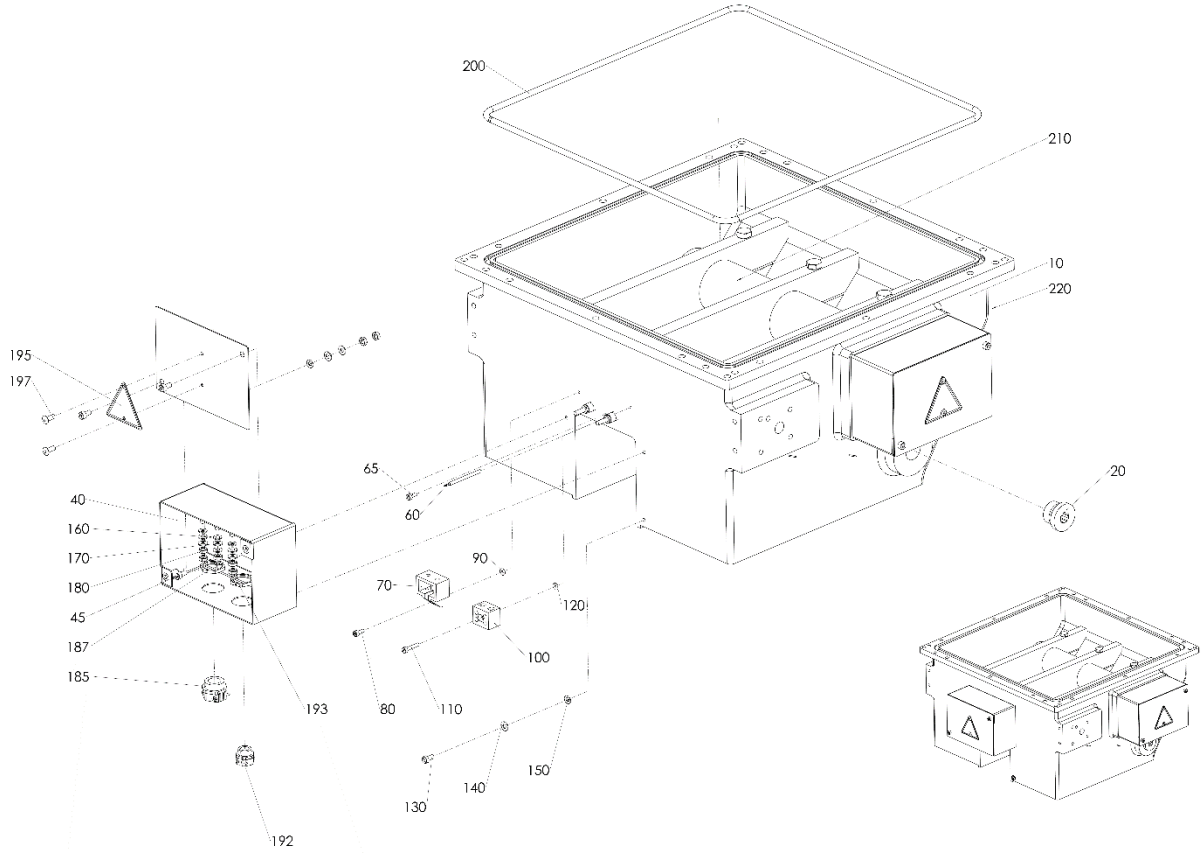


Pos.	Part no.	Description	Quantity
1	I10.00616.500 *	Basic tank 10L complete for 1 pump	1
	I10.00653.500 *	Basic tank 10L complete for 2 pumps	1
2	I10.00546.500 *	Three phase gear motor 0.5 KW with accessory	1
3	I09.20002.004	Coupling sleeve M28	1
4	I95.00005.501 **	Assembly for 1 frequency converter 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 tank10l, complete

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



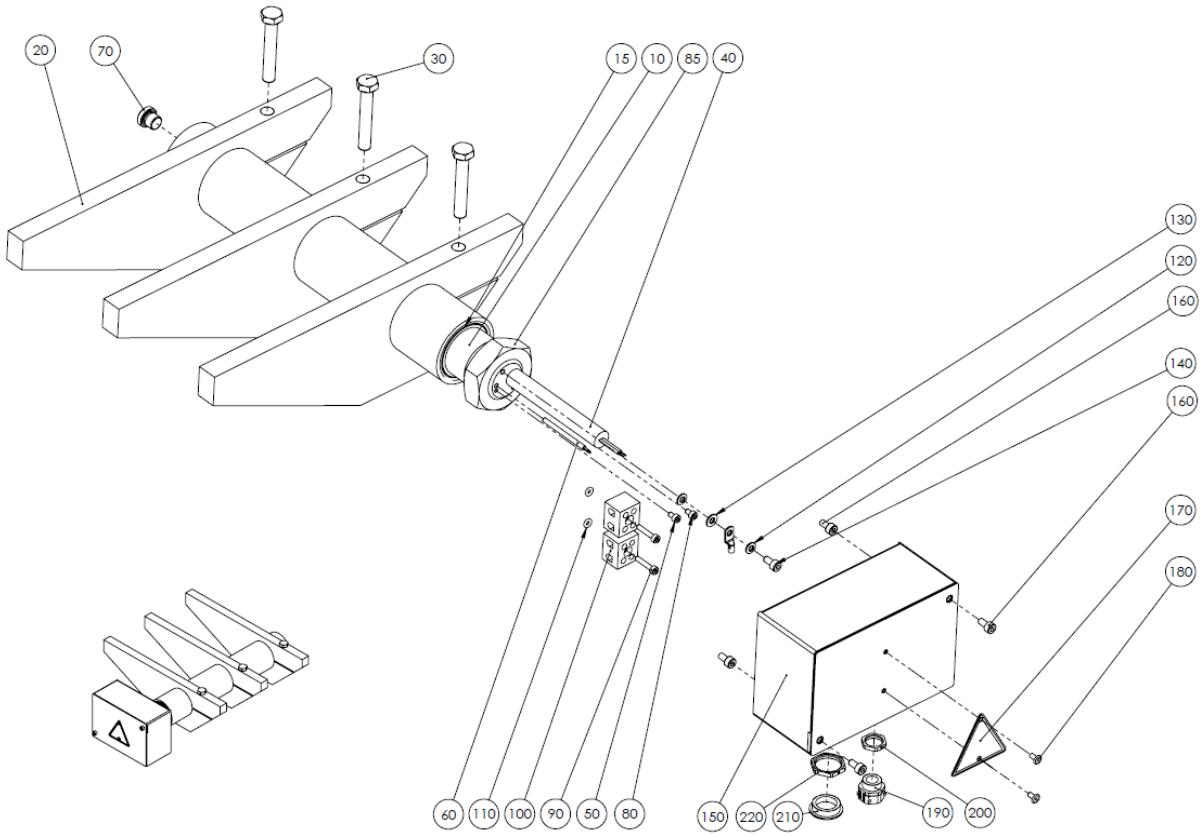
Pos.	Part no.	Description	Quantity
10	I10.00631.500	Basic tank 10l for 1 pump, coated	1
	I10.00651.500	Basic tank 10l for 2 pumps, coated	1
20	I00.62100.102	Plug screw G1/2"	1
40	I10.00465.300	Terminal box, small	1
45	I00.10408.912	Cylinder head screw M4x8	4
60	I05.63030.040	Temperature sensor Ø3x40 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

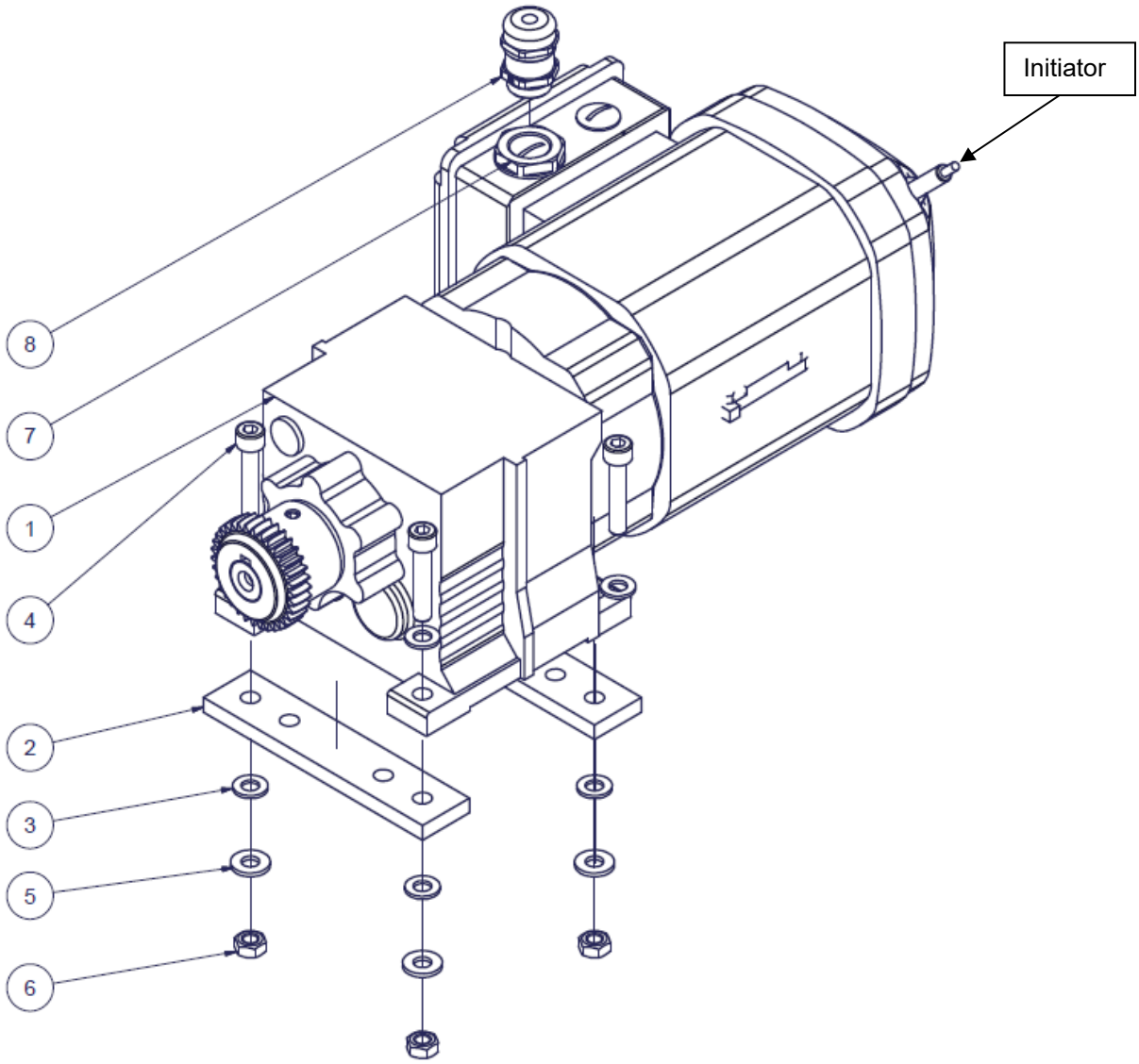
Melting aid complete, PN I10.00618.500



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 M8x50mm	3
40	I05.31700.001	Heating cartridge Ø12,5x300mm 1700W 230V	1
50	I00.10305.912	Hexagonal socket head screw M3x5mm	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 M3x5mm	1
85	I01.00300.936	Hexagonal nut M30 even	1
90	I00.10316.912	Cylinder head screw M3x16mm	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 M4	2
130	I02.00430.125	Washer Ø4,3mm	1
140	I00.10408.912	Cylinder head screw M4x8mm	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 Ø3x6mm	2
190	I05.90070.100	Pressure screw KLE MS Pg7	1
200	I05.92070.001	Hexagonal nut MS Pg 7	1
210	I05.93110.001	Plug screw MS Pg11	1
220	I05.92110.001	Hexagonal nut MS Pg11	1

9.6 Motor

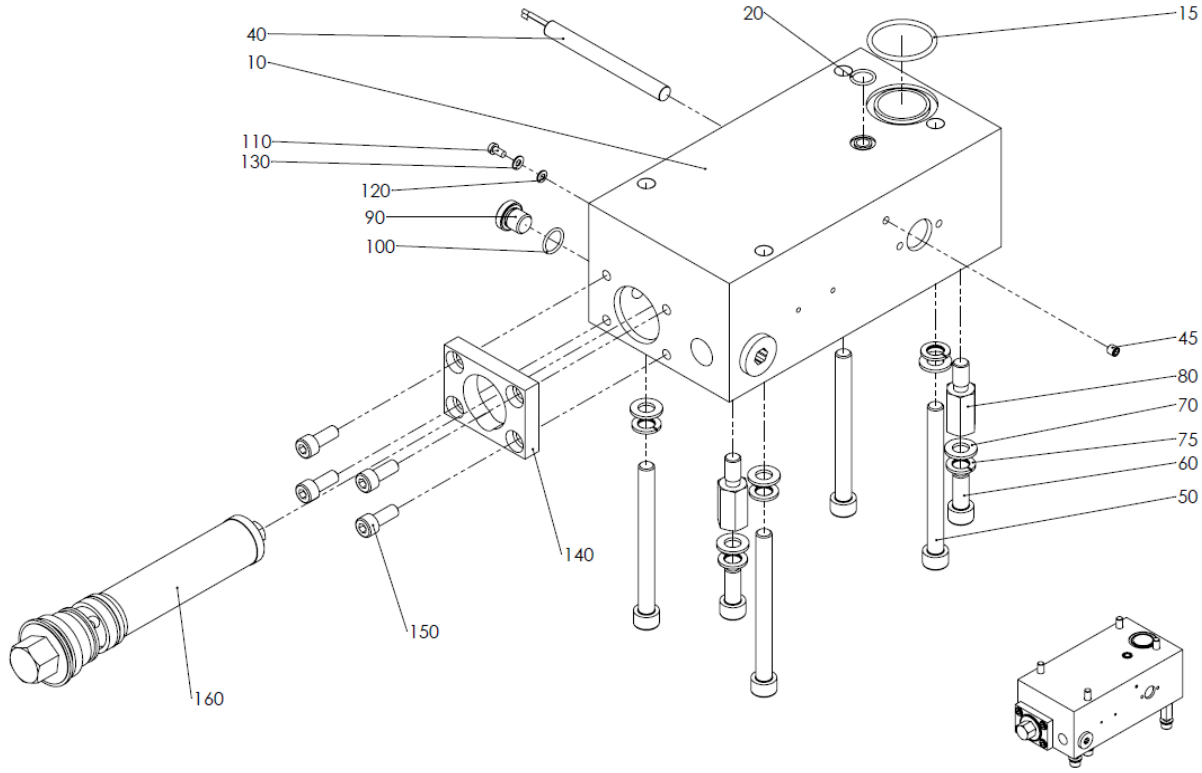
Three phase gear motor 0.5 KW with accessories, PN I10.00546.500



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

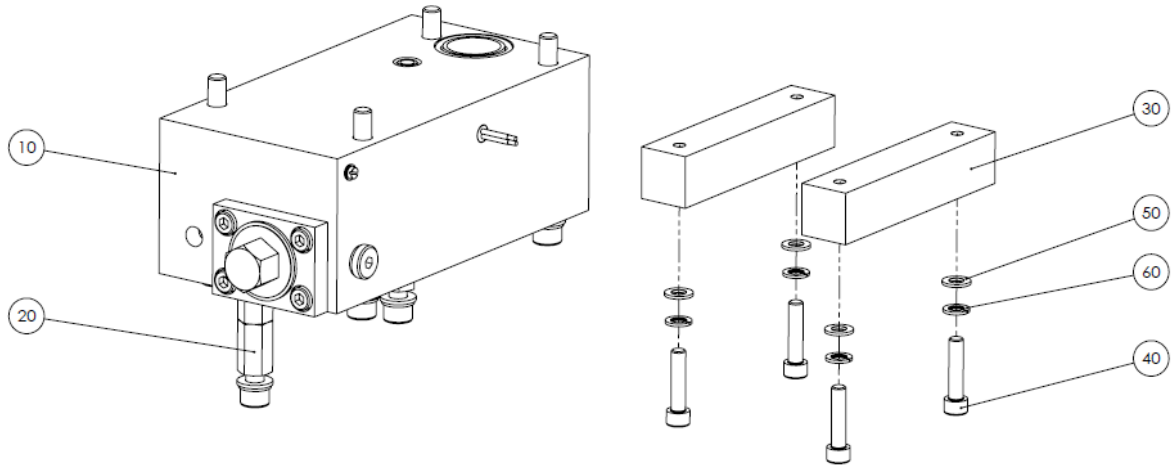
- Filter block right complete for DN 8, DN 10 and DN 16, (for single pump), PN I10.00256.501
- Filter block left (inversely) complete for DN 8, DN 10 and DN 16, (for single pump), PN I10.00257.501



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 10x100 HLP-ISAN 230V 350W	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.

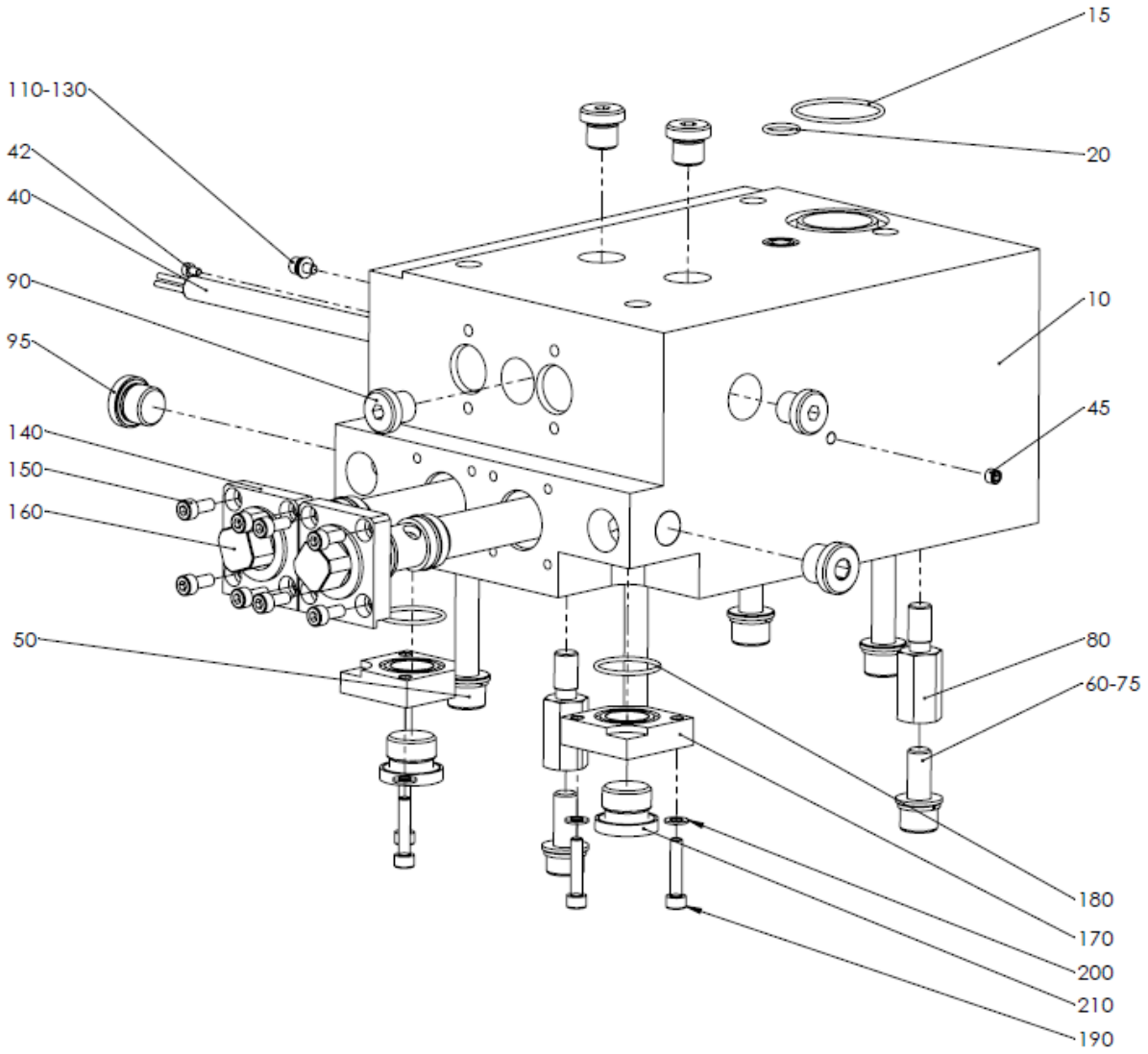
- Filter block left (for single pump), incl. feet + adaptor for motor, if right is a dual pump, PN I13.00240.500



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

* 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



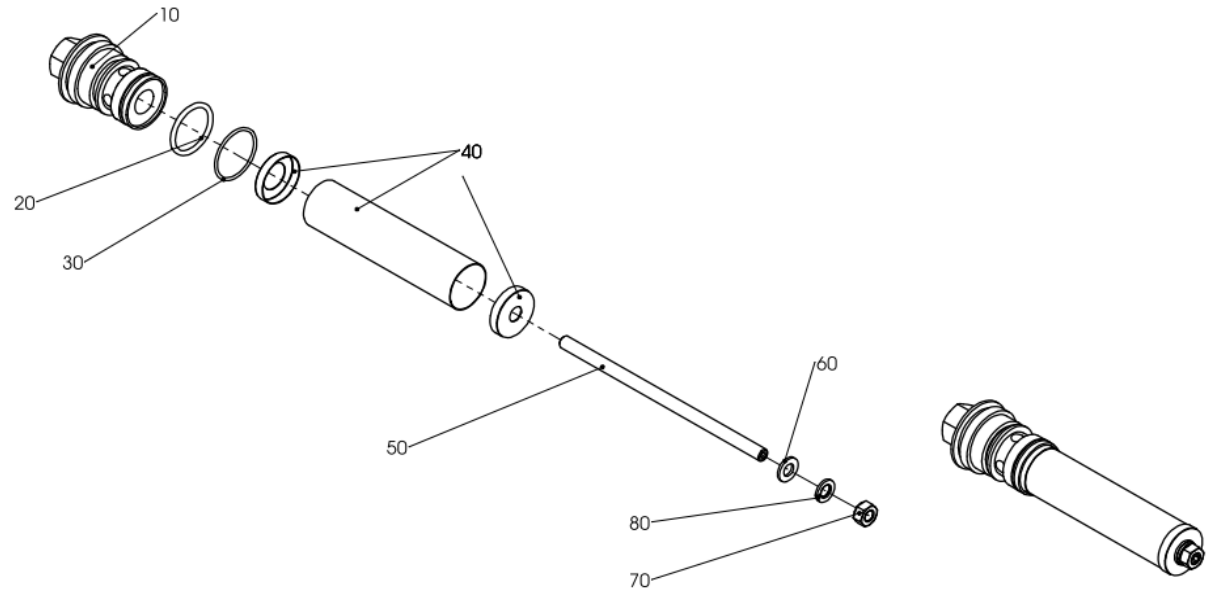
Pos.	Part no.	Description	Quantity
10	I10.00599.100	Filter block right for dual pump	1
	I10.00600.100	Filter block left for dual pump	1
15	I06.03609.222	O-ring 2-222	1
20	I06.01242.014	O-ring 2-014	1
40	05.30420.001	Heating cartridge 10 x 138 mm, 230 V, 420 W	1
42	I00.10305.912	Hexagonal socket head 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 G1/2”	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.

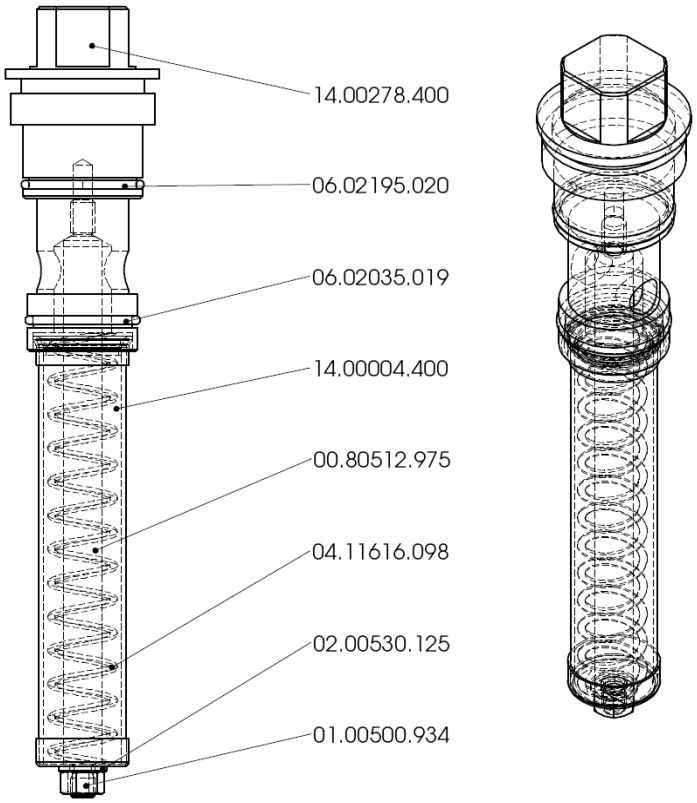
9.8 Filter screw

- 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

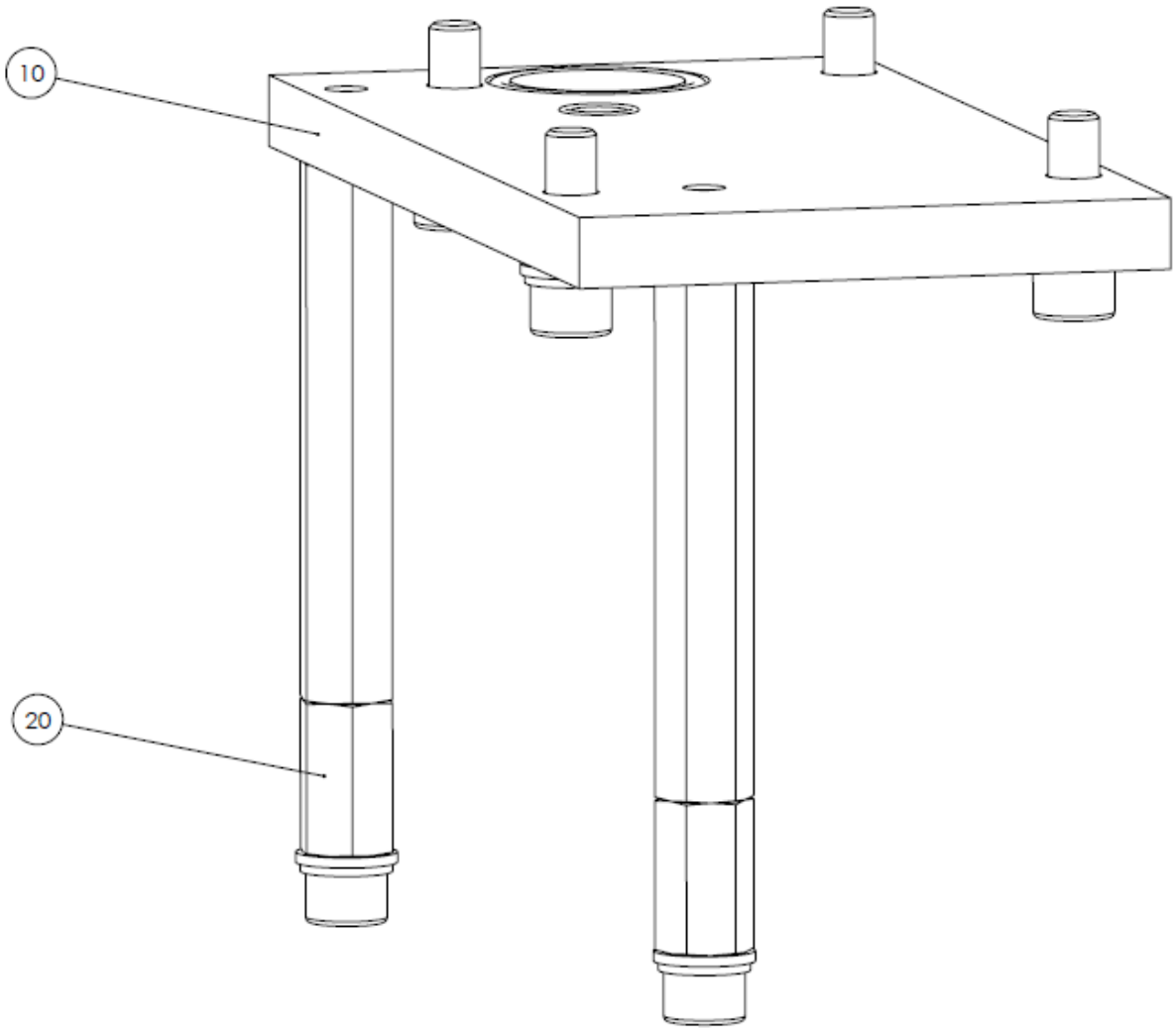
- Filter screw, complete 150µm, (for filter block for dual pump), PN I14.00282.500



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

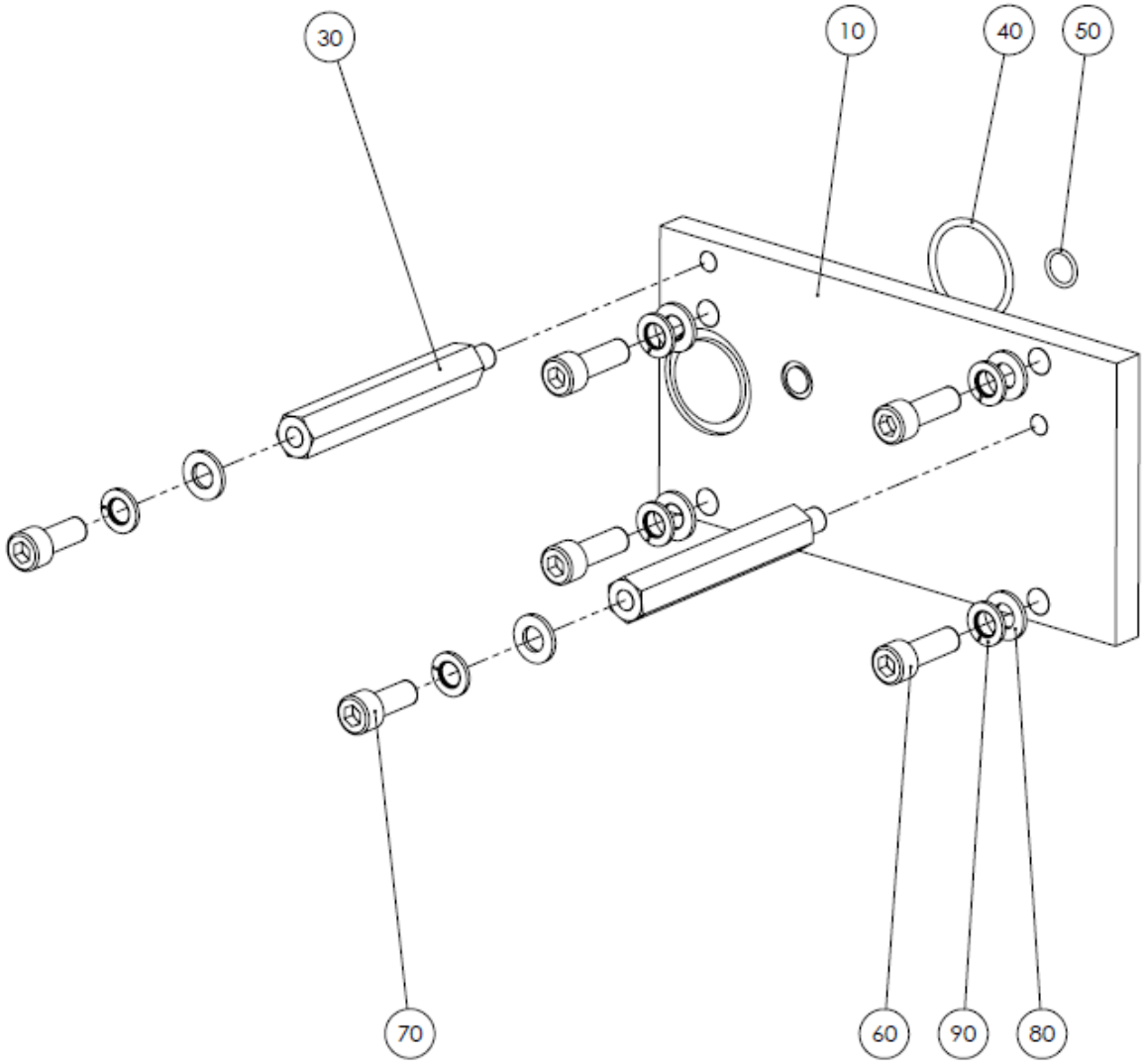
Adapter complete, at 1 dual pump, PN I13.00242.500



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

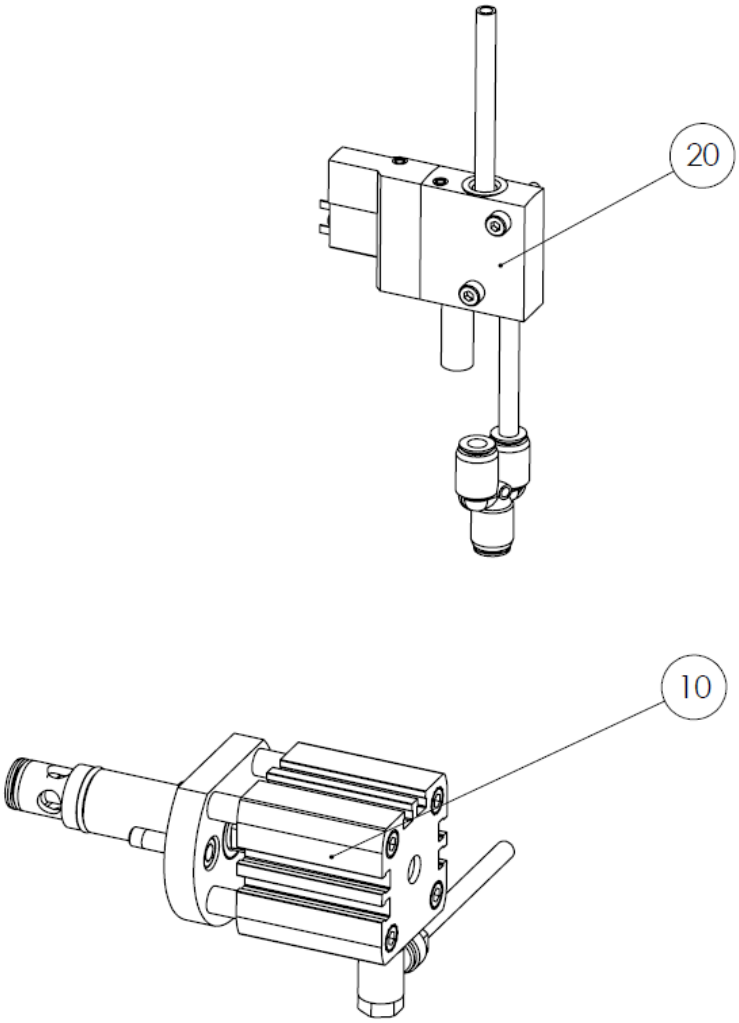
Adapter filter block, complete, PN I10.00430.500



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

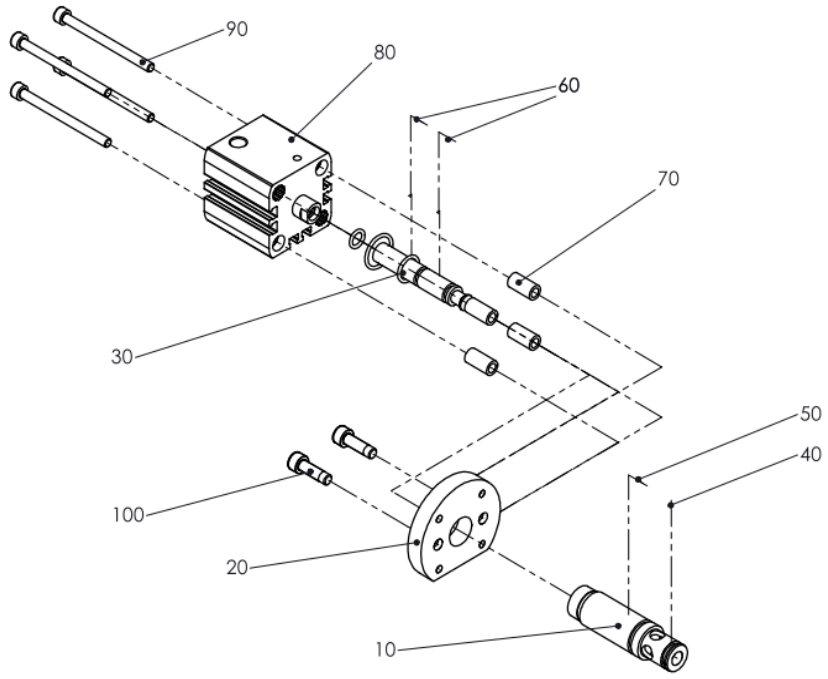


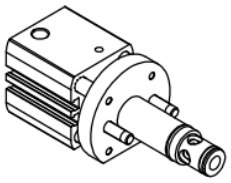
Pos.	Part no.	Description	Quantity
10	I14.00263.500 *	Pneumatic pressure relief valve	1
20	I80.00112.501 *	Pneumatic for pressure relief valve	1

* 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

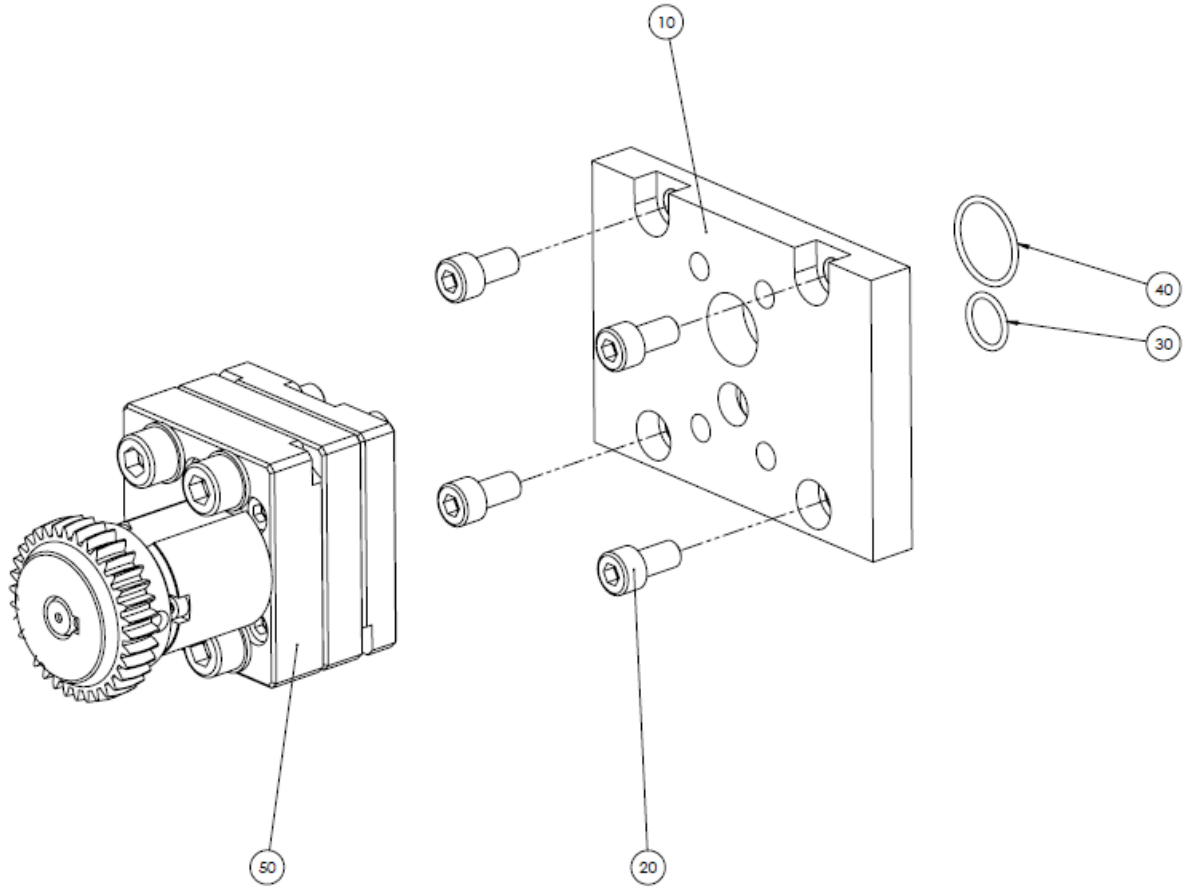




Pos.	Part no.	Description	Quantity
10	I14.00164.400	Casing	1
20	I14.00262.400	Adapter	1
30	I14.00165.400	Piston	1
40	I06.01242.014	O-ring 2-014	1
50	06.01717.017	O-ring 2-017	1
60	I06.00765.011	O-ring 2-011	2
70	I14.00264.400	Distance washer	4
80	I07.96008.050	Short stroke cylinder Ø32/5 single-acting-Viton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

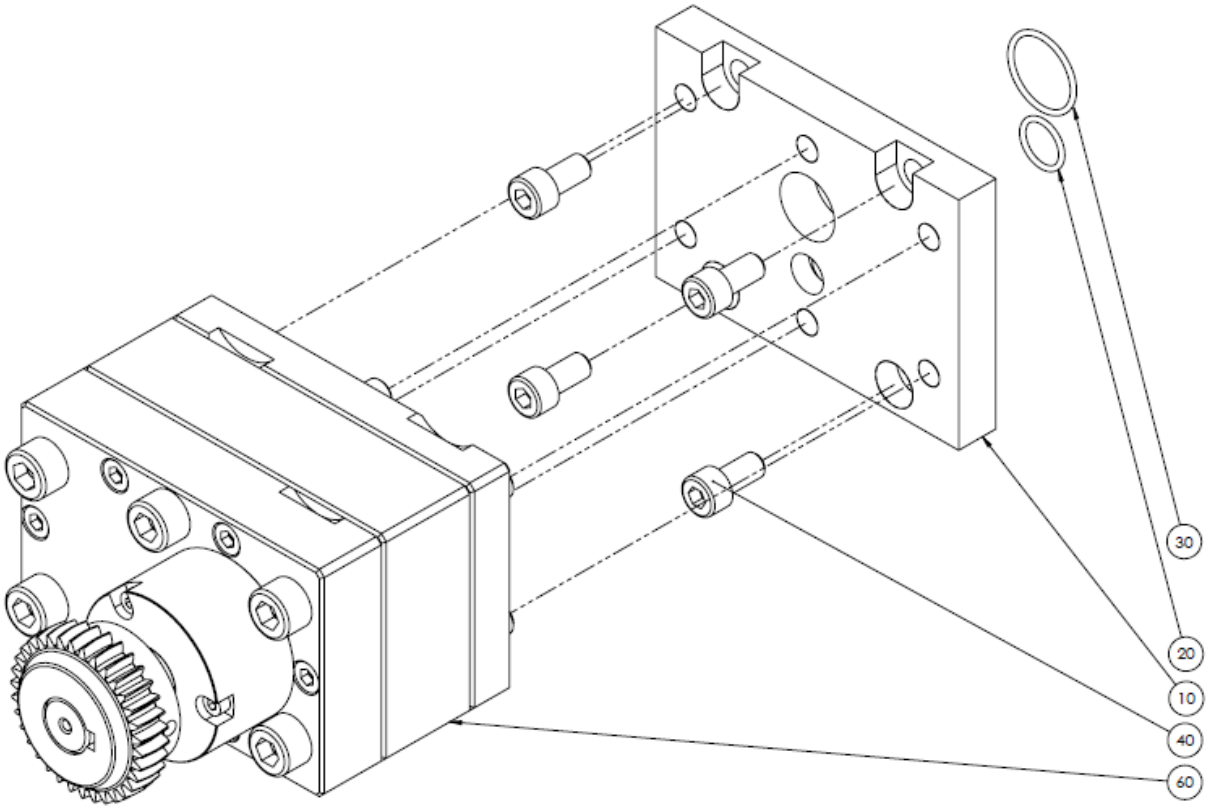
9.12 Gear pump

- 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



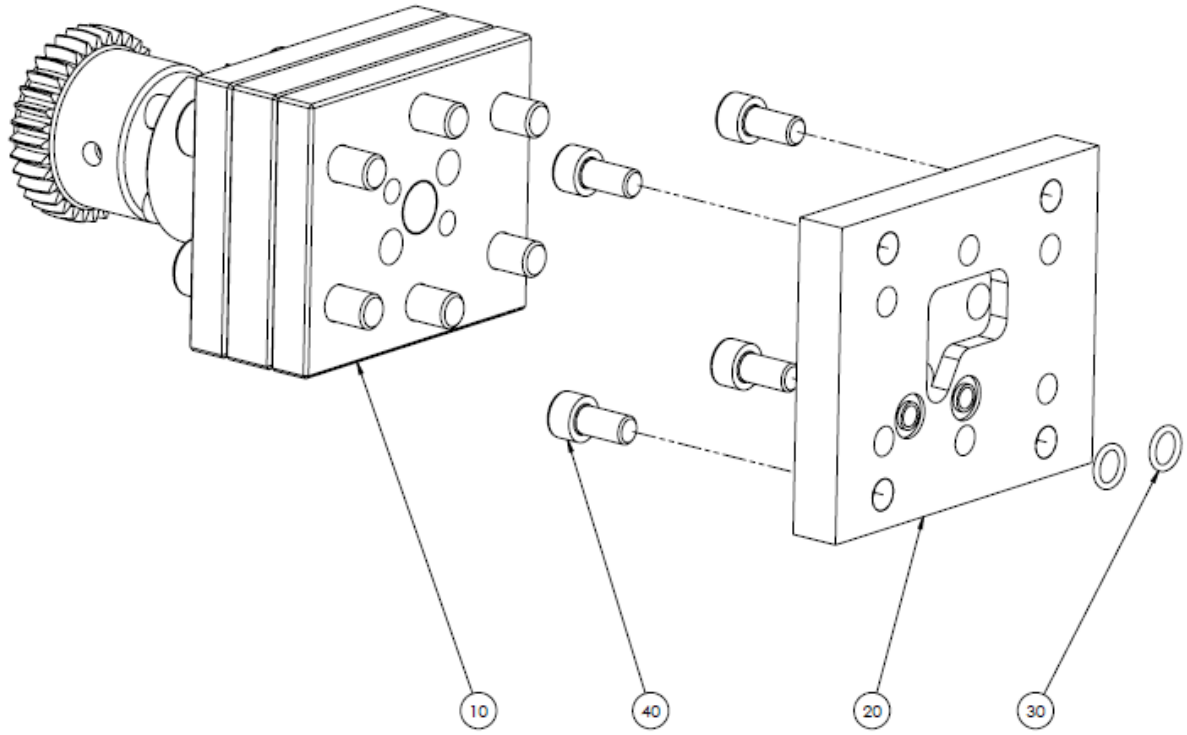
Pos.	Part no.	Description	Quantity
10	I10.00162.301	Adapter plate for 0.3-4.5 pump	1
20	I00.10816.912	Cylinder head screw M8x16	4
30	I06.01400.015	O-ring 2-015	1
40	I06.02352.021	O-ring 2-021	1
50	I07.99106.503	Gear pump 0.6ccm	1
	I07.99112.503	Gear pump 1.2ccm	1
	I07.99124.503	Gear pump 2.4ccm	1
	I07.99145.503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

- 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

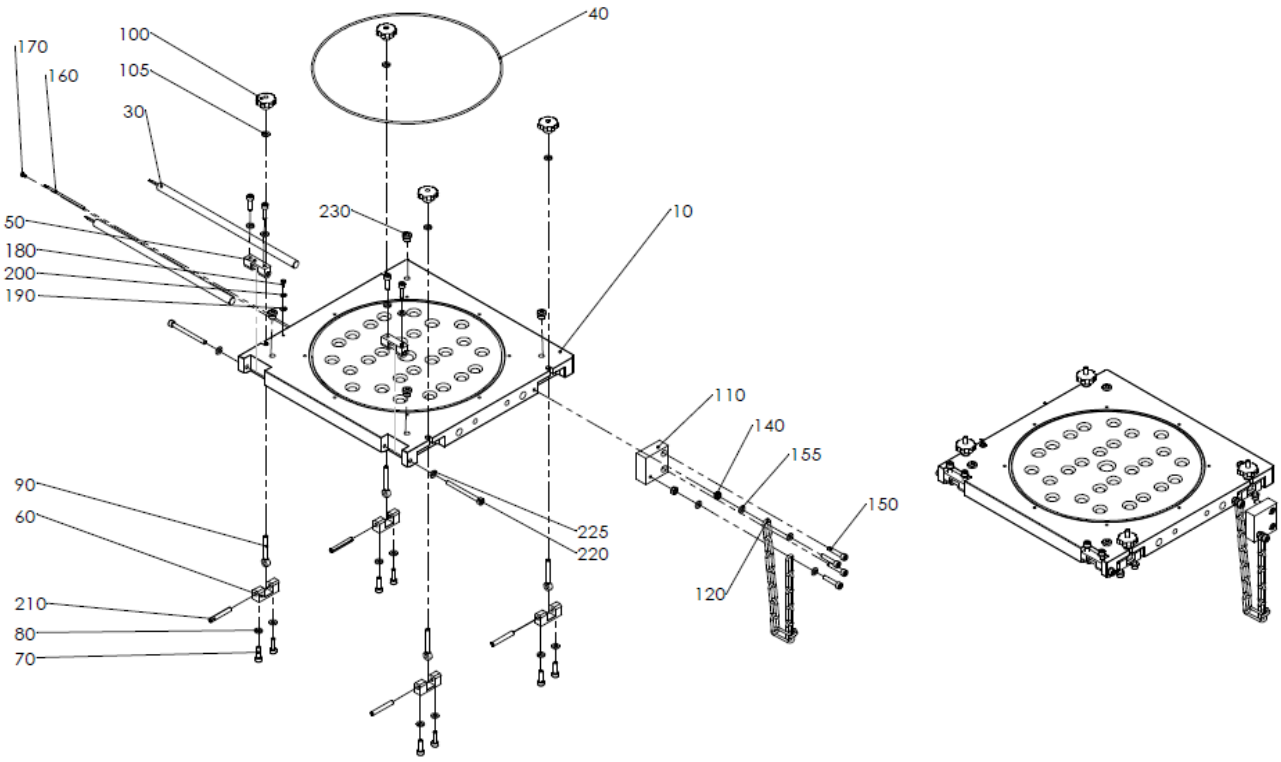
- Dual pump 2x0.6 ccm incl. adapter plate, PN I13.00233.501
- Dual pump 2x1.2 ccm incl. adapter plate, PN I13.00234.501
- Dual pump 2x2.4 ccm incl. adapter plate, PN I13.00235.501
- Gear pump 2x4.8 ccm incl. adapter plate, PN I13.00236.501



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

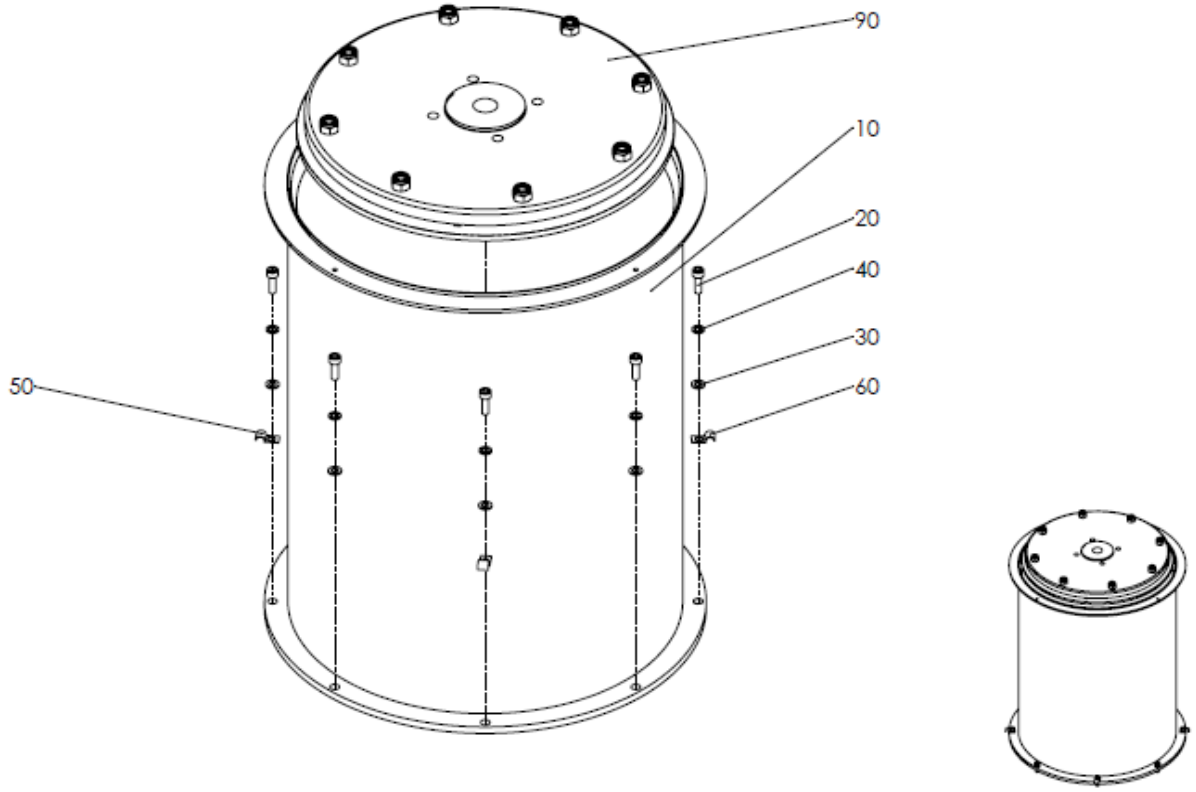
Melting plate 27 holes complete PN I13.00132.500



Pos.	Part no.	Description	Quantity
10	I13.00071.300	Melting plate 27 holes	1
30	I05.31700.001	Heating cartridge 12,5x300mm 1700W, 230V	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 Ø3x80 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

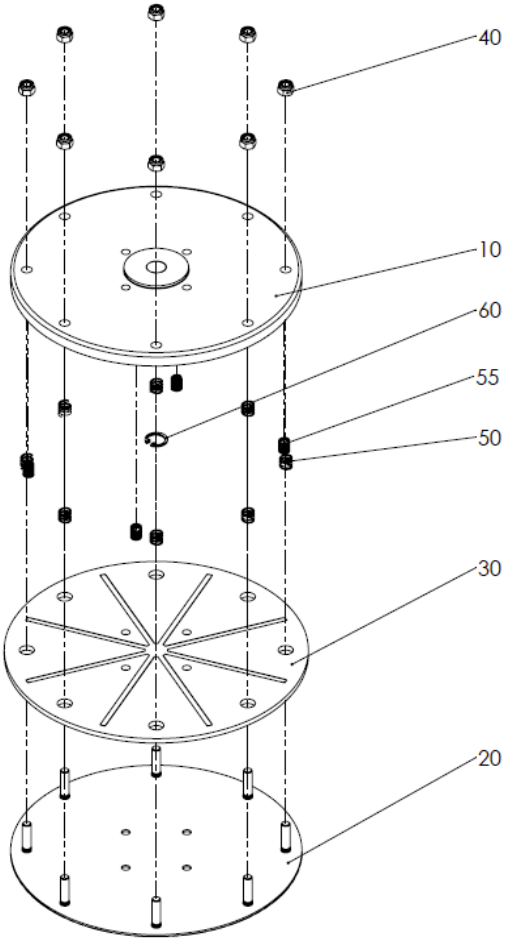


Pos.	Part no.	Description	Quantity
10	I13.00164.500	Feed tube with ring tube Ø 282mm	1
	I13.00170.500	Feed tube with ring tube Ø 288mm	1
20	I00.10516.912	Cylinder head screw M5x16	8
30	I02.00530.125	Washer 5.3	8
40	I02.50500.127	Lock washer A5	8
50	I05.99003.008	Fastening clamp 8mm	1
60	I05.99003.006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

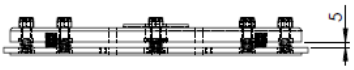
* see separate drawing and/or list of parts.

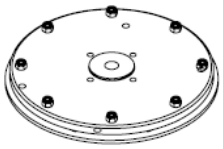
9.15 Platen

- 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!

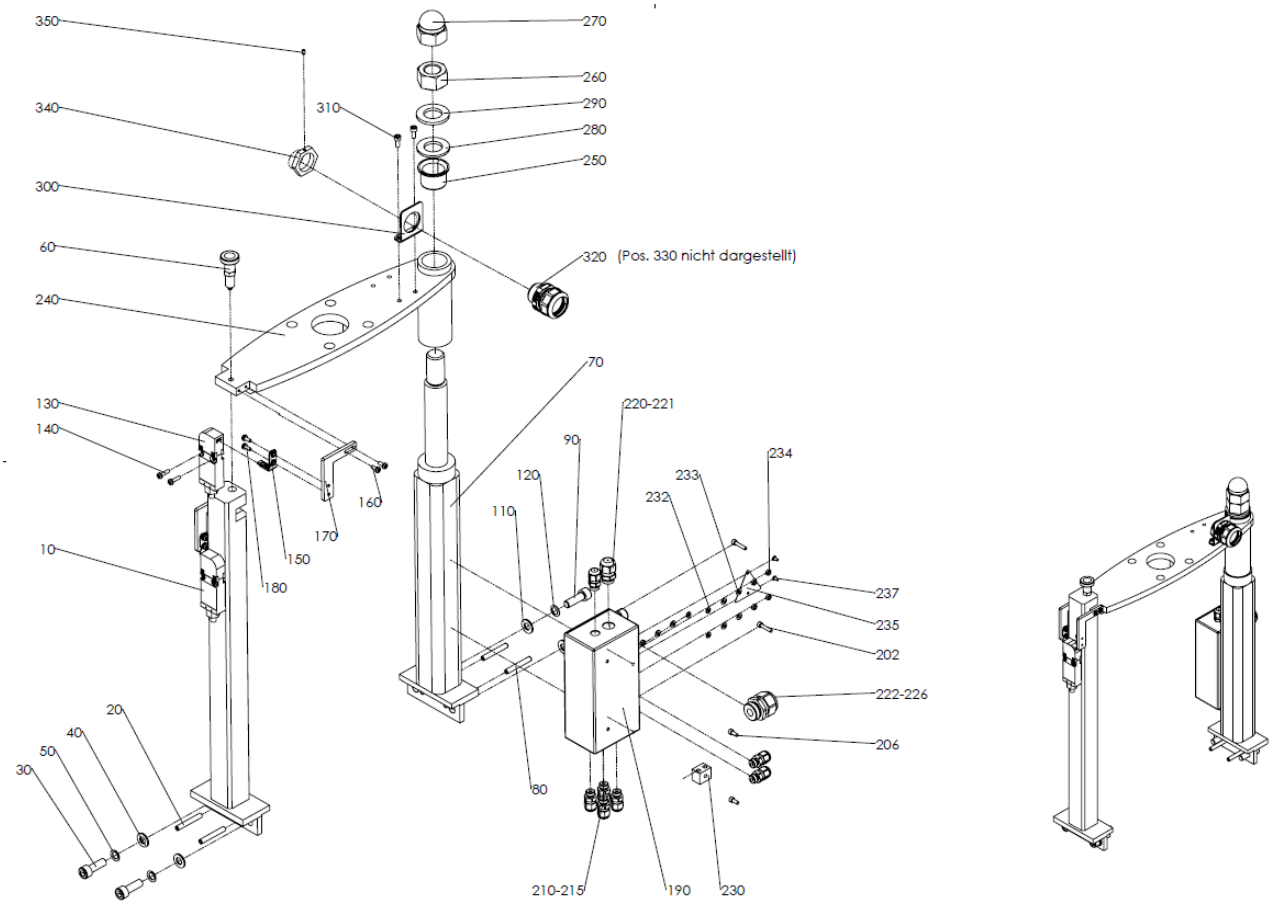




Pos.	Part no.	Description	Quantity
10	I13.00051.301	Platen Ø270mm	1
20	I13.00053.300	Clamping disc Ø270mm	1
30	I13.00092.501	Teflon disc Ø282mm, complete with star-sealing	1
	I13.00161.500	Teflon disc Ø288mm, complete with star-sealing	1
40	I01.00800.985	Hexagon nut M8 self-locking	8
50	I04.11111.098	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 V6, PN I95.00030.501 *
- Control cabinet EC1 230V/3/PE V6, 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 V6, PN I95.00035.500 *
- Control cabinet EC2 230V/3/PE V6, PN I95.00045.500 *

* see separate drawing and/or list of parts.

• Control cabinet EC1 400V/3/N/PE, PN I95.00030.501

Part no.	Description	Quantity
I05.90000.260	Control cabinet	1
I05.90000.263	Connector mounting plate stainless-steel	1
I05.97003.011	Mounting base	2
I05.90000.265	Cover plate dual	1
I05.90000.266	Cover plate 6-way	1
I08.60000.011	Velcro back to back 10mm	2
I05.14001.105	End cap for busbar 3-pin	4
I05.14001.082	Bus bar 3-phase	2
101074	Device socket 14-pin + PE	4
101521	Crimp socket contact 0.5-1.5mm² d = 1.6	34
9997	Small parts - electronics	20
I05.22000.119	Mounting adapter M22-A	4
I05.22000.121	Insert label M22-XST	3
I05.22000.123	Contact element M22-K10 normally open	2
I05.22000.124	Contact element M22-KO1 normally closed	4
I05.22000.125	Lamp socket M22-LED-W	2
I05.22000.144	Illuminated pushbutton green	1
I05.22000.145	Illuminated pushbutton red	1
I05.22000.132	EMERGENCY STOP sign M22-XBK1	1
I05.22000.131	EMERGENCY STOP button M22-PV	1
I05.22000.122	Label holder M22S-ST-X	3
I05.56000.018	Outlet filter black for 05.56000.017	1
I05.56000.017	Filter fan 230V black air volume 25m³ / h	1
115732	Power module V6	1
115733	AUX power module V6	1
40502	Safety relay 24V AC / DC	1
I05.52000.033	Solid State Relay 20A 1ph.	3
115734	Base module V6	1
115735	Temperature module V6	1
118584	V6 adapter for SSR connection	1
117648	XIO module V6	1
I05.14001.074	Circuit breaker B32A 3-pin	1
I05.14001.054	Circuit breaker B6A	1
I05.14001.055	Circuit breaker B10A	1
I05.14001.056	Circuit breaker B16A	1
I05.14001.053	Circuit breaker A20A	2
I05.14001.051	Circuit breaker A10A	1
I05.14001.173	Circuit breaker C4A 1-pin	2
17101	Power supply for valve driver VD2, 24V 5A	1
I05.52220.062	Main contactor 24VDC 4pol 60A	1
I05.52220.059	Auxiliary switch block 4S	1

I05.52220.075	Auxiliary contactor 24VDC 3NO + 1NC	1
I05.05001.037	Main switch KG80 T 103 / 01E	1
I05.05001.054	Shield holder + shield main switch	1
I05.52220.105	Coupling relay Finder 2W 24VDC	6
I09.70001.135	ITW Dynatec branding sticker	1
I09.70001.134	Sticker HMI overlay V6	1
40560	SD card 1GB for DynaControl V6	1

9.18 HMI Interface

- LCD Panel V6 for Bag Melter, PN 115719

Chapter 10
Options / Accessories

10.1 Interface

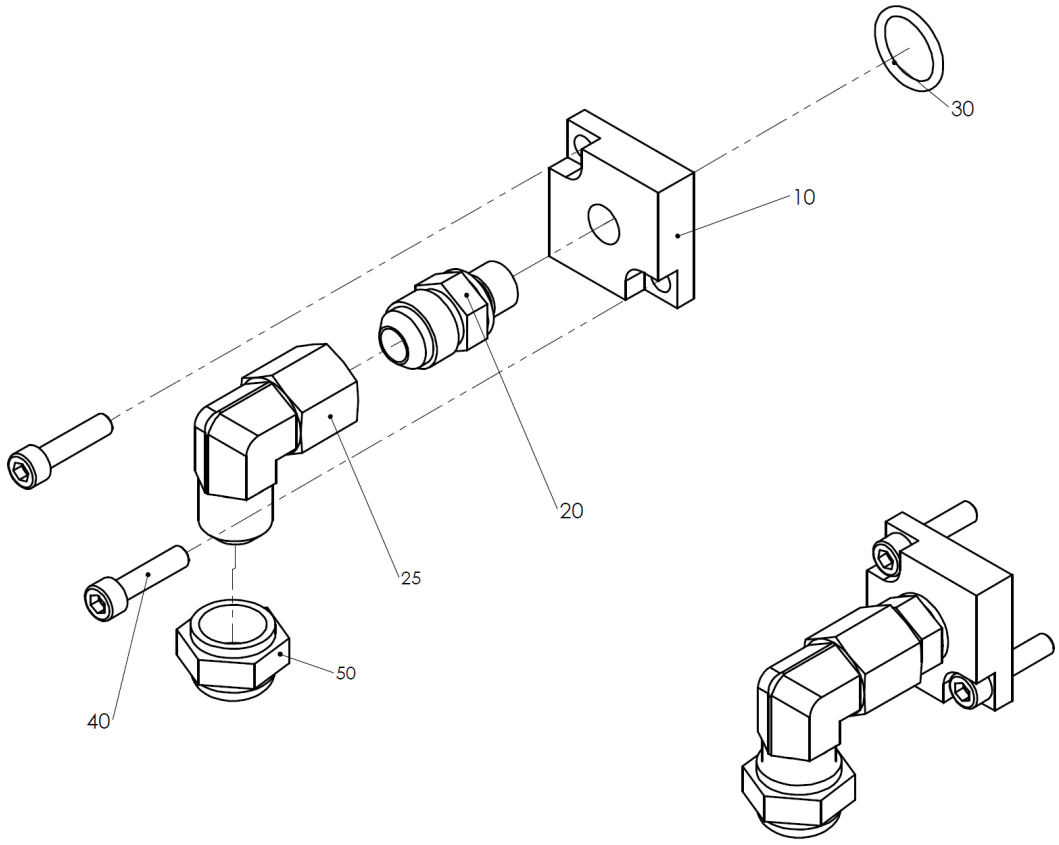
- Profibus-Kit V6, Art. Nr./ PN 117485
- Ethernet/IP-Kit V6, Art. Nr./ PN 117381
- EtherCAT-Kit V6, Art. Nr./ PN 118753
- ModBus/TCP

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

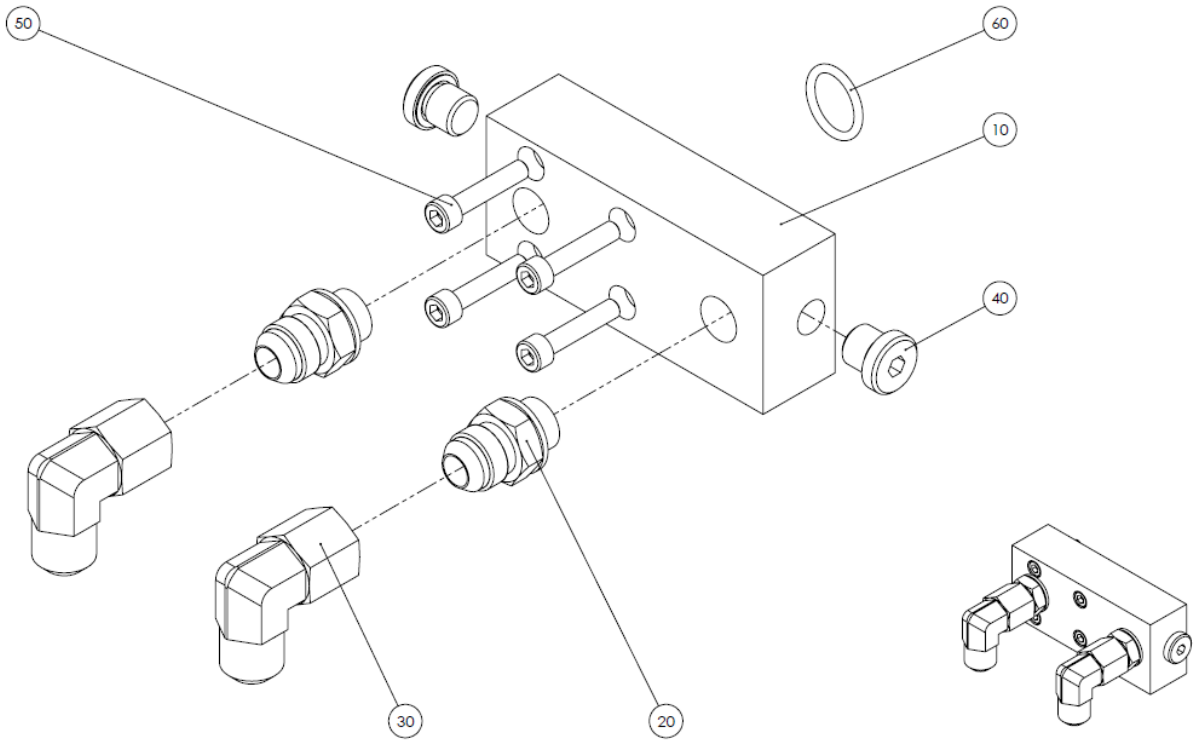
- Return hose connection DN 8, PN I10.00672.501
- Return hose connection DN 10, PN I10.00023.504
- Return hose connection DN 16 (Dynatec), PN I10.00705.500
- Return hose connection DN 16 (INATEC), PN I10.00151.502



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	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

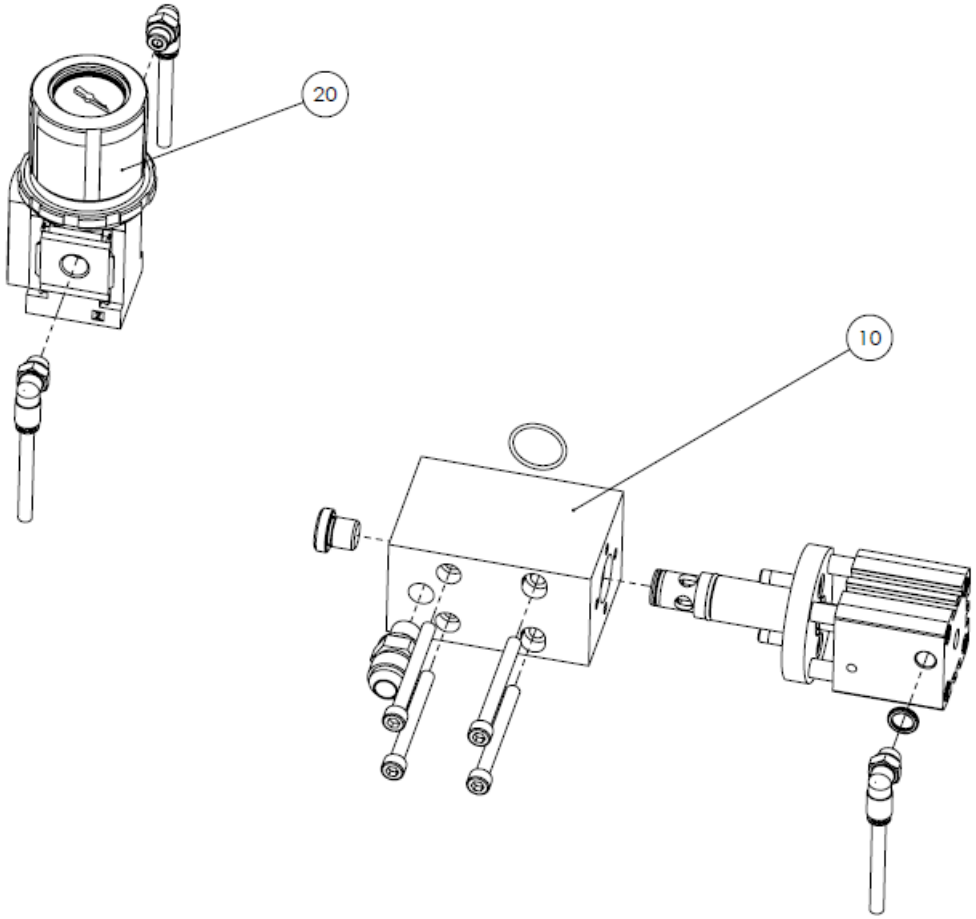
- Return hose connection for 2 hoses DN 8, PN I13.00225.501
- Return hose connection for 2 hoses DN 10, PN I13.00227.501
- Return hose connection for 2 hoses DN 16 (INATEC), PN I13.00229.501
- Return hose connection for 2 hoses DN 16 (Dynatec), PN I13.00230.500



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	4
60	I06.01872.116	O-ring 2-116	1

10.5 Pneum. Return regulating valve

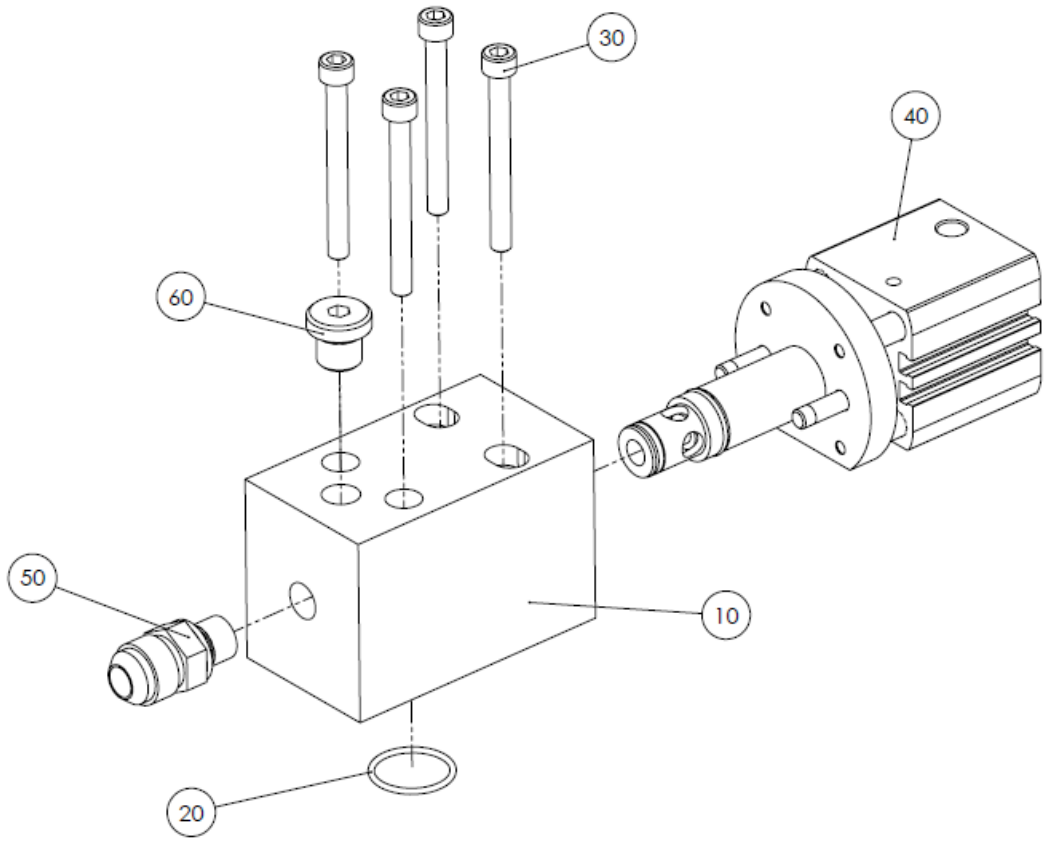
- Pneum. Return regulating valve DN 8 with pneumatic, PN I13.00197.501
- Pneum. Return regulating valve DN 10 with pneumatic, PN I13.00194.501
- Pneum. Return regulating valve DN 16 with pneumatic (INATEC), PN I13.00198.500
- Pneum. Return regulating valve DN 16 with pneumatic (Dynatec), PN I13.00255.500



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	4
40	I14.00263.500 *	Pressure regulating / relief valve	1
50	103623	Hose connection DN8 G3/8	1
	I07.00800.231	Hose connection DN10 G3/8	1
	I07.00800.219	Hose connection DN16 G3/8 (INATEC)	1
	I07.00800.244	Hose connection DN16 G3/8 (Dynatec)	1
60	I00.61320.101	Plug screw G1/4	1

* see separate drawing and/or list of parts

10.6 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

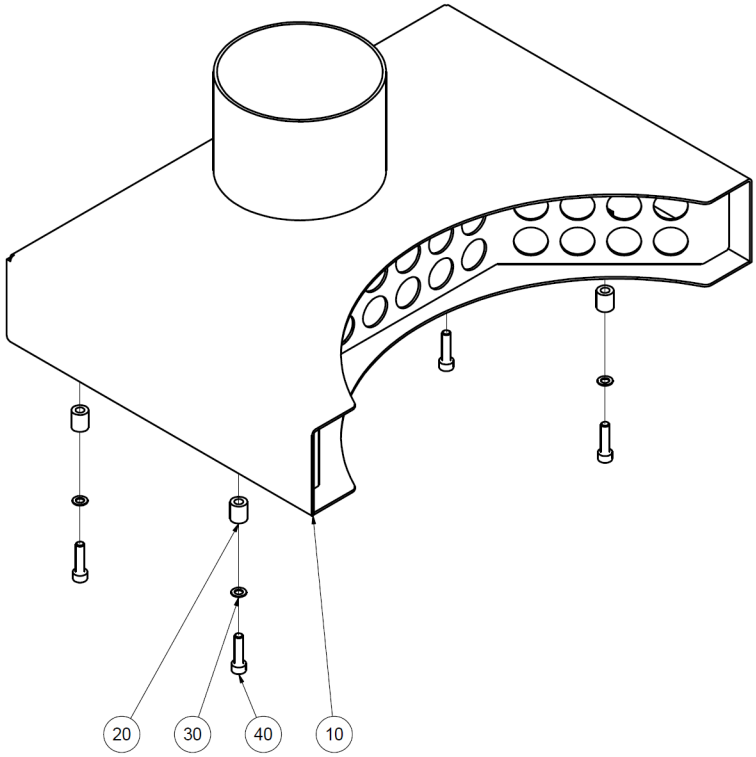
10.9 Stacklight, horn, proximity switch

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

10.10 Exhaust-Kit

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

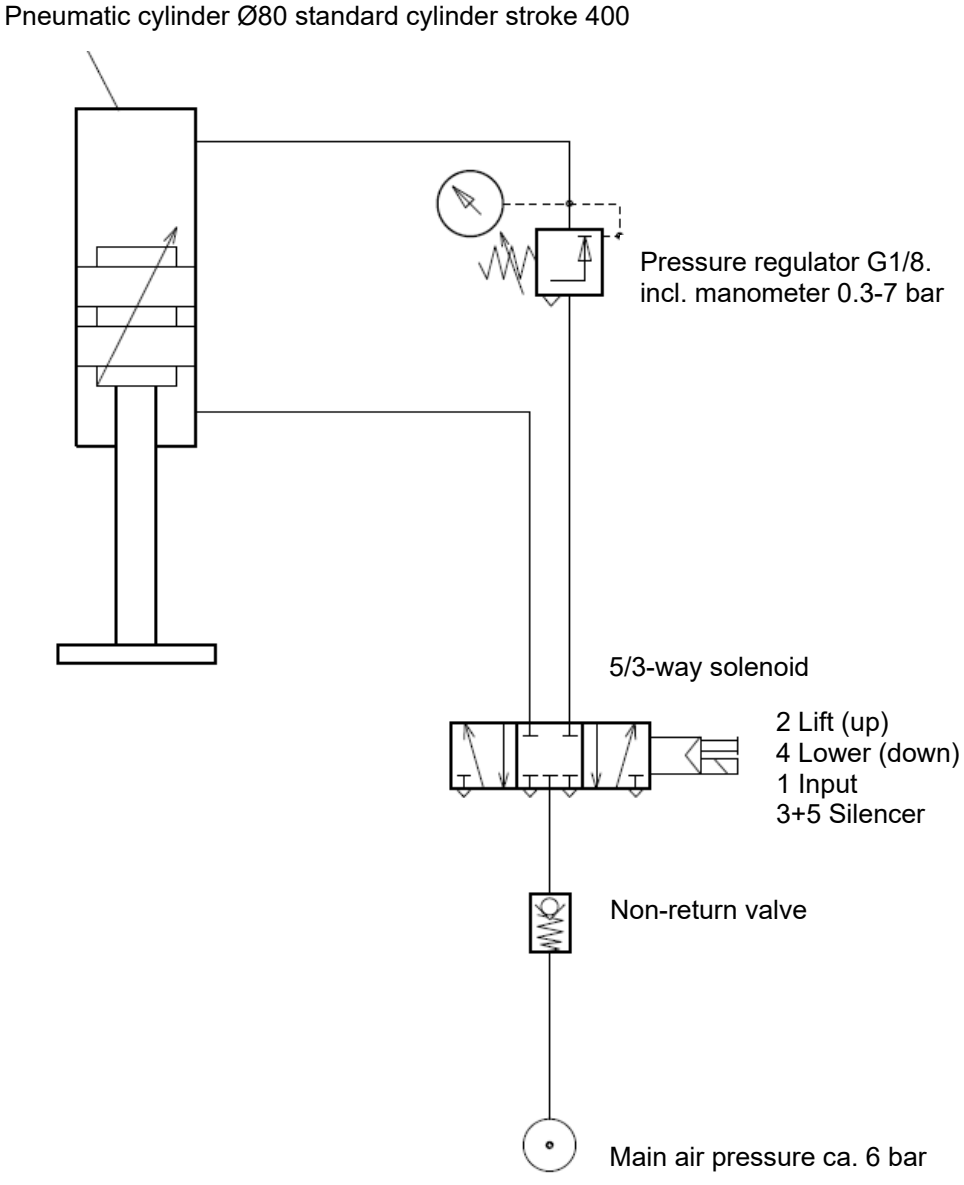
Pos.	Part no.	Description	Quantity
10	826262	Exhaust hood	1
20	02.10512.001	Ceramic isolation ring 5x12mm	4
30	I02.20005.000	Schnorr-washer S5	4
40	I00.10520.912	Screw M5x20mm	4



Chapter 11
Pneumatic plans and lists of parts

11.1 Pneumatic for Platen

Pneumatic for Platen, PN I80.00131.505

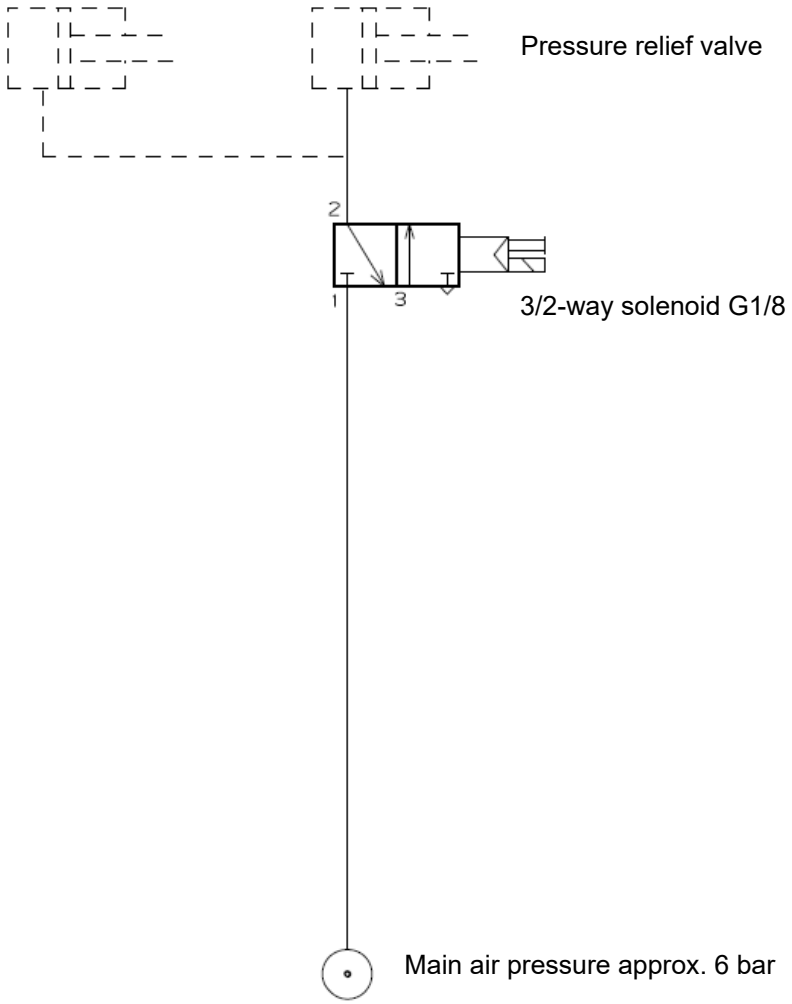


Pos.	Part no.	Description	Quantity
	I07.11400.008	Plug-in T-connection	1
	I07.70000.035	Non-return valve	1
	I07.95324.001	5/3-way solenoid	1
	I02.18503.001	Distance washer Ø4.3/8 L=3mm	2
	I00.10420.912	Cylinder head screw M4x20	2

	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
	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
	I05.03107.603	Proximity switch for pneumatic cylinder	1
	I05.03107.605	Cable for proximity switch for 05.03107.603 2.5m	1
	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	2
	07.03814.201	Pneumatic hose PFAN Ø4/6mm	2
	I08.00604.106	Pneumatikschlauch PFAN Ø4/6mm	1,2m

11.2 Pneumatic for Standard Over-Pressure Relief Function

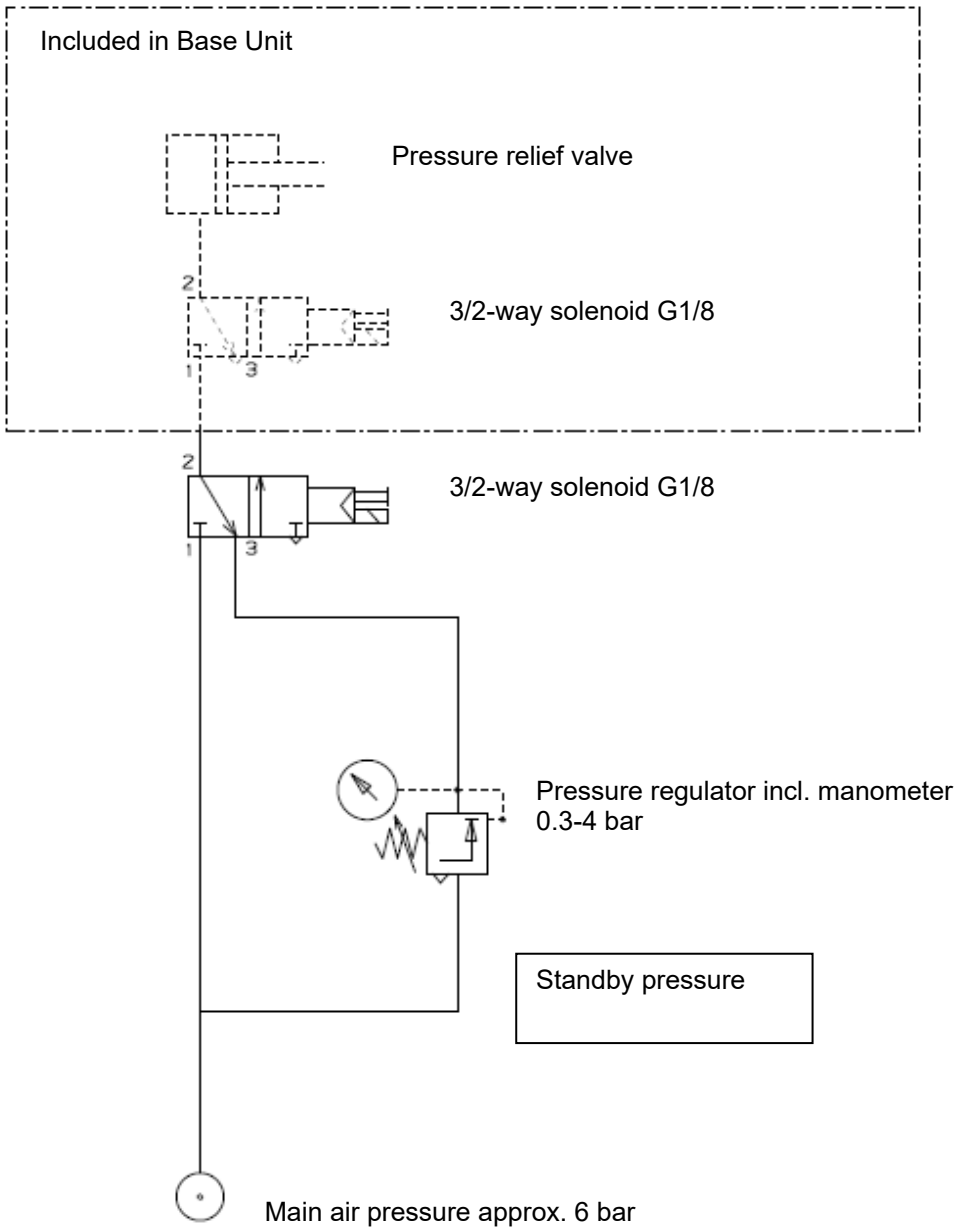
Pneumatic for pneumatic pressure relief valve, for supply, PN I80.00112.501



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)

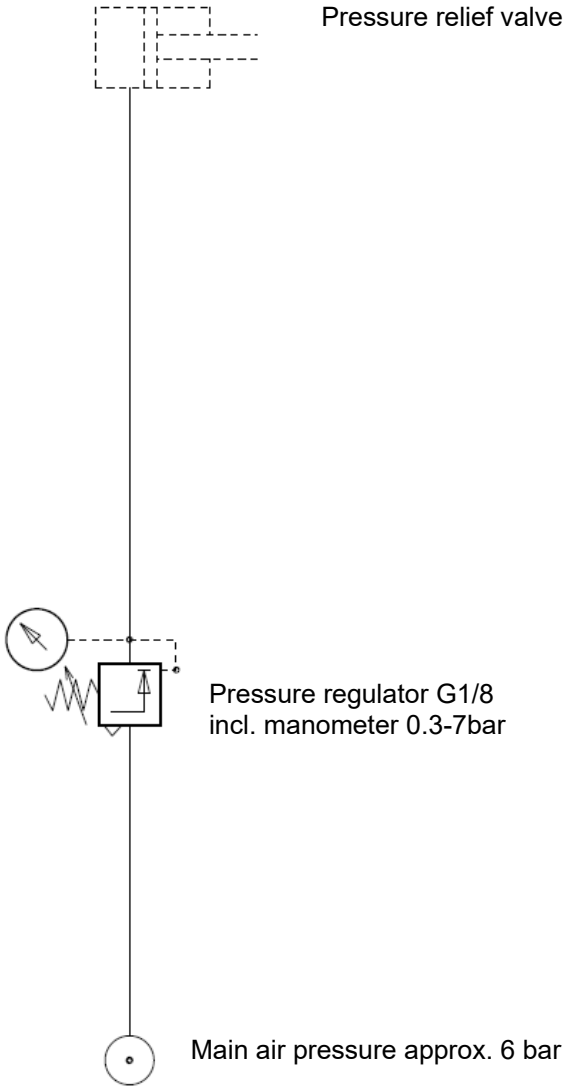
Pneumatic for tank circulation, PN I80.00228.500 (Option)



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	1m

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 PUR20 Bag Melter, Basic unit for 1 or 2 single pumps, PN I13.00200.500
- Dynamelt PUR20D 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)	1

12.2 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
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	1
70	I05.62001.001	Over temperature socket with BZ-Washer	1
90	I06.00290.006	O-ring 2-006	1
120	I06.00290.006	O-ring 2-006	1
200	I06.40526.385	O-ring 2-385	1

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	I05.31700.001	Heating cartridge Ø12,5x300mm 1700W 230V	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 10x100 HLP-ISAN 230V 350W	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 10 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 Adapter filter block

Adapter filter block, complete, PN I10.00430.500

Pos.	Part no.	Description	Quantity
40	I06.03609.222	O-Ring 2-222	1
50	I06.01242.014	O-Ring 2-014	1

12.9 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.

12.10 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

12.11 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

12.12 Melting plate

Melting plate 27 holes complete PN I13.00132.500

Pos.	Part no.	Description	Quantity
30	I05.31700.001	Heating cartridge 12,5x300mm 1700W, 230V	2
40	I06.29169.277	O-ring 2-277	1
160	I05.63030.081	Temperature sensor Ø3x80 PT100	1

12.13 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 Ø288mm, complete with star-sealing	1

12.14 Control cabinet

- **Control cabinet EC1 400V/3/N/PE, PN I95.00030.501**

Part no.	Description	Quantity
I05.56000.018	Outlet filter black for 05.56000.017	1
I05.56000.017	Filter fan 230V black air volume 25m³ / h	1
115732	Power module V6	1
115733	AUX power module V6	1
40502	Safety relay 24V AC / DC	1
I05.52000.033	Solid State Relay 20A 1ph.	3
115734	Base module V6	1
115735	Temperature module V6	1
118584	V6 adapter for SSR connection	1
117648	XIO module V6	1
I05.14001.074	Circuit breaker B32A 3-pin	1
I05.14001.054	Circuit breaker B6A	1
I05.14001.055	Circuit breaker B10A	1
I05.14001.056	Circuit breaker B16A	1
I05.14001.053	Circuit breaker A20A	2
I05.14001.051	Circuit breaker A10A	1
I05.14001.173	Circuit breaker C4A 1-pin	2
I05.52220.062	Main contactor 24VDC 4pol 60A	1
I05.52220.075	Auxiliary contactor 24VDC 3NO + 1NC	1
I05.52220.105	Coupling relay Finder 2W 24VDC	6
40560	SD card 1GB for DynaControl V6	1

12.15 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
30	I06.02507.120	O-ring 2-120	1

12.16 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
60	I06.01872.116	O-ring 2-116	1

12.17 Pneum. Return regulating valve

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

Pos.	Part no.	Description	Quantity
20	06.02195.020	O-ring di=21.95/S=1.78 mm	1
40	I14.00263.500 *	Pressure regulating / relief valve	1

* see separate drawing and/or list of parts

12.18 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

12.19 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	1
	I07.96007.018	Pneumatic cylinder Ø80 standard cylinder stroke 400	1
	I05.03107.603	Proximity switch for pneumatic cylinder	1
	I08.00604.106	Pneumatikschlauch PFAN Ø4/6mm	1,2m

12.20 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

12.21 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	1

12.22 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	1m

12.23 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.

Manual Revisions

Revision	Page / Chapter	Description
Rev.2.19	Ch.6	V6 LCD: CV% added to Info screen.
Rev.5.19	Ch.1	CE Conformity Declaration updated.
	Ch.7.13	Replacement updated.
Rev.10.19	Ch.6	V6 LCD display updated.
Rev.11.21	-	New manual layout.
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.

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