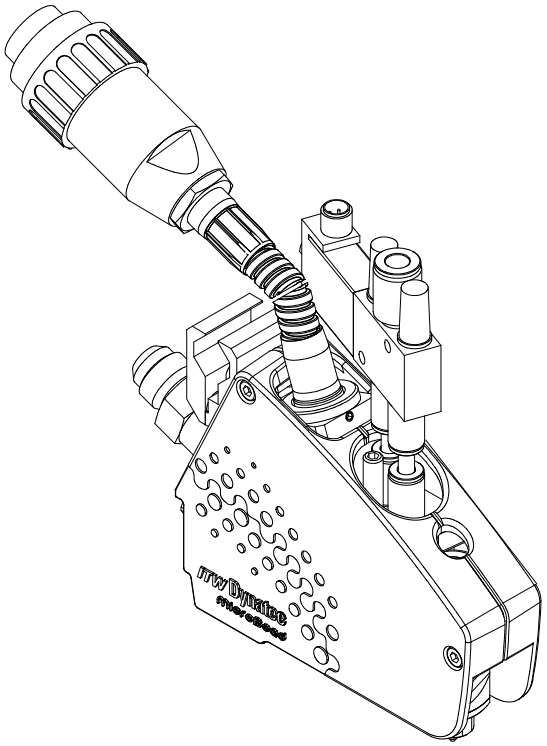
31 Volunteer Drive
Hendersonville, TN 37075 USA
Telephone: 615.824.3634
Fax: 615.264.5222
Email: dynatec@itwdynatec.com
Web: www.itwdynatec.com

ITW Dynatec®
The Next Level of Technology

■ innovation ■ service ■ reliability

OPERATIONS AND SERVICE MANUAL

BF MICROBEAD ADHESIVE APPLICATOR
HOT MELT ADHESIVE APPLICATOR



IMPORTANT ! - 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 model and 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 require.

ITW Dynatec Service Parts Direct Dial: 1-800-538-9540
ITW Dynatec Technical Service Direct Dial: 1-800-654-6711

⚠ SAFETY INSTRUCTIONS

GENERAL CONSIDERATIONS

1. Read and follow these instructions. Failure to do this could result in severe personal injury or death.

2. Additional safety instructions and/ or symbols are located throughout this manual. They serve to warn maintenance personnel and operators about potentially hazardous situations.

3. Inspect the machine for unsafe conditions daily and replace all worn or defective parts.

4. Keep work area uncluttered and well lit.

5. All covers and guards must be in place before operating this equipment.

For precautions and definitions of safety symbols, refer to the Safety Chapter of the service manual.

SERVICING EQUIPMENT

1. Only trained personnel are to operate and service this equipment.

2. 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.

3. Follow the maintenance and service instructions in the manual.

SIGNS

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.

ADDITIONAL CONSIDERATIONS

1. To ensure proper operation of the equipment, use specified electrical and/ or air supply sources.

2. Do not attempt to alter the design of the equipment unless written approval is received from ITW Dynatec.

3. Keep all manuals readily accessible at all times and refer to it often for the best performance from your equipment.

Declaration of incorporation

according to the EU Machinery Directive 2006/42/EG, Annex II, 1.B for partly completed machinery

Manufacturer:

ITW Dynatec,
31 Volunteer Drive
37075 Hendersonville, TN

Person residing within the Community authorised to compile the relevant technical documentation:

Andreas Pahl
ITW Dynatec GmbH,
Industriestraße 28
40822 Mettmann

Description and identification of the partly completed machinery:

Product / Article:	BF MicroBead Applicator Head
Serial no:	_____
Machine number:	_____
Project number:	NGPH
Project name:	NGPH
Function:	Delivery of hot melt adhesive to substrates

It is declared that the following essential requirements of the Machinery Directive 2006/42/EG have been fulfilled:

1.3.2.; 1.3.7.; 1.5.1.; 1.5.16.; 1.5.2.; 1.5.5.; 1.5.6.; 1.5.7.; 1.6.3.

It is also declared that the relevant technical documentation has been compiled in accordance with part B of Annex VII.

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

2004/108/EC:	(Electromagnetic compatibility) Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
2006/95/EC:	(Voltage limits) Directive of the european Parliament and of the council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (codified version)

Reference to the harmonized standards used:

EN ISO 14121-1:2007	Safety of machinery - Risk assessment - Part 1: Principles (ISO 14121-1:2007)
EN 60204-1:2006-06	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN 349:1993+A1	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN ISO 12100-1/A1:2009	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology
EN ISO 12100-2:2003/A1	Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles
EN ISO 13850:2008	Safety of machinery - Emergency stop - Principles for design (ISO 13850:2006)

The manufacturer or his authorised representative undertake to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery. This transmission takes place:

This does not affect the intellectual property rights!

Declaration of incorporation

according to the EU Machinery Directive 2006/42/EG, Annex II, 1.B
for partly completed machinery

Important note! The partly completed machinery may be put into service only if it was determined, where appropriate, that the machinery into which the partly completed machinery is to be installed meets the provisions of this Directive.

Hendersonville, TN, 2012.06.07

Place, date

Judson Broome

Signature
Judson Broome
General Manager

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Chapter 8 Engineering Drawings & Schematics

Chapter 1
SAFETY PRECAUTIONS

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.

Safe Installation & Operation

Read this manual before applying electrical power to the equipment. Equipment may be damaged by incorrect electrical connections.

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.

Do not use adhesive that is dirty or that may be chemically contaminated. Doing so can cause system clogging and pump damage.

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.

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.

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.

Never attempt to lift or move the unit when there is molten adhesive in the system.

Eye Protection & Protective Clothing

It is very important that you PROTECT YOUR EYES when working around hot melt adhesive equipment!

Wear a face shield conforming to ANSI Z87.1 or safety glasses with side shields which conform to ANSI Z87.1 or EN166. Failure to wear a face shield or safety glasses could result in severe eye injury.

It is important to protect yourself from potential burns when working around hot melt adhesive equipment.

Wear protective gloves and long-sleeved, protective clothing to prevent burns that could result from contact with hot material or hot components.

Always wear steel-reinforced safety shoes.

Electrical

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. Disconnect, lockout and tag external electrical power before removing protective panels.

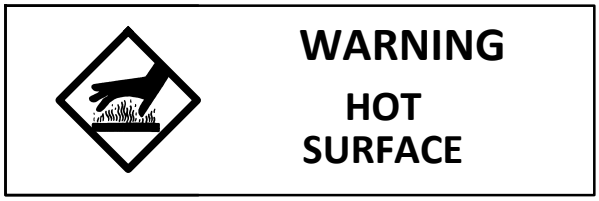
A secure connection to a reliable earth ground is essential for safe operation.

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.

High Temperatures

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

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.



High Pressure

To avoid personal injury, do not operate the equipment without all covers, panels and safety guards properly installed.

To prevent serious injury from molten adhesive under pressure when servicing the equipment, disengage the pumps and relieve the adhesive system's hydraulic pressure (ie., trigger the heads, hand-held applicators, and/or other application devices into a waste container) before opening any hydraulic fittings or connections.

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.

Either of the two High Pressure symbols shown may be used on ITW Dynatec equipment.

Protective Covers

Keep all guards in place!

To avoid personal injury, do not operate the application system without all covers, panels and safety guards properly installed.

Treatment for Burns From Hot Melt Adhesives

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.

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. When working near a hot melt application system, always wear safety gloves, safety glasses and long-sleeved, protective clothing.

Always have first-aid information and supplies available.

Call a physician and/or an emergency medical technician immediately.

Service

Refer all servicing to qualified personnel only.

Explosion/ Fire Hazard

Never operate this unit in an explosive environment.

Use cleaning compounds recommended by ITW Dynatec or your adhesive supplier only. Flash points of cleaning compounds vary according to their composition, so consult with your supplier to determine the maximum heating temperatures and safety precautions.

Lockout/ Tagout

Follow OSHA 1910.147 (Lockout/ Tagout Regulation) for equipment's lockout procedures and other important lockout/ tagout guidelines.

Be familiar with all lockout sources on the equipment. 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.

Use of PUR (Polyurethane) Adhesives

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.

Consult with your adhesive manufacturer for specifics about required ventilation. See also the Special Considerations for Using Reactive HMPUR Adhesives section in this chapter.

Safety Symbols In This Manual

WARNINGS and CAUTIONS are found throughout this manual.
WARNINGS mean that failure to observe the specific instructions may cause injury to personnel.
CAUTIONS mean that failure to observe the specific instructions may damage the equipment.

Special Safety Considerations When Using Reactive HMPUR Adhesives

Reactive hot melt PUR (HMPUR) adhesives are known for superior adhesion to numerous substrates and their exceptional heat, cold and moisture-resistance qualities. They are an excellent choice for the difficult-to-bond substrates used in a wide range of environments. HMPUR 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 HMPURs, however, come with special handling requirements. The adhesive must remain sealed off from the environment and maintained at low temperatures until it is dispensed, otherwise there is a risk that the adhesive will cross-link within the glue application equipment, rendering it impervious to melting when it is re-heated. Most importantly, when over-heated, many HMPURs release gases that can be hazardous to humans. Therefore, adequate ventilation must be available to prevent injury to personnel in the workspace.

Though the chemistries of individual adhesives differ, the following is a list of general operational considerations for the use of HMPURs 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.

- Assure the workspace has adequate ventilation.

- Assure the entire adhesive delivery system is sealed from the environment to the greatest extent possible to prevent moisture-related adhesive cross-linking.

- 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 ITW Dynatec equipment should not be left dormant (sealed at ambient temperature) with PUR inside for longer than recommended by your adhesive manufacturer. The ITW Dynatec system, especially applicators and nozzles, should be thoroughly purged of adhesive using a PUR purge material if the system will be left dormant for extended time periods.

- HMPUR 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 than a <u>cumulative total of 2 to 4 hours.</u> Utilization of the Temperature Standby feature will ensure a temperature drop occurs automatically.

- Turn off any gear pumps in the system if it will not be used for a period of five minutes or more. Doing so will reduce potential glue degradation.

- 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.

- The adhesive applicators must be either fully sealed or thoroughly cleaned with PUR purge material if the system is to be idle for more than two hours. Otherwise, HMPUR adhesive present in the exposed orifices of the applicator could potentially cross-link, clogging them.

- Recommended adhesive application temperatures should never be exceeded without first consulting with your adhesive manufacturer. Higher application temperatures may result in higher adhesive viscosities and thermal-related cross-linking.

There are many advantages to using HMPURs. 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 HMPURs. 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.

Chapter 2
DESCRIPTION & SPECIFICATIONS

ITW Dynatec's BF MicroBead Applicator is an air-operated, single-nozzle hot melt adhesive applicator assembly with an integrated filter cartridge which prevents particulate matter from obstructing flow through the head. It is used with intermittent pressure and constant pressure hot melt adhesive supply units (ASUs).

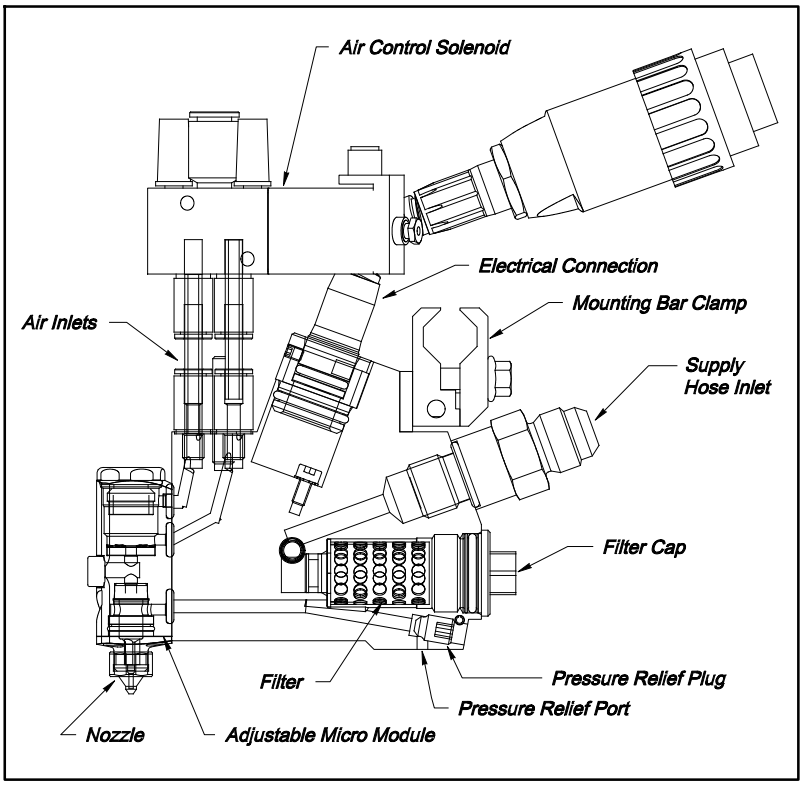
Each applicator features one or two Micro Optima modules mounted to a single service block. The module is “optimized” (self-cleaning). Its nozzle is integrated into the module, making it maintenance free. The Micro Optima module is designed for high speed/ high pressure (above 400 psi) applications where a sharp cutoff is necessary.

The module is opened and closed by air pressure. The rate of adhesive flow from the applicator is determined by the adhesive pressure applied by the ASU's pump, the size of the nozzle orifice and the characteristics of the adhesive.

The applicator is heated by replaceable cartridge heating elements which are controlled by an integrated RTD sensor and electronic control.

As seen in the illustration below, a module is mounted onto a service block. A piston inside the module is pneumatically triggered by a solenoid air valve, which allows adhesive to flow through a valve within the module.

The heated adhesive supply hose is connected at the rear of the service block. A variety of optional 45 and 90 degree fittings allows positioning flexibility. Adhesive flows from the hose into and through the channels within the block to the module. Air pressure opens the adhesive module, allowing adhesive to flow through the nozzle when the valve is open.



Operating air connections, from the solenoid valve, and electrical connections are made at the top of the service block.

The applicator is configured for ITW Dynatec's DynaControl or Dynamini controller. Both 120 and 240 volt configurations are available. Water-tight option is available.

Specifications

Environmental:

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)

Physical:

Dimensions . . . . . See dimensional layout on following page
Weight:
- with one module . . . . . 0.6 kg (1.32 lb.)
- with two modules . . . . . 0.95 kg (2.09 lb.)

Mounting . . . . . Integrated clamp-mount for 1/2" (12 to 13 mm) rod
Material . . . . . aluminum with stainless steel screws

Performance:

Temperature range . . . . . 38°C to 218°C (100°F to 425°F)
Warm-up time . . . . . 15 minutes for cold start/ 1 minute for module change only
Adhesive viscosity . . . . . 100 to 15000 mPa. sec. (100 to 15000 centipoise)
Cycle rate . . . . . 5000 cycles/ minute maximum
Adhesive pressure range . . . . . 68 bar maximum (1000 psi maximum)

Air Requirements:

Air pressure range . . . . . 2.1 to 6.2 bar (30 to 90 psi)

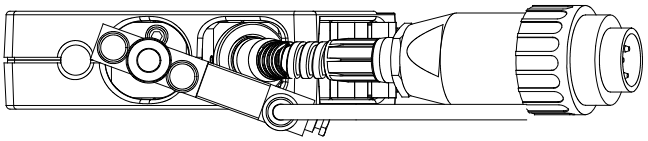
Electrical:

Supply voltage . . . . . 120 VAC or 240 VAC/ 1ph/ 50-60 Hz
Power requirements:
- 1-port 120VAC . . . . . 125 watts
- 2-port 120VAC . . . . . 200 watts
- 1-port 240VAC . . . . . 155 watts
- 2-port 240VAC . . . . . 200 watts

CE Mark . . . . . yes

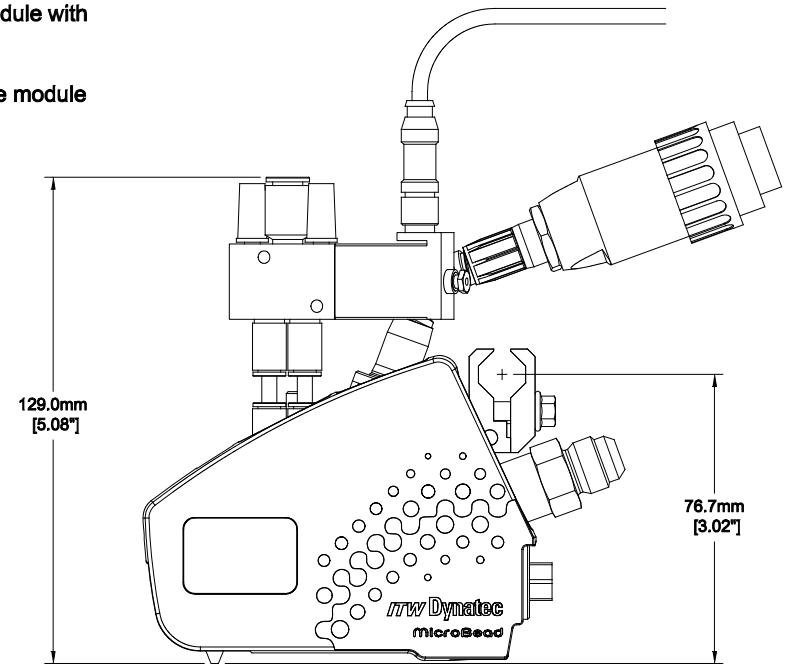
Dimensions

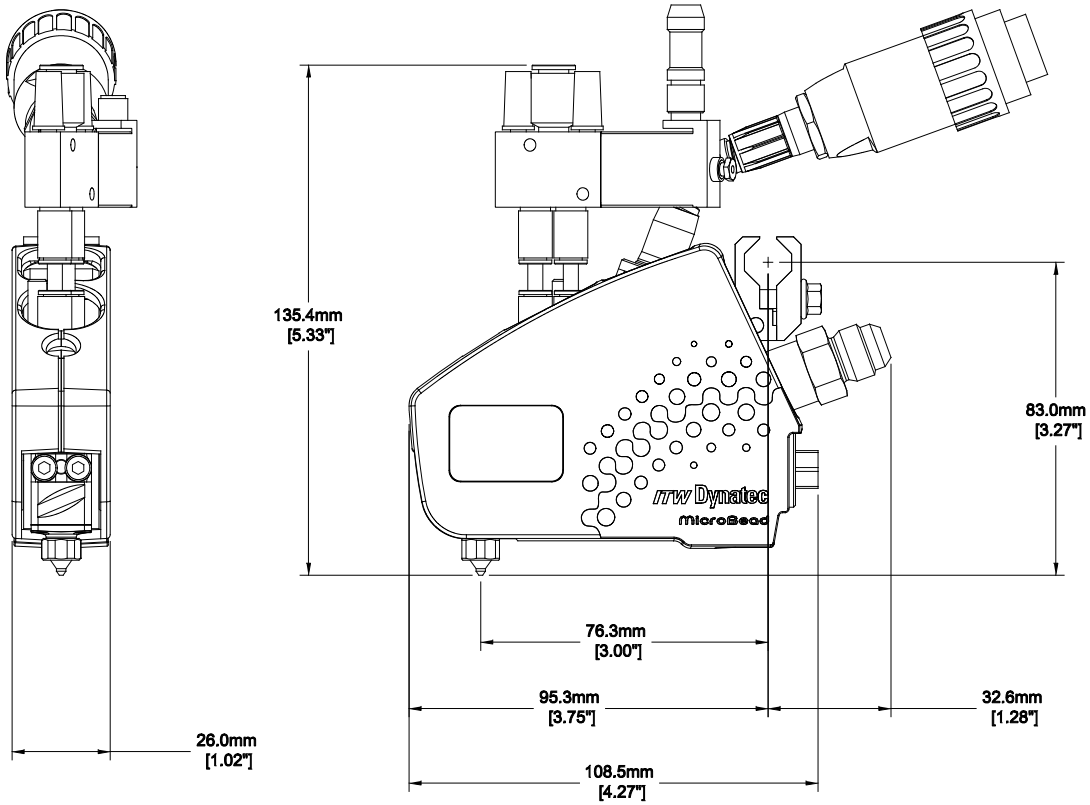
Single module (1-port) applicator assembly



Upper view - Applicator and Micro Optima Module with integrated nozzle

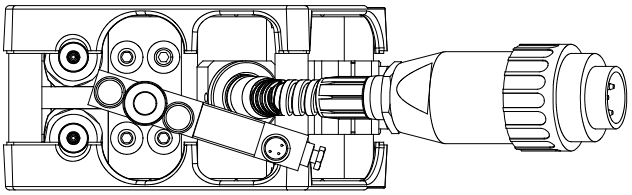
Lower view - Applicator and Micro Adjustable module with removable nozzle





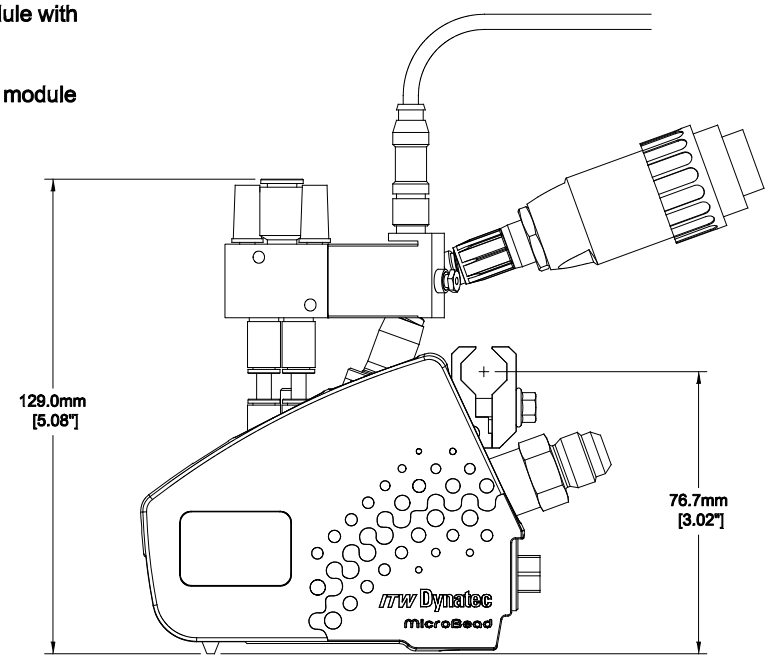
Dimensions

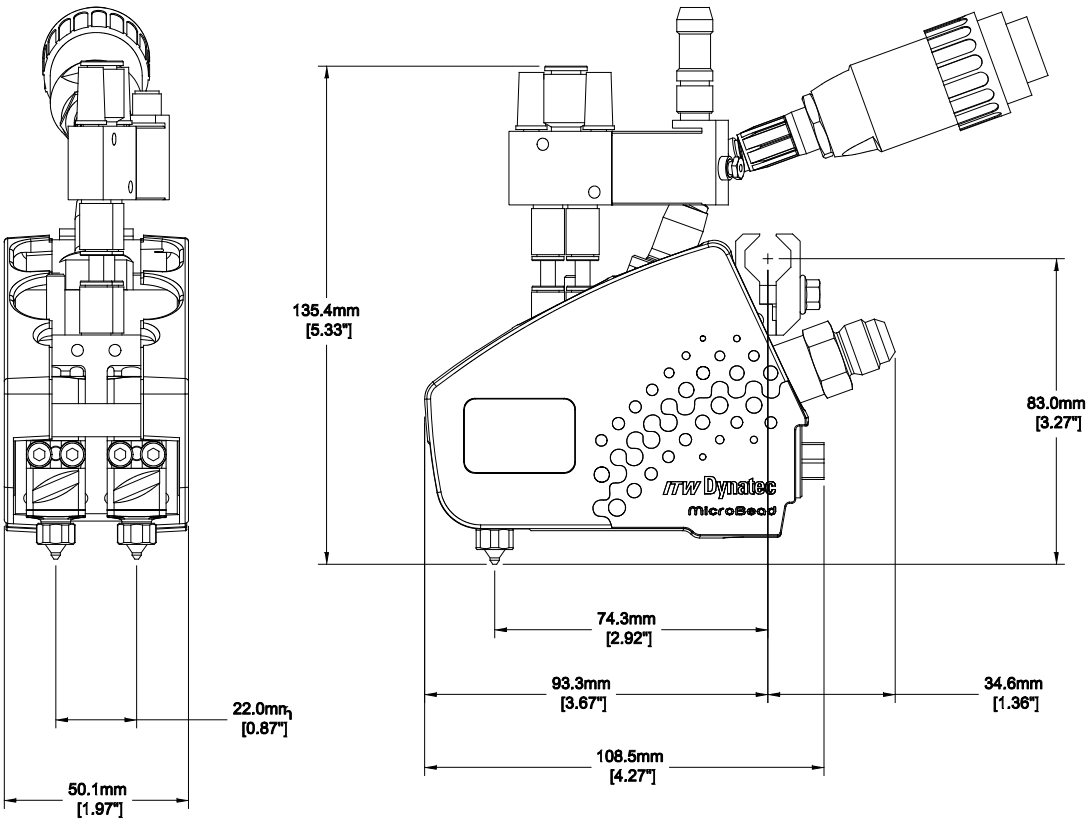
Two module (2-port) applicator assembly with standard mount



Upper view - Applicator and Micro Optima Module with integrated nozzle

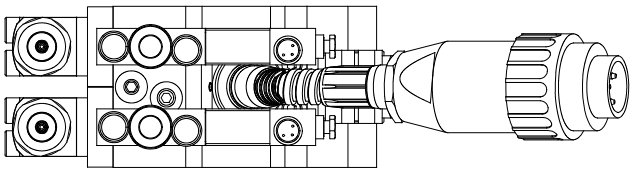
Lower view - Applicator and Micro Adjustable module with removable nozzle





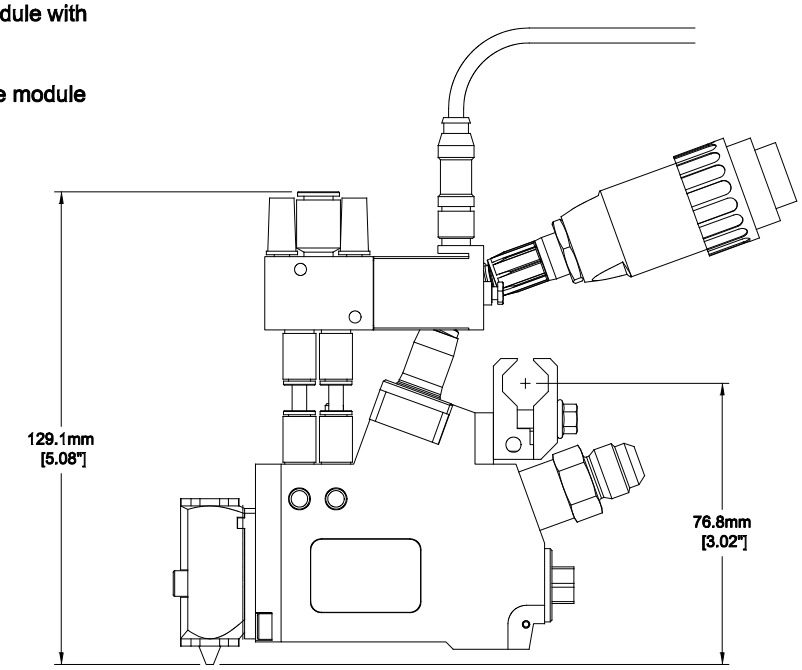
Dimensions

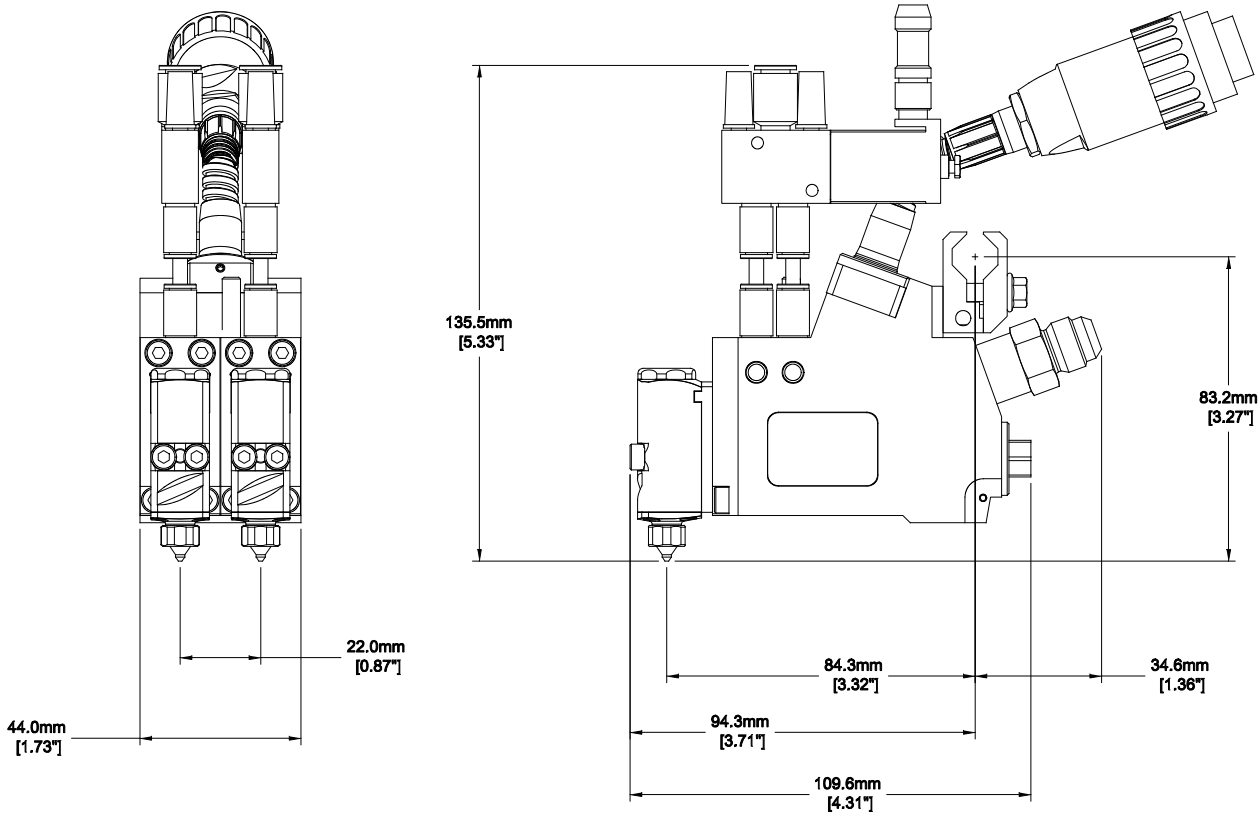
Two module (2-port) applicator assembly with pivot mount



Upper view - Applicator and Micro Optima Module with integrated nozzle

Lower view - Applicator and Micro Adjustable module with removable nozzle





Chapter 3
INSTALLATION & START UP

Note: Re-read Chapter 1 "Safety Precautions" before performing any installation or start-up procedures. All installation and start-up procedures must be performed by qualified, trained technicians.

Handling and Shipping

BF MicroBead applicator head assemblies are packaged within protective cushioning material in a fiber packing carton. This package may be shipped inside another carton along with other individual boxes containing components of the system.

Service Requirements

The applicator assembly consists of a service block assembly and a micro-module assembly.

Incoming electrical power and temperature control is supplied through the flexible cable exiting the adhesive supply hose cuff. The applicator has a circular, plastic connector which mates with the connector attached to this cable.

Incoming (operating) air is supplied to the solenoid valve provided as part of each MicroBead applicator. It must be clean and unlubricated. It must be separately regulated and maintained at a pressure between 4.8 and 6.2 bar (70 to 90 psi). Air lines to the solenoid valve should be 6mm OD, PTFE material. An airline adapter kit (PN 117706) is provided with each MicroBead applicator to enable the use of 1/4 inch (of PTFE, Nylon or PE material) in place of 6mm PTFE airline.

Installation Instructions

The ITW Dynatec applicator's service block has been tested at the factory and is ready for installation and operation.

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 the appendix of this manual.

Applicator control solenoid valves may be controlled by timers or limit switches which sense the position of the package or object to which adhesive is being applied. Switches should be mounted on moveable brackets to provide adjustment for proper location of adhesive application.

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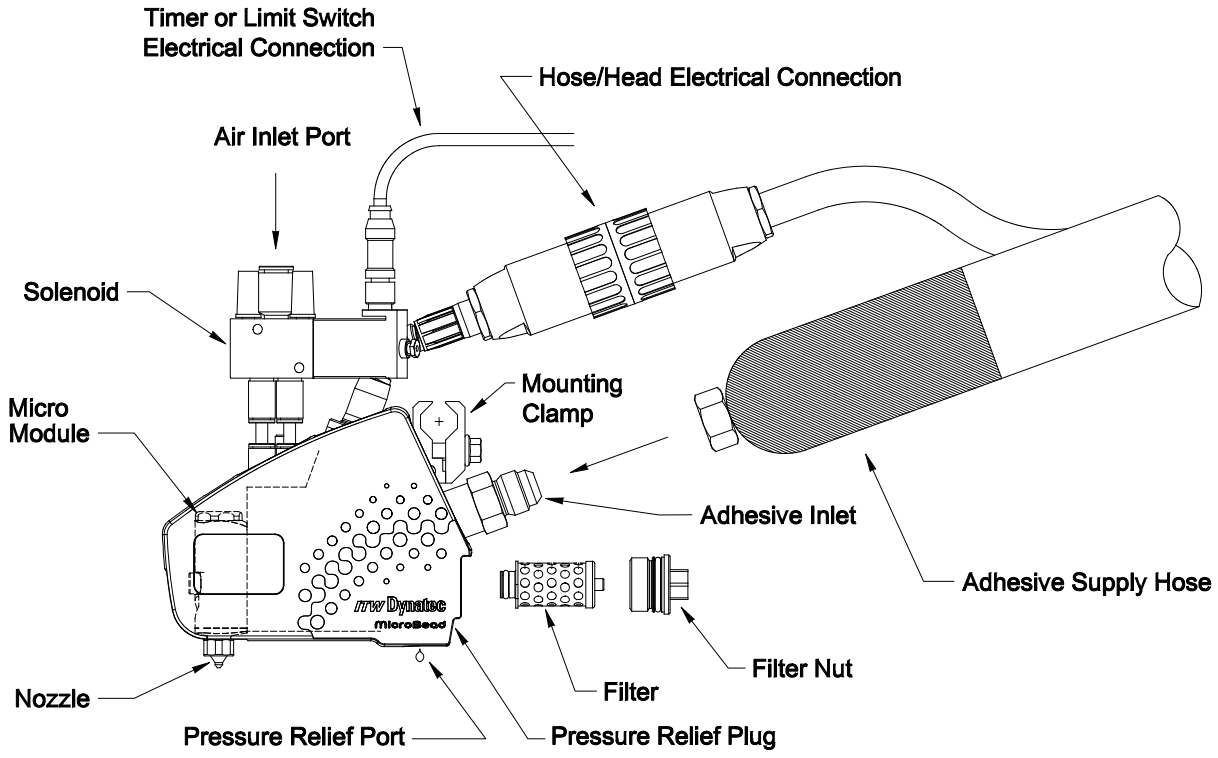


Installation Diagram

See the diagram above for location of the components referred to in the following section.

1. The applicator should be supported from brackets that permit lateral and vertical adjustments. Mount the applicator on a 12mm to 13mm (1/2 inch) rod or bracketry using the clamp provided. Allow access to the filter. Be sure that the module's “weep” holes are visible for periodic inspection.

2. 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 male fitting on the service block. When tightening the hose fitting, hold the hose cuff to prevent the hose core from rotating.

3. 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.

cont.

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.

4. It is advisable to check the temperature of the applicator. This can be done through the temperature readout of the adhesive supply unit. 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 (1 minute for module change) before-reading temperature.

5. Purge the applicator of air and test fluid. Turn the applicator ON electrically and pneumatically. Allow adhesive and applicator to warm up.

WARNING HIGH PRESSURE

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

WARNING

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

Place a heat resistant container under the module to collect the material that drains from the applicator. Manually open the solenoid air valve 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 fluid have drained and only adhesive flows from the module.

6. Orient the nozzle tip so it points toward the substrate.

Chapter 4
MAINTENANCE

Note: Re-read Chapter 1 "Safety Precautions" before performing any maintenance procedures. All maintenance procedures must be performed by qualified, trained technicians.

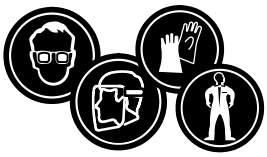
The BF MicroBead Applicator requires no regular maintenance. Wipe the applicator clean of adhesive with a clean cloth while still hot at the end of each shift. Inspect the applicator periodically as outlined in the following table.

Maintenance Schedule

ITEM	CHECK	FREQUENCY	ACTION
Adhesive supply hose fitting connection	Inspect for leaks	As required	Tighten if loose
Air supply connections	Inspect for leaks	As required	Tighten if loose
Module weep holes	Inspect for adhesive	As required	Replace module
Nozzle performance	Inspect all nozzles for proper operation	As required	Replace module
Built-in filter	Inspect for cleanliness	Monthly or as required by use	Replace filter element

Adhesive Pressure Relief

WARNING HIGH PRESSURE



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

WARNING

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

The applicator should be at operating temperature. Turn the ASU's pump/ motor OFF.

1. Place a heat-resistant container under the module.

2. With a 3mm hex key (allen wrench), slowly loosen the screw recessed under the service body (do not try to remove it). Stand clear since there may be residual adhesive pressure in the applicator.

Replacement of the Built-in Filter

Observe the warning and conditions for "Adhesive Pressure Relief", see above.

The applicator should be at operating temperature. Turn the ASU's pump/ motor OFF.

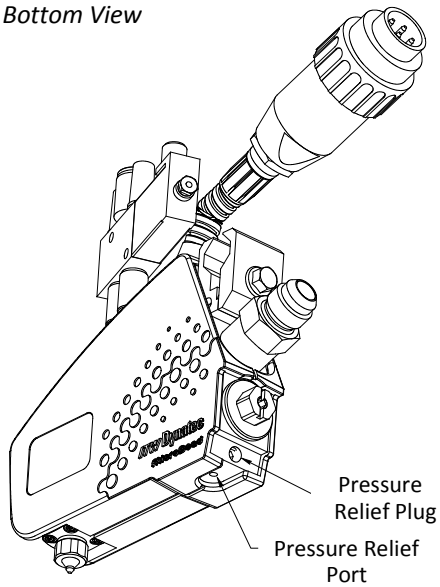
1. Relieve adhesive pressure as described above.

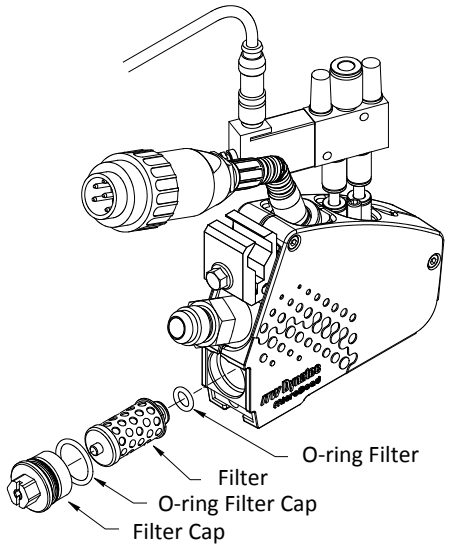
2. Remove the filter cap with a 10mm wrench. Remove and discard the old filter element. Install new o-rings on the filter and filter cap. Assemble the new filter to the filter cap.

3. Re-install the filter cap slowly, taking care to seat the cap o-ring without pinching it. Torque the filter cap to 5.9 ft/lb (8Nm).

CAUTION: Apply a coat of anti-seize compound onto the threads of the filter cap before re-installing it.

Bottom View





Replacement of the Module

Observe the warning and conditions for "Adhesive Pressure Relief" on the preceding page before working on modules.

The applicator should be at operating temperature. Turn the ASU's pump/ motor OFF.

1. Place a heat-resistant container under the module.

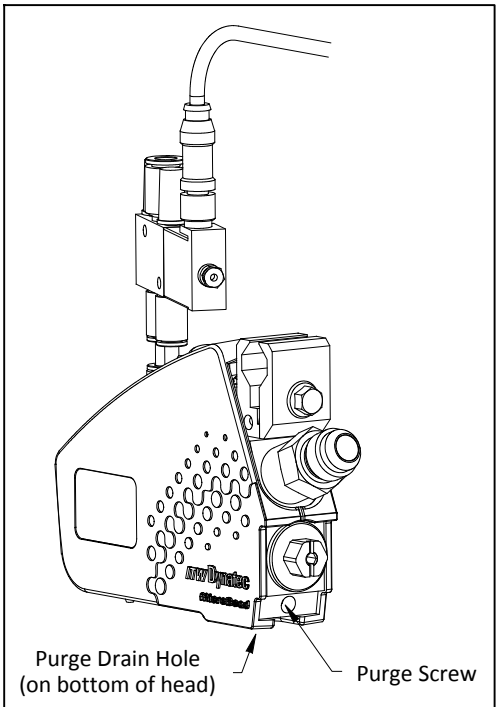
2. With a 3mm hex key (allen wrench), slowly loosen the purge screw until adhesive flows from the drain located on the bottom of the applicator. Do not try to remove the purge screw. Stand clear since there may be residual adhesive pressure in the applicator.

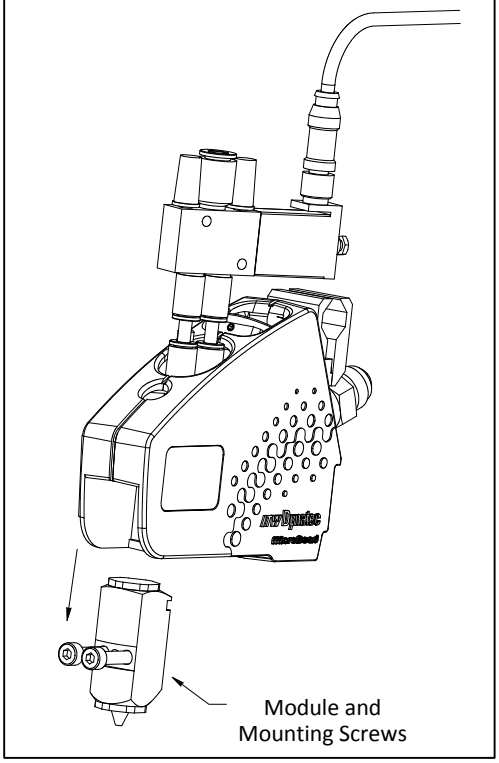
3. Relieve air pressure at the solenoid.

4. Using a 3mm hex key (allen wrench), loosen the two module screws until the module can be removed in a vertical (downward) direction.

5. Install the new module. Torque the two module mounting screws to 2.21 ft/lbs (3 Nm). Tighten the purge screw to 2.21 ft/lbs (3 Nm) also.

CAUTION: Apply a coat of anti-seize compound onto the threads of the mounting screws before installing the new module.

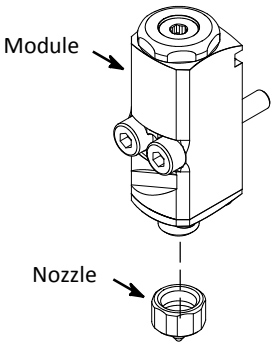




Nozzle Replacement on the PN 7050 Adjustable Micro Module

WARNING HOT SURFACE

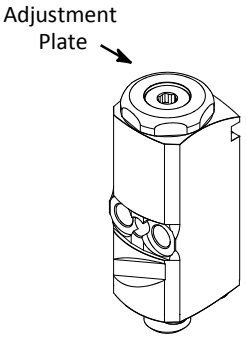
The applicator will still be hot when this procedure is being performed. Use insulated gloves and protective clothing when removing the nozzle.



1. Bring applicator up to operating temperature.
2. Using a 10mm hex wrench, loosen the nozzle and remove.
3. Install the new nozzle. Do not over tighten.

Stroke Limit Adjustment of the PN 7050 Adjustable Micro Module

This procedure can be performed only on the optional adjustable micro module, which can be identified by its adjustment plate at the top of the module.



1. Bring applicator up to operating temperature.
2. Turn the adjustment plate clockwise until it bottoms lightly.

CAUTION: Tightening the adjustment plate to completely shut OFF the nozzle will cause damage to the applicator.

3. Back off the adjustment plate one and one-half to two turns.

Chapter 5
TROUBLESHOOTING & SERVICE

Note: Re-read Chapter 1 Safety Precautions" before performing any troubleshooting or repair procedures. All troubleshooting or repair procedures must be performed by qualified, trained technicians.

In General

If failure occurs, first check all the electrical and pneumatic connections. Verify that the main power switch is ON at the ASU. Verify that the pump is ON and the application heads have sufficient air pressure. Verify that the temperature controller is in operation and that the setpoints are correct for the application. Check to see if all components are heating properly.

Troubleshooting Guide

Problem	Possible Cause	Solution
Module does not open	1. Temperature adjustment of head is too low.	1. Check temperature adjustment.
	2. Inoperative solenoid valve.	2. Push the solenoid's manual button. If it opens, the problem is electrical.
No adhesive flowing out of module	1. Filter element is dirty.	1. Replace filter, see instructions in Ch. 4 Maintenance.
	2. Module seals (o-rings) are inoperative.	2. Replace module.
	3. ASU's hopper is empty.	3. Re-fill hopper.
	4. Adhesive is too cold.	4. Adjust temperature, see ASU manual.
Hot melt is coming out of the module's "weep" holes	1. Module seals are damaged.	1. Replace module, see instructions in this chapter.

cont.

Problem	Possible Cause	Solution
Applicator does not reach operating temperature	1. Hopper temperature set-point is too low.	1. Change setpoint, see ASU manual.
	2. Inoperative heater cartridge.	2. Check/ replace heater cartridge, see instructions in this chapter.
	3. Inoperative temperature sensor.	3. Check/ replace sensor, see instructions in this chapter.
Applicator is too hot	1. Applicator temperature setpoint is too high.	1. Change setpoint, see ASU manual.
	2. Inoperative temperature sensor.	2. Check/ replace sensor, see instructions in this chapter.
Air escapes from module	1. Piston seal failure.	1. Replace module.
	2. O-rings located between module and service block are out of position or damaged.	2. Remove module from block (see instructions in this chapter: "Replacement of Module") and replace o-rings.
Application pattern is erratic	1. Adhesive pressure is too low.	1. a. *For units without speed control:* increase adhesive pressure at ASU. b. *For units with speed control (tach follower):* adjust pump speed control.
	2. Adjust pattern controller.	2. See pattern controller manual for proper adjustment.

Replacement of the Module

Turn the ASU OFF. Turn all adhesive and air pressure OFF.

WARNING HIGH PRESSURE

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

1. Place a heat-resistant container under the manifold.

2. With a 3mm hex key (allen wrench), slowly loosen loosen the screw recessed under the service body (do not try to remove it). Allow the adhesive to flow out of applicator. Be sure to stand clear since there may be residual adhesive pressure in the applicator.

3. Verify that there is no internal pressure.

4. Remove the module from the service block by removing the two 4mm socket head cap screws on the front of the module with a 3mm hex key screwdriver (allen wrench). Make sure that the three old o-rings located on the back of the module are also removed (the new module will include three new o-rings).

5. Mount the new module using a 3mm hex key on the socket head cap screws.

Testing of Heater Cartridge or Temperature Sensor

1. Turn the ASU OFF and make sure all adhesive air pressure and the pump are turned OFF.

2. Unplug the electrical cable from the adhesive supply hose to expose the pins in the cable.

Note: Pin connectors and pinout numbers vary depending on the control scheme of the applicator. See Chapter 8 for a pinout diagram.

Testing Resistance of the Heater Cartridge

a. Heater resistance is measured at room temperature. The following values do not apply to new heater cartridges that have not been raised to operating temperature.

Heater Voltage	Heater Wattage	Resistance Range (Ohms)	Heater Voltage	Heater Wattage	Resistance Range (Ohms)
120VAC	125W	122.9-106.2	120VAC	200W	83.6-61.9
240VAC	155W	431.5-319.4	240VAC	200W	334.4-247.6

b. *For DynaControl or Dynamini:* With an ohmmeter, contact pins 7 and 8 and measure heater resistance.

c. A heater cartridge that tests outside of the above noted range must be replaced. Replacement instructions follow in this chapter.

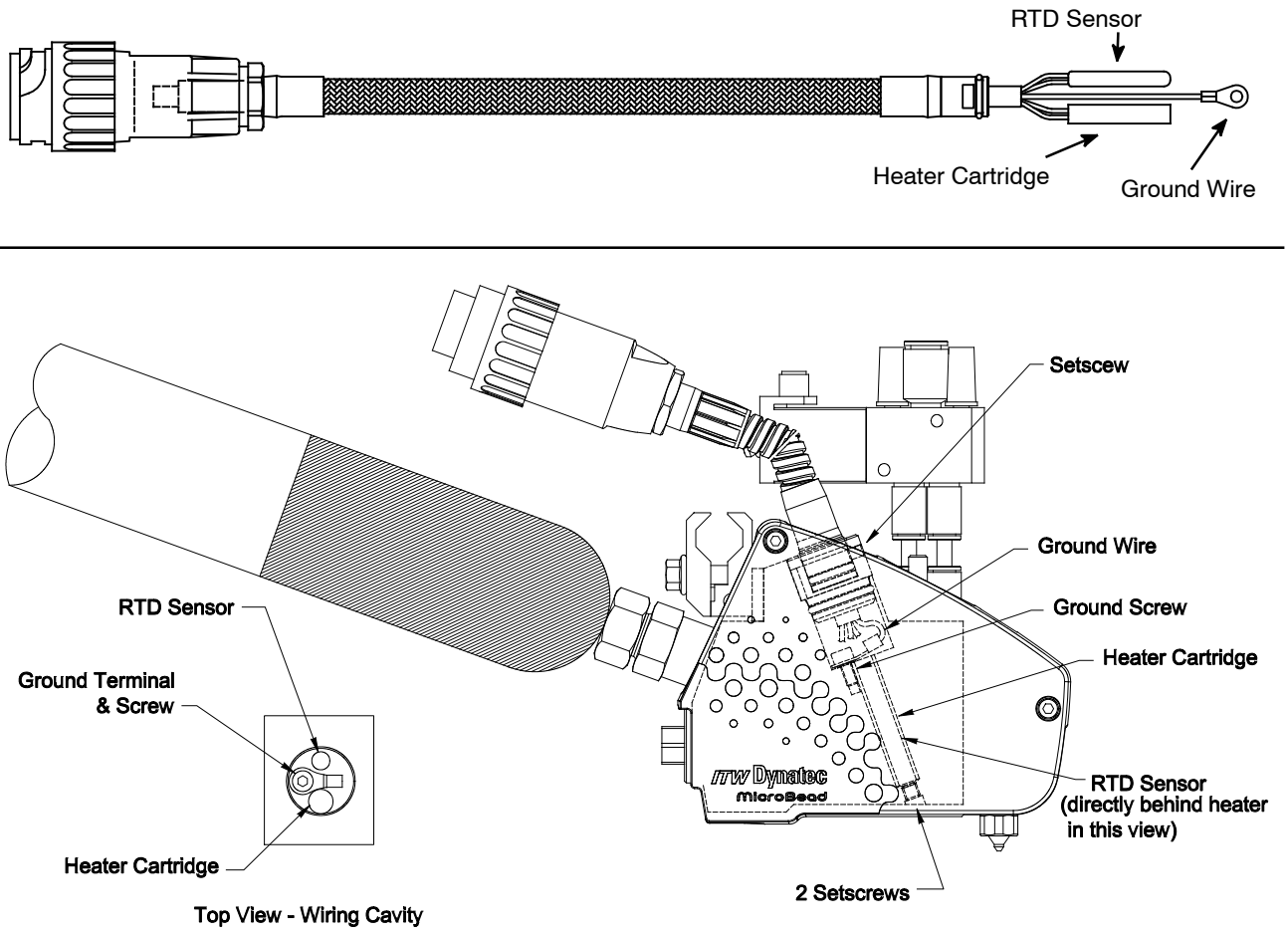
Testing Resistance of the RTD Temperature Sensor

a. The resistance value (Ohms) of your temperature sensor depends on the temperature of the sensor at the time it is being tested. At 25°C (77°F), the resistance of a PT 100 (Platinum) sensor should be 110 Ohms.

b. *For DynaControl/Dynamini:* With an ohmmeter, contact pins 5 and 6 and measure sensor resistance.

c. A tolerance range of + 10% is allowed. A sensor that tests outside of this range must be replaced. Replacement instructions follow in this chapter.

Replacement of Heater Cartridge or Sensor



Heater/ RTD Sensor Replacement Diagram

1. Disconnect power to the ASU and make sure all adhesive air pressure and pumps are turned OFF.

2. Loosen the two retaining screws in the cable anchor and withdraw anchor from the service block body.

3. Disconnect the ground wire screw.

4. Remove the two set screws in the bottom of the service body. Note: It may be necessary to apply heat in order to break the thread sealant.

5. Pull the cable assembly out of the service block.

6. Loosen the set screw in the cable anchor and remove the cable assembly from the anchor.

Re-assembly

1. Re-assemble the cable assembly to the cable anchor. Re-attach the ground wire to the service block body. Insert the heater and sensor into their respective holes in the service block body and carefully insert the anchor and cable assembly into the body.

2. Tighten the two cable anchor retaining screws.

3. Re-assemble and tighten the two set screws in the bottom of the service body. If a water-tight seal is desired, re-apply thread sealant (Loctite 242 or equal) to the set screws.

Re-Assembly Procedures and General Cautions

Unless noted, head 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 108689).

CAUTION: *TAPERED PIPE THREADS* are found on air line 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.

CAUTION: *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.

CAUTION: *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.

Chapter 6
COMPONENT ILLUSTRATIONS & BILLS OF MATERIAL

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.

The following pages provide exploded-view reference drawings to assist users of the applicator to identify parts and aid in servicing the equipment.

BF MicroBead Applicator Model Designation Guide

MB XXX XX X X X X X X X

MB 201 M1 S 1 C A D 1 S

BF MicroBead Applicator

Service Block Length/ # of Modules:
201 = 20mm/ 1 module
442 = 44mm/ 2 modules

Module Type:
M = Micro Optima

Module Size/ Reference #:
1 = 7020/ #1
2 = 7021/ #2
3 = 7022/ #3
4 = 7023/ #4
5 = 7024/ #5
6 = 7025/ #6
7 = 7026/ #7
8 = 7027/ #8
9 = 7028/ #9
0 = 7029/ #10
T = 7050/ Adjustable Module
Z = No Module

Module Mounting:
S = Standard
P = Pivot

Cable Type:
S = Standard (DCL & N available)
W = Water Resistant (DCL & N Upgrade)

Applicator Voltage:
1 = 120 AC
2 = 240 AC

Control Scheme:
D = DynaControl (PT100 RTD)
N = N Upgrade (Nickel RTD)

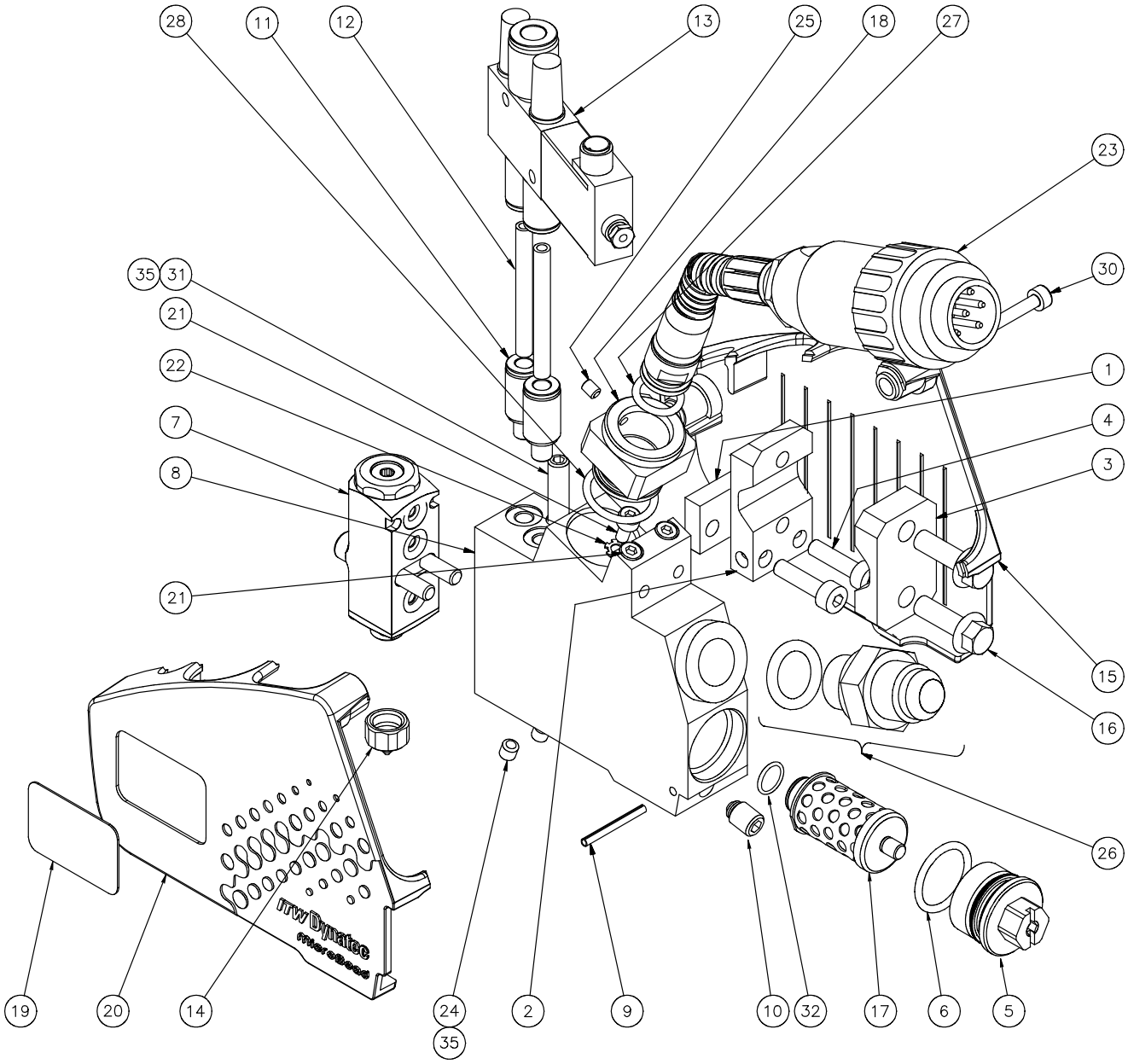
Solenoid Control:
A = Flying leads
B = DPC/ TPC controller
C = DY2008 controller

Program Air:
C = Single Control (1 solenoid)
S = Separate Control (2 solenoids)

Filtration:
1 = 100 mesh
2 = 150 mesh
3 = 200 mesh

Bill of Materials for BF MicroBead Applicator with One Module

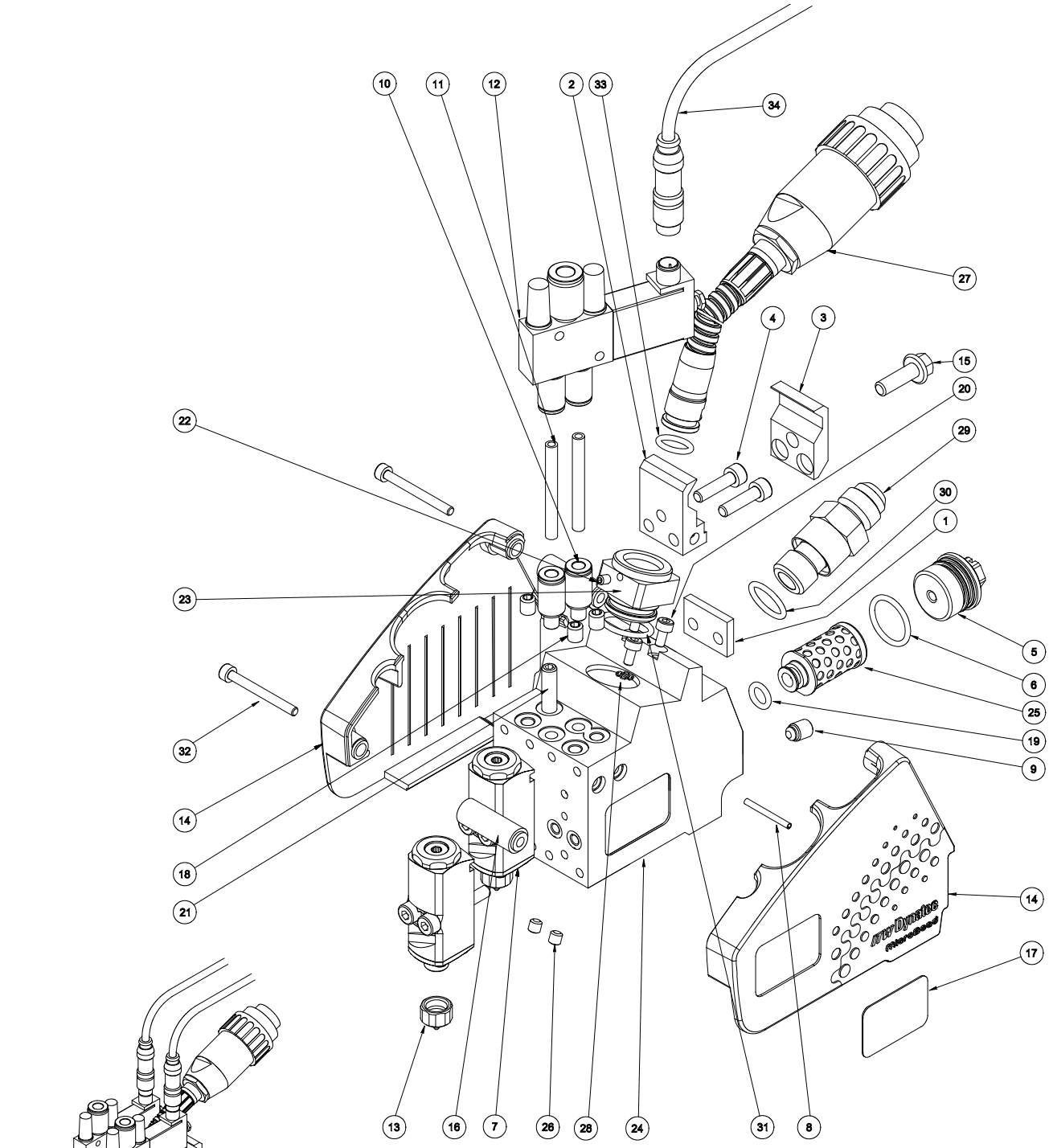
Item	*PN*	*Qty.*		*Description*
37	103053	1	EA	TAG, OIL FREE (NOT SHOWN)
36	100978	1	EA	TAG, QAP (NOT SHOWN)
35	117819	A/N	EA	THREADLOCKER ADH/SEALANT, GREEN
34	107324	A/N	EA	ANTI-SEIZE COMPOUND
33	001U002	A/N	EA	SILICONE LUBRICANT, DOW 112
32	N00177	1	EA	O-RING, -010
31	117326	1	EA	SETSCREW, M5x0.8 x 25, FLAT POINT
30	103537	2	EA	SCREW, SHC, M3x0.5 x 16
29				
28	N00182	1	EA	O-RING, -015
27	N00179	1	EA	O-RING, -012
26	101624	1	EA	FITTING, MALE ADAPTER, G 1/4 x #06 SAE 37°
25	106857	1	EA	SETSCREW, M3x0.5 x 5, FLAT POINT
24	109746	2	EA	SETSCREW, M4x0.7 x 4, FLAT POINT
23	SEE SALES ORDER	REF	EA	CONTROL CABLE ASSY
22	108362	1	EA	LOCKWASHER, EXT TOOTH, M3
21	103405	3	EA	SCREW, SHC, M3x0.5 x 6, ZP
20	117031	1	EA	COVER, RIGHT
19	117033	1	EA	DATA PLATE
18	117011	1	EA	ANCHOR, CABLE
17	SEE SALES ORDER	REF	EA	FILTER CARTRIDGE
16	117060	2	EA	SCREW, HEX FLANGE HD, M5x0.8 x 16
15	117030	1	EA	COVER, LEFT
14	SEE SALES ORDER	REF	EA	NOZZLE (USED ONLY WITH MODULE 7050)
13	117074	1	EA	SOLENOID VALVE ASSY
12	117061	2	EA	TUBE, AIR
11	117076	2	EA	FITTING, PNEUMATIC, M5 x 4MM TUBE
10	109882	1	EA	PURGE SCREW
9	117068	1	EA	SPRING PIN, 2 x 20MM
8	117009	1	EA	SERVICE BLOCK, 1 PORT
7	SEE SALES ORDER	REF	EA	MODULE
6	N00183	1	EA	O-RING, -016
5	117012	1	EA	FILTER PLUG
4	117014	2	EA	SCREW, SHC, M4x0.7 x 18
3	118572	1	EA	PRESSURE PLATE, BAR CLAMP
2	118571	1	EA	BASE, BAR CLAMP
1	117015	1	EA	INSULATING PLATE



Component Illustration for BF MicroBead Applicator with One Module

Bill of Materials for BF MicroBead Applicator with Two Modules, Single & Separate Control, Standard Mount

Item	*PN*	*Description*	*Qty.* Single Control	Separate Control
1	117015	Insulating plate	1	1
2	117016	Bracket ground plate	1	1
3	117017	Bracket pressure plate	1	1
4	117014	Hexagon socket head cap screw, M4x0.7 x 18	2	2
5	117012	Filter plug	1	1
6	N00183	O–Ring –016	1	1
7	See ordering guide	Application module	2	2
8	117068	Spring pin	1	1
9	109882	Purge screw	1	1
10	117076	Pneumatic fitting M5	2	4
11	117061	PTFE tube	2	4
12	117074	Solenoid assembly	1	2
13	See ordering guide	Nozzle (Used with Module 7050 only)	2	2
14	117637	Cover Kit (includes item 16 spacers & item 32 screws)	1	1
15	117060	Hexagon screw with flange M5x16	1	1
16	117034	Cover spacer	2	2
17	117033	Label	1	1
18	112716	Flat point setscrew, SST M5x6	3	1
19	N00177	O–Ring –010	1	1
20	103405	Hexagon socket head cap screw M3x0.5 x 6	3	3
21	117326	Set screw, M5 x 25, Flat point	1	6
22	106857	Flatpoint set screw M3x5	1	1
23	117011	Anchor cable	1	1
24	117010	Service block two port, common program	1	–
	117560	Service block two port, individual program	–	1
25	See ordering guide	Filter cartridge	1	1
26	109746	Flatpoint set screw M4x4	2	2
27	117032	Cordset, 120VAC, Dynacontrol, Water Resistant	1	1
	117035	Cordset, 240VAC, Dynacontrol , Water Resistant	1	1
	117036	Cordset, 120VAC, Ni120, Standard	1	1
	117040	Cordset, 240VAC, Ni120, Standard	1	1
	117576	Cordset, 120VAC, Ni120, Water Resistant	1	1
	117574	Cordset, 240VAC, Ni120, Water Resistant	1	1
	150029	**Cordset, 240VAC, Dynacontrol, Standard (1 port)**	**1**	**1**
	150030	**Cordset, 240VAC, Dynacontrol, Standard (2 port)**	**1**	**1**
	150031	**Cordset, 120VAC, Dynacontrol, Standard (1 port)**	**1**	**1**
	150032	**Cordset, 120VAC, Dynacontrol, Standard (2 port)**	**1**	**1**
28	108362	Lock Washer, External Tooth, M3	1	1
29	117059	Hose connection fitting	1	1
30	N00181	O–Ring –014	1	1
31	N00182	O–Ring –015	1	1
32	117063	Hexagon socket head cap screw M3x40	2	2
33	N00179	O–Ring –012	1	1
34	117532	Solenoid Cable, Flying leads	1	2
	117549	Solenoid Cable, DPC/TPC	1	2
	117550	Solenoid Cable, DY2008	1	2

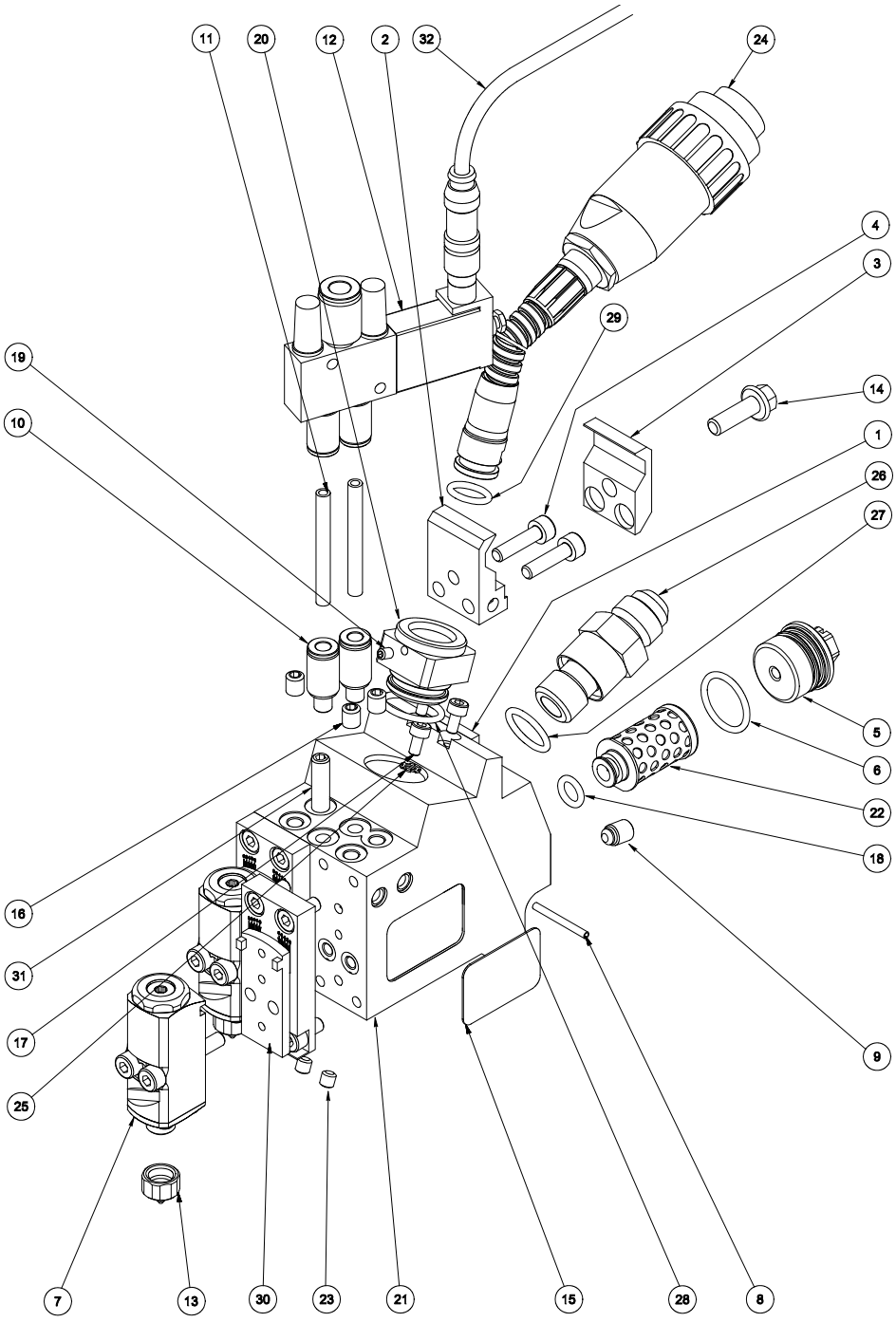


MicroBead Applicator with two modules & single control

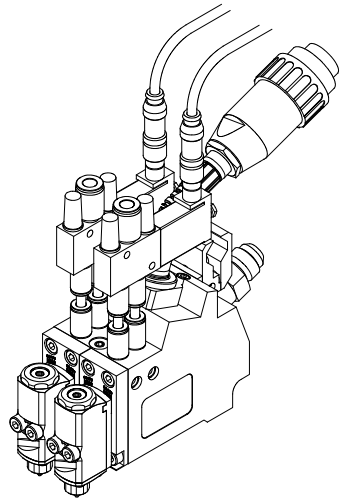
MicroBead Applicator with two modules & separate control

Bill of Materials for BF MicroBead Applicator with Two Modules, Single & Separate Control, Pivot Mount

Item	*PN*	*Description*	*Qty.*	
			Single Control	Separate Control
1	117015	Insulating plate	1	1
2	117016	Bracket ground plate	1	1
3	117017	Bracket pressure plate	1	1
4	117014	Hexagon socket head cap screw, M4x0.7 x 18	2	2
5	117012	Filter plug	1	1
6	N00183	O–Ring –016	1	1
7	See ordering guide	Application module	2	2
8	117068	Spring pin	1	1
9	109882	Purge screw	1	1
10	117076	Pneumatic fitting M5	2	4
11	117061	PTFE tube	2	4
12	117074	Solenoid Assembly	1	2
13	See ordering guide	Nozzle (Used only with Module 7050)	2	2
14	117060	Hexagon screw with flange M5x16	1	1
15	117033	Label	1	1
16	112716	Flat point setscrew, SST M5x6	3	1
17	103405	Hexagon socket head cap screw M3x0.5 x 6	3	3
18	N00177	O–Ring –010	1	1
19	106857	Flatpoint set screw M3x5	1	1
20	117011	Anchor cable	1	1
21	117010	Service block two port, common program	1	–
	117560	Service block two port, individual program	–	1
22	See ordering guide	Filter cartridge	1	1
23	109746	Flatpoint set screw M4x4	2	2
24	117032	Cordset, 120VAC, Dynacontrol, Water Resistant	1	1
	117035	Cordset, 240VAC, Dynacontrol, Water Resistant	1	1
	117036	Cordset, 120VAC, Ni120, Standard	1	1
	117040	Cordset, 240VAC, Ni120, Standard	1	1
	117576	Cordset, 120VAC, Ni120, Water Resistant	1	1
	117574	Cordset, 240VAC, Ni120, Water Resistant	1	1
	150029	Cordset, 240VAC, Dynacontrol, Standard (1 port)	1	1
	150030	Cordset, 240VAC, Dynacontrol, Standard (2 port)	1	1
	150031	Cordset, 120VAC, Dynacontrol, Standard (1 port)	1	1
	150032	Cordset, 120VAC, Dynacontrol, Standard (2 port)	1	1
25	108362	Lock Washer, External Tooth, M3	1	1
26	117059	Hose connection fitting	1	1
27	N00181	O–Ring –014	1	1
28	N00182	O–Ring –015	1	1
29	N00179	O–Ring –012	1	1
30	117065	Pivot kit	2	2
31	117326	Set screw, M5x25, Flat point	1	1
32	117532	Solenoid Cable, Flying leads	1	1
	117549	Solenoid Cable, DPC/TPC	1	1
	117550	Solenoid Cable, DY2008	1	1

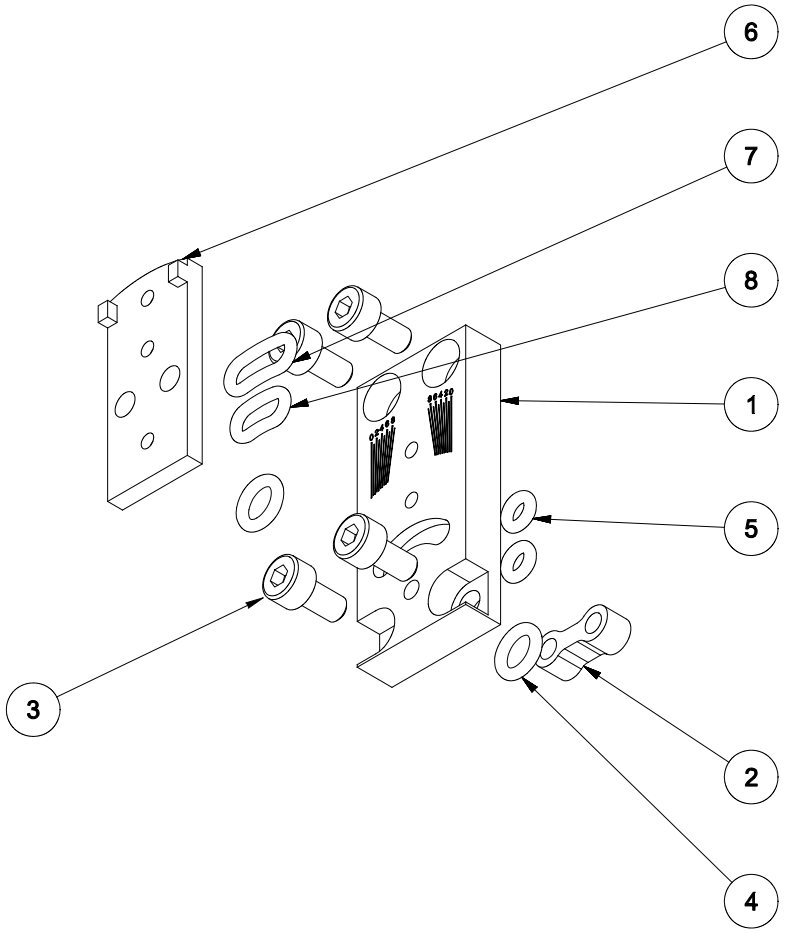


MicroBead Applicator with two Modules & Single Control, Pivot Mount



MicroBead Applicator with two Modules
& Separate Control, Pivot Mount

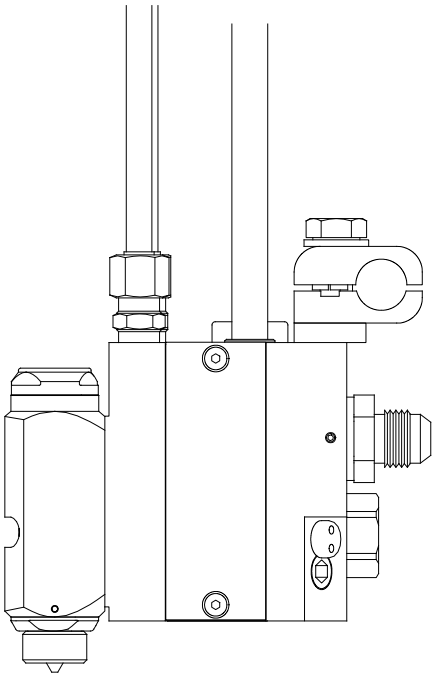
PN 117065 Pivot Mount Kit



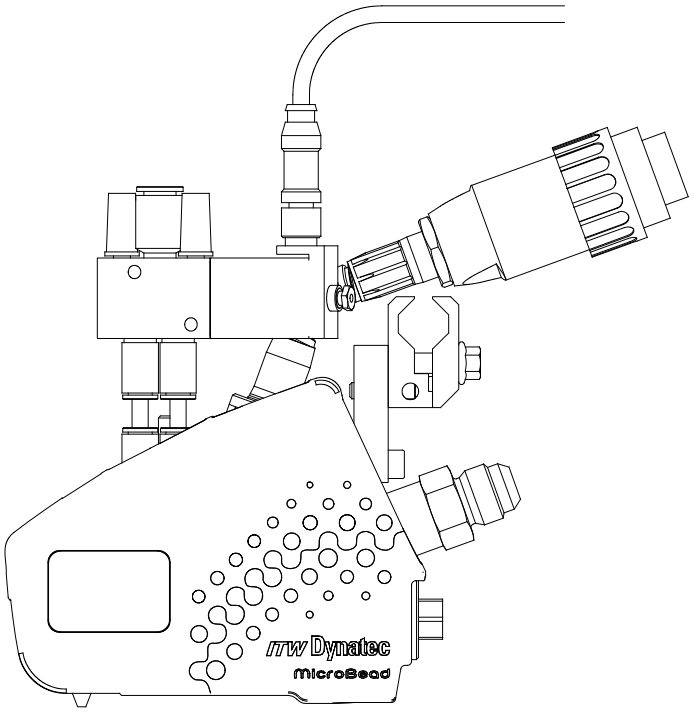
Item	*PN*	*Description*	*Qty.*
1	117018	Pivot adapter plate	1
2	117019	Slot nut	1
3	106338	Hexagon socket head cap screw M4x8	4
4	N00175	O-ring -008	2
5	N00173	O-ring -007	2
6	117071	Adapter plate	1
7	N00178	O-ring -011	1
8	N00177	O-ring -010	1

PN 117533 Optional Mod-Plus BF Adapter Plate Kit

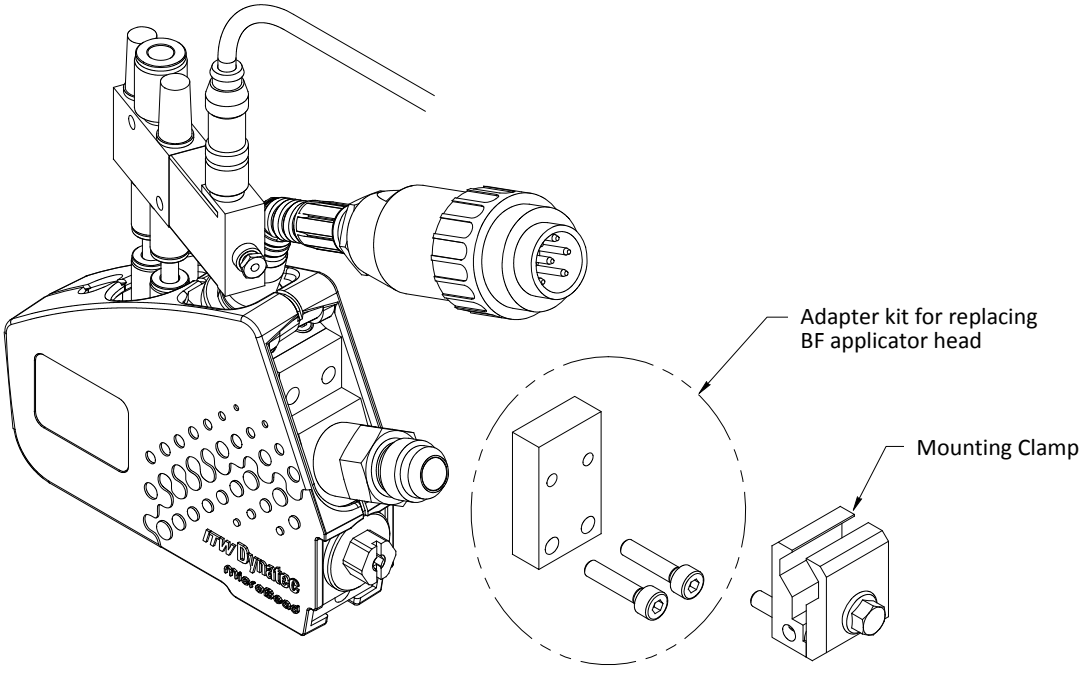
The Kit facilitates replacement of a Mod-Plus BF applicator with a BF MicroBead applicator, allowing identical nozzle tip placement.



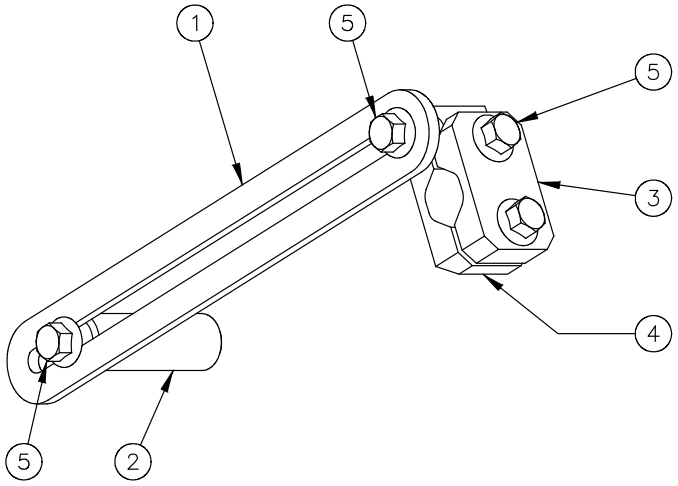
Mod-Plus BF Applicator profile



BF MicroBead Applicator profile



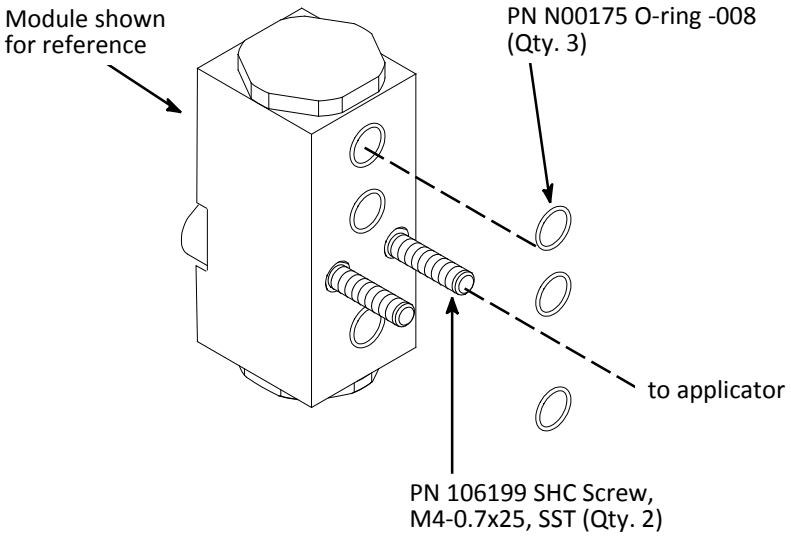
PN 117064 Optional Universal Mounting Bracket Assembly



Item	*PN*	*Qty.*		*Description*
5	117060	4	EA	SCREW, HHC W/ FLANGE, M5x0.8 x 16
4	118571	1	EA	BASE PLATE, BAR CLAMP
3	118572	1	EA	PRESSURE PLATE, BAR CLAMP
2	117028	1	EA	STUD, FLEX MOUNT
1	117027	1	EA	ARM, FLEX MOUNT

Module Mounting Hardware

Note: O-rings and Screws are included with the purchase of module(s).



Chapter 7
ORDERING GUIDES

Micro Optima Modules

Modules are listed in order of increasing adhesive flow. The diameter of the module orifice is not shown because this is not the only flow control variable incorporated into module design. For assistance in module selection, contact your ITW Dynatec representative.

Module Part Number	Reference #	Module Part Number	Reference #
7020	No. 1	7025	No. 6
7021	No. 2	7026	No. 7
7022	No. 3	7027	No. 8
7023	No. 4	7028	No. 9
7024	No. 5	7029	No. 10

Micro Adjustable Module

PN 7050 Adjustable Micro module with interchangeable nozzles (see pg. 7-2 for complete list).

Filters

The standard filter for the Micro Optima is the 200 mesh filter.

Filter Kits with O-rings

The following Filter Kits contain a PN N00177 -010 o-ring and a PN N00183 -016 o-ring in addition to a MicroBead filter.

Kit PN 117021 includes 100 mesh filter
Kit PN 117023 includes 150 mesh filter
Kit PN 117025 includes 200 mesh filter

Filter Kits with O-rings and a Filter Plug

The following Filter Kits contain a PN 117012 Filter Plug, a PN N00177 -010 o-ring and a PN N00183 -016 o-ring in addition to a MicroBead filter.

Kit PN 117078 includes 100 mesh filter
Kit PN 117079 includes 150 mesh filter
Kit PN 117080 includes 200 mesh filter

Nozzles

Note: all of the following nozzles are for the PN 7050 module only

Single-Orifice Nozzles, straight-thru

Part Number	Description
MM2501	Nozzle, .008 ORF,.050BRL,SS
MM2503	Nozzle, .010 ORF,.050BRL,SS
MM2504	Nozzle, .012 ORF,.050BRL,SS
MM2505	Nozzle, .014 ORF,.050BRL,SS
MM2507	Nozzle, .016 ORF,.050BRL,SS
MM2508	Nozzle, .018 ORF,.050BRL,SS

Single-Orifice Nozzles, straight-thru

Part Number	Description
MM2509	Nozzle, .020 ORF,.050BRL,SS
MM2511	Nozzle, .024 ORF,.050BRL,SS
MM2513	Nozzle, .028 ORF,.050BRL,SS
MM2514	Nozzle, .030 ORF,.050BRL,SS
MM2515	Nozzle, .032 ORF,.050BRL,SS

Single-Orifice 90 Degree Nozzles

Part Number	Description
MM1510	Nozzle, .008 x 90 DEG
MM3904	Nozzle, .012 x 90 DEG
MM3906	Nozzle, .016 x 90 DEG
MM1518	Nozzle, .018 x 90 DEG

Single-Orifice 90 Degree Nozzles

Part Number	Description
MM3907	Nozzle, .020 x 90 DEG
MM3909	Nozzle, .024 x 90 DEG
MM3908	Nozzle, .028 x 90 DEG
MM3900	Nozzle, .039 x 90 DEG

Dual-Orifice Nozzles, straight-thru

Part Number	Description
MM1194	Nozzle, 2/O, .012 X 17 DEG.
MM1196	Nozzle, 2/O, .016 X 17 DEG.
MM1198	Nozzle, 2/O, .020 X 17 DEG.
MM1199	Nozzle, 2/O, .028 X 17 DEG.
MM1152	Nozzle, 2/O, .008 X 30 DEG.
MM1153	Nozzle, 2/O, .010 X 30 DEG.
MM1154	Nozzle, 2/O, .012 X 30 DEG.
MM1155	Nozzle, 2/O, .014 X 30 DEG.
MM1156	Nozzle, 2/O, .016 X 30 DEG.
MM1157	Nozzle, 2/O, .018 X 30 DEG.

Dual-Orifice Nozzles, straight-thru

Part Number	Description
MM1158	Nozzle, 2/O, .020 X 30 DEG.
MM1159	Nozzle, 2/O, .028 X 30 DEG.
MM1122	Nozzle, 2/O, .008 X 45 DEG.
MM1123	Nozzle, 2/O, .010 X 45 DEG.
MM1124	Nozzle, 2/O, .012 X 45 DEG.
MM1125	Nozzle, 2/O, .014 X 45 DEG.
MM1126	Nozzle, 2/O, .016 X 45 DEG.
MM1127	Nozzle, 2/O, .018 X 45 DEG.
MM1128	Nozzle, 2/O, .020 X 45 DEG.
MM1129	Nozzle, 2/O, .028 X 45 DEG.

Dual-Orifice 90 Degree Nozzles

Part Number	Description
MM4914	Nozzle, 2/O, .012 X 15 DEG.
MM4916	Nozzle, 2/O, .016 X 15 DEG.
MM1618	Nozzle, 2/O, .018 X 15 DEG.
MM4917	Nozzle, 2/O, .020 X 15 DEG.
MM1624	Nozzle, 2/O, .024 X 15 DEG

Dual-Orifice 90 Degree Nozzles

Part Number	Description
MM4926	Nozzle, 2/O, .016 X 30 DEG.
MM1724	Nozzle, 2/O, .018 X 30 DEG.
MM4927	Nozzle, 2/O, .020 X 30 DEG.
MM1728	Nozzle, 2/O, .024 X 30 DEG.

Triple-Orifice Nozzles, straight-thru		Triple-Orifice Nozzles, straight-thru	
Part Number	**Description**	**Part Number**	**Description**
MM1132	Nozzle, 3/O, .008 X 45 DEG.	MM1136	Nozzle, 3/O, .016 X 45 DEG.
MM1133	Nozzle, 3/O, .010 X 45 DEG.	MM1137	Nozzle, 3/O, .018 X 45 DEG.
MM1134	Nozzle, 3/O, .012 X 45 DEG.	MM1138	Nozzle, 3/O, .020 X 45 DEG.
MM1135	Nozzle, 3/O, .014 X 45 DEG.	MM1139	Nozzle, 3/O, .028 X 45 DEG.

Options & Accessories

PN 117533 Mod-Plus BF Adapter Plate Kit

This kit's adapter plate and screws enables precise replacement of a Mod-Plus BF applicator with a BF Microbead applicator. It allows the replacement nozzle tip to be positioned in a nearly identical location as the old nozzle tip.

PN 117064 Optional Universal Mounting Bracket Assembly

The Universal Mounting Bracket Assembly has the flexibility to mount any MicroBead applicator.

PN 118053 Push-in Air Fitting

The pneumatic fitting enables one solenoid to control two modules.

PN 118507 Solenoid Extension Cable

The three meter (9.84 ft) extension cable has a M8 straight male connector on one end and a M8 straight female connector on the other end.

Solenoid Cables

PN 117532 Solenoid Cable, Flying Leads
PN 117549 Solenoid Cable for DPC/ TPC
PN 117550 Solenoid Cable for DY2008

Recommended Service Parts List

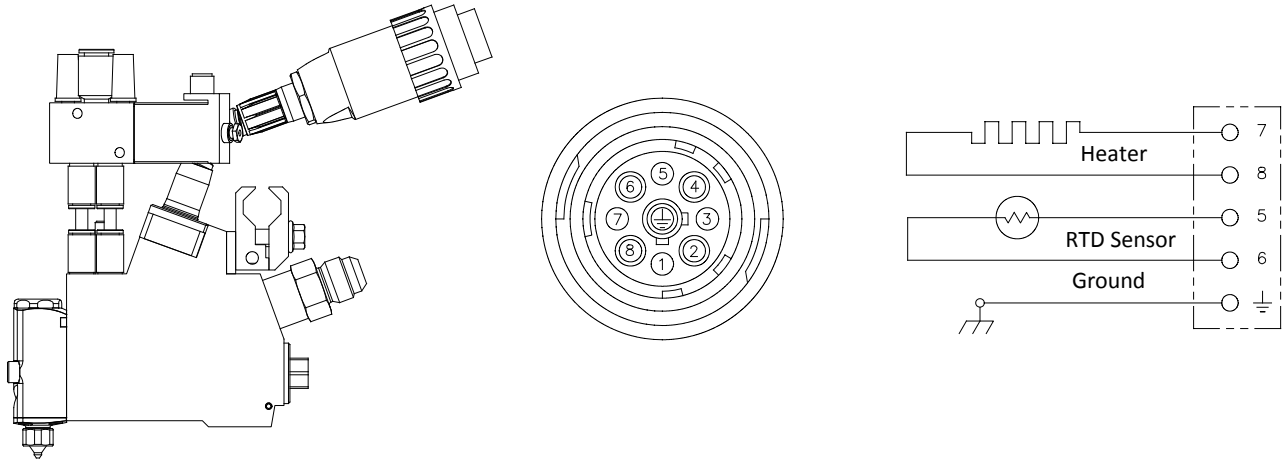
Part Number	Description	Qty. per Service Block
N00175	O-ring, -008	2-4
N00179	O-ring, -012	1
N00180	O-ring, -013	4
N00182	O-ring, -015	1
N00183	O-ring, -016	1
108700	TFE Lube, 0.25 oz.	1
see list on pg. 7-1	Filter	2
Heaters and RTD Sensors are located in the Cable Assemblies, choose one of the following:		
109742	Cable Assembly, 120v, WR (Pt100, 1 module)	1
109708	Cable Assembly, 240v, WR (Pt100, 1 module)	1
110065	Cable Assembly, 240v, Std. (Ni120, 1 module)	1
114975	Cable Assembly, 120v, Std. (Ni120, 1 module)	1
117575	Cable Assembly, 120v, WR (Ni120, 1 module)	1
117573	Cable Assembly, 240v, WR (Ni120, 1 module)	1
117032	Cable Assembly, 120v, WR (Pt100, 2 modules)	1
117035	Cable Assembly, 240v, WR (Pt100, 2 modules)	1
117036	Cable Assembly, 120v, Std. (Ni120, 2 modules)	1
117040	Cable Assembly, 240v, Std. (Ni120, 2 modules)	1
117576	Cable Assembly, 120v, WR (Ni120, 2 modules)	1
117574	Cable Assembly, 240v, WR (Ni120, 2 modules)	1
150029	Cordset, 240VAC, Dynacontrol, Standard (1 port)	1
150030	Cordset, 240VAC, Dynacontrol, Standard (2 port)	1
150031	Cordset, 120VAC, Dynacontrol, Standard (1 port)	1
150032	Cordset, 120VAC, Dynacontrol, Standard (2 port)	1

Chapter 8
SCHEMATICS

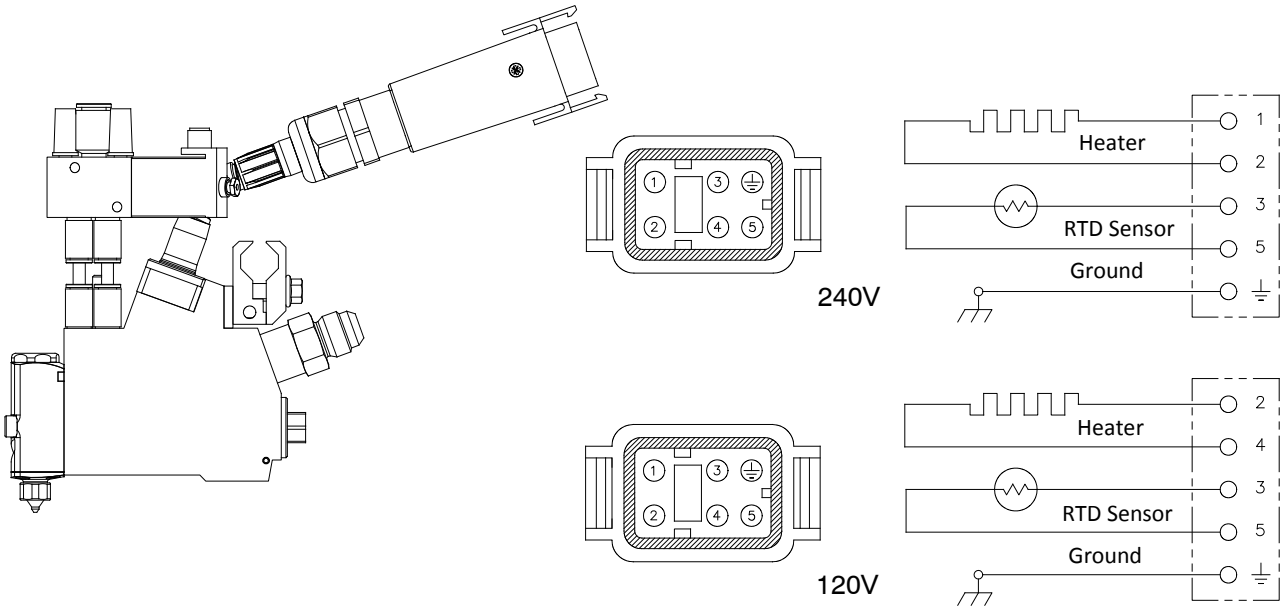
Pin Connectors & Electrical Schematics

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

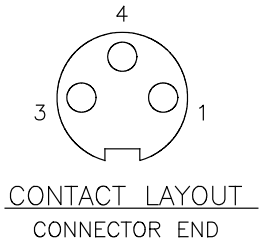
DynaControl/Dynamini Uses PN N07958 RTD Sensor, Pt100



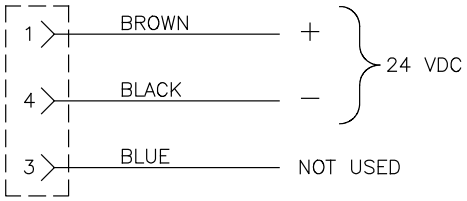
Upgrade Uses PN N07864 RTD Sensor, Ni120



MicroBead Solenoid PN 117532



CONTACT LAYOUT
CONNECTOR END



CIRCUIT DIAGRAM

Appendix PN 100055 Air Control Filter Coalescing Kit for Applicator Heads

ITW Dynatec applicator heads require compressed air for needle actuation. Air Control Filter Coalescing Kits (PN 100055) are available to provide filter regulators, tubing and fittings for one or more applicator heads.

Air Control Filter Coalescing Kit Installation Notes

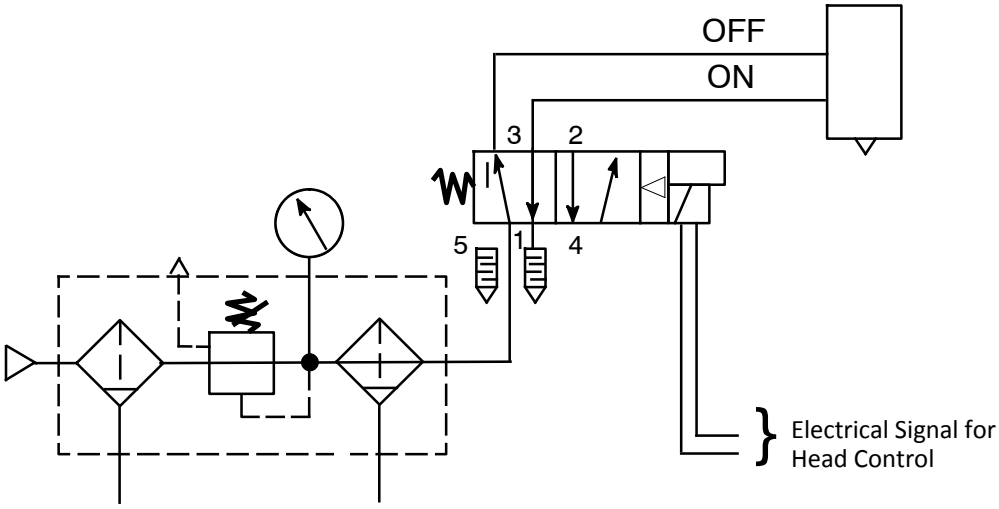
1) Compressed air for applicator head operation should be clean, dry and oil free.

2) Operation of more than two applicator heads by one kit may require additional lines, tee-fittings and solenoid valves not supplied in one kit.

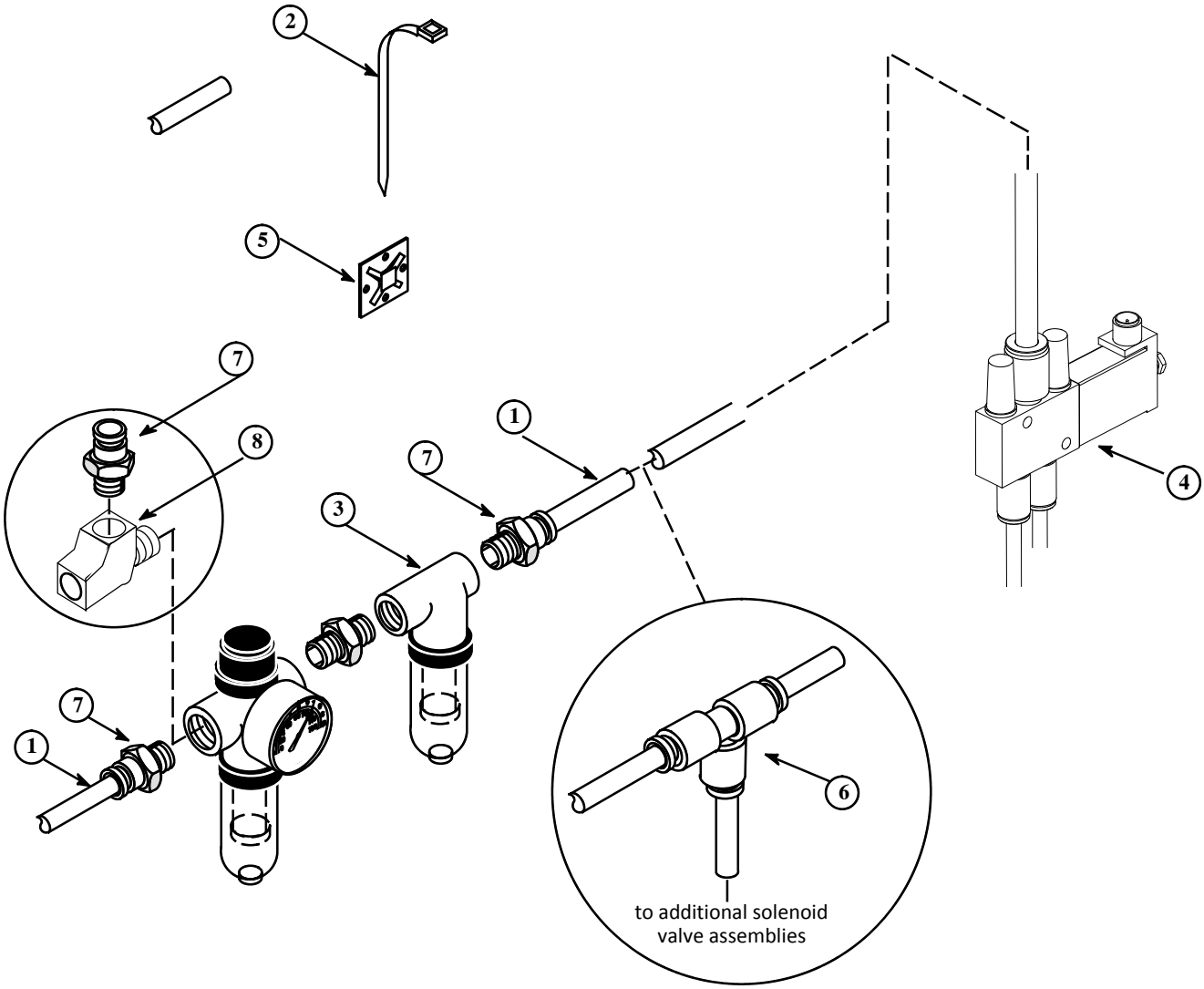
3) To provide identical operation of more than one head, air line circuits from solenoid valves to heads should be the same length and contain similar fittings.

4) To minimize applicator response time, minimize length of the air line circuits from the solenoid valve(s).

Pneumatic Drawing for Head Air Control



COMPONENT ILLUSTRATION: PN 100055 AIR CONTROL KIT



Item	*PN*	*Description*	*Qty.*
1		Tubing, 6mm or 1/4 inch dia.	10 '
2	N00318	Cable Tie, .09 x 3.62 Lg	10
3	100380	Filter Assembly	1
4	117074	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 Street T, Brass	1