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ITW Dynatec
The Next Level of Technology

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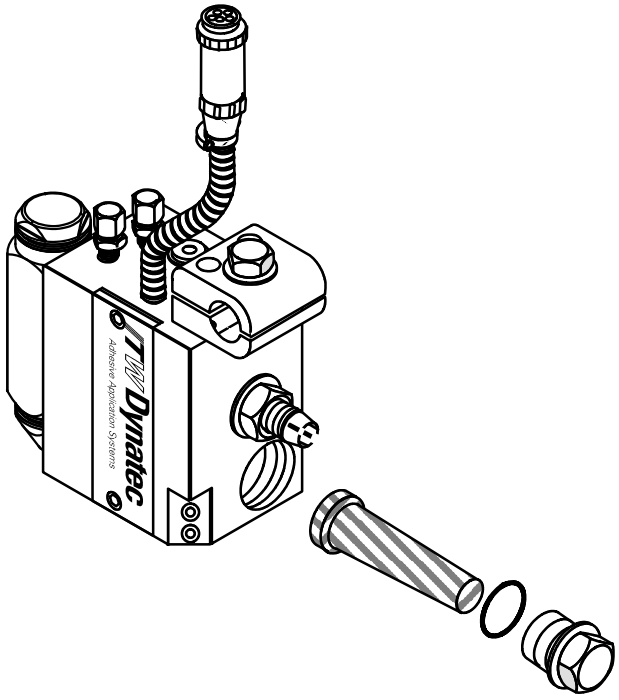
OPERATIONS AND SERVICE MANUAL

MOD-PLUS™ DYNA BF
HOT MELT ADHESIVE APPLICATOR HEADS



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 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.

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:	Dyna BF Applicator Head
Serial no:	_____
Machine number:	_____
Project number:	BF Head
Project name:	BF Applicator Head
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 13850:2008	Safety of machinery - Emergency stop - Principles for design (ISO 13850:2006)

Reference of the other technical standards and specifications used:

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

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, 2012.10.10

Place, date

Judson Broome

Signature
Judson Broome
General Manager

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Chapter 7 Ordering Guides

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Appendix Air Control FIlter Coalescing Kit for Applicator Heads

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.

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.

A 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.

Safety glasses, 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 (e.g., 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" psig, 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 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.

Eye Protection & Protective Clothing

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

Wear safety glasses with side shields which conform to ANSI Z87.1 or EN166.

Failure to wear 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.

Safe Installation and Operation

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.

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

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.

Treatment for Burns From Hot Melt Adhesives

Burns caused by hot melt adhesive must be treated at a burn center.

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 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 an exhaust hood or system be installed over any PUR system.

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 Dynatec equipment. If PUR adhesive solidifies in a unit, the unit must be replaced. Always purge old PUR adhesive from the system per your adhesive manufacturer's instructions and timetable. ALLOWING PUR ADHESIVE TO CURE IN A UNIT VOIDS ITW DYNATEC'S WARRANTY.

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.

Chapter 2
DESCRIPTION AND SPECIFICATIONS

Description

ITW Dynatec's MOD-PLUS™ DYNA BF Applicator Head is an air-operated, single or multi-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 Mod-Plus Dyna BF applicator features one or more adhesive valve modules mounted to a single service block. Each module is opened and closed by air pressure. Springs are used to keep needles closed when no air pressure is supplied to the head. The rate of adhesive flow from the applicator is determined by the adhesive pressure applied by the ASU's pump and the size of the nozzle orifice.

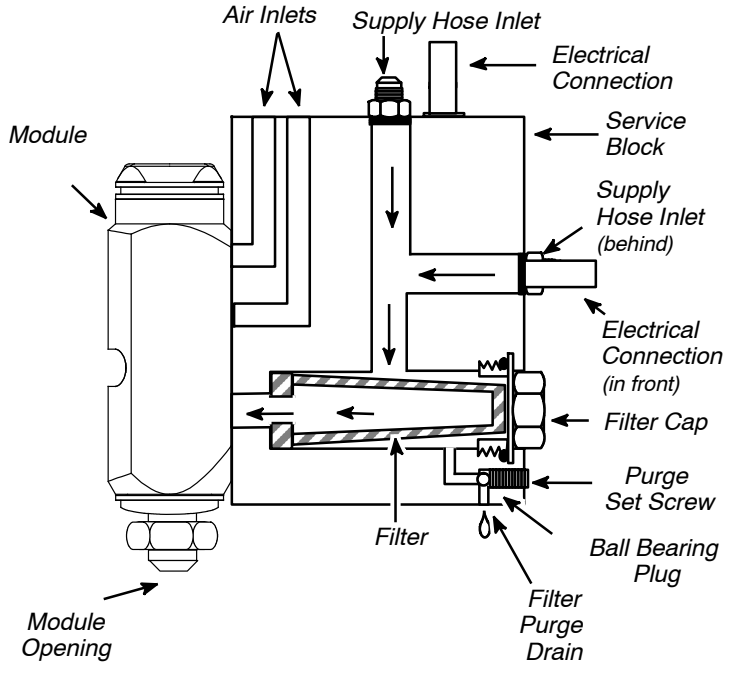
The applicator is heated by replaceable cartridge heating elements which are controlled by an integrated RTD sensor and electronic control.

As seen in the illustration below, the Mod-Plus Dyna BF module(s) is mounted onto a service block. A piston inside the module is pneumatically triggered by a solenoid, which allows adhesive to flow through a valve within the module.

The heated adhesive supply hose may be connected at the rear of the service block or at the top. Adhesive flows from the hose into and through the channels within the block to the module. Air pressure opens the adhesive valve, allowing adhesive to flow through the module's nozzle when the valve is open.

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

Eight standard Mod-Plus Dyna BF models supporting up to eight modules, are available, ranging in width from 44mm to 198mm (1.73" to 7.8"). Each model can be configured for either ITW Dynatec's DynaControl or Dynamini controller, Dynaplus/ Dynapro systems, Microprocessor Temperature Control/CompuVision (MCV) or Electronic Temperature Control with Readout (ETC/RO), or it can be configured for a competitive upgrade. Washdown models are available for all of these configurations.



The Dyna BF Flow Pattern

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 . . . . . Model Dyna BF0441: 0.68 to 2.05 kg (1.5 to 4.5 lb.)
Mounting . . . . . M5x .8 screws with insulators or 1/2" rod mount, insulated clamps, 12 to 13 mm rod

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
Cycle rate . . . . . 5000 cycles/ minute maximum
Adhesive viscosity . . . . . 100 to 20000 mPa. sec. (100 to 20000 centipoise)
Adhesive pressure range . . . . . 68 bar maximum (1000 psi maximum)
Noise emission . . . . . 70 dB(A)

Air Requirements:

Air pressure range . . . . . 4.8 to 9.5 bar (70 to 140 psi)
Air consumption . . . . . .28 liters/ minute @ 100 cycles/ minute (.01 SCFM per module @ 100 cycles/ minute)

Electrical:

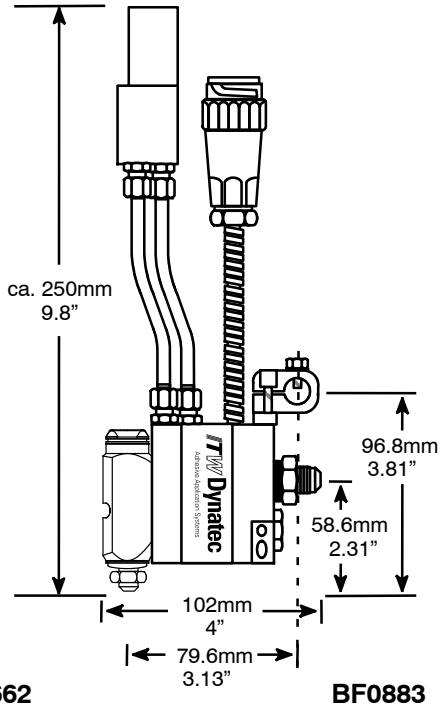
Supply voltage . . . . . 120 VAC or 200-240 VAC/ 1p/ 50-60 Hz

Power requirements:

Model	No. Modules	Spacing Between Nozzle Centers	Wattage	
			120 VAC	240VAC
BF0441	1	- - -	200	200
BF0442	2	22 mm	200	200
BF0662	2	44 mm	240	400
BF0883	3	22/ 22 mm	240	400
BF0884	4	22/ 22/ 22 mm	320	475
BF1104	4	22/ 44/ 22 mm	360	585
BF1546	6	2x22/ 44/ 2x22mm	500	775
BF1988	8	3x22/ 44/ 3x22 mm	600	960

Dimensions

	WIDTH	
Model No.	**A**	**B**
BF0441	44mm 1.73”	n.a.
BF0442	44mm 1.73”	22mm .86”
BF0662	66mm 2.6”	44mm 1.73”
BF0883	88mm 3.46”	45mm 1.76”
BF0884	88mm 3.46”	66mm 2.6”
BF1104	110mm 4.33”	88mm 3.46”
BF1546	154mm 6.06”	132mm 5.2”
BF1988	198mm 7.8”	176mm 6.93”



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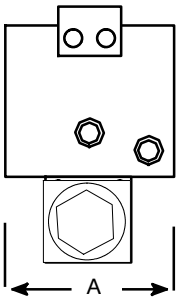

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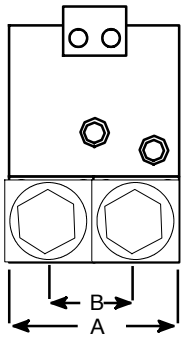

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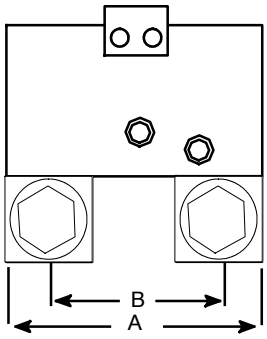

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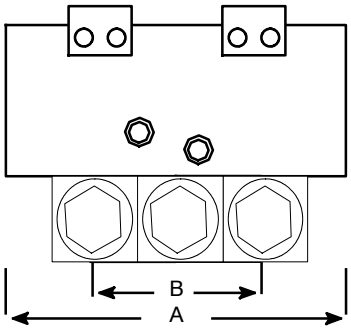

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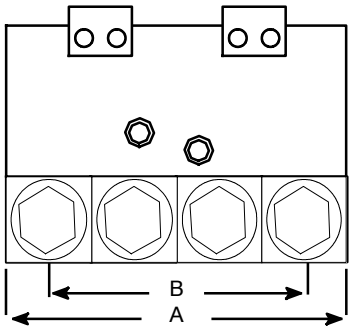

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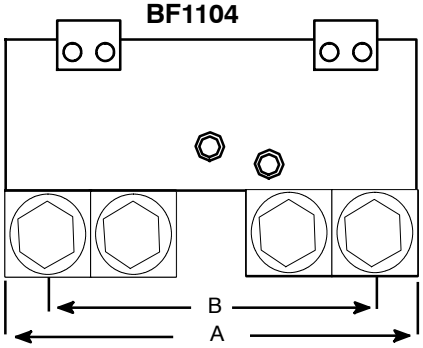

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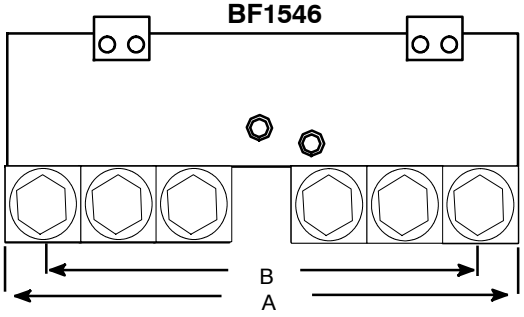

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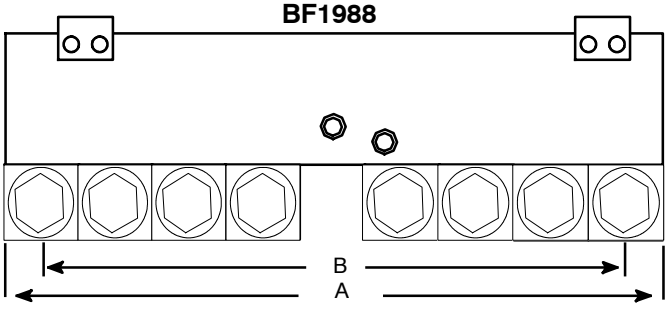

Chapter 3
INSTALLATION & START UP

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

MOD-PLUS™ DYNA BF 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 and one to eight modules. Single, dual, four-, six-, or eight-module versions are available.

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 through a solenoid valve. It must be clean and unlubricated. It is controlled by a four-way solenoid valve and should be separately regulated and maintained at a pressure between 5.4 to 8.5 bar (80 to 125 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). The air outlet ports on the solenoid are marked A (open/ ON) and B (closed/ OFF).

Installation Instructions

The applicator head has been tested at the factory and is ready for installation and operation. Mod-Plus Dyna BF applicators require a separate 4-way solenoid valve for each applicator. The 4-way valves should be mounted so that the air lines to each applicator are as close to the same length as practical. The modular applicator has an very high speed capability, so to take advantage of this, the solenoids should be located as close to the applicators as possible to keep applicator air lines short. (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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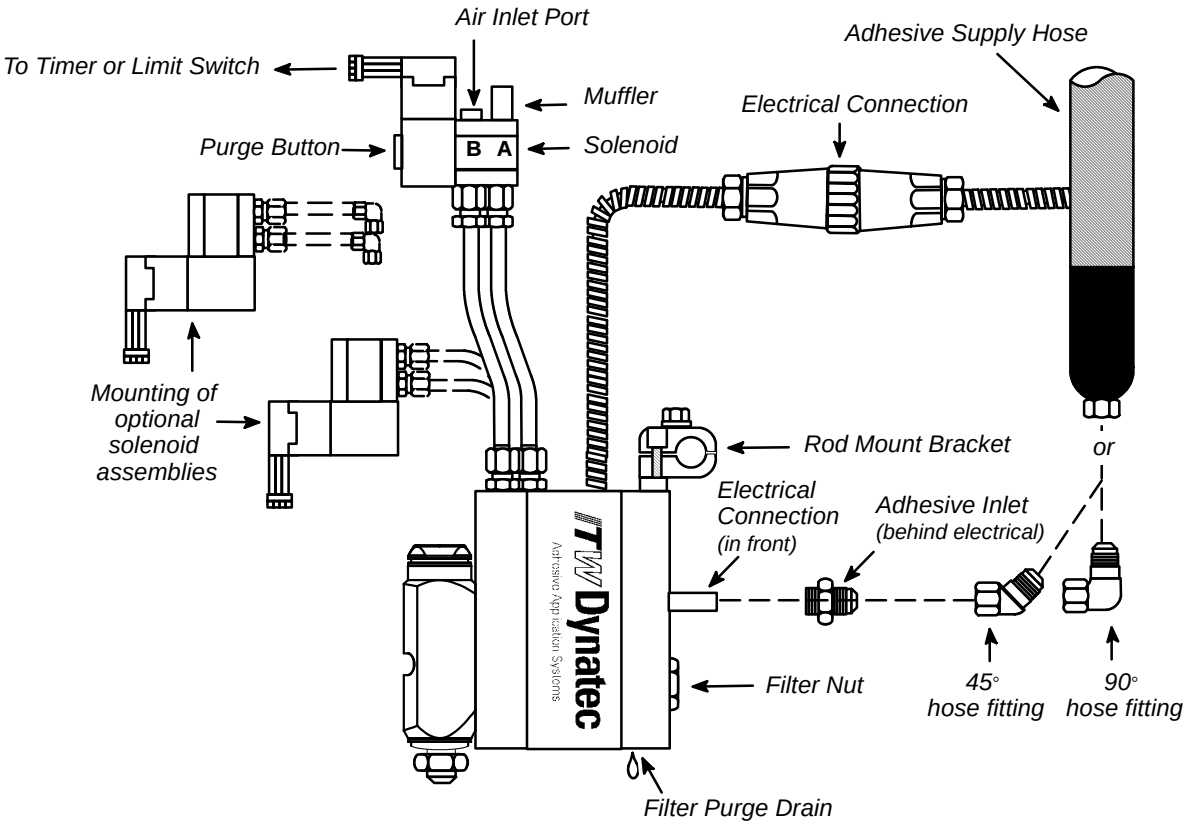


Installation Diagram

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 rod or bracketry using 5mm screws and insulators provided. Allow access to the filter. Be sure that the stroke limit adjustment screws are accessible and that the “weep” holes are visible for periodic inspection. For proper application, the maximum distance from the nozzle tip to the substrate should not exceed 6.4mm (1/4 inch).

2. Before making the adhesive connection to the applicator, align the adhesive supply hose with its electrical connector oriented in relation to either of the electrical connectors on the applicator. Connect the swivel fitting of the hot melt hose to the adapter on the service block, using either the inlet port located above the filter nut or the port located on the top of the applicator (behind the electrical connection in the diagram). 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 at either of the two electrical connects on the applicator.

4. When connecting the air lines to the applicator, the air line which has air pressure to the module when the 4-way solenoid is OFF is the closing air line (marked “B” on the solenoid and applicator). This line connects to the “B” air fitting on the applicator. The other air line (marked “A”) is connected to the “A” air port. The “A” air line has pressure when the solenoid is ON (open). This line can be checked by loosening the air line after the system has been pressurized.

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 Mod-Plus Dyna BF applicator.

5. 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.

6. Purge the applicator of air and oil. Turn the applicator ON electrically and pneumatically. Allow adhesive and applicator to warm up.

WARNING HIGH PRESSURE

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

WARNING

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

Remove the nozzle from the module by loosening the nozzle cap. 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. Replace nozzle, orienting 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.

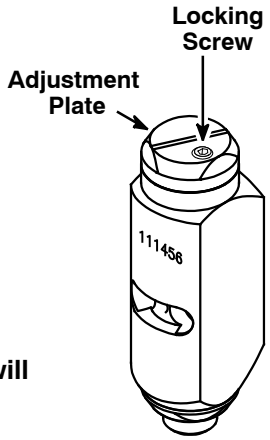
The MOD-PLUS™ DYNA BF modular applicator requires no regular maintenance. Wipe the applicator clean of adhesive with a clean cloth while still hot at the end of each shift. Inspect the applicator periodically as outlined in the following table.

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
Weep holes	Inspect for adhesive	As required	Replace module
Nozzle performance	Inspect all nozzles	As required	Clean nozzle.
Filter Drain	Purge chamber to remove contaminants	Weekly	Open drain
Built-in filter	Inspect for cleanliness	Monthly or as required by use	Replace filter element

Stroke Limit Adjustment of the PN 111456 Adjustable Marathon Module

This procedure can be performed only on the optional adjustable marathon module, which can be identified by its adjustment plate and locking set screw at the top of the module.



1. Bring applicator up to operating temperature.

2. Loosen the locking screw.

3. Bottom the adjustment plate lightly.

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

4. Back off the adjustment plate two turns (to achieve factory setting).

5. While holding the plate in position, tighten the locking screw.

Purging the Filter Chamber

WARNING HIGH PRESSURE

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

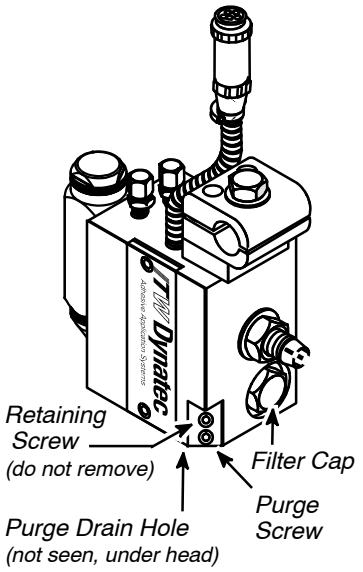
The applicator should be at operating temperature. Turn the ASU's pump/ motor OFF.

1. Place a heat-resistant container under the purge drain.

2. With a 5mm hex key (allen wrench), slowly loosen the purge screw (do not try to remove it) and allow the adhesive and residues to flow out of applicator. Be sure to stand clear since there may be residual adhesive pressure in the applicator.

3. Turn on the pump/ motor. When all the contaminants have run out and the glue is clean, re-tighten the screw.

Back View of BF Head



Replacement of the Built-in Filter

Observe the same warning and conditions as in “Purging the Filter Chamber”, on the previous page. Refer to the illustration on page 4-2 as needed.

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

1. Place a heat-resistant container under the purge drain.

2. With a 5mm hex key (allen wrench), slowly loosen the purge screw and allow the adhesive to flow out of applicator. Stand clear since there may be residual adhesive pressure in the applicator.

3. Remove the filter cap with an open wrench and replace the filter element.

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

4. Re-install the filter cap slowly, taking care to seat the cap o-ring without pinching it.

Nozzle Cleaning

Occasionally nozzles can become clogged with char, residue or other foreign material. This can result in the decrease or even stoppage of glue flow. ITW Dynatec has three nozzle cleaning kits available, which are orifice-size specific:

PN 101877	Nozzle Cleaning Kit: 0.010 to 0.017 orifice
PN 101878	Nozzle Cleaning Kit: 0.018 to 0.027 orifice
PN 101879	Nozzle Cleaning Kit: 0.028 to 0.040 orifice

WARNING HIGH PRESSURE

Before using the nozzle cleaning kit: Turn OFF the ASU, then slowly open the head’s purge drain to relieve adhesive pressure.

The nozzle must be at operating temperature when cleaned. Turn the ASU OFF. Turn adhesive pressure OFF (zero). Remove the nozzle retaining nut and nozzle with a 14mm open wrench.

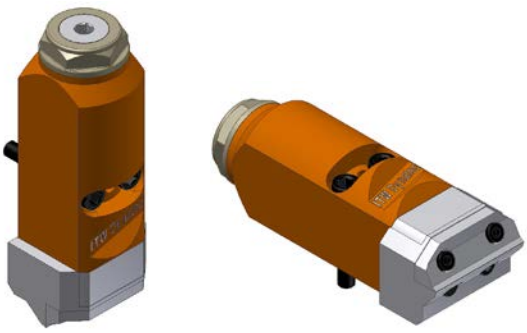
Use the reamers in the kit to clear the orifice. Since there are several orifice sizes available, first make sure that the reamer is compatible with the orifice size you are about to clean. Carefully insert the reamer into the tip of the nozzle.

CAUTION: If a reamer of too large a diameter is used to clean the orifice, it could result in a broken reamer jammed in the nozzle, or damage to the nozzle itself.

PN 150008 REV. A, Instruction Sheet, Module Replacement for older versions

PN 118700 Module w. 1 INCH SLOT DIE REPLACEMENT FOR OLDER VERSIONS

OLDER VERSIONS INCLUDE MODULE P/N 118101 AND THE DIE CLAMPS AT AN ANGLE:



REMOVE DIE LIP ASSEMBLY AND SEAT FROM MODULE

STEP 2
REMOVE SEAT FROM MODULE

STEP 1
REMOVE DIE LIP ASSEMBLY

- INSTALL NEW VERSION DIE LIP/SEAT ASSEMBLY ONTO MODULE.
- VERIFY STROKE ADJUSTMENT TO 2 TURNS (1MM TRAVEL).

RECOMMENDED TORQUE FOR #4-40 SCREWS = 2 N*m [18 in*lb]

Chapter 5
TROUBLESHOOTING & SERVICE

Note: Re-read Chapter 1 Safety Precautions" before performing any troubleshooting or repair procedurs. 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.	2. Push the solenoid's manual button. If it opens, the problem is electrical.
No adhesive flowing out of module	1. Nozzle is clogged.	1. Clean nozzle, see instructions in Ch. 4 Maintenence.
	2. Filter element is dirty.	2. Replace filter, see instructions in Ch. 4 Maintenence.
	3. Module seals are inoperative.	3. Replace module.
	4. ASU's hopper is empty.	4. Re-fill hopper.
	5. Adhesive is too cold.	5. Adjust temperature, see ASU manual.
	6. Solenoid valve is not opening.	6. Check solenoid valve.
Hot melt is coming out of the module's "weep" holes	1. Module seals are damaged.	1. Replace module.

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. Inoperative piston seal.	1. Replace module.
	2. O-rings located between module and service block are inoperative.	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 the purging 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 5mm hex key (allen wrench), slowly loosen the purge screw and allow the adhesive to flow out of applicator. Be sure to stand clear since there may be residual adhesive pressure in the applicator.

3. Remove the module from the service block by removing the two special shoulder bolts on the front of the module with a 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).

4. Mount the new module using a 4mm (5/32") hex key on the special shoulder 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 will vary depending on the control scheme of the applicator. See pages 8-1 & 2 for a diagram of each.

Testing Resistance of the Heater Cartridge

a. The resistance value (Ohms) of your heater cartridge may be obtained from the chart below, or it may be calculated using the formula:

$$\frac{\text{Volts}^2}{\text{Watts}} = \text{Ohms}$$

To determine wattage, see chart on pg. 7-3.

b. *For DynaControl or Dynamini:* With an ohmmeter, contact pins 7 and 8 and measure resistance.
For Dynaplus/Pro: With an ohmmeter, contact pins 8 and 9 and measure resistance.

120 VAC		200 VAC		240 VAC	
Watts	Ohms	Watts	Ohms	Watts	Ohms
200	72	200	200	220	245
240	60				
320	45				
360	40				
500	29				
600	24				

200-240 VAC	
Watts	Ohms
400	144
475	121
585	98
775	74
960	60

cont.

For ETC/RO or MCV: With an ohmmeter, contact pins 3 and 5 and measure resistance.
For Upgrade (NOR): With an ohmmeter, contact pins 1 and 2 and measure resistance.
For Upgrade (SLA): With an ohmmeter, contact pins 2 and 3 and measure resistance.

c. A tolerance range of ± 5% is allowed. A heater cartridge that tests outside of this range must be replaced. Replacement instructions follow in this chapter.

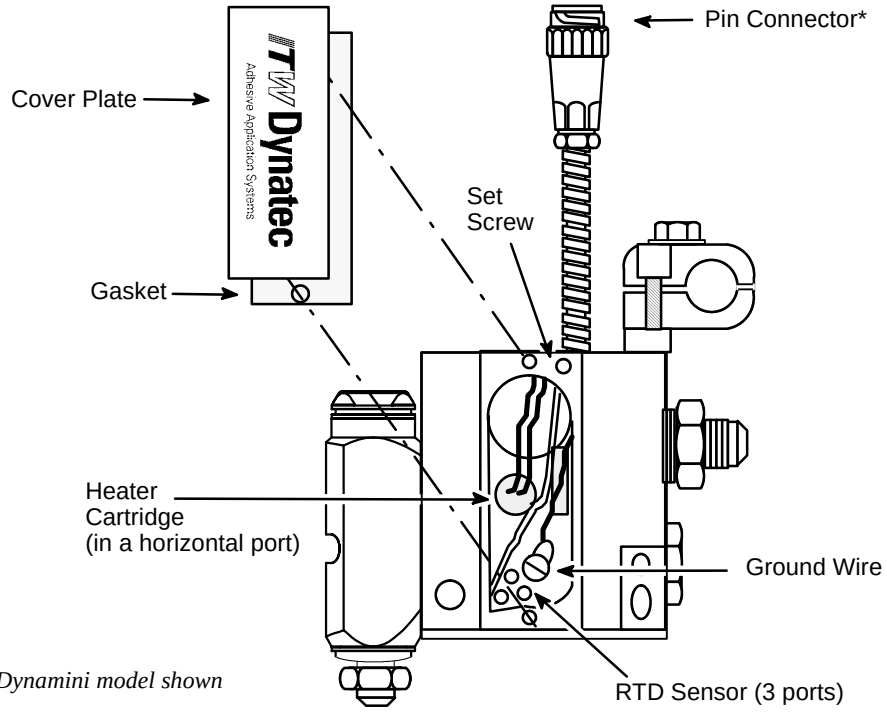
Testing Resistance of the RTD Temperature Sensor

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. At 25°C (77°F), the resistance of a N120 (Nickel) sensor should be 138 Ohms. At 25°C (77°F), the resistance of a NiFe (Nickel Iron) sensor should be 100 Ohms.

b. *For DynaControl/Dynamini:* With an ohmmeter, contact pins 5 and 6 and measure resistance.
For Dynaplus/Pro: With an ohmmeter, contact pins 2 and 3 and measure resistance.
For ETC/RO: Both sensors should be checked: with an ohmmeter, contact pins 6 and 10 and measure resistance of one sensor, then contact pins 8 and 12 and measure resistance of the other sensor.
For MCV: With an ohmmeter, contact pins 8 and 12 and measure resistance.
For Upgrade (NOR): With an ohmmeter, contact pins 3 and 5 and measure resistance.
For Upgrade (SLA): With an ohmmeter, contact pins 6 and 7 and measure 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

ITW Dynatec has a High Temp Heater Splice Kit available (PN 102645). Each kit contains sufficient connectors and shrink tube to replace a heater cartridge (the heater is ordered separately).

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

2. Disconnect the electrical cable assembly from the hose.

3. Remove the wire access cover plate and the gasket via two holding screws.

4. *If replacing heater (only):* Cut the wires of the heater cartridge at the splice.

5. Pull the heater (or sensor) out of the service block.

6. Apply a thin coat of thermal paste (PN 001V061) to the new cartridge heater (or new sensor).

7. Put new cartridge heater (or new sensor) in service block. *If replacing heater:* connect its wires with splice and shrink tube.

8. Replace access cover plate and gasket.

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 N07588).

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

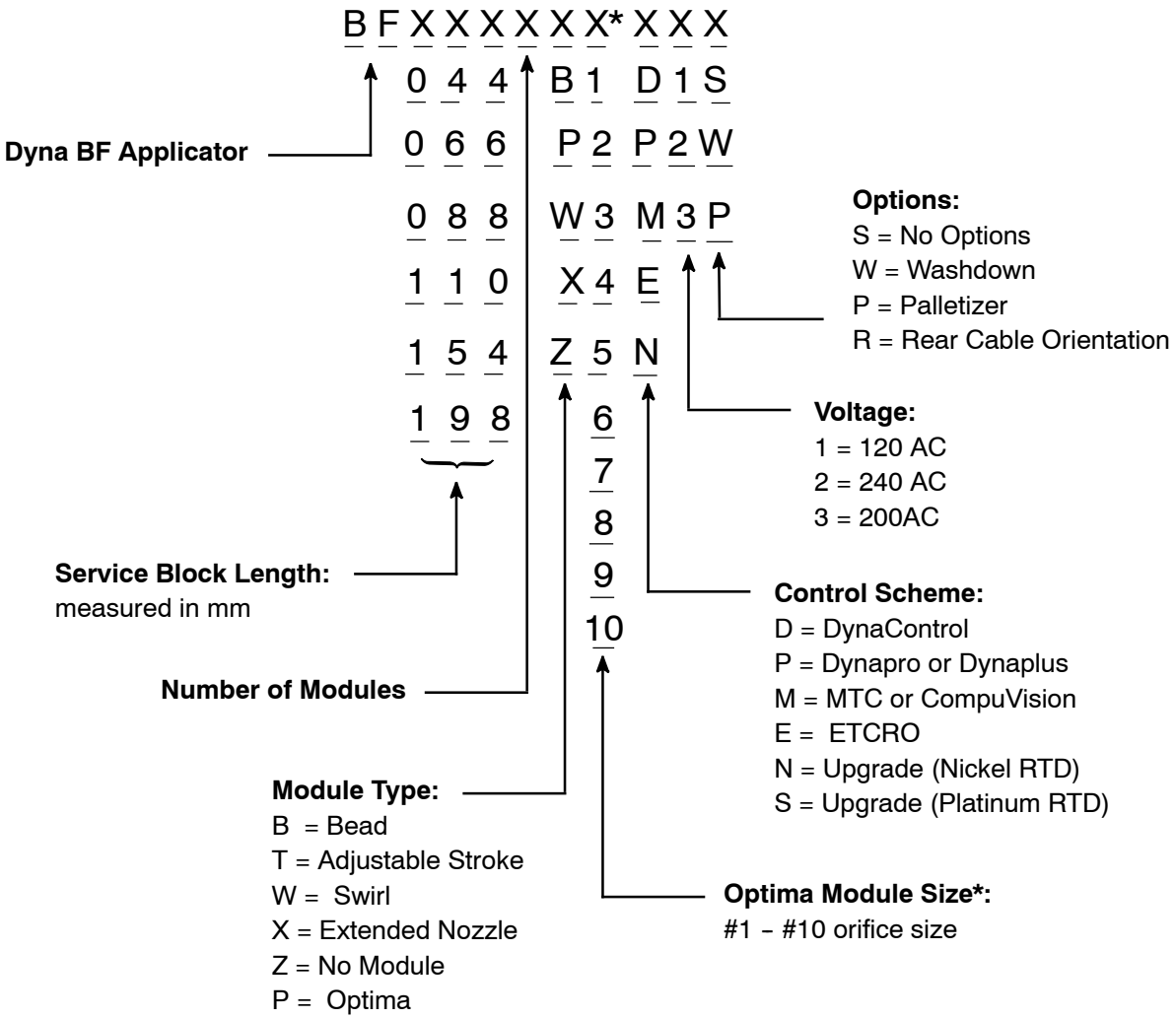
WARNING

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 Mod-Plus Dyna BF modular applicators to identify parts and aid in servicing the equipment.

Note: most common nuts, bolts and fasteners can be obtained locally at your hardware store. Specialty fasteners are available by contacting Dynatec's Customer Service.

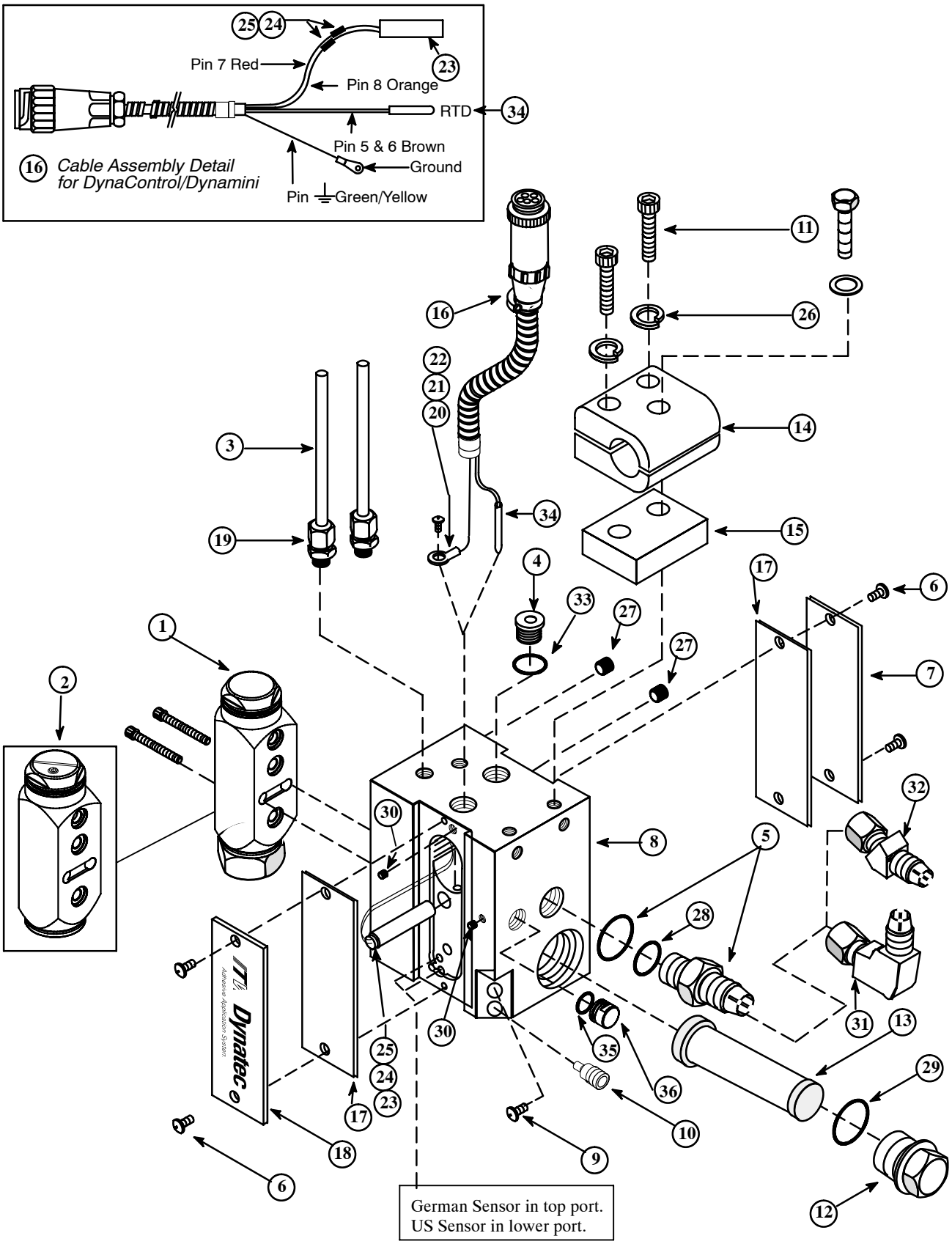
Mod-Plus Dyna BF Applicator Model Designation Guide



** This character (Optima Module Size) only appears when an Optima module is used.*

Bill of Materials for a Typical Mod-Plus Dyna BF Applicator

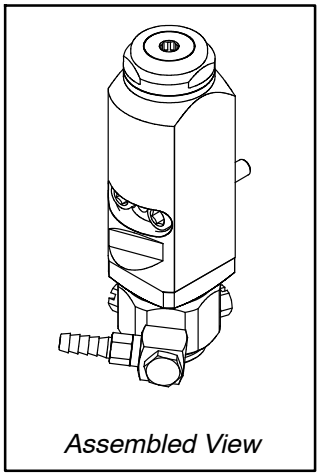
Item No.	Part Number	Description	Qty.
1	110639	Module Assembly, Hi- Performance	1
2	111456	Adjustable Marathon Module (option)	
3	L13533	Aluminum Tubing .25” OD x 8” Long	2
4	101625	Fitting Plug	1
5	101624	Fitting Adapter with Ring	1
6	101628	M3-5 x 8mm Screw	4
7	103347	Identification Plate	1
8	103466	Service Block, BF0441*	1
	104260	Service Block, BF0442*	1
	104261	Service Block, BF0662*	1
	118307	Service Block, BF0883**	1
	104262	Service Block, BF0884**	1
	104263	Service Block, BF1104**	1
	104264	Service Block, BF1546**	1
	104265	Service Block, BF1988**	1
9	101833	10-32 x 1/2 Tamper Proof Screw (retaining screw)	1
10	104852	M10-1.5 x 12 Cone, SSS, Relief Screw	1
11	102447	M5 x 25 SHC Screw	2
12	101620	Filter Cap, BF Head	1
13	101618	Filter, 100 mesh (standard BF)	1
	113311	Filter, 200 mesh (standard Optima)	1
14	104129	Mounting Clamp	1* or 2**
15	L14899	Insulator, Mounting Clamp	1* or 2**
16	103467	Cable Assembly for DynaControl 240v	1
	104521	Cable Assembly for DynaControl 120v	1
	104523	Cable Assembly for DynaPlus/Pro 240v	1
	105014	Cable Assembly for DynaPlus/Pro 120v	1
	104526	Cable Assembly for ETC	1
	800223	Cable Assembly for MCV	1
	104528	Cable Assembly for Upgrade 240v (assy. includes sensor)	1
	115036	Cable Assembly for Upgrade 120v	1
	113133	Cable Assembly for Slautt. 240v	1
	104127	Cable Assembly for DynaControl 240v/ Washdown	1
	104522	Cable Assembly for DynaControl 120v/ Washdown	1
	104524	Cable Assembly for DynaPlus/Pro/ Washdown	1
	104527	Cable Assembly for ETC/ Washdown	1
	104525	Cable Assembly for MCV/ Washdown	1
	104529	Cable Assembly for Upgrade (assy. includes sensor)/ Washdown	1
17	101622	Gasket, Wire Access	2
18	103733	Wire Access Cover Plate	1
19	N00093	Fitting Connector	2
20	101627	M3-.5 x 6 Cheese (Phillips) Head Screw	1
21	N04268	Terminal Ring	1
22	078C088	Washer #4	1
23	104128	Heater (see Ordering Guide on pg. 7-3)	1
24	N01756	Parallel Connector	2
25	048J271	Shrink Tube	1 ft.
26	N00695	Lock Washer #10	2
27	N01124	1/16 NPT Level Seal Plug	1
28	N00196	O-ring #111	1
29	N00186	O-ring #019	1
30	103470	M3-5 x 4, Flat Point Socket Head Set Screw	2
31	N07830	90° Fitting (optional)	1
32	N07831	45° Fitting (optional)	1
33	N00181	O-ring #014	1
34		Temperature Sensor (see Ordering Guide on pg. 7-3)	
35	N00179	O-ring #012	1
36	109551	Cable Entry Plug	1



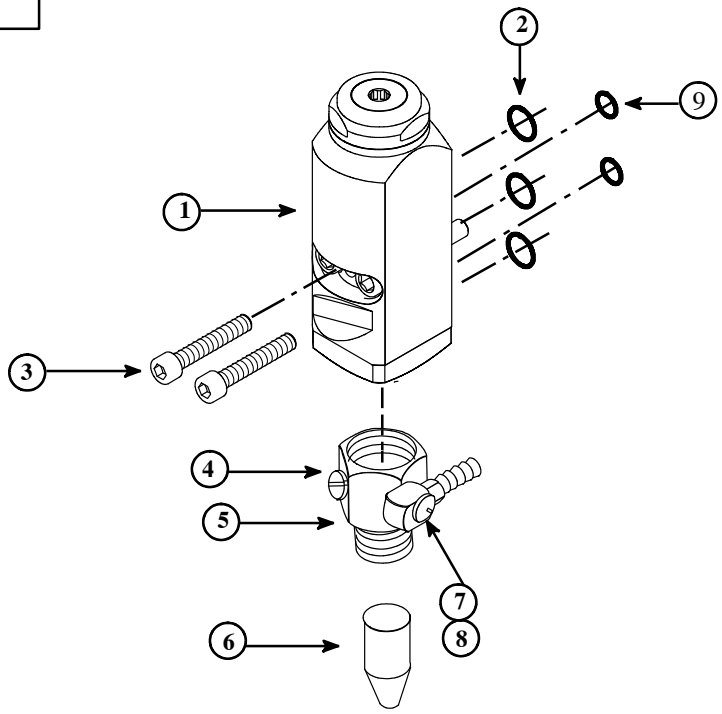
Component Illustration: Typical Mod-Plus Dyna BF Head
(DynaControl/Dynamini version illustrated)

Bill of Materials for PN 118148 Mod Plus Swirl Module Assembly

Item No.	Part Number	Description	Qty.
1	118148	Module Assembly, Mod Plus Swirl (sold as an assembly only)	1
2	N00175	O-ring #008	3
3	N00801	Screw, 8-32 x 1.0” SHCS	2
4	N06433	10-32 Pan Head Plug	1
5	L18789	Adapter, Nozzle	1
6	L19610	Baffle	1
7	N06431	Swivel	1
8	N06432	Fitting Barb	1
9	8842	Screw Retaining O-ring	2



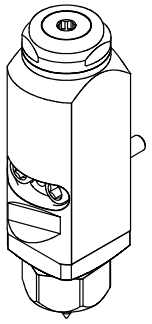
Assembled View



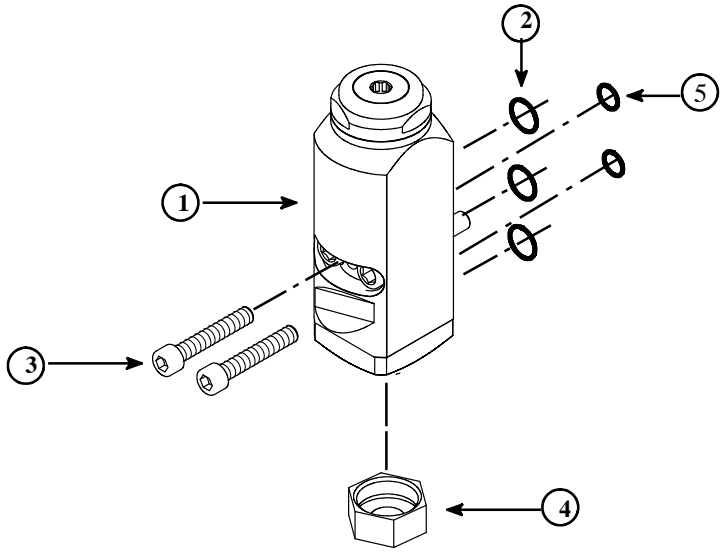
Component Illustration: Assembly #118148 Mod Plus Swirl Module

Bill of Materials for PN 118150 Extended Module Assembly

Item No.	Part Number	Description	Qty.
1	118150	Extended Module Assembly (sold as an assembly only)	1
2	N00175	O-ring #008	3
3	N00801	Screw, 8-32 x 1.0” SHCS	2
4	L06223	Nozzle Retaining Nut	1
5	8842	Screw Retaining O-ring	2



Assembled View

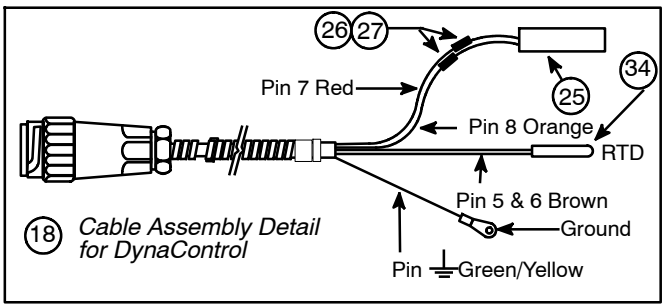


Component Illustration: Assembly #118150 Extended Bead Module

Bill of Materials for Assembly #802843 BF Head Assembly W/ 3 Port Shoe Nozzle #802844 BF Head Assembly W/ 6 Port Shoe Nozzle

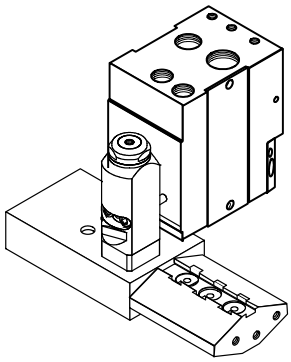
Item No.	Part Number	Description	Qty.
1	118149	Mod Plus Shoe Nozzle Module Assembly	1
2	802779	Shoe Spacer	1
3	078A373	6-32 x 1 1/4 SHC Screw	2
	802842	**Service Body Assembly**	**1**
4	L13533	Aluminum Tubing .25" OD x 8" Long	2
5	101625	Fitting Plug	1
6	101624	Fitting Adapter with Ring	1
7	101628	M3-5 x 8mm Screw	4
8	103347	Identification Plate	1
9	802764	Service Block	1
10	101833	10-32 x 1/2 Tamper Proof Screw (retaining screw)	1
11	104852	M10-1.5 x 12 Cone, SSS, Relief Screw	1
12	N07419	M5 x 30 SHC Screw	2
13	101620	Filter Cap, BF Head	1
14	(not used)		
15	101618	Filter, 100 mesh	1
16	104129	Mounting Clamp	1
17	L14899	Insulator, Mounting Clamp	1
18	103467	Cable Assembly for DynaControl 240v	1
19	101622	Gasket, Wire Access	2
20	103733	Wire Access Cover Plate	1
21	N00093	Fitting Connector	2
22	101627	M3-.5 x 6 Cheese (Phillips) Head Screw	1
23	N04268	Terminal Ring	1
24	078C088	Washer #4	1
25	104128	Heater (see ordering guide on pg. 7-3)	1
26	N01756	Parallel Connector	2
27	048J271	Shrink Tube	1 ft.
28	N00695	Lock Washer #10	2
29	N01124	1/16 NPT Level Seal Plug	1
30	N00196	O-ring #111	1
31	N00186	O-ring #019	1
32	103470	M3-5 x 4, Flat Point Socket Head Set Screw	1
33	N00181	O-ring #014	1
34		Temperature Sensor (see ordering guide on pg. 7-3)	
35	104390	Pin, Spring Roll	2
	084B1851	**Shoe Nozzle Assembly, 6 Nozzle (used with 802844)**	
36	N00793	6-32 x 5/8 SHC Screw	2
37	036A016	Heater, 90w, 240v	2
38	048D324	Cover Plate, Shoe, Brass	1
39	057B2142	Nozzle, Bar, Shoe, 6 Nozzle, 5/8, 2 Heater	1
40	N00767	8-32 x 1/4" SHS Screw	3
41	078A373	6-32 x 1 1/4 SHC Screw	4
42	048J049	Conduit Fitting	1
43	116323	6- 32 x 3/16 Button Head Screw	1
	084B1852	**Shoe Nozzle Assembly, 3 Nozzle (used with 802843)**	
44	N00793	6-32 x 5/8 SHCS	2
45	036A016	Heater, 90w, 240v, 1/4" x 3"	2
46	048D324	Cover Plate, Shoe, Brass	1
47	057B2143	Nozzle, Bar, Shoe, 3 Nozzle, 5/8, 2 Heater	1
48	N00767	8-32 x 1/4" SHS Screw	3
49	8398	4-40 x 1 1/4 SHC Screw	4
50	048J049	Conduit Fitting	1
51	116323	6- 32 x 3/16 Button Head Screw	1
52	8397	Washer, Lock, 3.10 x 6mm, 1mm	8

Note: screws & washers are part of the module assy. Shown for reference only.



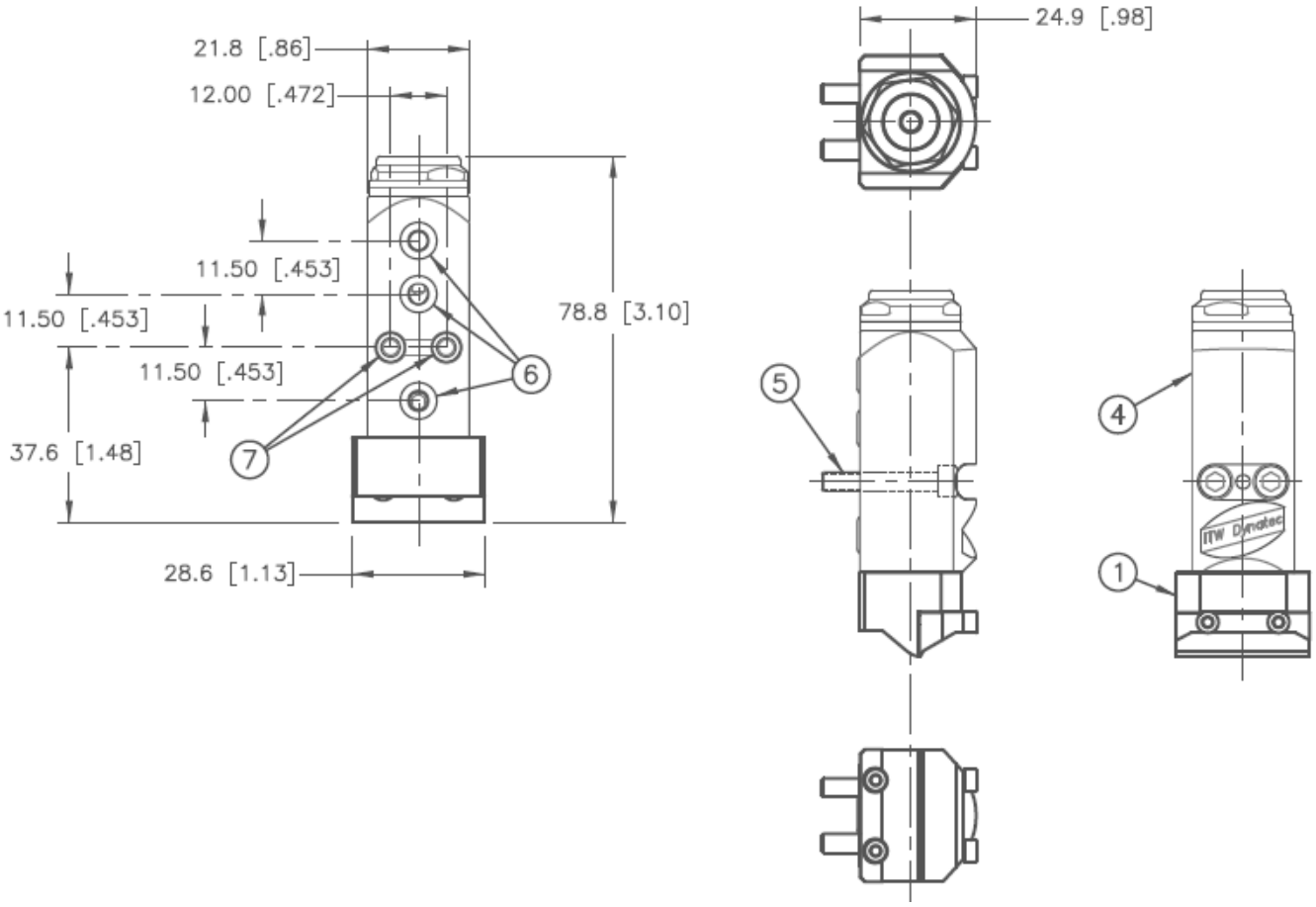
18 *Cable Assembly Detail for DynaControl*

Note: Item #2 Shoe Spacer cannot be used when the nozzle is used in "Side Apply" configuration as shown below.



Component Illustration: Assembly 802843 & 802844 BF Head Assembly With Shoe Nozzle

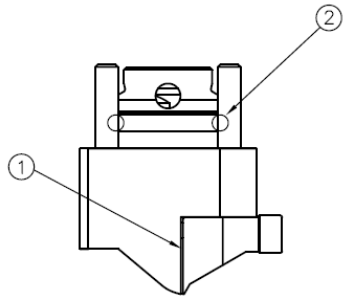
PN 118700 Slot Die Module Assembly



ITEM	PART NUMBER	QTY.	U/M	DESCRIPTION
9	L21334	5	EA	SHIM BLANK, 1" R/C, TEN PLUS, 0.10mm [.004"]
8	–	–	EA	–
7	118781	2	EA	O–RING, 3.5mm ID x 1.3mm WIDE, VITON
6	N00175	3	EA	O–RING, –008, 75 DURO, VITON
5	N00801	2	EA	SCREW, SHC, #8–32 x 1.00, BLK OXIDE
4	150007	1	EA	MODULE ASSY, MOD PLUS, RBNCTR, TEN PLUS
3	–	–	EA	–
2	–	–	EA	–
1	118699	1	EA	NOZ ASSY, 1" RIBBONCOATER, TEN PLUS

BRASS SHIM BLANKS (ITEM 9), NOT SHOWN, ARE SUPPLIED WITH EVERY MODULE/SLOT NOZZLE ASSY. OTHER SHIM BLANKS ARE AVAILABLE IN THICKNESS: .003"/0.076mm (P/N L21333),
.005"/0.127mm (L21335),
.010"/0.254mm (L21336),
.015"/0.381mm (L21337).

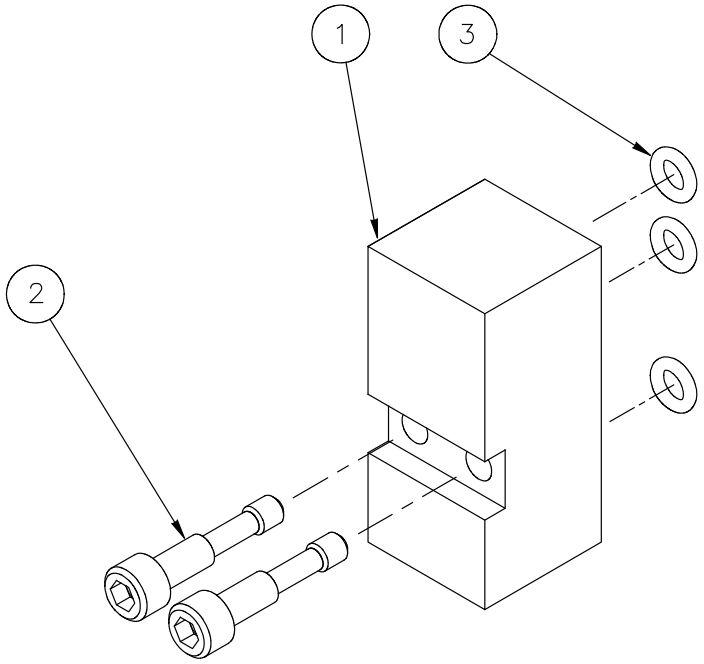
PN 118699 Nozzle Assembly 1.0 Inch RibbonCoater Ten Plus



ITEM	PART NUMBER	QTY.	U/M	DESCRIPTION
4	N07982	0	A/R	LUBE, SEAL, HI-TEMP
3	150008	1	EA	INSTRUCTION SHEET
2	150009	1	EA	O-RING
1	L21334	5	EA	SHIM, .004 THK

Standard shim size is .004. Other shim sizes are available:

P/N	THICKNESS
L21333	.003
L21334	.004
L21335	.005
L21336	.010
L21337	.015



PN L18500 Blank Assembly, Mod+

Item No.	Part Number	Description	Qty
1	L18700	Blank, Module	1
2	L18038	Screw, Shoulder	2
3	N00175	O-Ring, -008	3

Chapter 7
ORDERING GUIDES

Mod-Plus Single Orifice Nozzles

Part Number EZ-style	Part Number Button-style	Orifice Diameter	Orifice Length
100706	L19965	.25mm (0.010 inch)	1.27mm (0.050 inch)
100707	L19966	.30mm (0.012 inch)	1.27mm (0.050 inch)
100709	L19967	.38mm (0.015 inch)	1.91mm (0.075 inch)
100710	L19968	.51mm (0.020 inch)	1.91mm (0.075 inch)
100711	L19969	.64mm (0.025 inch)	1.91mm (0.075 inch)
100712	L19970	.76mm (0.030 inch)	1.91mm (0.075 inch)
100713	L19971	.89mm (0.035 inch)	1.91mm (0.075 inch)
100714	L19972	1.02mm (0.040 inch)	1.91mm (0.075 inch)

Mod-Plus Multi-Orifice Nozzles

Part Number	# of Orifices	Orifice Diameter	Angle
L09350-1015	2	.25mm (0.010 inch)	15°
L09350-1022	2	.25mm (0.010 inch)	22°
L09350-1030	2	.25mm (0.010 inch)	30°
L09350-1045	2	.25mm (0.010 inch)	45°
L09350-1060	2	.25mm (0.010 inch)	60°
L09350-1090	2	.25mm (0.010 inch)	90°
L09350-1515	2	.38mm (0.015 inch)	15°
L09350-1522	2	.38mm (0.015 inch)	22°
L09350-1530	2	.38mm (0.015 inch)	30°
L09350-1545	2	.38mm (0.015 inch)	45°
L09350-1560	2	.38mm (0.015 inch)	60°
L09350-1590	2	.38mm (0.015 inch)	90°
L09350-2015	2	.51mm (0.020 inch)	15°
L09350-2022	2	.51mm (0.020 inch)	22°
L09350-2030	2	.51mm (0.020 inch)	30°
L09350-2045	2	.51mm (0.020 inch)	45°
L09350-2060	2	.51mm (0.020 inch)	60°
L09350-2090	2	.51mm (0.020 inch)	90°
L09350-2515	2	.64mm (0.025 inch)	15°
L09350-2522	2	.64mm (0.025 inch)	22°
L09350-2530	2	.64mm (0.025 inch)	30°
L09350-2545	2	.64mm (0.025 inch)	45°
L09350-2560	2	.64mm (0.025 inch)	60°
L09350-2590	2	.64mm (0.025 inch)	90°

cont.

Mod-Plus Multi-Orifice Nozzles, cont.

Part Number	# of Orifices	Orifice Diameter	Angle
L09350-3015	2	.76mm (0.030 inch)	15°
L09350-3022	2	.76mm (0.030 inch)	22°
L09350-3030	2	.76mm (0.030 inch)	30°
L09350-3045	2	.76mm (0.030 inch)	45°
L09350-3060	2	.76mm (0.030 inch)	60°
L09350-3090	2	.76mm (0.030 inch)	90°
L09276-1015	3	.25mm (0.010 inch)	15°
L09276-1022	3	.25mm (0.010 inch)	22°
L09276-1030	3	.25mm (0.010 inch)	30°
L09276-1045	3	.25mm (0.010 inch)	45°
L09276-1515	3	.38mm (0.015 inch)	15°
L09276-1522	3	.38mm (0.015 inch)	22°
L09276-1530	3	.38mm (0.015 inch)	30°
L09276-1545	3	.38mm (0.015 inch)	45°
L09276-2015	3	.51mm (0.020 inch)	15°
L09276-2022	3	.51mm (0.020 inch)	22°
L09276-2030	3	.51mm (0.020 inch)	30°
L09276-2045	3	.51mm (0.020 inch)	45°
L09276-2515	3	.64mm (0.025 inch)	15°
L09276-2522	3	.64mm (0.025 inch)	22°
L09276-2530	3	.64mm (0.025 inch)	30°
L09276-2545	3	.64mm (0.025 inch)	45°
L09276-3015	3	.76mm (0.030 inch)	15°
L09276-3022	3	.76mm (0.030 inch)	22°
L09276-3030	3	.76mm (0.030 inch)	30°
L09276-3045	3	.76mm (0.030 inch)	45°
L10382-10	4	.25mm (0.010 inch)	all quads are
L10382-15	4	.38mm (0.015 inch)	35° inner angle,
L10382-20	4	.51mm (0.020 inch)	76° outer angle.
L10382-25	4	.64mm (0.025 inch)	

Nozzles, Spray (Swirl) or Extended

Part Number	Orifice Diameter
101367	0.381mm (0.015 inch)
101368	0.508mm (0.020 inch)
101369	0.635mm (0.025 inch)
101370	0.787mm (0.031 inch)
101371	1.016mm (0.040 inch)
101372	1.397mm (0.055 inch)
101373	1.778mm (0.070 inch)

Optima Nozzles

The optimized nozzles are “integrated”, that is, the nozzle and module are one piece (inseparable). Stem stroke adjustments are never necessary on optimized modules.

Part Number	Description	Color Ring
109729	Optima Module, SC, #2	Brown
109730	Optima Module, SC, #3	Red
109731	Optima Module, SC, #4	Orange
109732	Optima Module, SC, #5	Yellow
109733	Optima Module, SC, #6	Green
109735	Optima Module, SC, #8	Purple
109737	Optima Module, SC, #10	White

Spray (Swirl) Caps

Spray (swirl) models require a spray cap in addition to a nozzle.

Orifice Diameter inch	Orifice Diameter mm	Angle	Part Number
0.035	0.889	15°	L18790
0.035	0.889	20°	L18791
0.035	0.889	25°	L18792
0.035	0.889	30°	L18793
0.035	0.889	35°	L18794
0.040	1.016	15°	L18795
0.040	1.016	20°	L18796
0.040	1.016	25°	L18797
0.040	1.016	30°	L18798
0.040	1.016	35°	L18799

Options

Adjustable Stroke Module PN 111456

The standard BF module has a fixed stem stroke. An Adjustable Stroke model is available for applications which require that the operator make manual adjustments to the stem stroke, ie. the vertical travel of the needle, in order to adjust the quantity of adhesive coming from the module.

Filter Kits

To simplify ordering, Filter Kits are available for the 100-mesh, 150-mesh and 200-mesh filters.

Filter Kit PN	O-ring PN	Filter Cap PN	Filter Assy. PN
114287	N00186 O-ring #019	101620 Filter Cap	101618 100-mesh
114288	N00186 O-ring #019	101620 Filter Cap	112091 150-mesh
114289	N00186 O-ring #019	101620 Filter Cap	113311 200-mesh

Swirl Air Kits

Spray models require a swirl air kit installed on the ASU.

# of Applicators per ASU	ASU Voltage	Part Number Dynamini V2 ASU	Part Number DynameIt S ASU
1	120	111892	- - -
2	120	111893	- - -
1	240	111894	104903
2	240	111895	104906
1	200	n/a	104902
2	200	n/a	104905

Mod-Plus Dyna BF Head Heater Cartridges (12.5 mm diameter)

# of Modules/ Model	200-240VAC		120VAC	
	Part Number	Description	Part Number	Description
1 Module/ BF0441	104128 (240v)	220w x 33mm	104254	200w x 33mm
2 Modules/ BF0442	105878 (200v)	200w x 33mm	104254	200w x 33mm
2 Modules/ BF0662	104249	400w x 55mm	104255	240w x 55mm
3 Modules/ BF0883	104250	475w x 77mm	104256	320w x 77mm
4 Modules/ BF0884	104250	475w x 77mm	104256	320w x 77mm
4 Modules/ BF1104	104251	585w x 99mm	104257	360w x 99mm
6 Modules/ BF1546	104252	775w x 143mm	104258	500w x 143mm
8 Modules/ BF1988	104253	960w x 187mm	104259	600W x 187mm

Mod-Plus Dyna BF Head RTD Sensors

Control	Part Number	Quantity	Description
DynaControl/Dynamini	N07958	1	Pt100
Dynaplus/Pro	N07958	1	Pt100
MTC/ CompuVision	N07958	2	Pt100
ETC	N08176	2	NiFe
Upgrade	N07864	1	N120

Kits & Replacements

Nozzle Cleaning Kits

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

PN 101877	Nozzle Cleaning Kit .010 to .017 orifice
PN 101878	Nozzle Cleaning Kit .018 to .027 orifice
PN 101879	Nozzle Cleaning Kit .028 to .040 orifice

High Temp Heater Splice Kit PN 102645

This kit consists of a foot of shrink tube and nine connectors (splices). These parts plus a heater cartridge (order the heater separately from the chart above) will enable you to replace the heater in one module.

Replacement Module for the Standard Mod-Plus Module PN 110639

The standard Mod-Plus module (PN 110639) is a high performance module. ITW Dynatec also offers a more economical, lower performance replacement module, PN 110638. Cycle life of the high performance module is approximately three times longer than the ITW Challenger module.

Flexible Airline Kit for Solenoid Valve PN 111336

Kit is used to connect air solenoid valve to applicator when supplied rigid tubing is unsuitable.

Recommended Service Parts List

Part Number	Description	Qty. per Module
See Your Order	Module Assembly	1*
See Ordering Guide, pg. 7-3	Heater	1
See Ordering Guide, pg. 7-4	RTD Sensor	1
N00196	O-ring #111	1
N00186	O-ring #019	1
N00181	O-ring #014	1
102645	High Temp Heater Splice Kit	1
101618	Filter Asy., 100 mesh (standard)	2
112091	Filter Asy., 150 mesh (option)	2
112574	Filter Asy., 50 mesh (option)	2
113311	Filter Asy., 200 mesh (standard for Optima)	2
001V061	Thermal Paste	1 (per head)

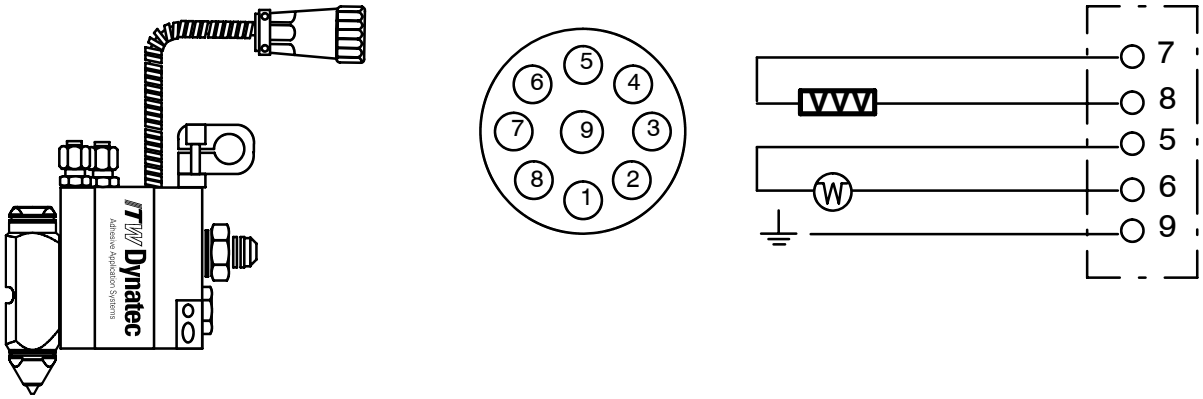
** if applicable*

Chapter 8
ENGINEERING DRAWINGS & SCHEMATICS

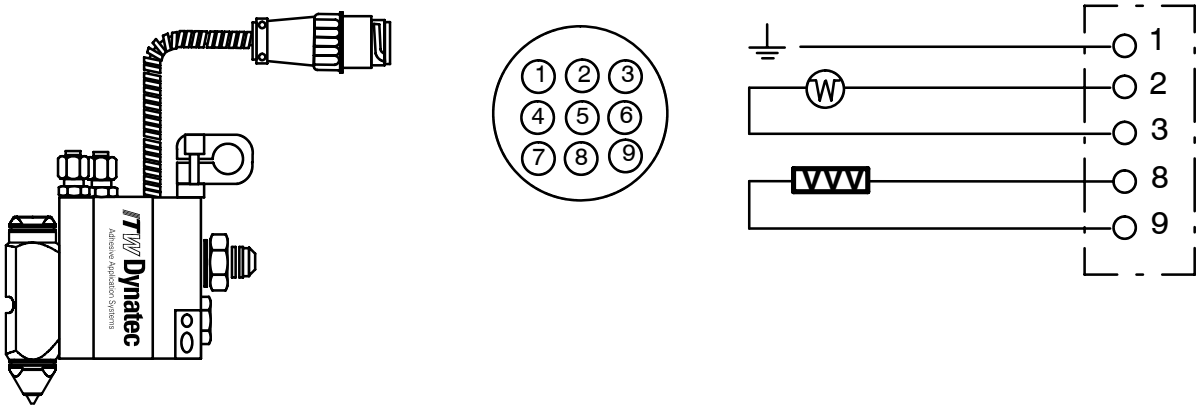
Pin Connectors & Electrical Schematics

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

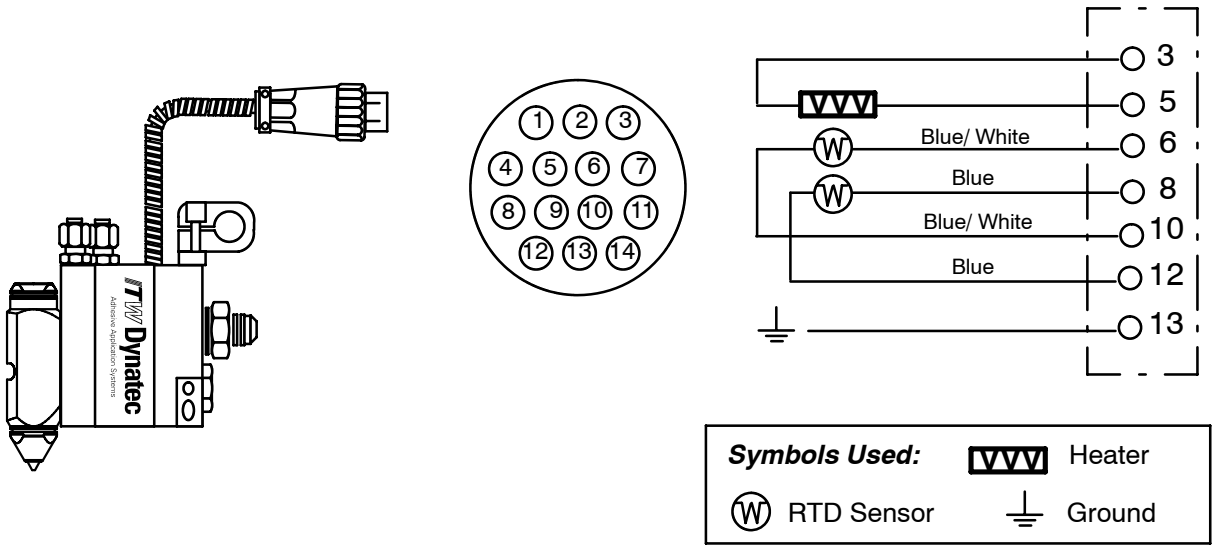
DynaControl/Dynamini Uses PN N07958 RTD Sensor, Pt100.



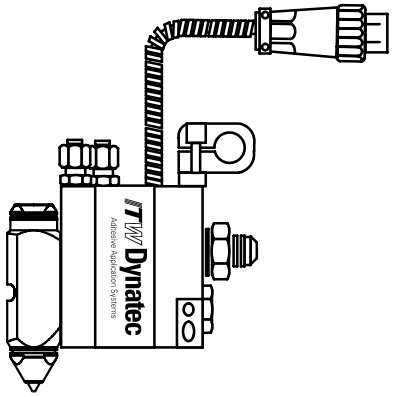
Dynaplus/Pro Uses PN N07958 RTD Sensor, Pt100.

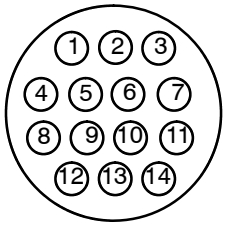


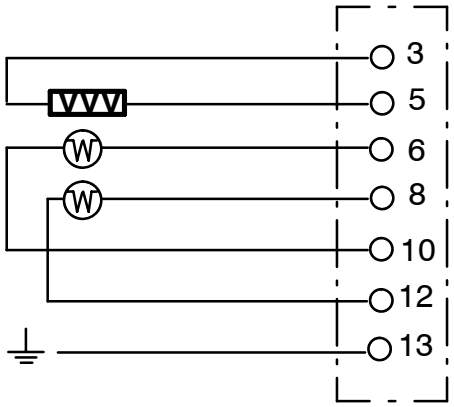
Electronic Temperature Control with Readout (ETC) Uses two PN N08176 RTD Sensor, NiFe.



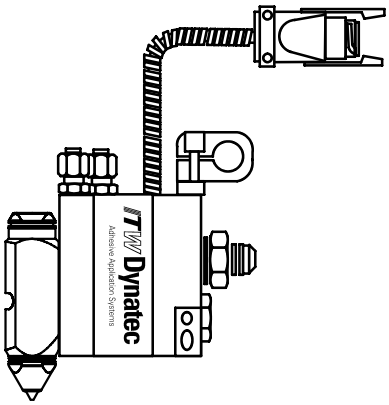
Microprocessor Temperature Control or CompuVision (MCV) Uses two PN N07958 RTD Sensors, Pt100

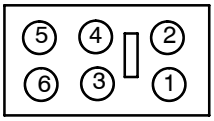




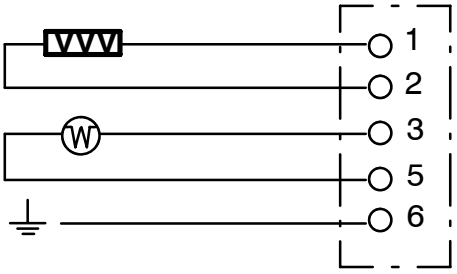


Upgrade (NOR) Uses PN N07864 RTD Sensor, N120.

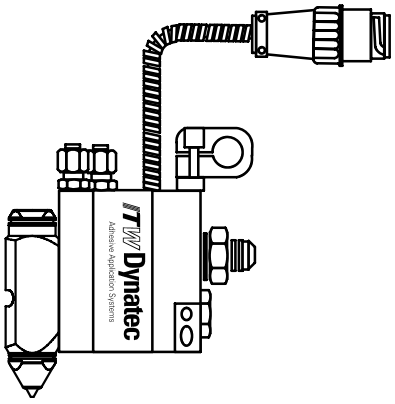


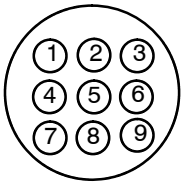


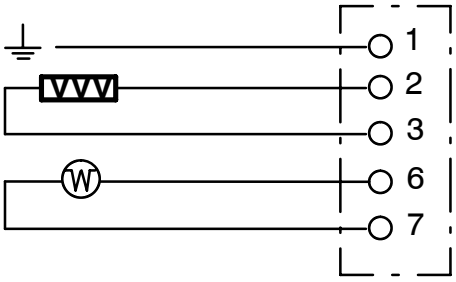
Note: pin out numbers are not labeled on the Upgrade connector.



Upgrade (SLA) Uses PN N07958 RTD Sensor, PT100.







Symbols Used: Heater — RTD Sensor — Ground

Appendix PN 100055 Air Control Filter Coalescing Kit for Applicator Heads

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

In addition to the kit, a solenoid valve with voltage that matches the output voltage of the electrical control device must be selected for the application. Use the following chart to select an appropriate solenoid valve:

Part No.	Voltage	Application
100054	24 VDC	Single-port head, continuous or intermittent
100383	24 VDC	Multi-port head, continuous
100421	120 VAC	Single or multi-port head, continuous
100422	240 VAC	Single or multi-port head, continuous
108968	24 VDC	Single or multi-port head, intermittent

Air Control Filter Coalescing Kit Installation Notes

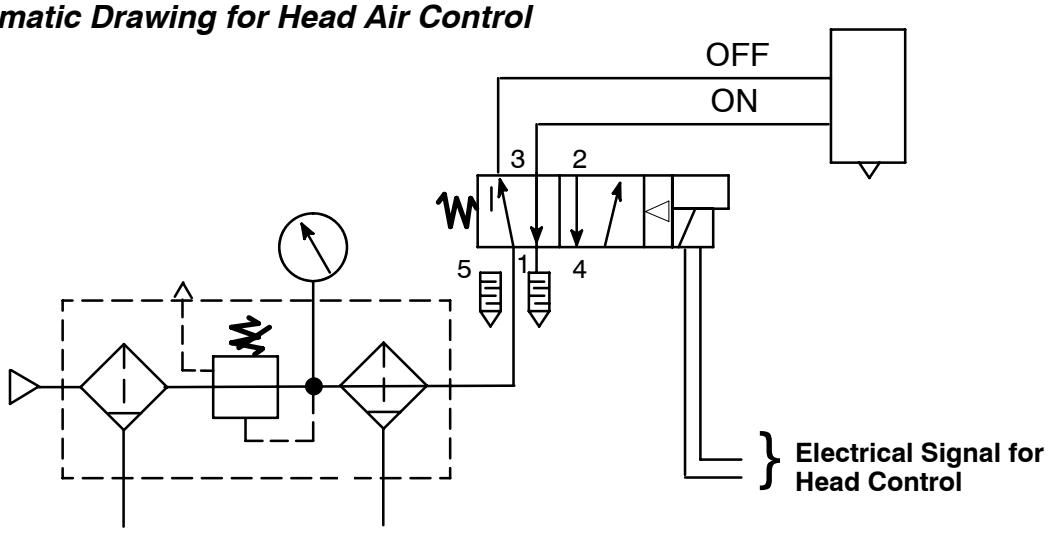
1) Compressed air for applicator head operation should be clean, dry and oil free.

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.

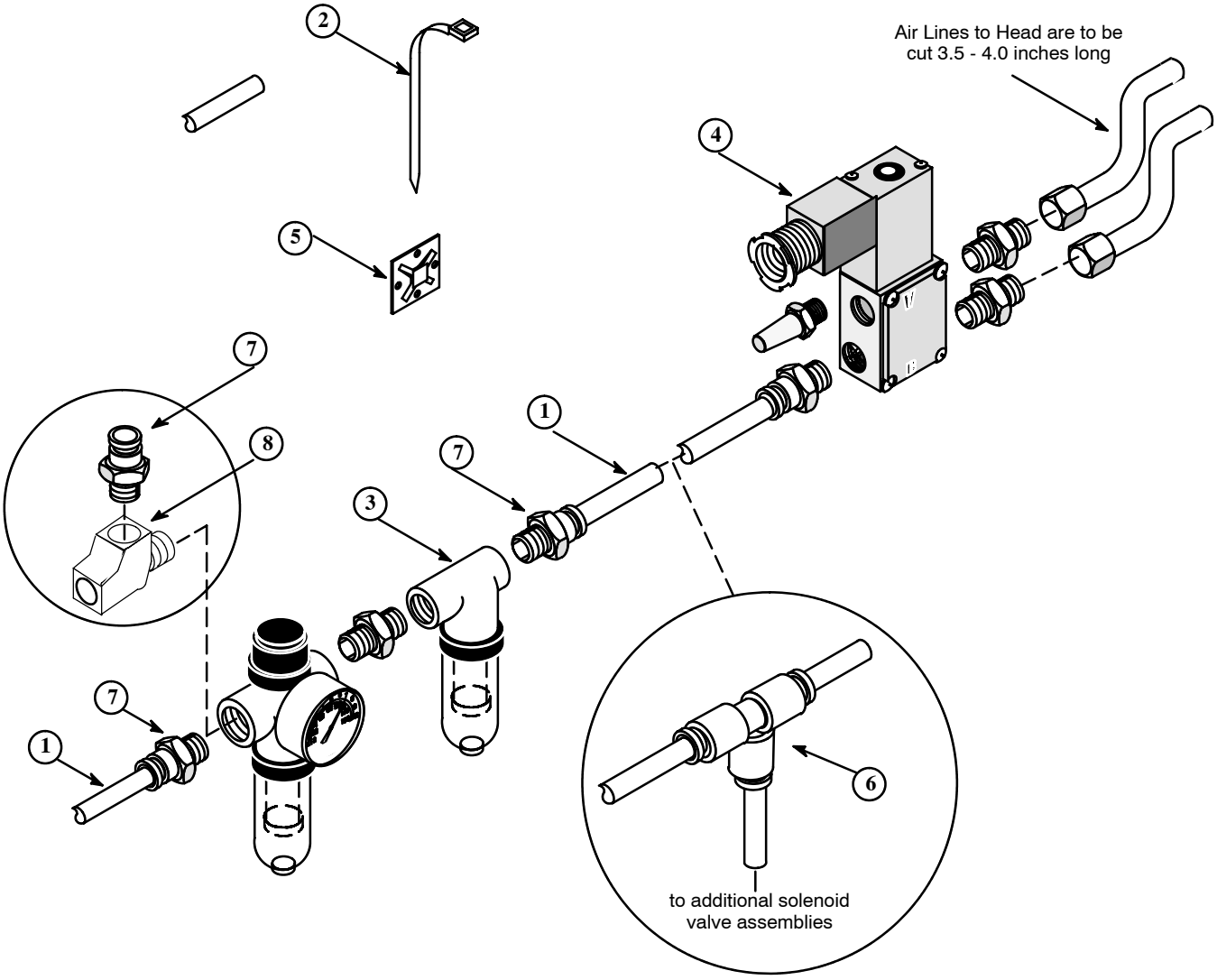
3) To provide identical operation of more than one head, air line circuits from solenoid valves to heads should be the same length and contain similar fittings.

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 Filter Coalescing Kit



Item No.	Part Number	Description	Qty.
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