

Dynatec HF Bead Applicators

Technical Documentation, No.40-72, Rev.7.23
English – Original Instructions

For following Bead Applicators:

- Bead Applicator, 01, MR13, high-flow, PN 804587
- Bead Applicator, 03, MR13, high-flow, PN 805709
- Bead Applicator, 01, MR13, high-flow, PUR, PN 820511
- Bead Applicator, MR13, high-flow, PUR, PN 821483
- Bead Applicator, MR13, high-flow, PUR, PN 821928
- Bead Applicator, headlight, high-flow, PUR, right-hand, AUTOBEAD, PN 824511
- Bead Applicator, headlight, high-flow, PUR, left-hand, AUTOBEAD, PN 824847
- Bead Applicator, headlight, high-flow, PUR, left-hand, PN 825585
- Bead Applicator, headlight, high-flow, PUR, right-hand, PN 825586
- Bead Applicator, MR13, high-temp, PN 107912

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.

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.

ITW Dynatec Service Parts and Technical Service:

AMERICAS

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

EUROPE, MIDDLE EAST & AFRICA

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

ASIA PACIFIC

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

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

Index

Information about this manual	2
Index	3
Chapter 1 Declaration of Incorporation	5
Chapter 2 Safety Instructions	7
2.1 General Considerations.....	7
2.2 Warning Labels	7
2.3 Safety Symbols in this Manual	8
2.4 Safe Installation and Operation	9
2.5 Explosion/ Fire Hazard	10
2.6 Use of PUR (Polyurethane) Adhesives	10
2.7 Special Considerations When Using Reactive Hot Melt Adhesives	11
2.8 Eye Protection & Protective Clothing	12
2.9 Electrical	12
2.10 Lockout/ Tagout.....	13
2.11 High Temperatures.....	13
2.12 High Pressure.....	13
2.13 Protective Covers	14
2.14 Servicing, maintenance	14
2.15 Secure transport.....	14
2.16 Treatment for Burns from Hot Melt Adhesives	15
2.17 Measures in case of fire	15
2.18 Keep attention to environmental protection standards.....	16
Chapter 3 Description and Technical Specs	17
3.1 Applicable Safety Regulations	17
3.1.1 Intended Use	17
3.1.2 Unintended Use, Examples	17
3.1.3 Residual Risks	17
3.1.4 Technical changes	18
3.1.5 Using foreign components	18
3.1.6 Setting-up operation	18
3.2 Description of Bead Applicator	19
3.2.1 Description	19
3.2.2 Technical Data	20
Chapter 4 Installation & Startup	21
4.1 Conditions for set-up and mounting	21
4.2 Installation & Startup	22
4.2.1 Switching off the applicator/ unit	24
4.2.2 Purging Adhesive Through the Applicator	25
4.3 Quality of compressed Air	26
Chapter 5 Maintenance and Repair Notes	27
5.1 Security advices for maintenance and repair	27
5.2 Re-Assembly Procedures and General Cautions	28
5.3 Relieving Adhesive Pressure	29
5.4 Replacement of the Module	30
5.5 Replacement of the Nozzle	31
5.6 Cleaning of the Nozzle	32
5.7 Testing of Resistance	33
5.7.1 Testing Resistance of Heater Cartridges	33
5.7.2 Testing Resistance of the RTD Temperature Sensor	33
5.7.3 Resistance Table for Temperature sensor.....	34

5.8 Replacement of Heater Cartridge or Temperature Sensor	35
5.9 Maintenance plan	37
Chapter 6 Troubleshooting	39
6.1 Troubleshooting In General.....	39
6.2 Troubleshooting Guide Applicator	39
Chapter 7 Component Illustrations & Bills of Materials	41
7.1 Bead Applicator, 01, MR13, high-flow, PN 804587L.....	42
7.2 Bead Applicator, 03, MR13, high-flow, PN 805709B	44
7.3 Bead Applicator, 01, MR13, high-flow, PUR, PN 820511A.....	45
7.4 Bead Applicator, MR13, high-flow, PUR, PN 821483A.....	46
7.5 Bead Applicator, MR13, high-flow, PUR, PN 821928D	47
7.6 Bead Applicator, headlight, high-flow, PUR, right-hand, AUTOBEAD, PN 824511C	48
7.7 Bead Applicator, headlight, high-flow, PUR, left-hand, AUTOBEAD, PN 824847C	49
7.8 Bead Applicator, headlight, high-flow, PUR, left-hand, PN 825585A	50
7.9 Bead Applicator, headlight, high-flow, PUR, right-hand, PN 825586A	51
7.10 Bead Applicator, MR13, high-temp, PN 107912B.....	52
7.11 Modules.....	53
7.11.1 Bead Module, MR13, high-flow, PN 116248.....	53
7.11.2 Repair Kit PN 114321	55
7.11.3 Bead Module, MR13, high-temp, PN 810874	55
Chapter 8 Options & Accessories	57
8.1 Recommended Service Parts	57
8.2 Bead Nozzle Cleaning Kits.....	57
Chapter 9 Engineering Drawings & Schematics	59
9.1 Pin Connectors & Electrical Schematics.....	59
Chapter 10 Appendix.....	61
10.1 Coalescing Air Filter Kit, PN 100055.....	61
Manual Revisions	63

Chapter 1

Declaration of Incorporation

This page intentionally left blank.

Chapter 2

Safety Instructions

2.1 General Considerations



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



Read and adhere to the manual!

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

2.2 Warning Labels

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

2.3 Safety Symbols in this Manual

Mandatory signs

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

Warning signs

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

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

Prohibition signs

	Fire danger! Smoking prohibited!		Fire danger! Fire and open flames prohibited!
---	---	--	--

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 degrees C (300 degrees 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 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 time table.

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

2.7 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.

9. Recommended adhesive application temperatures should never be exceeded. Higher application temperatures may result in higher adhesive viscosities and thermal related cross-linking.
10. The use of air dryers such as ITW Dynatec PN 117944 or 117974 can be very helpful in preventing moisture from infiltrating the melt system via the compressed air supply.

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.

2.8 Eye Protection & Protective Clothing



WARNING

Eye Protection & Protective Clothing Required

1. It is very important that you PROTECT YOUR EYES when working around hot melt adhesive equipment!
2. Wear a face shield conforming to ANSI Z87.1 or safety glasses with side shields which conform to ANSI Z87.1 or EN166.
3. Failure to wear a face shield or safety glasses could result in severe eye injury.

4. It is important to protect yourself from potential burns when working around hot melt adhesive equipment.
5. Wear heat-resistant 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.

2.9 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.

2.10 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.

2.11 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), heat-resistant protective gloves and long-sleeved clothing must be worn whenever working with or around adhesive application systems.

2.12 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.

2.13 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).

2.14 Servicing, maintenance

1. Only trained and qualified personnel are to operate and service this equipment.
2. Before any service work disconnect the external power supply and the pressure air supply!
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.)!

2.15 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 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.

2.16 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.

2.17 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.

Firefighting - burning hot melt:

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



EXTINGUISH FIRE

Appropriate extinguishing agents:

Foam extinguisher, Dry powder, Spray, Carbon dioxide (CO₂), Dry sand.

For safety reasons not appropriate extinguishing agents: None.

Firefighting - burning electrical equipment:

Appropriate extinguishing agents:

Carbon dioxide (CO₂), Dry powder.

2.18 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 Specs

3.1 Applicable Safety Regulations

3.1.1 Intended Use

The Bead Applicator may be used only to apply suitable materials, e.g. adhesives. When in doubt, seek permission from ITW Dynatec.



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!



Intended use includes, that you

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

Any other use is considered to be unintended.

3.1.2 Unintended Use, Examples

The Applicator 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 Applicator 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 Applicator, 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 Applicator 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 unit (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 system 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 foreign components

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

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

3.1.6 Setting-up operation

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

ITW Dynatec takes no responsibility for damages or faults caused by any untrained personal.

3.2 Description of Bead Applicator

3.2.1 Description

ITW Dynatec's Bead Applicators are air-operated, single or multi-module hot melt adhesive applicator assemblies.

The Applicator is heated by replaceable cartridge heating elements which are controlled by an integrated sensor and electronic control. Each model can be configured for ITW Dynatec's DynaControl or Upgrade control schemes.

Refer to the appropriate drawing for components.

Theory of Operation

Each Applicator features one or more modules (adhesive valve) mounted to a single service block. Each module is opened and closed by air pressure (solenoid valve). The air pressure keeps the stems closed and the air pressure will be applied to open the stems (air open/air close). The rate of adhesive flow from the applicator is determined by the adhesive pressure applied by the Adhesive Melter's pump, the nozzle type and the stem stroke adjustment.

The heated adhesive supply hose is connected to the applicator. The adhesive flows from the hose into the service block, and then to the module. Air pressure (Control Air) opens the module, allowing adhesive to flow through the module's nozzle.

The adhesive pressure in the system is influenced by the following parameters:

- Temperature and viscosity of the adhesive
- Size and speed of the Adhesive Melter's pump
- Cross-section and length of the adhesive hoses
- Adjusted adhesive pressure at Applicator (if adjustable pressure relief valve)
- Nozzle type

3.2.2 Technical Data

Supply voltage	200-240 VAC/ 1p/ 50-60 Hz
Temperature range	38°C to 218°C (100°F to 425°F)
Warm-up time	15 minutes for cold start/ 5 minutes for module change only
Adhesive viscosity	100 to 30.000 mPa. sec. (100 to 30.000 centipoise)
Adhesive pressure range	68 bar maximum (1000 psi maximum)
Noise emission	70 dB(A)
Air pressure range	4.1 to 6.9 bar (60 to 100 psi)
Storage/ shipping temperature	-40°C to 70°C (-40°F to 158°F)
Ambient service temperature	-7°C to 50°C (20°F to 122°F)

Chapter 4

Installation & Startup



CAUTION

- Before setting up, please read this documentation carefully.
- Pay attention to all the installation and connecting advices.
- Heed all safety instructions mentioned in Chapter 2.

4.1 Conditions for set-up and mounting

Place requirement

Install the Applicator in the machine so that the operator is able to work on it from all sides, for e.g. for adjusting, preparing, maintaining, repairing, cleaning, etc. See drawing.

Mounting and alignment

- The complete unit has to be set up 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 connection has to be provided. See electrical schematics.
- Never connect or disconnect plug-and-socket connections under load!
- The service block's incoming electrical power and temperature control is supplied through the flexible cable exiting on the adhesive supply hose cuff or through an extension cable from the Melter. The Applicator has a circular, plastic connector which mates with the connector attached to this cable.

Pneumatic connection



- In any case the air has to be clean and dry! See advice in Chapter 4.3 "Quality of compressed air".
- Please heed that units with high air demand may not be used at the same time with the same air supply.
- Incoming module-activation air is supplied through a solenoid valve. It must be clean and unlubricated.
For standard module, the module activation air is controlled by a four-way solenoid valve and should be separately regulated and maintained at a pressure between 4.1 to 6.9 bar (60 to 100 psi). Air lines from the solenoid valve should be 6.4mm (1/4 inch). Head air inlet ports are G 1/8 threads (1/8 NPT).



Advices:

- Check all screw connections at the unit and retighten if necessary.
- Lay the cables and heated hoses so that no risk or least possible risk of stumbling occurs.

4.2 Installation & Startup



CAUTION

- All work on or with this unit is only permitted for skilled personnel!
- Pay attention to the electrical schematics!
- Clean and dry air and air pressure of 6 bar to the applicator solenoids is required.
- All heating elements have to be mounted and operated secured and according to the valid regulations.



WARNING

- While installing the Applicator, use an appropriate protection device to avoid unintended contact with heated parts and with spilling out Hotmelt. The protection device has to prevent also the operator against not reaching into the adhesive application and against injuring.
- Risk of burns and risk of injury!

Typical installation for an Applicator:

1. Install the Applicator on the machine at the foreseen place.

The Applicator should be supported from brackets that permit lateral and vertical adjustments. Mount the Applicator on a 12mm to 13mm rod or bracketry using the 6 mm screws and insulators provided. Be sure that the "weep" holes are visible for periodic inspection.

2. Connect the compressed-air supply to Applicator. Connect all solenoids with air hoses as required.



6 bar air pressure are required. **Reason:**

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

CAUTION: Do not use lubricating oil with the air supply as Applicators are lubricated at the factory and do not require lubrication when used in production. Where oil is present in the air supply, a coalescing filter (Dynatec PN 100055) must be installed between the standard air regulator/ filter and the Applicator.

Note: Air lines and fittings must be capable of withstanding temperatures up to 218°C (425°F). ITW Dynatec supplies Air Control Filter Coalescing Kits (PN 100055) to be used with air-operated Applicators (see the Air Control Filter Coalescing Kit Manual in Appendix A of this manual).

3. Before making the adhesive connection to the Applicator, align the adhesive supply hose with its electrical connector oriented in relation to the electrical connector on the top of the Applicator.

Connect the swivel fitting of the hot melt hose to the adapter on the service block. When tightening the hose fitting, hold the hose cuff to prevent the hose core from rotating.



Heed the following for the installation of the heated hoses:

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

4. Make the electrical connection from the hose to the applicator by connecting the female connector of the hose to the male connector of the applicator.
5. It is advisable to check the temperature of the applicator. This can be done through the temperature readout of the adhesive melter. Surface temperature may be checked with a separate pyrometer and surface probe or with a dial thermometer. Turn the system power switch ON. Permit the applicator to warm up at least 15 minutes (5 minutes for module change) before reading temperature.
6. Purge the Applicator of air and oil. Turn the Applicator ON electrically and pneumatically.



WARNING! HIGH PRESSURE! HOT ADHESIVE!

During the purging procedure, hot adhesive and oil can come out of the Applicator under high pressure. Wear safety glasses, gloves and protective clothing.

Use a stable, deep container to collect hot-melt adhesive and/ or oil.

Remove the nozzle from the module. Place a heat resistant container under the module to collect the material that drains from the Applicator. Manually open the solenoid by pushing (with a small screwdriver or other tool) the purge button located on the solenoid coil. Continue to hold in the purge button until all air and oil have drained and only adhesive flows from the module.

7. Install the nozzle, orienting the nozzle tip so it points toward the substrate.
8. Interconnect the components with the foreseen Profibus (or EtherNet, etc.) interface cables (if applicable).

Daily operation



Purge the Applicator before every start of production respectively of a shift by allowing the adhesive flows out until it is bubble-free and satisfactory.

Then switch off the adhesive and clean the nozzle from adhesive.

Bring the Applicator in work position and continue production.

4.2.1 Switching off the applicator/ unit

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

	ADVICES: PUR-adhesives react with air humidity. To avoid blocked 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. Metallic scrapers or other tools made from steel, like knife or blades, may not be used under any circumstances.
---	---

4.2.2 Purging Adhesive Through the Applicator

This procedure may be used anytime the operator wishes to purge old adhesive from the Applicator and replace it with fresh adhesive. For example, this procedure could be used in instances where the adhesive system has been held at temperature for an extended time without running, such as during a production line start-up.

	WARNING! HOT SURFACE & ADHESIVE! The equipment will still be hot when this procedure is being done. Use insulated gloves and protective clothing.
---	---

Procedure

1. Remove all nozzles. Place a suitable container under the Applicator to catch adhesive.
2. Activate the modules and manually run the adhesive pump to purge the hoses and Applicators of old adhesive. Purge until the adhesive exiting the modules is fresh.
3. Check system pressure to see if filters are clogged and need to be changed.
4. Replace the nozzles and check the adhesive flow through them. Compare to target flow.
5. Check the nozzle bead pattern.
6. Clean any nozzles that do not apply properly and check the pattern again.

4.3 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**.
We recommend installing the ITW Dynatec's Air Control Kit PN 100055 (see Appendix).

Compressed air quality classes according to ISO 8573-1:2010 **class 2:4:3**:

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

Chapter 5

Maintenance and Repair Notes

5.1 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!

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:

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

Before any service work the adhesive pressure must be relieved throughout the system. Switch the unit pressureless:

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. Push the purge button located on the side of the air solenoid coil, and the adhesive will flow out of the applicator/module.

5.2 Re-Assembly Procedures and General Cautions

Unless noted, component 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 High-Temp Lube (PN 001V078 Krytox GPL206).

TAPERED PIPE THREADS are found on air pipe fittings used with the pump air supply and on the outlet filter manifold. Apply thread sealant (PN N02892) whenever tapered pipe threaded parts are re-assembled.

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.

5.3 Relieving Adhesive Pressure

	WARNING
 	Heed all security advices given in Chapter 5.1.
 	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 severe burns!
	Components and adhesive are hot. Take every precaution to prevent the material and hot surfaces from contacting the skin.
	During the purging procedure, hot adhesive can come out of the Applicator under high pressure. Wear safety glasses, gloves and protective clothing.

Many maintenance and troubleshooting procedures potentially expose the maintenance technician to dangerous hot adhesive, which is under pressure. Follow this procedure to release the adhesive pressure in the Applicator before performing such maintenance.

1. The Applicator should be at operating temperature.
2. Turn the Melter's pump/ motor OFF.
3. Place a heat-resistant catchment container/underlay under the Applicator.
4. Push the purge button located on the side of the air solenoid coil, and the adhesive will flow out of the applicator/module.

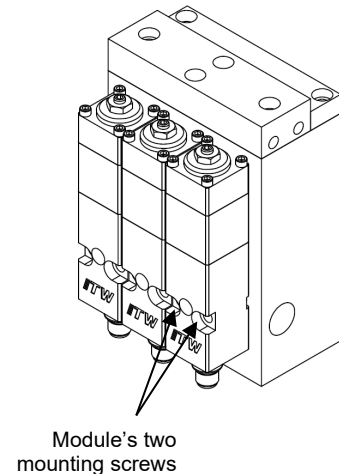
Or, if the Melter filter block is equipped with a drain, adhesive pressure may be relieved at the Melter.

5.4 Replacement of the Module

	WARNING Heed all security advices given in Chapter 5.1. 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 severe burns! Components and adhesive are hot. Take every precaution to prevent the material and hot surfaces from contacting the skin. During the purging procedure, hot adhesive can come out of the Applicator under high pressure. Wear safety glasses, gloves and protective clothing.
---	---

Refer to the drawing in Chapter 7 for more information.

1. Stop all motors.
2. Switch the unit to stand-by and pressureless.
3. Place a heat-resistant catchment container/underlay under the Applicator. Hot adhesive may come out!
4. Relieve the adhesive pressure by following the instructions under Chapter 5.3 "Relieving Adhesive Pressure".
5. Remove the module from the service block by removing the two mounting screws on the front of the module with a hex key screwdriver (Allen wrench). Make sure that the old O-rings located on the back of the module are also removed (the new module will include new O-rings).
6. Mount the new module in reverse order and attach it to the manifold with a torque of 20-25 in./lbs (2.3-2.8 Nm).



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.

5.5 Replacement of the Nozzle

      	WARNING Heed all security advices given in Chapter 5.1. 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 severe burns! Components and adhesive are hot. Take every precaution to prevent the material and hot surfaces from contacting the skin. During the purging procedure, hot adhesive can come out of the Applicator under high pressure. Wear safety glasses, gloves and protective clothing.
--	--

Refer to the drawing in Chapter 7 for more information.

Occasionally nozzles can become clogged with char, residue or other foreign material. This can result in the decrease or even stoppage of glue flow. Use following procedure to change nozzles:

The nozzle must be at operating temperature when cleaned.

1. Stop all motors.
2. Switch the unit voltage-free and pressureless.
3. Guard the unit against unauthorized restarting.
4. Place a heat-resistant catchment container/underlay under the Applicator. Hot adhesive may come out!
5. Relieve the adhesive pressure by following the instructions under Chapter 5.3 "Relieving Adhesive Pressure".
6. Remove the nozzle retaining nut and nozzle from the module.
7. Mount the nozzle in reverse order and attach it to the module.

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.

5.6 Cleaning of the Nozzle

      	WARNING Heed all security advices given in Chapter 5.1. 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 severe burns! Components and adhesive are hot. Take every precaution to prevent the material and hot surfaces from contacting the skin. During the purging procedure, hot adhesive can come out of the Applicator under high pressure. Wear safety glasses, gloves and protective clothing.
---	---

Refer to the drawing in Chapter 7 for more information.

Occasionally nozzles can become clogged with char, residue or other foreign material. This can result in the decrease or even stoppage of glue flow. Use the following to clean nozzles.

The nozzle must be at operating temperature when cleaned.

1. Stop all motors.
2. Switch the unit voltage-free and pressureless.
3. Guard the unit against unauthorized restarting.
4. Place a heat-resistant catchment container/underlay under the Applicator. Hot adhesive may come out!
5. Relieve the adhesive pressure by following the instructions under Chapter 5.3 "Relieving Adhesive Pressure".
6. Remove the nozzle retaining nut and nozzle from the module.
7. Soak the nozzle in solvent. If necessary, use a non-metallic brush to remove any foreign material, being careful not to damage the nozzle's orifice. Be sure to remove all residue before re-assembling.
Or, use one of the cleaning kits (see Ch.8) according to the orifice size, and clean the nozzle being careful not to damage the nozzle's orifice.
8. Mount the nozzle in reverse order and attach it to the module.

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.

5.7 Testing of Resistance

5.7.1 Testing Resistance of Heater Cartridges



WARNING

Heed all security advices given in Chapter 5.1.
Maintenance and repair work is only permitted for skilled personnel!

1. Stop all motors.
2. Turn the Melter OFF or disable the Applicator and preheater zones at the control panel. Disconnect all electrical cables from the Applicator.
3. Relieve the adhesive pressure by following the instructions under Chapter 5.3 "Relieving Adhesive Pressure".
4. Unplug the electrical cable from the adhesive supply hose or extension cable to expose the pins in the cable.
5. Use the schematics in Ch. 9 to determine the correct pins used to measure the heater resistance.

5.7.2 Testing Resistance of the RTD Temperature Sensor



WARNING

Heed all security advices given in Chapter 5.1.
Maintenance and repair work is only permitted for skilled personnel!

1. Stop all motors.
2. Turn the Melter OFF or disable the Applicator and preheater zones at the control panel. Disconnect all electrical cables from the Applicator.
3. Relieve the adhesive pressure by following the instructions under Chapter 5.4 "Relieving Adhesive Pressure".
4. Unplug the electrical cable from the adhesive supply hose or extension cable to expose the pins in the cable.

Note: The resistance value (Ohms) of the temperature sensor depends on the temperature of the sensor at the time it is being tested. All values listed in the table below are given at 25°C (77°F). To correct for ambient temperatures other than 25°C (77°F), see next Chapter "Resistance Tables, Temperature sensors" for complete resistance-temperature tables for the RTD sensors.

5. Using the schematics in Chapter 9 as a reference, measure the resistance of the sensor and compare to the values in the table below. A tolerance of $\pm 5\%$ is allowed for ambient temperature differences. A sensor that tests outside of this range must be replaced.

Applicator Control	Sensor Resistance PT100 at 25°C (77°F)
DynaControl	110 ohms

5.7.3 Resistance Table for Temperature sensor

Temperature sensor

PT 100 Ohms

Control option: DCL

Temperature °F °C		Resistance in Ohms
32	0	100
50	10	104
68	20	108
86	30	112
104	40	116
122	50	119
140	60	123
158	70	127
176	80	131
194	90	135
212	100	139
230	110	142
248	120	146
268	130	150
284	140	154
302	150	157
320	160	161
338	170	164
356	180	168
374	190	172
392	200	176
410	210	180
428	220	183

5.8 Replacement of Heater Cartridge or Temperature Sensor

Replacement of Service Block Heater Cartridges



WARNING

Heed all security advices given in Chapter 5.1.
Maintenance and repair work is only permitted for skilled personnel!

1. Stop all motors.
2. Turn the Melter OFF and relieve all system pressure.
Switch the unit voltage-free and pressureless.
Guard the unit against unauthorized restarting.

Relieve the adhesive pressure by following the instructions under Chapter 5.3
"Relieving Adhesive Pressure".
3. Disconnect the service block's electrical cable assembly from the hose.
4. Remove the four screws holding the cover plate. Remove the plate. Pull the ceramic terminal blocks from the wiring cavity and disconnect the heater leads from the terminal blocks.
5. Locate the non-functioning heater with a multimeter. Remove and replace the heater. Apply a thin film of thermal paste to the new heater before installation.
6. Reconnect the three heaters to the terminal blocks, making sure that no strands of wire are protruding from the terminal blocks.
7. Place the terminal blocks back into the wiring cavity. Replace the cover plate.

The Applicator is now ready for installation and service.

Replacement of Service Block Temperature Sensor**WARNING**

Heed all security advices given in Chapter 5.1.
Maintenance and repair work is only permitted for skilled personnel!

1. Stop all motors.
2. Turn the Melter OFF and relieve all system pressure.
Switch the unit voltage-free and pressureless.
Guard the unit against unauthorized restarting.

Relieve the adhesive pressure by following the instructions under Chapter 5.3
"Relieving Adhesive Pressure".
3. Disconnect the service block's electrical cable assembly from the hose.
4. Remove the four screws holding the cover plate. Remove the plate.
5. Pull the sensor out of the service block.
6. Cut the old sensor wires off as close to the sensor as possible.
7. Apply a thin film of thermal paste to the new sensor and place it in the service block.
Trim the lead wires so that they overlap the old sensor wires by one to two inches.
Strip the ends of all four wires.
8. Connect the new sensor to the old sensor wires.
9. Place the wires in the wiring cavity and replace the cover.

The Applicator is now ready for installation and service.

5.9 Maintenance plan



CAUTION

- Heed all security advices given in Chapter 5.1.
- Use only original parts from ITW Dynatec, otherwise ITW Dynatec's warranty is void!
- When handling hazardous substances (cleaning agents, etc.), consider the current safety data sheets.
- Please use only the indicated lubricants and keep the prescribed maintenance intervals. Consider in addition the enclosed regulations of manufactures (if applicable).
- Punctual and conscientious maintenance of the unit secures not only a trouble-free function but prevents also for expensive repair costs.
- After maintenance work, remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Place a heat-resistant catchment container/underlay 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 dropped out adhesive and scrap adhesive and search for the cause of that, eliminate the cause.
Once a day	• Clean the Applicator and components from dirt. • Wipe the Applicator clean of adhesive with a clean cloth while still hot at the end of each shift.
Once a week	• Check modules on Applicator if leaky and replace if necessary. Check weep holes on modules if adhesive is leaking and replace module if necessary. • Check nozzles for wearing or clogging and clean or replace if necessary. • Check adhesive supply hose connection and tighten if loose. • 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.
Every 3 months	• Due to temperature differences a loosening of threads (threaded connections) is possible. Check all parts with threads, all screw fittings and fasteners for tightness and tighten them if necessary.
Once a year	• Clean the Applicator. • Complete check-up for wearing.
Every two years	• Complete maintenance.

This page intentionally left blank.

Chapter 6

Troubleshooting

6.1 Troubleshooting In General



ADVICES:

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.

To properly replace the required parts, refer to advices given in Ch. 5 Maintenance.

In general: If failure occurs, check first:

- Check all the electrical and pneumatic connections, if properly connected.
- Verify that the main power switch of the unit is ON.
- Verify that there is adhesive in the tank and that the melter's pump is functioning.
- Verify that the melter and the applicator have the required air pressure.
- Verify that the temperature controller is in operation and that the setpoints are correct for the Melter, Heated Hoses, Applicator and all other components connected to the unit.
- Check to see if all components are heating properly.

6.2 Troubleshooting Guide Applicator

Problem	Possible Cause	Solution
Module does not open.	1. Temperature adjustment of head is too low. 2. Solenoid defective.	1. Check temperature adjustment. 2. Push the solenoid's manual button. If it opens, the problem is electrical. Check and/or replace the solenoid.
No adhesive flowing out of module.	1. Nozzle is clogged. 2. Filter element is at Melter dirty. 3. Module seals (O-rings) are defective. 4. Melter's hopper is empty. 5. Adhesive is too cold. 6. Solenoid valve is not opening.	1. Clean or replace nozzle. 2. Replace filter. 3. Check module O-rings. 4. Re-fill hopper. 5. Adjust temperature. 6. Check solenoid valve.

Problem	Possible Cause	Solution
Hot melt is coming out of the module's "weep" holes.	1. Module seals are damaged.	1. Replace module.
Applicator does not reach operating temperature	1. Hopper temperature setpoint is too low. 2. Heater cartridge defective. 3. Temperature sensor defective.	1. Change setpoint, see Melter manual. 2. Check/ replace heater cartridge. 3. Check/ replace sensor.
Applicator is too hot	1. Applicator temperature setpoint is too high. 2. Temperature sensor defective.	1. Change setpoint, see Melter manual. 2. Check/ replace sensor.
Air escapes from module	1. Piston O-ring defective. 2. O-rings located between module and service block are defective.	1. Replace O-ring. 2. Remove module from block and replace O-rings.
Application pattern is erratic	1. Adhesive pressure is too low. 2. Adjust pattern controller.	1. a. <i>For units without speed control</i> : increase adhesive pressure at Melter. b. <i>For units with speed control (tach follower)</i> : adjust pump speed control. 2. See pattern controller manual for proper adjustment.

Chapter 7

Component Illustrations & Bills of Materials



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. 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.

7.1 Bead Applicator, 01, MR13, high-flow, PN 804587L

Item No.	Part Number	Description	Quantity
1	108699	Heater, 3/8 x 2.00, 240V, 250W	2
2	072X067	Hex Nip 1/4 NPT x 3/4-16 JIC	1
3	078A085	Screw 10-32 x 3/4 SHC	2
4	N00859	Fillister Head Screw 8-32 x 1/4	1
5	078A111	Screw 10-24 x 1 1/4 SHC	2
6	N00798	Screw 8-32 x 1/2 SHC	4
7	104129	Mounting Clamp, 12-13mm Rod	1
8	101610	Cable Assembly, DCL	1
9	804586	Service Block, Hi-Flo	1
10	804639	Junction Cover	1
11	116248	Bead Module High-Flow	1
12	106333	Stainless Steel Tube	2
13	L14899	Insulator	1
14	N00093	Compression Fitting	4
15	N00754	Level Seal Plug 1/4 NPTF	1
16	N06703	Temperature Sensor PT100, .1875X1.25L, R106.-115. (shown for reference only, located in cable)	1
17	078A055	Set Screw 10-24 x 3/16	1
18	N00695	Lock Washer	2
19	N04268	Terminal Ring	1
20	N04302	Star Lock Washer #10	1
21	N00754	Level Seal Plug 1/4	2
22	048J049	Conduit Fitting	1
23	N01756	Splice Connector (not shown)	2
24	A48J164	Heat Shrink Tubing (not shown)	5'

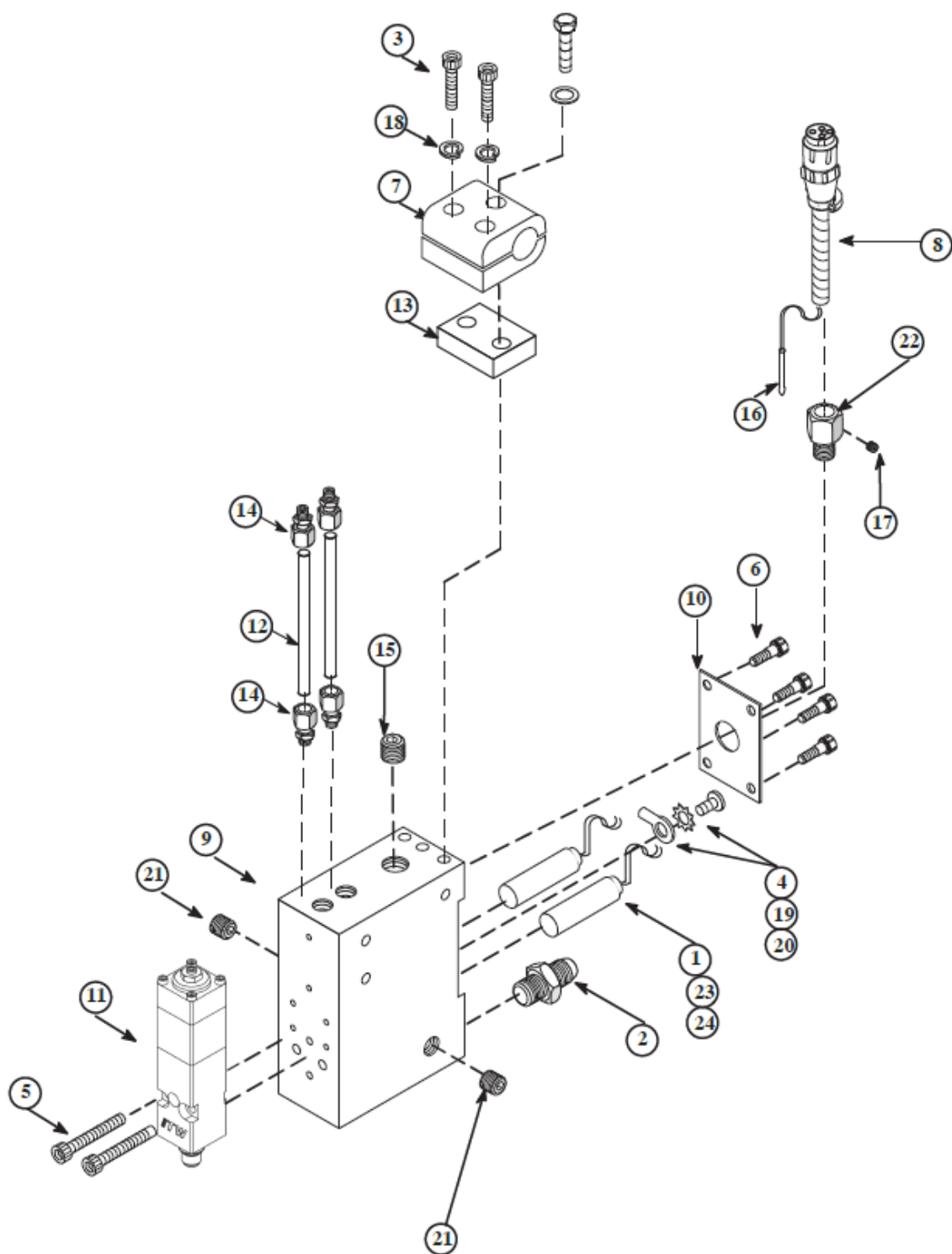
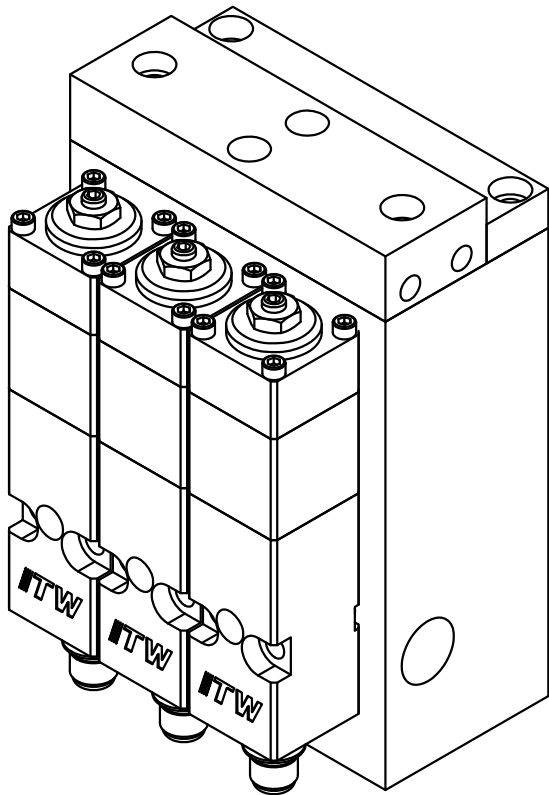


Illustration: Bead Applicator, 01, MR13, high-flow, PN 804587L

7.2 Bead Applicator, 03, MR13, high-flow, PN 805709B

THIS DRAWING IS THE PROPERTY OF DYNATEC.
DO NOT REPRODUCE OR DISCLOSE TO
OTHERS WITHOUT EXPRESS WRITTEN
CONSENT OF DYNATEC.



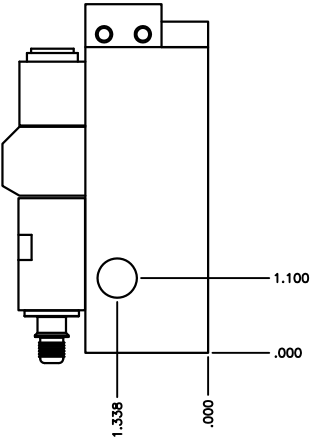
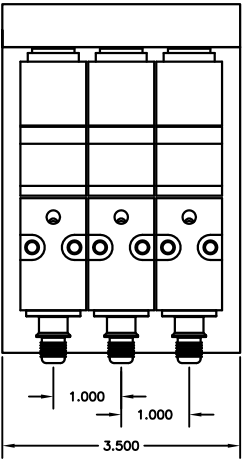
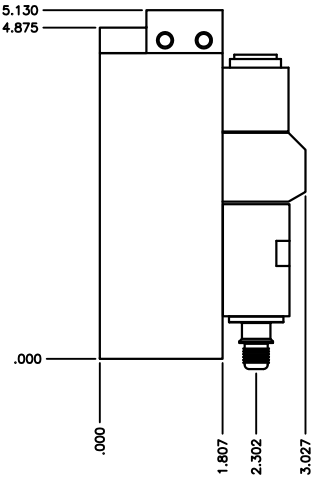
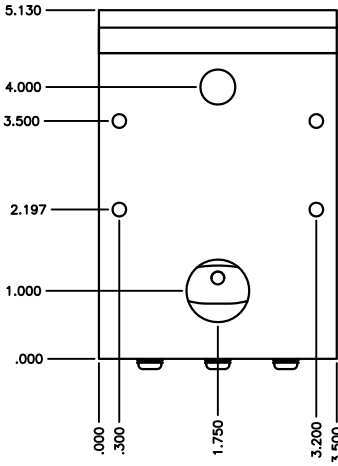
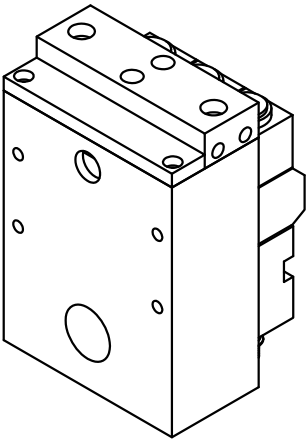
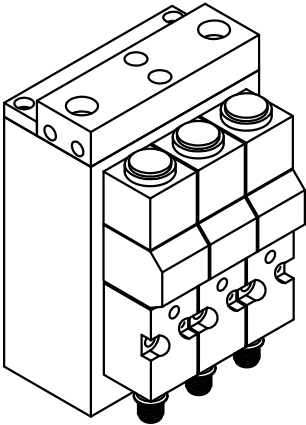
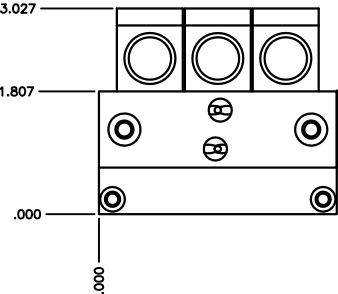
DWG. NO.		805709		SH	1	REV.	B	
REVISIONS								
REL.	REV.	DESCRIPTION				DATE	BY	APPROVED
-	A	ORIGINAL RELEASE				10.11.00	ASA	ASA
E10134	B	116248 WAS 107710				30JUN10	EWB	

17	805710	1	EA	DIM'L DWG
16	N04268	1	EA	TERM,RING,22-16,#10,
15	N00859	1	EA	SCR, FIL HD, 8-32 X 0.25
14	N00816	4	EA	SCR,SKT HD,.250-20X1.00B
13	N00809	8	EA	SCR,SKT HD,10-32X1.250 B
12	N00807	2	EA	SCR,SKT HD,10-32X0.750,B
11	N00093	2	EA	FTG,CONN,1/4TUBE-1/8NPT
10	805712	1	EA	CVR,PLT,W,3.5X.685
09	805711	1	EA	MANIF,AIR,3PT
08	805708	1	EA	SER BLK,03,MR13,02,HI
07	072X427	1	EA	FTG,3/4NPT,X,#16JIC
06	116248	3	EA	MOD,HFX,BEAD,VITON
05	106333	2	EA	TUB,SST,1/4X.065WX3.5
04	104070	2	EA	HTR,3/8X3,240V,300W
03	101610	1	EA	CA ASY,240V DCL HD,09,8.
02	072X127	1	EA	3/8 NPT LEVEL SEAL PLUG
01	048J049	1	EA	FTG,1/4" COND,9/16-18

ITEM	PART NUMBER	QTY.	U/M	DESCRIPTION
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE: DECIMALS .X. =±0.5 .X. =±0.25 .XX =±0.10		FOR MACHINING STANDARDS AND SYMBOLS, SEE ITW/DYNATEC SPEC. A05800		U/M EA
USED ON	30179	APPROVALS	DATE	HEAD, BEAD 03,MR 1300,02 HIGH FLOW
		DRAWN	ASA 10.11.00	
		CHECKED		
NEXT ASSY.	805709	COMPUTER DESCRIPTION(25 CHARACTERS)		STATUS P
		HD,BD,03,MR13,02,HI		SOURCE C
DO NOT SCALE DRAWING		SIZE	DWG. NO.	REV.
		B	805709	B
		SCALE 1:1	CAD DRAWING	SHEET 1 of 1

THIS DRAWING IS THE PROPERTY OF DYNATEC.
DO NOT REPRODUCE OR DISCLOSE TO
OTHERS WITHOUT EXPRESS WRITTEN
CONSENT OF DYNATEC.

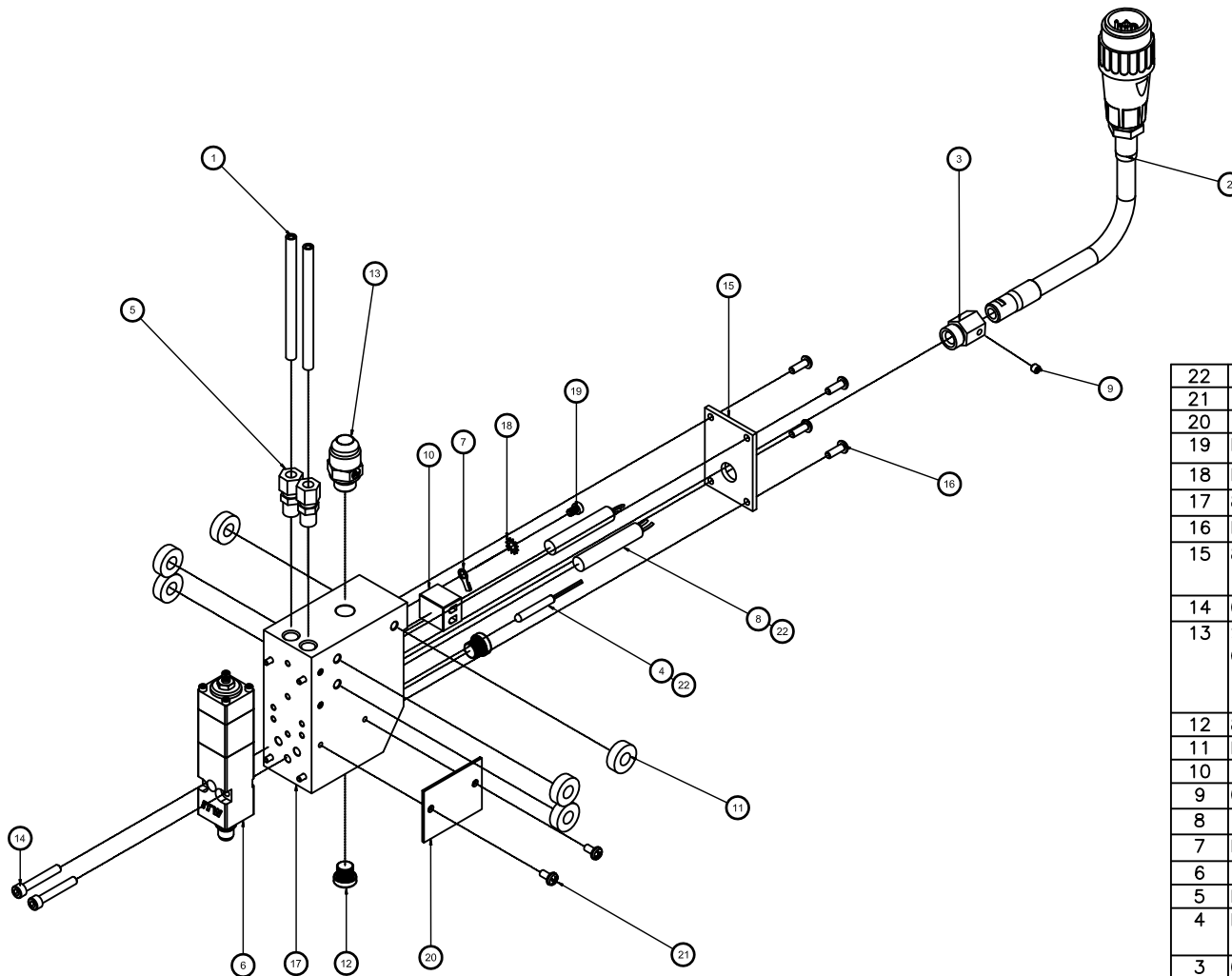
DWG. NO. 805710		REV. 1	REV. A		
REVISIONS					
REL.	REV.	DESCRIPTION	DATE	BY	APPROVED
-	A	ORIGINAL RELEASE	10.11.00	ASA	ASA



A/N		EA	2024-T351 ALUMINUM	
ITEM	PART NUMBER	QTY.	U/M	DESCRIPTION
PARTS LIST				
DYNATEC 1000 DYNATEC DRIVE MARIETTA, GA 30067 TEL: 770-425-1100 FAX: 770-425-1101 WWW.DYNATEC.COM		FOR MACHINING STANDARDS AND SYMBOLS, SEE DYNATEC SPEC. ADDRESS		DYNATEC MARIETTA, GA
USED ON	30179	APPROVALS	DATE	STATUS
DESIGNED	ASA	10.11.00		P
REV. NO.	805710	REV. NO.	805710	REV. NO.
DO NOT SCALE DRAWING	DYNATEC, 03, MR13, 02, H	SCALE	1:2	CAD DRAWING

7.3 Bead Applicator, 01, MR13, high-flow, PUR, PN 820511A

REVISIONS					
REL	REV	SHEET	DESCRIPTION	DATE	BY / APPROVED
286147	A	1	ORIGINAL RELEASE	06.14.13	JA



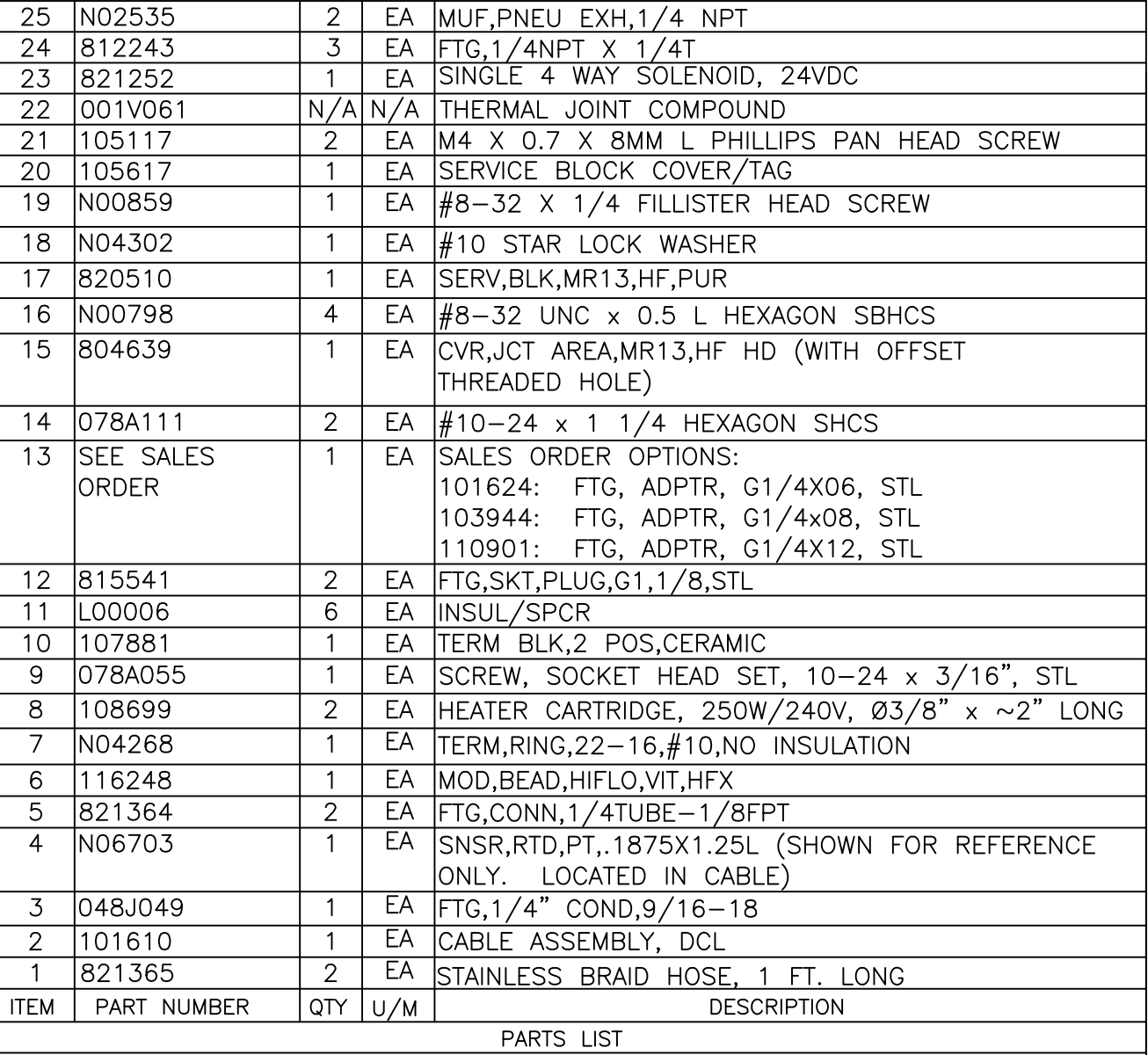
NOTES:

1. APPLY THERMAL JOINT COMPOUND 001V061 (22) TO CARTRIDGE HEATERS 108699 (8) AND SENSOR N06703 (4)
2. ENGRAVE TAG 105117 (20) AS FOLLOWS:
FOR FIELDS ON TAG ALREADY PRINTED "P/N", "S/N", "VOLTS", AND "WATTS":
ENGRAVE "820511", (SEE SALES PAPERWORK FOR S/N), "240", AND "500", RESPECTIVELY

22	001V061	N/A	N/A	THERMAL JOINT COMPOUND
21	105117	2	EA	M4 X 0.7 X 8MM L PHILLIPS PAN HEAD SCREW
20	105617	1	EA	SERVICE BLOCK COVER/TAG
19	N00859	1	EA	#8-32 X 1/4 FILLISTER HEAD SCREW
18	N04302	1	EA	#10 STAR LOCK WASHER
17	820510	1	EA	SERV,BLK,MR13,HF,PUR
16	N00798	4	EA	#8-32 UNC x 0.5 L HEXAGON SBHCS
15	804639	1	EA	CVR,JCT AREA,MR13,HF HD (WITH OFFSET THREADED HOLE)
14	078A111	2	EA	#10-24 x 1 1/4 HEXAGON SHCS
13	SEE SALES ORDER	1	EA	SALES ORDER OPTIONS: 101624: FTG, ADPTR, G1/4X06, STL 103944: FTG, ADPTR, G1/4X08, STL 110901: FTG, ADPTR, G1/4X12, STL
12	815541	2	EA	FTG,SKT,PLUG,G1,1/8,STL
11	L00006	6	EA	INSUL/SPCR
10	107881	1	EA	TERM BLK,2 POS,CERAMIC
9	078A055	1	EA	SCREW, SOCKET HEAD SET, 10-24 x 3/16", STL
8	108699	2	EA	HEATER CARTRIDGE, 250W/240V, Ø3/8" x ~2" LONG
7	N04268	1	EA	TERM,RING,22-16,#10,NO INSULATION
6	116248	1	EA	MOD,BEAD,HIFLO,VIT,HFX
5	N00093	2	EA	FTG,CONN,1/4TUBE-1/8NPT
4	N06703	1	EA	SNSR,RTD,PT.,1875X1.25L (SHOWN FOR REFERENCE ONLY. LOCATED IN CABLE)
3	048J049	1	EA	FTG,1/4" COND,9/16-18
2	101610	1	EA	CABLE ASSEMBLY, DCL
1	106333	2	EA	TUB,SST,1/4X.065WX3.5
ITEM	PART NUMBER	QTY	U/M	DESCRIPTION
PARTS LIST				

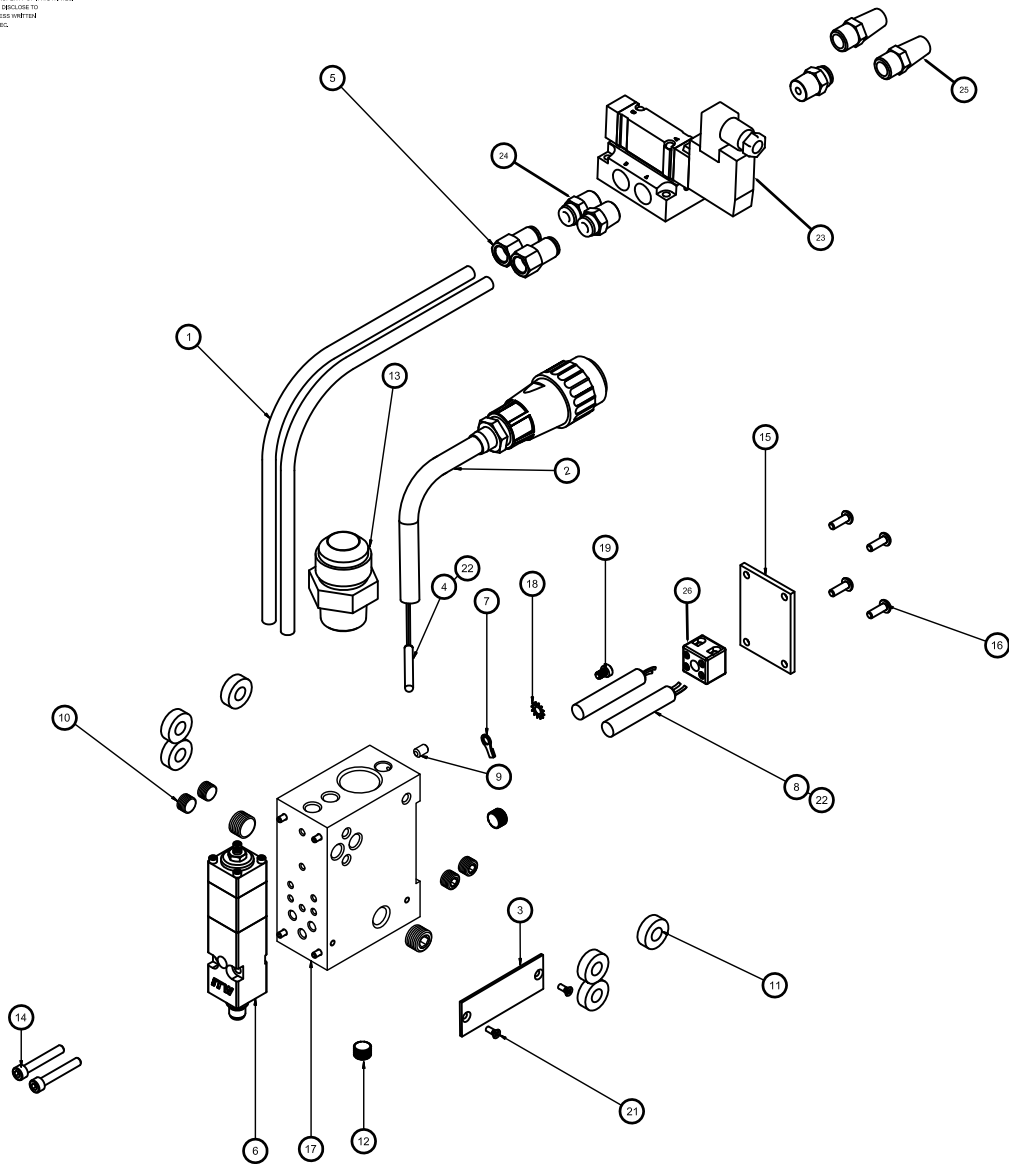
FOR MACHINING STANDARDS AND SYMBOLS SEE ITVDYNATEC SPEC. A00000		mwDyntec HENDERSVILLE, TN		DATE	BY
286147		HIGH FLOW BEAD HEAD		06-14-13	JA
PARENT		MR1300,24DL,PUR		820511	A
DO NOT SCALE DRAWING		CAD DRAWING		1 OF 1	

7.4 Bead Applicator, MR13, high-flow, PUR, PN 821483A



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES (MILLIMETERS). TOLERANCES ARE: FRACTIONS DECIMALS ANGLES X .05 .XX .010 .5 Y .005 .XXX .005		FOR MACHINING STANDARDS AND SYMBOLS, SEE ITW/DYNATEC SPEC. A05000		 HERBESBORNVILLE, TN		U/M EA
USED ON 29786		APPROVALS DATE DRAWN JC 01.28.14		HIGH FLOW BEAD HEAD MR1300,24DL,PUR,SPC		STATUS P
NEXT ASSY. PARENT		COMPUTER DESCRIPTION(24 CHARACTERS) HD,MR13,HF,24DCL,PUR,SPC		SIZE DWG. NO. D 821483	REV A 00	SOURCE C
CHECKED DO NOT SCALE DRAWING		SCALE CAD DRAWING		SHEET 1 OF 1		U/C 0

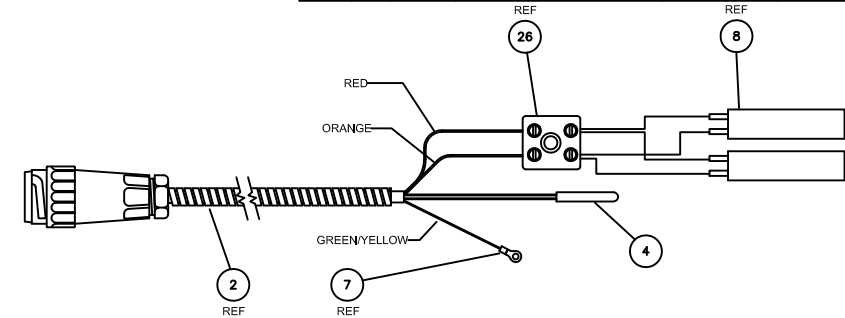
7.5 Bead Applicator, MR13, high-flow, PUR, PN 821928D



NOTES:

1. APPLY THERMAL JOINT COMPOUND 001V061 (22) TO CARTRIDGE HEATERS 108699 (8) AND SENSOR N06703 (4)
2. APPLY THREAD SEALANT (ITEM 29) TO FLUSH PLUGS AND TUBE FITTINGS.
3. APPLY ANTI-SEIZE (ITEM 30) TO SCREWS.

REVISIONS						
REL	REV	SHEET	DESCRIPTION	DATE	BY	APPROVED
303131	A	1	ORIGINAL RELEASE	05.08.14	JC	
CCR	B	1	ITEM 9 WAS 821925	06.18.14	JC	
CCR	C	1	ITEM 13 WAS 821928	07.18.14	JC	
16055	D	1	ITEM 20 WAS 101622	08.02.16	JC	
			ITEM 3 WAS 103733			
			ITEM 26 WAS N01756			
			ITEM 27 WAS 048J271			

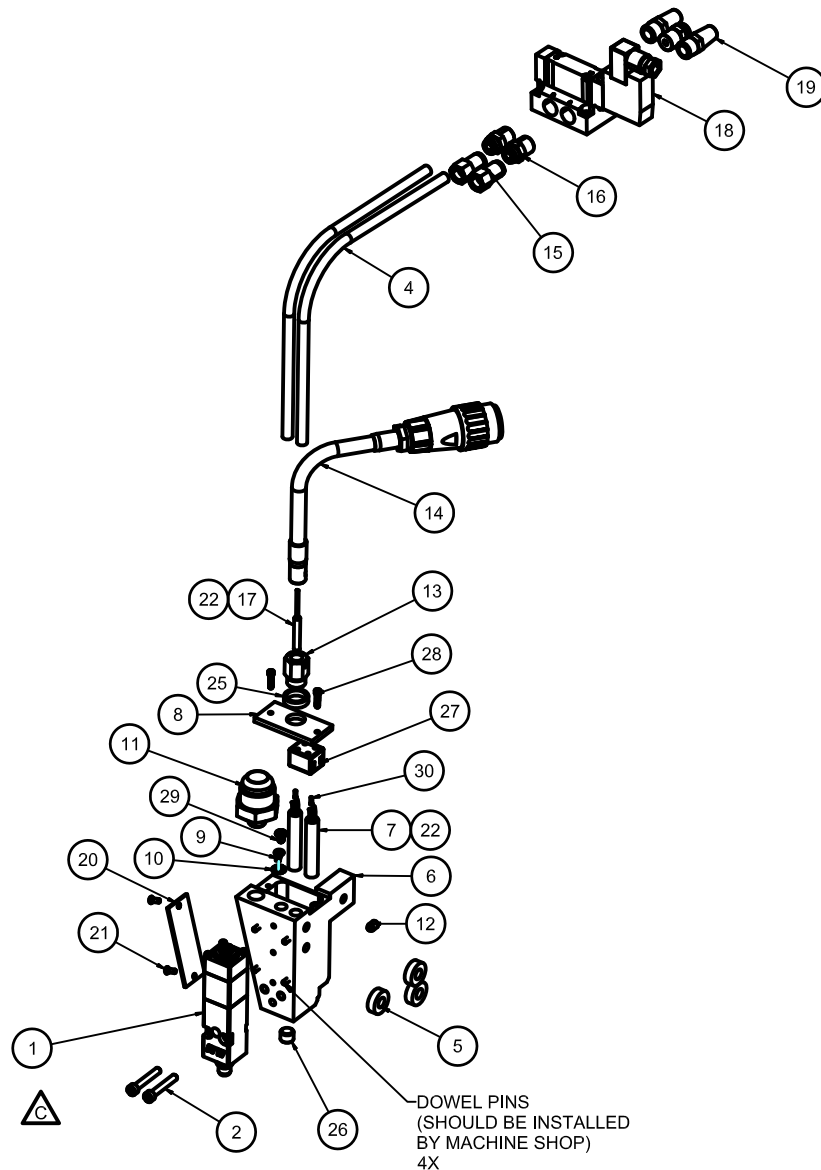


30	107324	N/A	N/A	ANTI-SEIZE COMPOUND
29	N02937	N/A	N/A	SEALANT,THREAD,TFE
28	103117	1	REF	SCHEM,DCL HEADS
27	-	-	EA	-
26	107881	1	EA	TERM BLK,2 POS,CERAMIC
25	N02535	2	EA	MUF,PNEU EXH,1/4 NPT
24	812243	3	EA	FTG,1/4NPT X 1/4T
23	821252	1	EA	SINGLE 4 WAY SOLENOID, 24VDC
22	001V061	N/A	N/A	THERMAL JOINT COMPOUND
21	101628	2	EA	SCR,FLT HD,M3-.5X8,ZN PL
20	-	-	EA	-
19	N00859	1	EA	#8-32 X 1/4 FILLISTER HEAD SCREW
18	N04302	1	EA	#10 STAR LOCK WASHER
17	821888	1	EA	SERV,BLK,MR13,HF,NO PSI
16	N00798	4	EA	#8-32 UNC x 0.5 L HEXAGON SBHCS
15	821927	1	EA	CVR,JCT,MR13,HF HD,PUR
14	078A111	2	EA	#10-24 x 1 1/4 HEXAGON SHCS
13	072X103	1	EA	3/4NPTX1-1/16JIC, HEX
12	N00754	4	EA	FTG,PLUG,FLUSH,1/4 NPT
11	L00006	6	EA	INSUL/SPCR
10	N00753	4	EA	FTG,PLUG,FLUSH,1/8 NPT
9	106156	1	EA	SCR,SHS,M4X6,BLK OX
8	108699	2	EA	HEATER CARTRIDGE, 250W/240V, Ø3/8" x ~2" LONG
7	N04268	1	EA	TERM,RING,22-16,#10,NO INSULATION
6	116248	1	EA	MOD,BEAD,HIFLO,VIT,HFX
5	821364	2	EA	FTG,CONN,1/4TUBE-1/8FPT
4	N06703	1	EA	SNSR,RTD,PT.,1875X1.25L (SHOWN FOR REFERENCE ONLY. LOCATED IN CABLE)
3	110224	1	EA	PLATE,DATA,BLANK,BLK
2	101610	1	EA	CABLE ASSEMBLY, DCL
1	821365	2	EA	STAINLESS BRAID HOSE, 1 FT. LONG
ITEM	PART NUMBER	QTY	U/M	DESCRIPTION

PARTS LIST

HYDRA-MATIC 1000 HYDRA-MATIC DRIVE ANN ARBOR, MI 48106 TEL: 734.769.1000 FAX: 734.769.1001 WWW.HYDRA-MATIC.COM		FOR MACHINING STANDARDS AND SYMBOLS SEE HYDRA-MATIC SPEC. 000000		HYDRA-MATIC HYDRA-MATIC, MI 48106, TN		DATE	BY	APP
303131		JIC		HIGH FLOW BEAD HEAD				EA
PARENT		MR13JF,24DCL,PUR,SPC		MR1300,24DCL,PUR,SPC				P
DO NOT SCALE DRAWING		D		821928				C
		D		D				00
				1 OF 1				

7.6 Bead Applicator, headlight, high-flow, PUR, right-hand, AUTOBEAD, PN 824511C

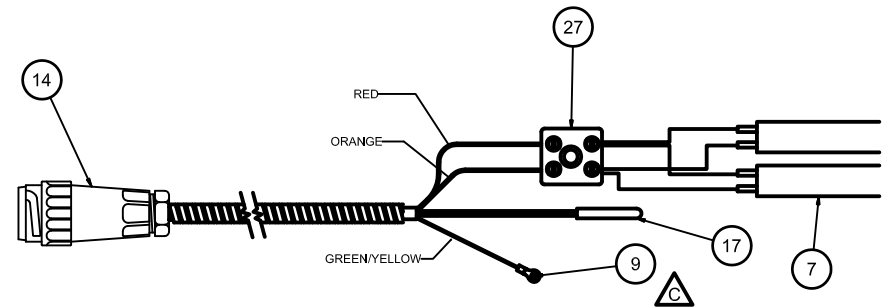


DATA TAG TO SHOW:
-SERIAL NUMBER
-PART NUMBER
FOLLOWED
BY "RH" FOR
RIGHT-HAND
-TOTAL WATTAGE

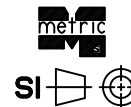
NOTES:

1. APPLY THERMAL JOINT COMPOUND 001V061 (22) TO CARTRIDGE HEATERS 108699 (7) AND SENSOR N06703 (17).
2. APPLY THREAD SEALANT (23) TO FLUSH PLUGS AND TUBE FITTINGS.
3. APPLY ANTI-SEIZE (24) TO SCREWS.

REVISIONS				
ORDER/CCR/ECR	REV	DESCRIPTION	DATE	BY
	A	ORIGINAL RELEASE	06.23.16	LW
	B	BOM REVISED, WIRING DIAGRAM ADDED	12.20.16	LM
	C	BOM REVISED, MISSING CALLOUT ADDED, DATA TAG INFO	02.09.17	LM



PARTS LIST				
ITEM	PART NUMBER	QTY	U/M	DESCRIPTION
30	104227	4		FERRULE,UNINSUL,18 AWG
29	105117	1		SCR.PNHD,PH,M4-0.7X8,ZP
28	N00788	2		SCR, SKT HD, 4-40X0.500B,ZP
27	107881	1		TERM BLK,2 POS,CERAMIC
26	N00753	1		FTG,PLUG,FLUSH,1/8 NPTF
25	078C137	1	EA	WSHR,9/16,ALUMINUM
24	107324	N/A	N/A	ANTI-SEIZE COMPOUND
23	N02937	N/A	N/A	SEALANT,THREAD,TFE
22	001V061	N/A	N/A	THERMAL JOINT COMPOUND
21	101628	2	EA	SCR,FLT HD,M3-.5x8,ZN PL
20	103733	1	EA	PLT,WIRING ACCESS
19	N02535	2	EA	MUF,PNEU EXH,1/4 NPT
18	821252	1	EA	SINGLE 4 WAY SOLENOID, 24VDC
17	N06703	1	EA	SNRS,RTD,PT.,1875X1.25L(FOR REF, IN CABLE ASY)
16	812243	3	EA	FTG,1/4NPT x 1/4TUBE, SMC
15	821364	2	EA	FTG,CONN,1/4TUBE-1/8FPT
14	101610	1	EA	CABLE ASSEMBLY, DCL
13	048J049	1	EA	FTG,1/4" COND,9/16-18
12	109882	1	EA	PLUG,PRESSURE BLEED,M6
11	110901	1	EA	FTG,G1/4x#12 JIC,STL
10	N04302	1	EA	#10 STAR LOCK WASHER
9	N04268	1	EA	TERM,RING,22-16,#10,NO INSULATION
8	824505	1	EA	CVR JCT, MR13, HF HD,
7	108699	2	EA	HEATER CARTRIDGE, 250W/240V, Ø3/8" x ~2" LONG
6	824504	1	EA	HL,SERV BLK,HF,RH
5	L00006	3	EA	INSUL/SPCR
4	821365	2	EA	STAINLESS BRAID HOSE, 1 FT. LONG
3	810390	4	EA	PIN,DOWEL,,125x.375.316
2	078A111	2	EA	#10-24 x 1 1/4 HEXAGON SHCS
1	116248	1	EA	MOD,BEAD,HIFLO,VIT,HFX



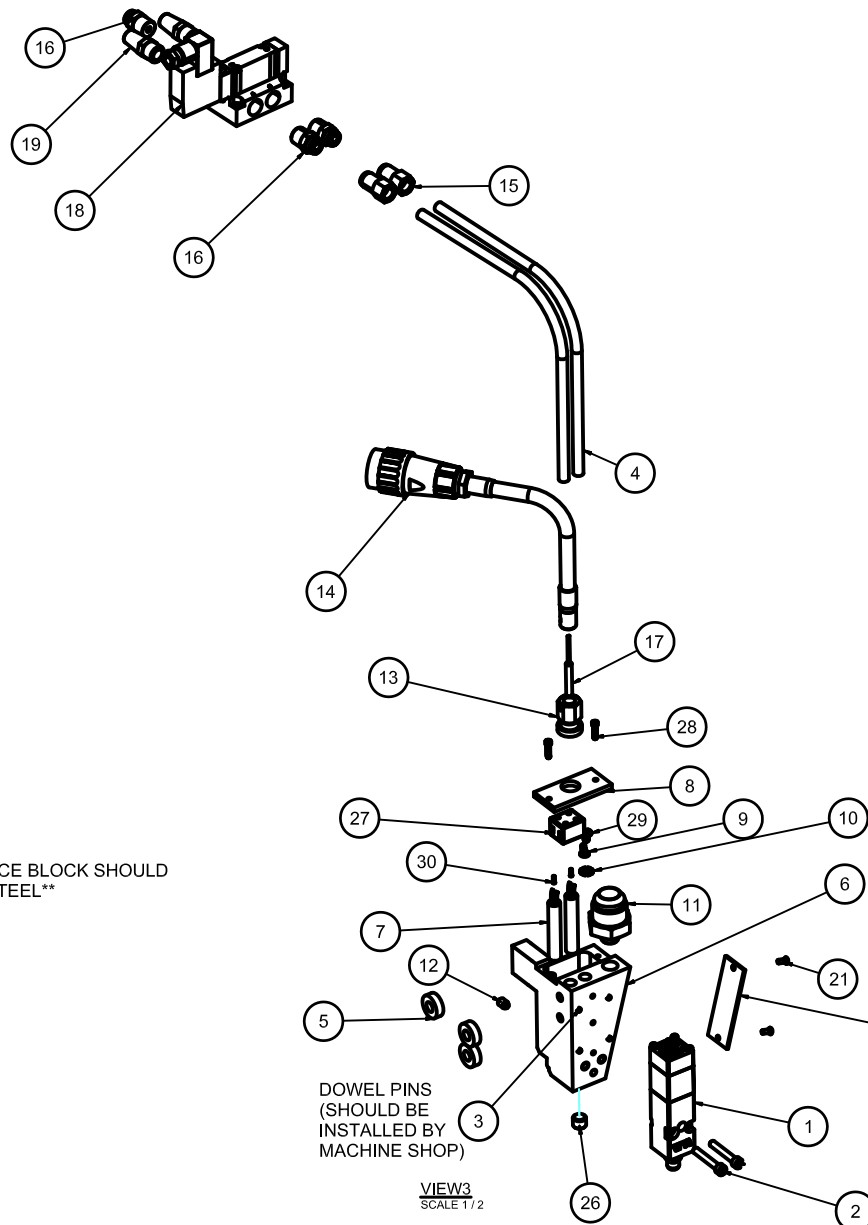
DATE OF THIS DRAWING: 06/23/16 DRAWN BY: LW CHECKED BY: LM APPROVED BY: LM DATE: 06/23/16		DYNASTIC HYDRAULIC SYSTEMS HEAD,HEADLIGHT,HIGH-FLOW,PUR, RIGHT HAND D1 824511 1/21	
PARENT		HD,HL,HF,PUR,RH	

7.7 Bead Applicator, headlight, high-flow, PUR, left-hand, AUTOBEAD, PN 824847C

[illegible]

7.8 Bead Applicator, headlight, high-flow, PUR, left-hand, PN 825585A

REVISIONS				
ORDER/CCR/ECR	REV	DESCRIPTION	DATE	BY
352765	A	ORIGINAL RELEASE	11.3.17	CG

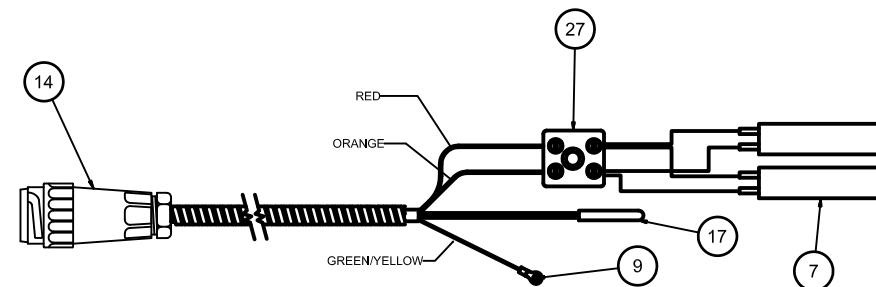


****APPLICATOR SERVICE BLOCK SHOULD
BE MACHINE FROM STEEL****

DOWEL PINS
(SHOULD BE
INSTALLED BY
MACHINE SHOP)

VIEW3
SCALE 1/2

DATA TAG TO SHOW:
-SERIAL NUMBER
-PART NUMBER FOLLOWED
BY "LH" FOR LEFT-HAND
-TOTAL WATTAGE

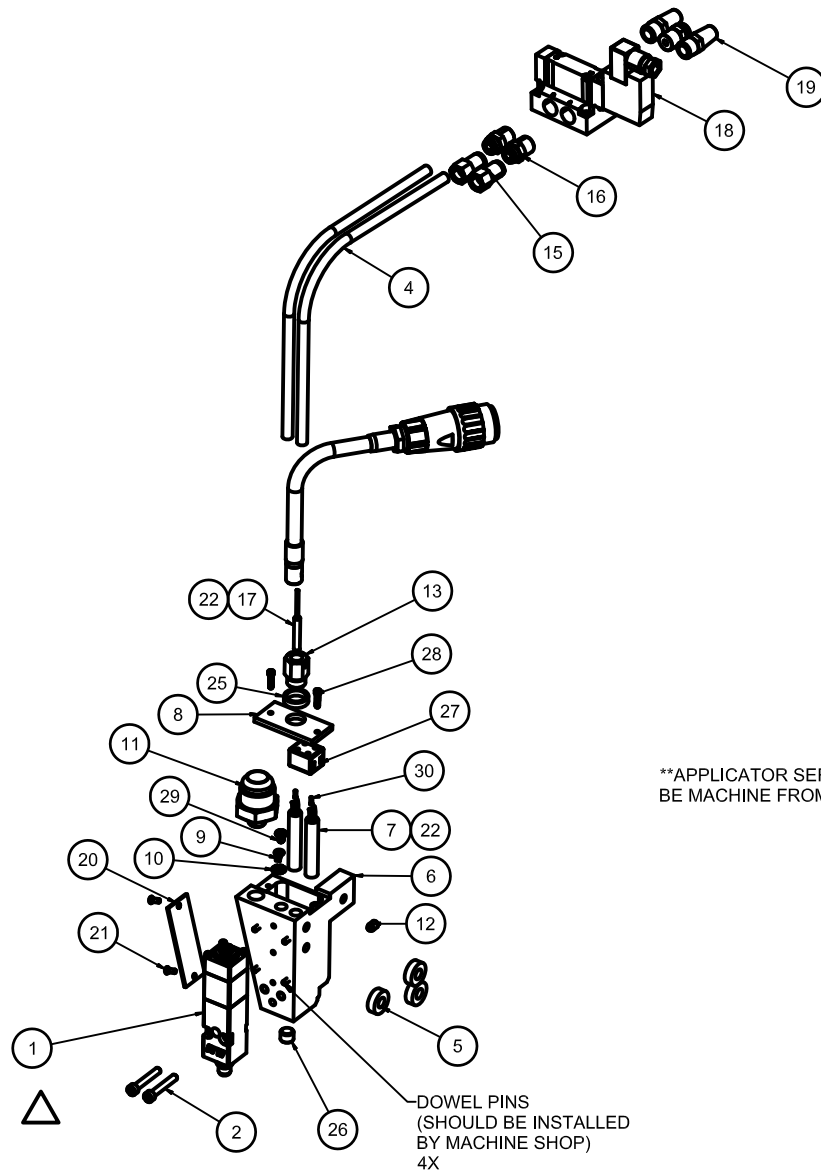


30	104227	4		FERRULE,UNINSUL,18 AWG
29	105117	1		SCR, PNHD,PH,M4-0.7X8,ZP
28	N00788	2		SCR, SKT HD, 4-40X0.500B, ZP
27	107881	1		TERM BLK,2 POS,CERAMIC
26	N00753	1		FTG,PLUG,FLUSH,1/8 NPTF
25	078C137	1	EA	WSHR,9/16,ALUMINUM
24	107324	N/A	N/A	ANTI-SEIZE COMPOUND
23	N02937	N/A	N/A	SEALANT,THREAD,TFE
22	001V061	N/A	N/A	THERMAL JOINT COMPOUND
21	101628	2	EA	SCR,FLT HD,M3-5x8,ZN PL
20	103733	1	EA	PLT,WIRING ACCESS
19	N02535	2	EA	MUF,PNEU EXH,1/4 NPT
18	821252	1	EA	SINGLE 4 WAY SOLENOID, 24VDC
17	N06703	1	EA	SNSR,RTD,PT.,.1875X1.25L(FOR REF, IN CABLE ASY)
16	812243	3	EA	FTG,1/4NPT x 1/4TUBE, SMC
15	821364	2	EA	FTG,CONN,1/4TUBE-1/8FPT
14	101610Aa1	1	EA	CABLE ASSEMBLY, DCL
13	048J049	1	EA	FTG,1/4" COND,9/16-18
12	109882	1	EA	PLUG,PRESSURE BLEED,M6
11	110901	1	EA	FTG,G1/4x#12 JIC,STL
10	N04302	1	EA	#10 STAR LOCK WASHER
9	N04268	1	EA	TERM,RING,22-16,#10,NO INSULATION
8	824505	1	EA	CVR JCT, MR13, HF HD,
7	108699	2	EA	HEATER CARTRIDGE, 250W/240V, Ø3/8" x ~2" LONG
6	824846	1	EA	HL,SERV BLK,HF, LH
5	L00006	3	EA	INSUL/SPCR
4	821365	2	EA	STAINLESS BRAID HOSE, 1 FT. LONG
3	810390	4	EA	PIN,DOWEL,.125x.375,316
2	078A111	2	EA	#10-24 x 1 1/4 HEXAGON SHCS
1	116248	1	EA	MOD,BEAD,HIFLO,VIT,HFX
ITEM	PART NUMBER	QTY	U/M	DESCRIPTION

Parts List

[illegible]

7.9 Bead Applicator, headlight, high-flow, PUR, right-hand, PN 825586A

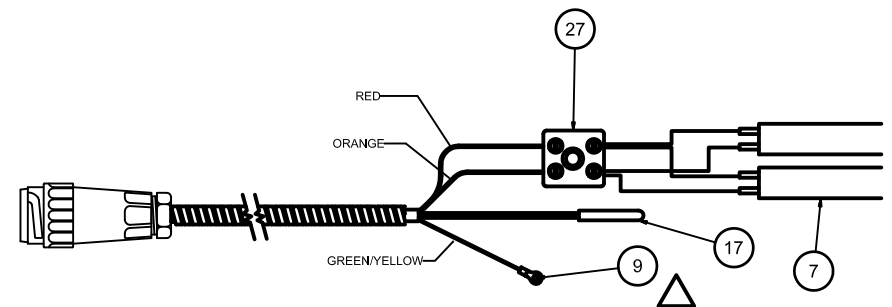


**APPLICATOR SERVICE BLOCK SHOULD
BE MACHINE FROM STEEL**

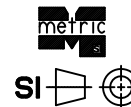
NOTES:

1. APPLY THERMAL JOINT COMPOUND 001V061 (22) TO CARTRIDGE HEATERS 108699 (7) AND SENSOR N06703 (17).
2. APPLY THREAD SEALANT (23) TO FLUSH PLUGS AND TUBE FITTINGS.
3. APPLY ANTI-SEIZE (24) TO SCREWS.

REVISIONS			
ORDER/CCR/ECR	REV	DESCRIPTION	DATE BY
352765	A	ORIGINAL RELEASE	11.3.17 CG



30	104227	4		FERRULE,UNINSUL,18 AWG
29	105117	1		SCR.PNHD,PH,M4-0.7X8,ZP
28	N00788	2		SCR, SKT HD, 4-40X0.500B,ZP
27	107881	1		TERM BLK,2 POS,CERAMIC
26	N00753	1		FTG,PLUG,FLUSH,1/8 NPTF
25	078C137	1	EA	WSHR,9/16,ALUMINUM
24	107324	N/A	N/A	ANTI-SEIZE COMPOUND
23	N02937	N/A	N/A	SEALANT,THREAD,TFE
22	001V061	N/A	N/A	THERMAL JOINT COMPOUND
21	101628	2	EA	SCR,FLT HD,M3-.5x8,ZN PL
20	103733	1	EA	PLT,WIRING ACCESS
19	N02535	2	EA	MUF,PNEU EXH,1/4 NPT
18	821252	1	EA	SINGLE 4 WAY SOLENOID, 24VDC
17	N06703	1	EA	SNSR,RTD,PT.,1875X1.25L(FOR REF, IN CABLE ASY)
16	812243	3	EA	FTG,1/4NPT x 1/4TUBE, SMC
15	821364	2	EA	FTG,CONN,1/4TUBE-1/8FPT
14	101610Aa1	1	EA	CABLE ASSEMBLY, DCL
13	048J049	1	EA	FTG,1/4" COND,9/16-18
12	109882	1	EA	PLUG,PRESSURE BLEED,M6
11	110901	1	EA	FTG,G1/4x#12 JIC,STL
10	N04302	1	EA	#10 STAR LOCK WASHER
9	N04268	1	EA	TERM,RING,22-16,#10,NO INSULATION
8	824505	1	EA	CVR JCT, MR13, HF HD,
7	108699	2	EA	HEATER CARTRIDGE, 250W/240V, Ø3/8" x ~2" LONG
6	824504	1	EA	HL,SERV BLK,HF,RH
5	L00006	3	EA	INSUL/SPCR
4	821365	2	EA	STAINLESS BRAID HOSE, 1 FT. LONG
3	810390	4	EA	PIN,DOWEL,,125x.375.316
2	078A111	2	EA	#10-24 x 1 1/4 HEXAGON SHCS
1	116248	1	EA	MOD,BEAD,HIFLO,VIT,HFX
ITEM	PART NUMBER	QTY	U/M	DESCRIPTION



DATE BY (DRAWN/APP/CHK/ENG) 11/3/17		QTY PER ASSEMBLY 113,17	
APPROVALS		DATE	
DRAWN/CG		11/3/17	
CHECKED			
DESCRIPTION		COMPUTER DESCRIPTION (Q'Y CHARACTER)	
AUTOBEAD HL		HD,HL,HF,PUR,RH	
SIMILAR PART NO. 824511		REV. 01	
REV. 01		PART 1 OF 1	

HEAD,HEADLIGHT,HIGH-FLOW,PUR, RIGHT HAND

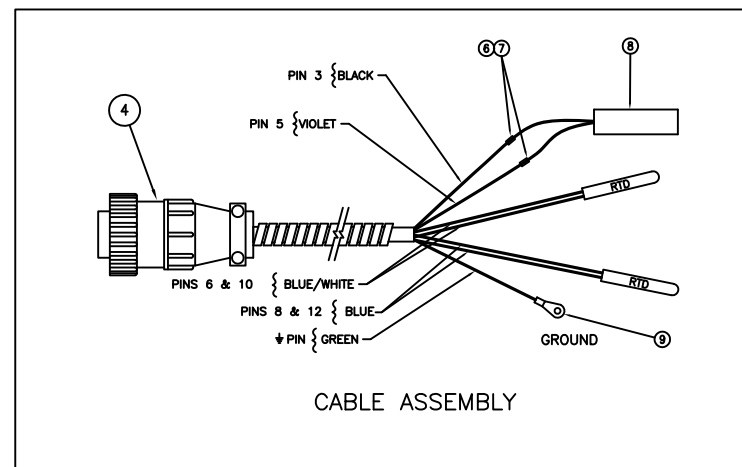
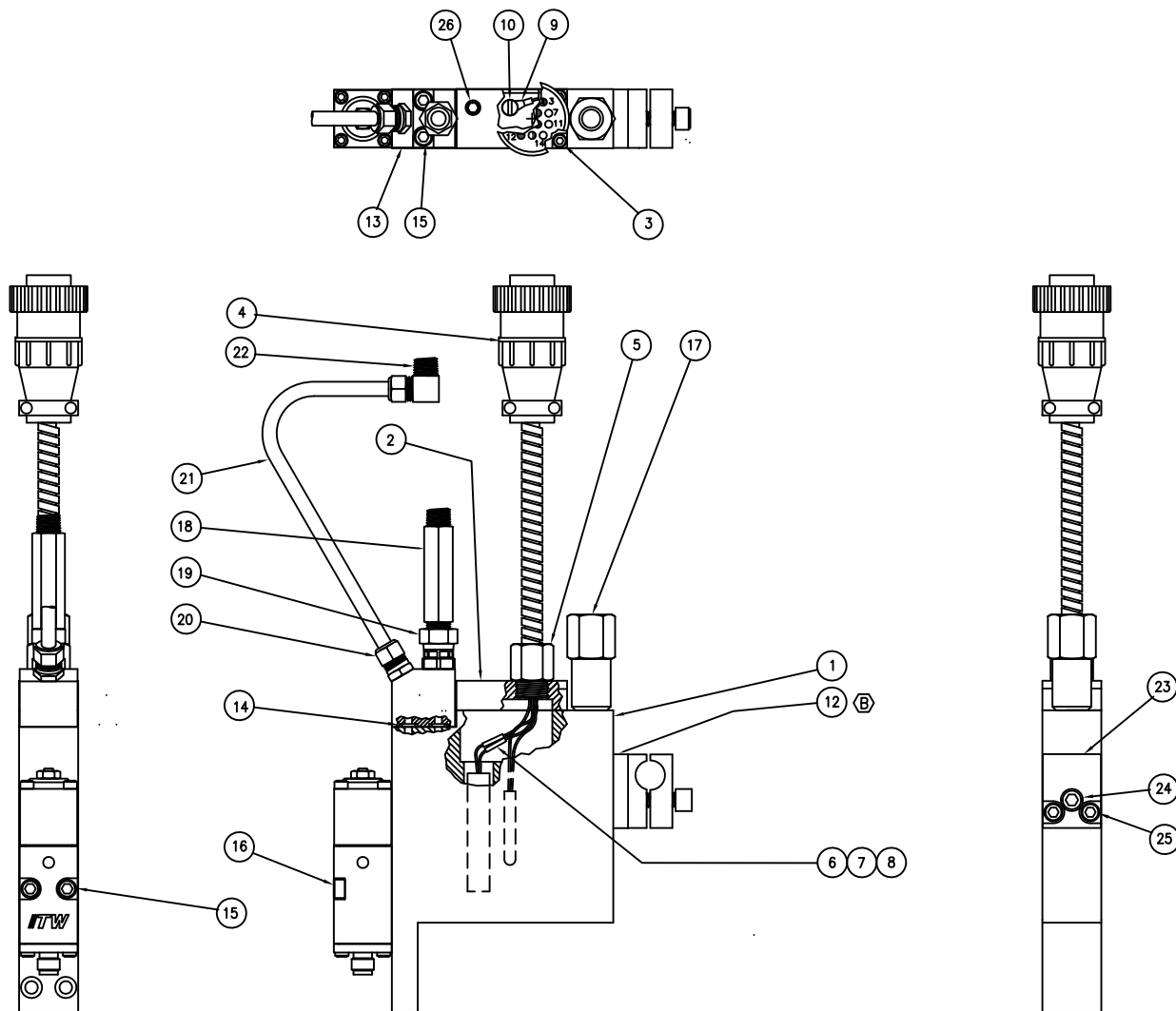
825586

1/21

7.10 Bead Applicator, MR13, high-temp, PN 107912B

Max. Operating temperature 450°F (232°C)

DIV. NO.		107912		SH	1	REV.	B
REVISIONS							
REL.	REV.	DESCRIPTION				DATE	BY
	B	ORIGINAL RELEASE				11.14.17	LF



NOTES:

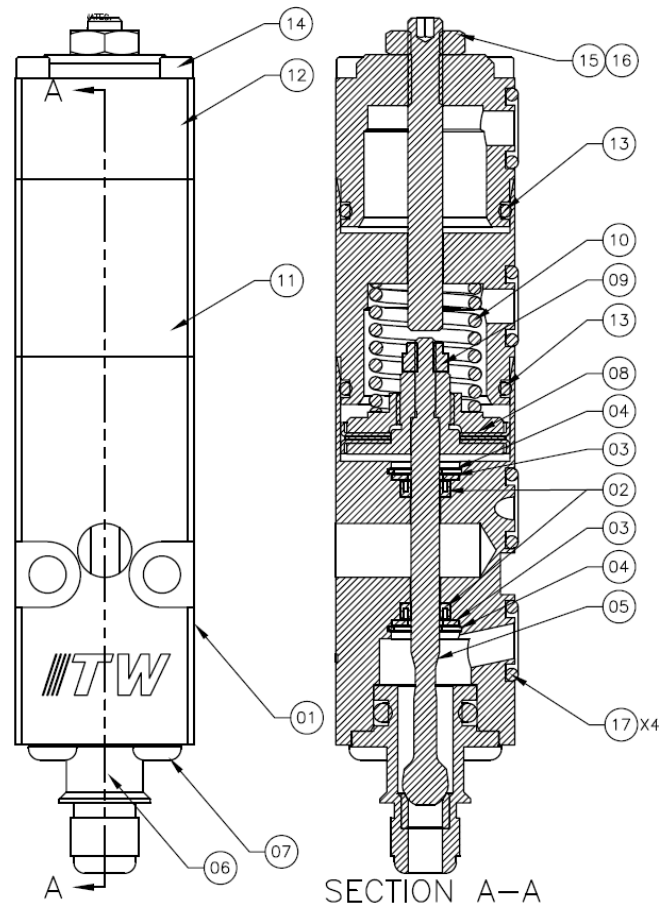
USE TFE THREAD SEALANT (ITEM 27)
ON ALL PIPE THREADS.

27	N0297	A/N	EA	SEALANT, THREAD, W/TFE
26	078A017	1	EA	SCREW, SHS, 1/4-20 x .25
25	078A342	1	EA	SCREW, SHCS, 10-24 x .875
23	078A035	1	EA	SCREW, SHCS, 1/4-20 x .75
23	802383	1	EA	CLAMP, 1/2"
22	072X428	1	EA	1/8 NPT X 3/16" ELBOW
20	011007	.5	FT	3/16 OD ALUMINUM TUBING
20	072X382	1	EA	1/8 NPT X 3/16" TUBE CONNECT
19	072X248	1	EA	1/8 NPT SWIVEL FITTING
18	072X254	1	EA	SOLENOID NIPPLE 2.5"
17	N04439	1	EA	FILTER, 100 MESH SST, 2 1/4" LG
16	810874	1	EA	HT-TEMP MR1300 BEAD MODULE
15	078A111	4	EA	SCREW, SHCS, 10-24 x 1.25
15	0787177	2	EA	O-RING, -OOB, PAROFLOUR
13	057F149	1	EA	SOLENOID AIR MANIFOLD
(B) 12	802622	1	EA	INSULATOR, BRACKET
11	030B108	1	EA	1/8 NPT BREATHING VENT
10	078A045	1	EA	SCREW, PAN HD, 6-32 x .25
9	N04268	1	EA	TERMINAL, RING, 22-16
8	802397	1	EA	HEATER, 300W, 240V, 3/8" X 2"
7	048C204	2	EA	PARALLEL CONNECTOR
6	048J271	1	FT	SHRINK TUBE
5	048J049	1	EA	1/4 CONDUIT FITTING
4	084B467	1	EA	CABLE ASSY, ETCRO/MC CONTROL
3	N00793	2	EA	SCREW, SHCS, 6-32 x .625
2	057I303	1	EA	WIRE COVER
1	802382	1	EA	ADHESIVE MANIFOLD
QTY.	PART NAME	QTY.	U/A	DESCRIPTION
PARTS LIST				
GENERAL NOTES: 1. KERO SOLVENT SHALL BE USED FOR CLEANING PURPOSES. 2. SEE DRAWING FOR DIMENSIONS AND MATERIAL SPECIFICATIONS.				
FOR BOOKING STANDARDS AND CHECKS, SEE: APPROVED				
REV/DRAWN SPEC. APPROVED				
APPROVALS				
DRAWN	LWF	11.04.17	DATE	
CHECKED	LWF	11.04.17	DATE	
COMPUTER DESIGNED/GRAPHICALLY CHECKED				
PO, BEAD, I, MR13, MC, VCH				
DO NOT SCALE DRAWING				
DYNATEC INDUSTRIAL, TN ASSEMBLY BEAD MR13, HT, DCL 171 CAD DRAWING				
U/A EA STATUS A SOURCE P QTY 18 PRICE \$40				

7.11 Modules

7.11.1 Bead Module, MR13, high-flow, PN 116248

Item No.	Part Number	Description	Quantity
01	111307	Module body	1
02	110417	Stem seal	2
03	111309	Washer	2
04	N05262	Snap ring, internal, 3/8" bore	2
05	111310	Stem	1
06	110590	Adapter asy	1
06A	N00195	O-ring 2-110	1
06B	110588	Seat asy	1
07	N02680	Screw 6-32x3/8	4
08	114137	Piston asy	1
08A	114136	Retainer	1
08B	111314	Piston seal	2
08C	111315	Spacer	1
08D	114135	Piston	1
09	110046	Lock nut 4-40	1
10	111311	Compression spring	1
11	115019	Cap, intermediate	1
12	111308	Spring cap	1
13	N00186	O-ring 019	2
14	115021	Screw 4-40 x1-3/4	4
15	116247	Screw 10-32x1.17	1
16	078D078	Hex sealing nut 10-32	1
17	N00178	O-ring 011	4



See also next page.

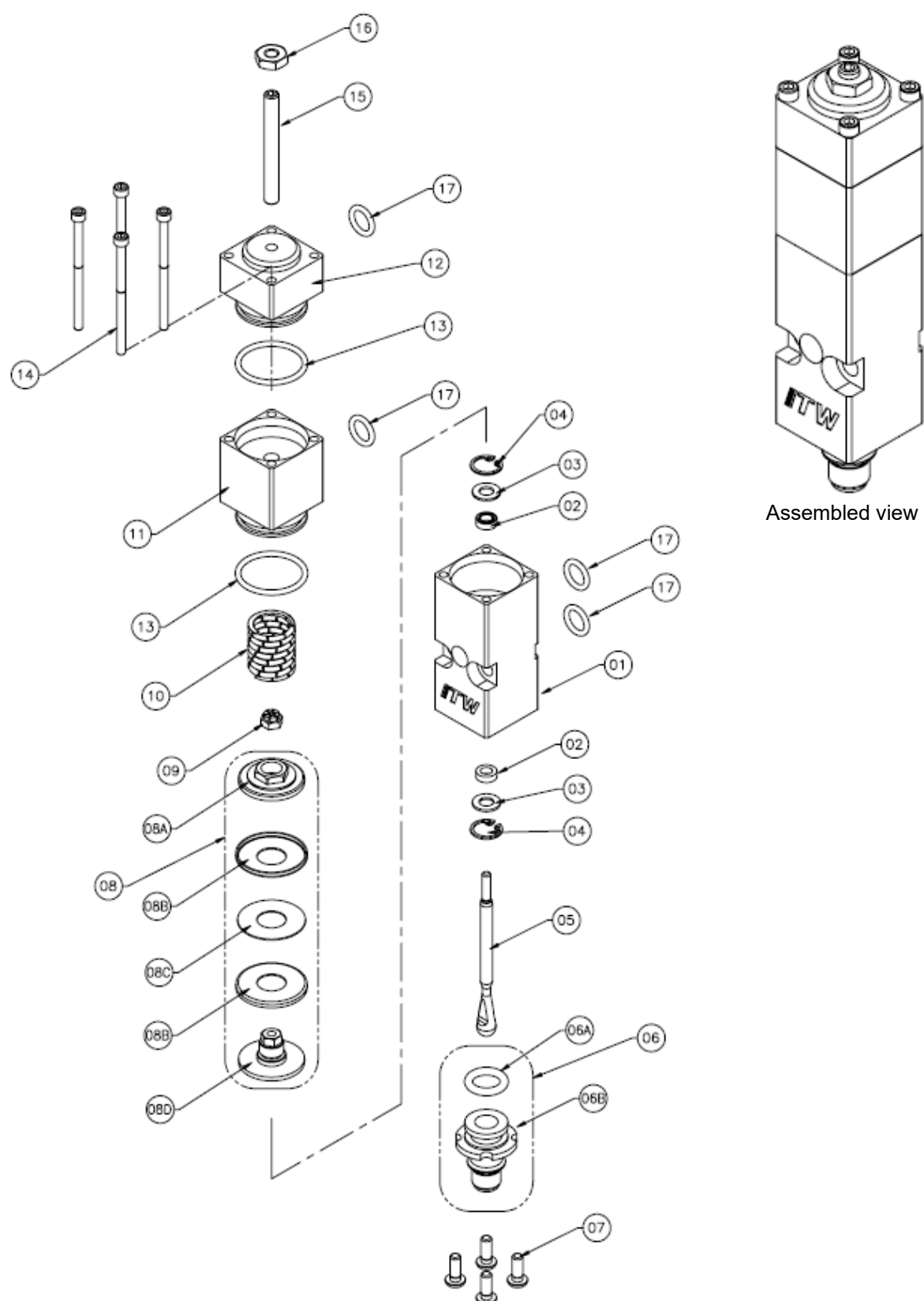


Illustration : Exploded-view drawing - Bead Module, MR13, high-flow, PN 116248

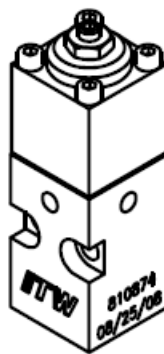
7.11.2 Repair Kit PN 114321

for Bead Module, MR13, high-flow, PN 116248

Item No.	Part Number	Description	Quantity
02	110417	Stem seal	2
03	111309	Washer	2
04	N05262	Snap ring, internal, 3/8" bore	2
06A	N00195	O-ring 2-110	1
-	N05044	O-ring 109 (not used in this module assembly)	1
07	N02680	Screw 6-32x3/8	4
08	114137	Piston asy	1
09	110046	Lock nut 4-40	1
10	111311	Compression spring	1
13	N00186	O-ring 019	2
16	078D078	Hex sealing nut 10-32	1
17	N00178	O-ring 011	4
-	N00176	O-ring 009 (not used in this module assembly)	1
-	N00174	O-ring 007 (not used in this module assembly)	1
-	108700	Lube, TFE, 1/4 oz tube	1

7.11.3 Bead Module, MR13, high-temp, PN 810874

Max. Operating temperature 450°F (232°C)



Chapter 8

Options & Accessories

8.1 Recommended Service Parts

As a general rule, we recommend that you keep on hand:

- *Heaters*: half as many of each heater as listed on the BOM.
- *Sensors*: half as many of each sensor as listed on the BOM.
- *Kits*: half as many as the number of modules on the BOM.
- *O-rings*: the same quantity as listed on the BOM.
- *Nozzle*: the same quantity as on the applicator.
- *Solenoid valve*: the same quantity as on the applicator.

Recommended quantities of spare parts vary depending on each individual applicator. Refer to your Applicator's drawing/BOM to determine quantities of parts.

1x Repair Kit PN 114321 for each Bead Module, MR13, high-flow, PN 116248.

8.2 Bead Nozzle Cleaning Kits

Two nozzle cleaning kits are available, sized to be orifice-specific:

- PN 101877 Nozzle Cleaning Kit .010' to .017' (0.0254 – 0.043 cm) orifice
- PN 101878 Nozzle Cleaning Kit .018' to .040' (0.045 – 0.10 cm) orifice

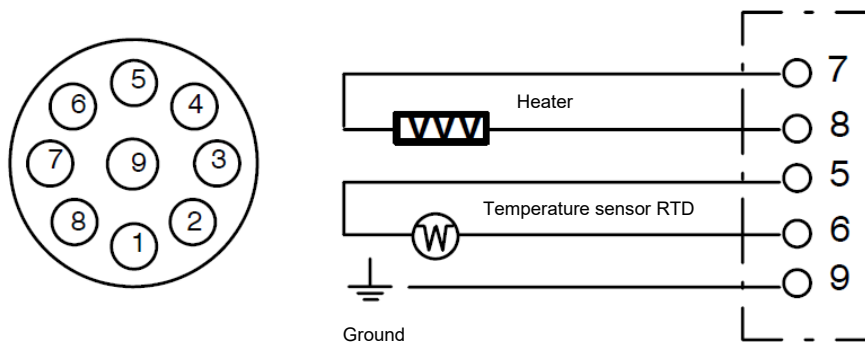
Chapter 9

Engineering Drawings & Schematics

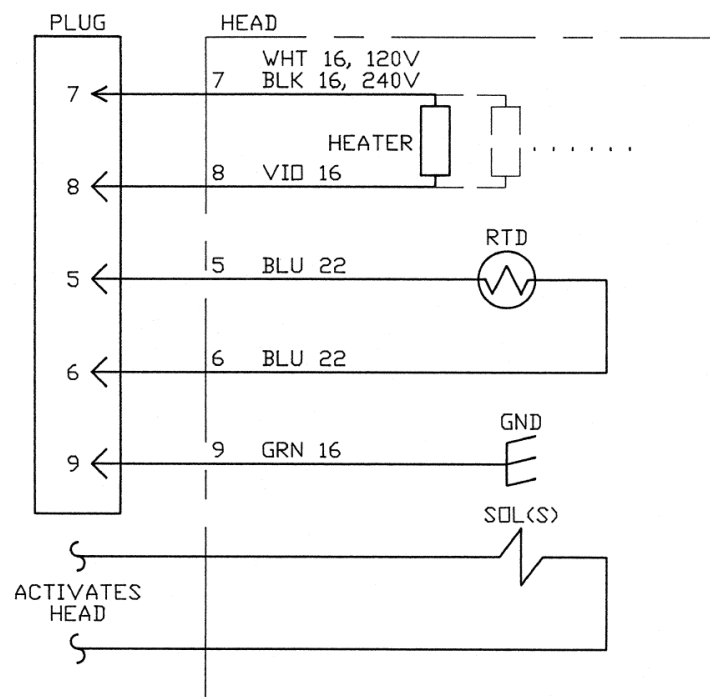
9.1 Pin Connectors & Electrical Schematics

Note: Pin connectors are viewed from the exposed end. Pins not shown on schematics are not used.

DynaControl/ Dynamini or PLC Control Scheme PN 101610



Schematic, DCL Heads, PN 103117



NOTES:

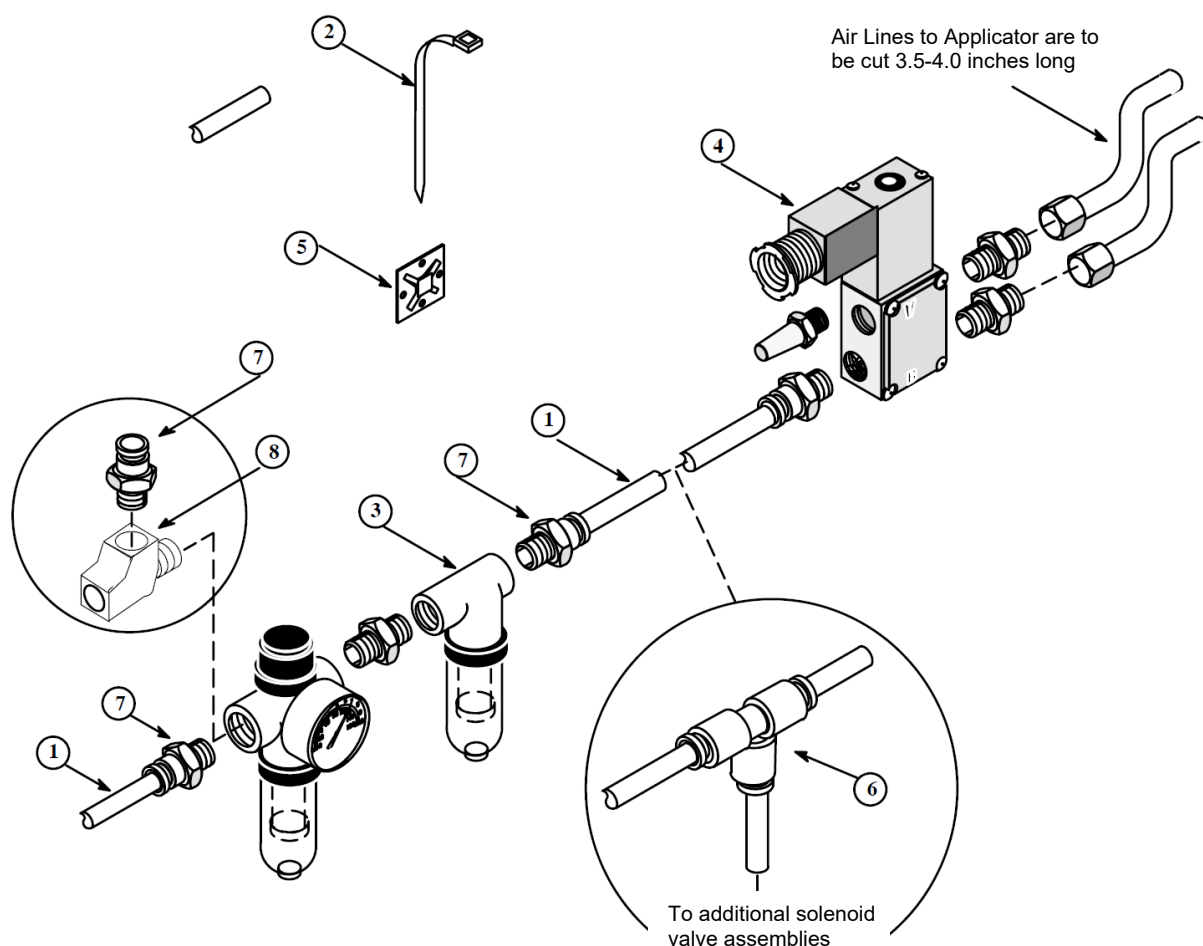
- NOTES:
1. All wire are MIL-W-22759/10 or 12, minimum 600V, 260°C.
 2. Solenoid(s) voltage and timing method depends on application.
 3. RTD Temperature sensor is PT100 Ohm.

Chapter 10

Appendix

10.1 Coalescing Air Filter Kit, PN 100055

Item No.	Part Number	Description	Quantity
1	N06438	Nylon Tubing, .250 Dia.	10'
2	N00318	Cable Tie, .09 x 3.62 Lg	10
3	100380	Filter Assembly	1
4		Solenoid Valve Assembly	1
5	N04264	Cable Tie Anchor	3
6	N06504	Push-in Union Tee Fitting	1
7	N06430	Male Connect Fitting	3
8	N04531	1/4 Treet T, Brass	1



Manual Revisions

<i>Revision</i>	<i>Page/Chapter</i>	<i>Description</i>
Rev.1.20	Ch.7	Module 116248 drawing and BOM added. Repair kit 114321 for module 116248 added.
Rev.2.20	Ch.7	Bead Applicator, 01, MR13, high-flow, PN 804587L added. “HF” (high-flow) added to manual name.
Rev.2.23	Ch.2	“Safety Symbols in this Manual” added.
Rev.7.23	P.1	Manual language added.

ITW Dynatec Service Parts and Technical Service:

ITW Dynatec Corporation 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