ITW Dynatec®

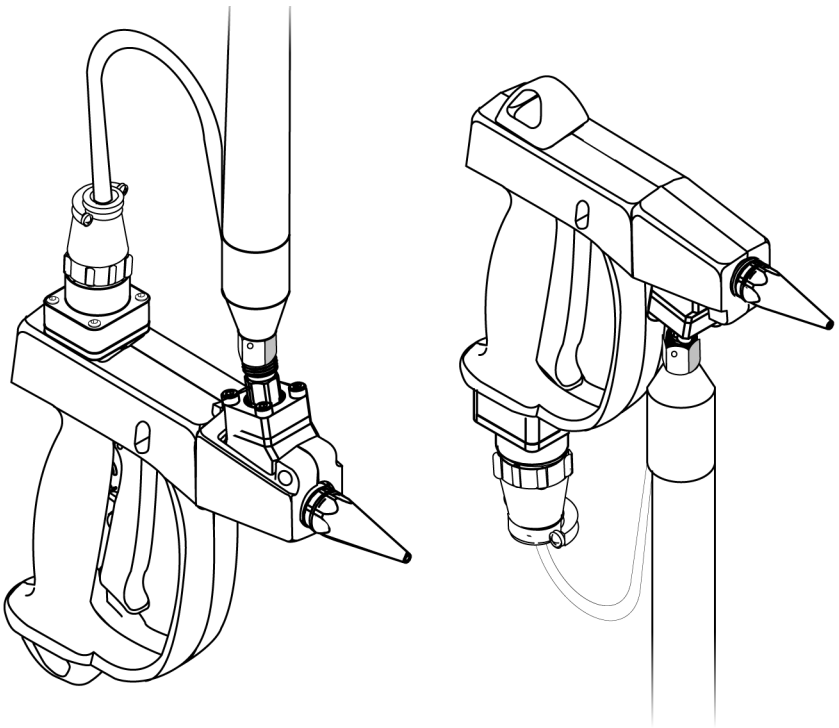
Adhesive Application Solutions | ISO 9001 certified

# DynaGun DG2

## Hand-Held Applicator

**Technical Documentation, No.40-41, Rev.11.23**

English – Original Instructions



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

# Information about this manual

***Read all instructions before operating this equipment!***
It is the customer's responsibility to have all operators and service personnel read and understand this information. Contact your ITW Dynatec customer service representative for additional copies.

**NOTICE:**
Please be sure to include the serial number of your application system each time you order replacement parts and/or supplies.
This will enable us to send you the correct items that you need.

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

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

## ITW Dynatec Service Parts and Technical Service:

| AMERICAS | EUROPE, MIDDLE EAST & AFRICA | ASIA PACIFIC | |
|---|---|---|---|
| ITW Dynatec<br>31 Volunteer Drive<br>Hendersonville, TN 37075<br>USA<br>Tel. +1.615.824.3634<br>info@itwdynatec.com<br>service@itwdynatec.com | ITW Dynatec<br>Industriestrasse 28<br>40822 Mettmann<br>Germany<br>Tel. +49.2104.915.0<br>info@itwdynatec.de<br>service@itwdynatec.de | ITW Dynatec<br>No. 2 Anzhi Street,<br>SIP, Suzhou, 215122<br>China<br>Tel. +86.512.6289.0620<br>info@itwdynatec.cn<br>service@itwdynatec.cn | ITW Dynatec<br>Tsukimura Building 5th Floor<br>26-11, Nishikamata 7-chome<br>Ota-ku, Tokyo 144-0051,<br>Japan<br>Tel. +81.3.5703.5501<br>info@itwdynatec.co.jp<br>service@itwdynatec.co.jp |

# Index

# Chapter 1
# Declaration of Incorporation / Conformity

## Declaration of Conformity

**Equipment Type: Heavy Industrial**

**Model No.** _____

**The manufacturer of the products covered by this declaration is**

**ITW Dynatec**
**31 Volunteer Dr.**
**Hendersonville, TN 37075**

**The directives covered by this declaration**

| | |
|---|---|
| 89/336/EEC | Electromagnetic Compatibility (EMC) directive, as amended |
| 73/23/EEC | Low Voltage Equipment directive, as amended |
| 98/37/EC | Machinery directive (consolidated edition) |

**The basis on which conformity is declared**

The product identified above complies with the protection requirements of the EMC directive, with the principal elements of the safety objectives of the Low Voltage directive, and with the essential health and safety requirements of the Machinery directive. The manufacturer has applied one or more of the following standards:

I, the undersigned, hereby declare that the equipment specified above conforms to the following Directive(s) Standard(s).

EN 292-1 Safety of Machinery – basic terminology, methodology
EN 563 Temperatures of Touchable Surfaces
EN 60204-1 Electrical Equipment of Machines
EN 50081-2 General Immunity Standard - Residential, light industrial environment
EN 50082-2 General Immunity Standard - Industrial environment

**Signed:** ..... Judson Broome .....
**Judson Broome** (General Manager)

**Date:** ..... 09/01/08 .....
(dd/mm/yy)

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# Chapter 2
# Safety Instructions

## 2.1 General Considerations

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

### Read and adhere to the manual!

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

## 2.2 Warning Labels

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

## 2.3 Safety Symbols in this Manual

### Mandatory signs

| | |
|---|---|
|  | General mandatory sign |
|  | Read and adhere to the documentation! |
|  | Switch the unit voltage-free before working!<br>Main switch OFF! |
|  | Wear headgear, protective goggles and ear protection! |

| | |
|---|---|
|  | Wear foot guard! |
|  | Wear protective gloves! |
|  | Wear protective clothing! |

### Warning signs

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

| | |
|---|---|
|  | **Caution, danger spot!**<br>This sign points to possible dangers for life and physical condition or to possible risks for machine and material or to possible risks for environment.<br><br>The word **"DANGER"** in addition with this points to possible dangers of life<br><br>The words **"WARNING" and "CAUTION"** in addition with this sign point to possible risks of injury.<br><br>The word **"ADVICE"** in addition with this sign points to possible risks for machine, material or environment. |

| | |
|---|---|
|  | **Danger, high voltage!**<br>This sign points to possible dangers for life and physical condition caused by electricity.<br>**Risk of injury, mortal danger!** |
|  | **Caution, hot surface!**<br>This sign points to possible risks of burns.<br>**Risk of Burns!** |
|  | **Caution, high pressure!**<br>This sign points to possible risks of injury caused by high pressure.<br>**Risk of injury!** |
|  | **Caution, rotating rolls!**<br>This sign points to possible risks of injury caused by inrunning nip (at rolls).<br>**Risk of injury!** |

### Prohibition signs

| | |
|---|---|
|  | **Fire danger!**<br><br>**Smoking prohibited!** |

| | |
|---|---|
|  | **Fire danger!**<br>**Fire and open flames prohibited!** |

## 2.4 Safe Installation and Operation

### Read and adhere to the manual!

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

2. To avoid possible failure of hoses, make sure all hoses are routed to avoid kinking, tight radius turns (8” or less) and abrasive contact. Hot-melt hoses should not have prolonged contact with heat-absorbing surfaces such as cold floors or metal troughs. These heat-absorbing surfaces can alter adhesive flow and cause incorrect calibration. Hoses should never be covered with materials that prevent heat dissipation, such as insulation or sheathing. Hoses should be spaced apart from each other, not making direct contact.

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

4. When adhesive hand-held applicators or other movable applicators are used, never point them at yourself or at any other person. Never leave a hand-held applicator's trigger unlocked when not actually in use.

5. Do not operate the hopper or other system components without adhesive for more than 15 minutes if the temperature is 150 degrees C (300 degrees F) or more. To do so will cause charring of the residual adhesive.

6. Never activate the heads, hand-held applicators and/ or other application devices until the adhesive's temperature is within the operating range. Severe damage could result to internal parts and seals.

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

8. In case of an emergency or exceptional incident, press the emergency stop button in order to stop the unit quickly.

9. Use the unit only as it is intended to.

10. Never let the unit run unattended.

11. Operate the unit only in a faultless and fully functional condition. Check and make sure that all safety devices work in proper form!

| | |
|---|---|
|  | **Smoking, fire and open flames prohibited! Fire danger!**<br><br>Make absolutely sure that there is no smoking and no fire being lit in the work area! |

## 2.5 Explosion/ Fire Hazard

1. Never operate this unit in an explosive environment.
2. Use cleaning compounds recommended by ITW Dynatec or your adhesive supplier only.
3. Flash points of cleaning compounds vary according to their composition, so consult with your supplier to determine the maximum heating temperatures and safety precautions.

## 2.6 Use of PUR (Polyurethane) Adhesives

1. PUR adhesives emit fumes (MDI and TDI) that can be dangerous to anyone exposed to them. These fumes cannot be detected by the sense of smell. ITW Dynatec strongly recommends that a power-vented exhaust hood or system be installed over any PUR system.
2. Consult with your adhesive manufacturer for specifics about required ventilation.

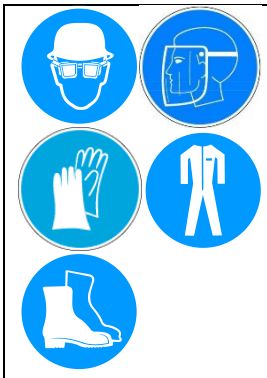
**CAUTION**

Because of the nature of PUR adhesives to strongly bond in the presence of moisture, care must be taken to prevent them from curing inside ITW Dynatec equipment.

If PUR adhesive solidifies in a unit, the unit must be replaced. Always purge old PUR adhesive from the system per your adhesive manufacturer's instructions and time table.

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

## 2.7 Eye Protection & Protective Clothing



**WARNING**
**EYE PROTECTION & PROTECTIVE CLOTHING REQUIRED**

1. It is very important that you PROTECT YOUR EYES when working around hot melt adhesive equipment!
2. Wear a face shield conforming to ANSI Z87.1 or safety glasses with side shields which conform to ANSI Z87.1 or EN166.
3. Failure to wear a face shield or safety glasses could result in severe eye injury.
4. It is important to protect yourself from potential burns when working around hot melt adhesive equipment.
5. Wear heat-resistant protective gloves and long-sleeved, protective clothing to prevent burns that could result from contact with hot material or hot components.
6. Always wear steel-reinforced safety shoes.

## 2.8 Electrical

### DANGER HIGH VOLTAGE

1. Dangerous voltages exist at several points in this equipment. To avoid personal injury, do not touch exposed connections and components while input power is on.
2. Disconnect, lockout and tag external electrical power before removing protective panels.
3. A secure connection to a reliable earth ground is essential for safe operation.
4. An electrical disconnect switch with lockout capability must be provided in the line ahead of the unit. Wiring used to supply electrical power should be installed by a qualified electrician.
5. Notify the maintenance personnel immediately, if cables are damaged. Provide for exchanging the defective components immediately.

## 2.9 Lockout/ Tagout

### Switch the unit voltage-free before working!
### Main switch OFF!

1. Follow OSHA 1910.147 (Lockout/ Tagout Regulation) for equipment's lockout procedures and other important lockout/tagout guidelines.
2. Be familiar with all lockout sources on the equipment.
3. Even after the equipment has been locked out, there may be stored energy in the application system, particularly in the capacitors within the panel box. To ensure that all stored energy is relieved, wait at least one minute after removing power before servicing electrical capacitors.

## 2.10 High Temperatures

### WARNING HOT SURFACE

1. Severe burns can occur if unprotected skin comes in contact with molten adhesive or hot application system parts.
2. Face shields (preferred) or safety glasses (for minimum protection), heat-resistant protective gloves and long-sleeved clothing must be worn whenever working with or around adhesive application systems.

## 2.11 High Pressure

### WARNING HIGH PRESSURE PRESENT

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

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

3. IMPORTANT NOTE: Even when a system's pressure gauge reads “0” psi, residual pressure and trapped air can remain within it causing hot adhesive and pressure to escape without warning when a filter cap or a hose or hydraulic connection is loosened or removed. For this reason, always wear eye protection and protective clothing.

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

5. Keep the given operating pressure.

6. Notify the maintenance personnel immediately, if hoses or components are damaged. Provide for exchanging the defective components immediately.

## 2.12 Protective Covers

### WARNING
### DO NOT OPERATE WITHOUT GUARDS IN PLACE

1. Keep all guards in place!

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

3. Never get your extremities and/or objects into the danger area of the unit. Keep your hands away from running parts of the unit (pumps, motors, rolls or others).

## 2.13 Servicing, maintenance

1. Only trained and qualified personnel are to operate and service this equipment.
2. Before any service work disconnect the external power supply and the pressure air supply!
3. Never service or clean equipment while it is in motion. Shut off the equipment and lock out all input power at the source before attempting any maintenance.
4. Follow the maintenance and service instructions in the manual.
5. Keep the maintenance rates given in this documentation!
6. Any defects in the equipment that impact safe operation have to be repaired immediately.
7. Check screws that have been loosened during the repair or maintenance, if they are tight again.
8. Replace the air hoses in preventive maintenance regularly, even if they have got no viewable damages! Adhere to the manufacturers` instructions!
9. Never clean control cabinets or other houses of electrical equipment with a jet of water!
10. Adhere to the current safety data sheet of the manufacturer when using hazardous materials (cleaning agents, etc.)!

## 2.14 Secure transport

1. Examine the entire unit immediately after receipt, if it has been delivered in perfect condition.
2. Let damages in transit certify by the carrier and announce them immediately to ITW Dynatec.
3. Use only lifting devices that are suitable for the weight and the dimensions of the equipment (see drawing of the equipment).
4. The unit has to be transported upright and horizontally!
5. The unit has to cool down to room temperature before packaged and transported.

## 2.15 Treatment for Burns from Hot Melt Adhesives

***Measures after being burned:***

1. Burns caused by hot melt adhesive must be treated at a burn center. Provide the burn center's staff a copy of the adhesive's M.S.D.S. to expedite treatment.

2. Cool burnt parts immediately!

3. Do not remove adhesive forcibly from the skin!

4. Care should be used when working with hot melt adhesives in the molten state. Because they rapidly solidify, they present a unique hazard. Even when first solidified, they are still hot and can cause severe burns.

5. When working near a hot melt application system, always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothes that cover all vulnerable parts of the body.

6. Always have first-aid information and supplies available.

7. Call a physician and/or an emergency medical technician immediately. Let the burns medicate by a medic immediately.

## 2.16 Measures in case of fire

1. Please heed that not covered hot parts of the engine and molten hot melt may cause heavy burns. Risk of burns!

2. Work very carefully with molten hot melt. Keep in mind, that already jelled hot melt can be very hot, too.

3. When working near a hot melt application system, always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothes that cover all vulnerable parts of the body!

***Measures in case of fire:***

Wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothes that cover all vulnerable parts of the body.

***Firefighting - burning hot melt:***

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

**EXTINGUISH FIRE**

*Appropriate extinguishing agents:*
Foam extinguisher, Dry powder, Spray, Carbon dioxide ($CO_2$), Dry sand.

*For safety reasons not appropriate extinguishing agents: None.*

***Firefighting - burning electrical equipment:***

*Appropriate extinguishing agents:*
*Carbon dioxide ($CO_2$), Dry powder.*

## 2.17 Keep attention to environmental protection standards

1. When working on or with the unit, the legal obligations for waste avoidance and the duly recycling / disposals have to be fulfilled.

2. Keep attention, that during installations, repairs or maintenance matters hazardous to water, like adhesive / adhesive scrap, lubricating grease or oil, hydraulic oil, coolant and cleaner containing solvent do not pollute the ground or get into the canalization!

3. These matters have to be caught, kept, transported and disposed in appropriate reservoirs!

4. Dispose these matters according to the international, national and regional regulations.

# Chapter 3
# Description and Technical Specs

## 3.1 Applicable Safety Regulations

### *3.1.1 Intended Use*

The DynaGun DG2 Hand-Held Applicator may be used only to apply suitable materials, e.g. adhesives. When in doubt, seek permission from ITW Dynatec.

If the Applicator is not used in accordance with this regulation, a safe operation cannot be guaranteed.

The operator - and not ITW Dynatec - is liable for all personal injury or property damages resulting from unintended use!

Intended use includes, that you

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

Any other use is considered to be unintended.

### *3.1.2 Unintended Use, Examples*

**The Applicator may not be used under the following conditions:**

- In defective condition.
- In a potentially explosive atmosphere.
- With unsuitable operating/processing materials.
- When the values stated under Specifications are not complied with.

**The Applicator may not be used to process the following materials:**

- Toxic, explosive and easily flammable materials.
- Erosive and corrosive materials.
- Food products.

### *3.1.3 Residual Risks*

In the design of the Applicator, every measure was taken to protect personnel from potential danger. However, some residual risks cannot be avoided.

**Personnel must be aware of the following:**

- Risk of burns from hot material.
- Risk of burns from hot Applicator's components.
- Risk of burns when conducting maintenance and repair work for which the system must be heated up.
- Risk of burns when attaching and removing heated hoses.
- Material fumes can be hazardous. Avoid inhalation. If necessary, exhaust material vapors and/or provide sufficient ventilation of the location of the system.
- Risk of pinching parts of the body at running parts of the Adhesive Supply Unit (pumps, motors, rolls or others).
- The safety valves may malfunction due to hardened or charred material.

### 3.1.4 Technical changes

Any kind of technical changes having impact to the security or the operational liability of the system must only be done by written agreement of ITW Dynatec. Suchlike changes made without given a corresponding written agreement will lead to immediate exclusion of liability granted by ITW Dynatec for all direct and indirect subsequent damages.

### 3.1.5 Using foreign components

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

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

### 3.1.6 Start-up operation

We recommend asking for an ITW Dynatec-service technician for the start-up operation, to ensure a functioning system. Let yourself and the people working with or working on the system be introduced to the system on this occasion.
ITW Dynatec takes no responsibility for damages or faults caused by any untrained personal.

# 3.2 Description of DynaGun DG2 Hand-Held Applicator

## *3.2.1 Description*

ITW Dynatec's DynaGun (DG2) Hand-held Applicators dispense hot melt adhesive onto a substrate via manual activation of a trigger.

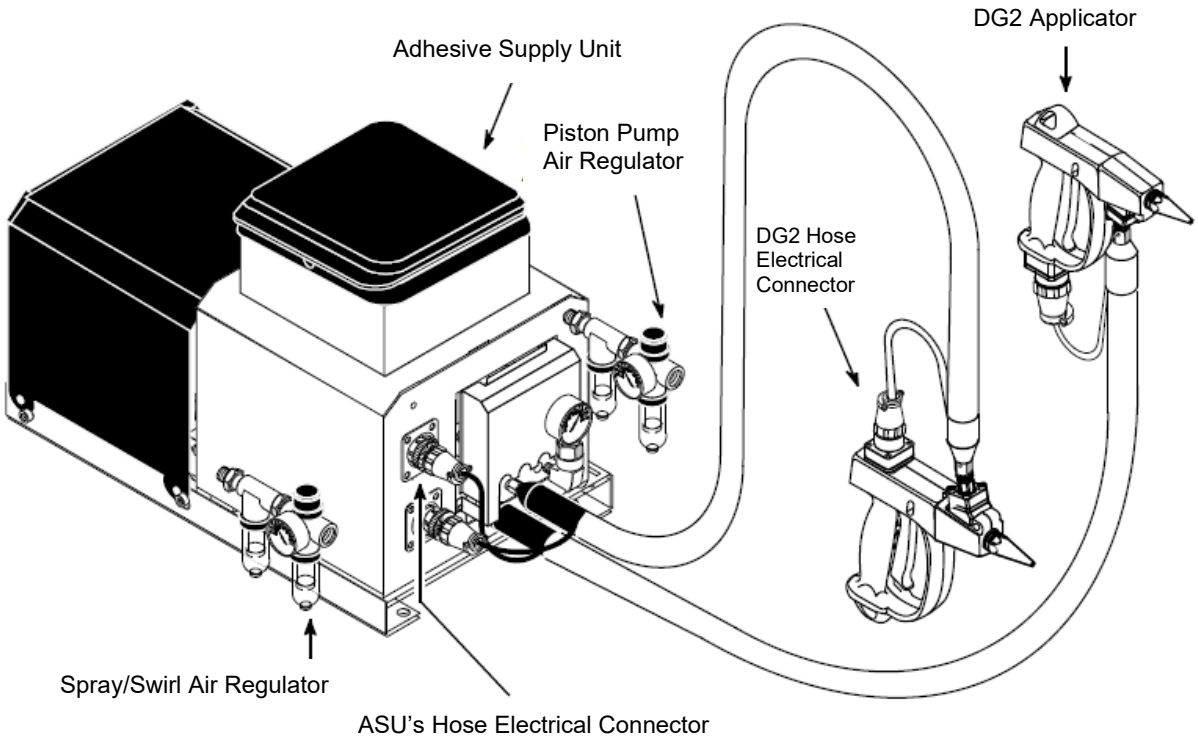
The DG2 applicators are electrically heated independent of the adhesive supply hose. Temperatures are controlled by the controller at the adhesive supply unit (ASU). The ASU responds to signals from temperature sensors (RTDs) located in the hose and applicator. The applicator connects to the adhesive supply hose through either a ball swivel fitting or an axial rotation (rotary) fitting and with an electrical connector. Adhesive output may be oriented to be straight or right angle.

As shipped, the DG2 applicator is fitted with a four-finger trigger and set-up for bottom-entry hose connection. Parts to convert the applicator to a top-entry hose connection are available. Applicators set up for bead application are tested and shipped with a bead nozzle with a orifice-Ø 0.055 inch (1.40mm). Applicators set up for swirl application are shipped with a swirl adapter kit. Tools, safety tags and a configuration sheet are also included.

The DG2 applicator is available in either straight or right-angle (90° application) models. They may be ordered for any ITW Dynatec control configurations as well as for competitive upgrades.

**Hand Applicator Tool Kit**

The DG2 Applicator is supplied with a tool kit containing a connector pin extractor and a caution tag. Other small items may be enclosed with the kit for shipment, but are not part of the tool kit.



### *3.2.2 3.2.2 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 layouts on following page
Weight ..... 0.77 kg (1.7 lb.)

**Performance:**

Operating temperature range..... 38°C to 232°C (100°F to 450°F)
Maximum operating pressure..... 70 bar (1000 psi)
Warm-up time.....15 minutes
Adhesive viscosity range.....0 to 80.000 mPa.sec. (centipoise)
Flow rate * .....0.39 kg/min (0.9 lb/min)
** Data determined for 1420 cps adhesive at 41.4 bar (600 psi)*
CE approval granted ..... yes

**Electrical:**

Voltage ..... 120 or 240 VAC, 50/60 Hz
Power requirements ..... 80 W

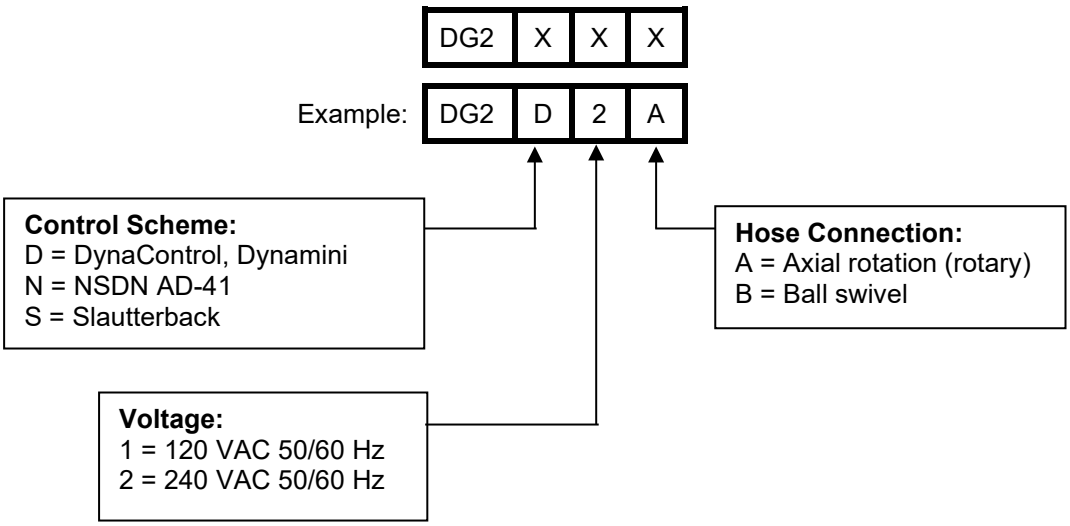
**Air Requirements (for swirl application only):**

Air pressure range, solenoid valve ..... 4.8 to 9.6 bar (70 to 140 psi)
Air pressure range, spray air..... 0 to 5.5 bar (0 to 80 psi)

**Control System**

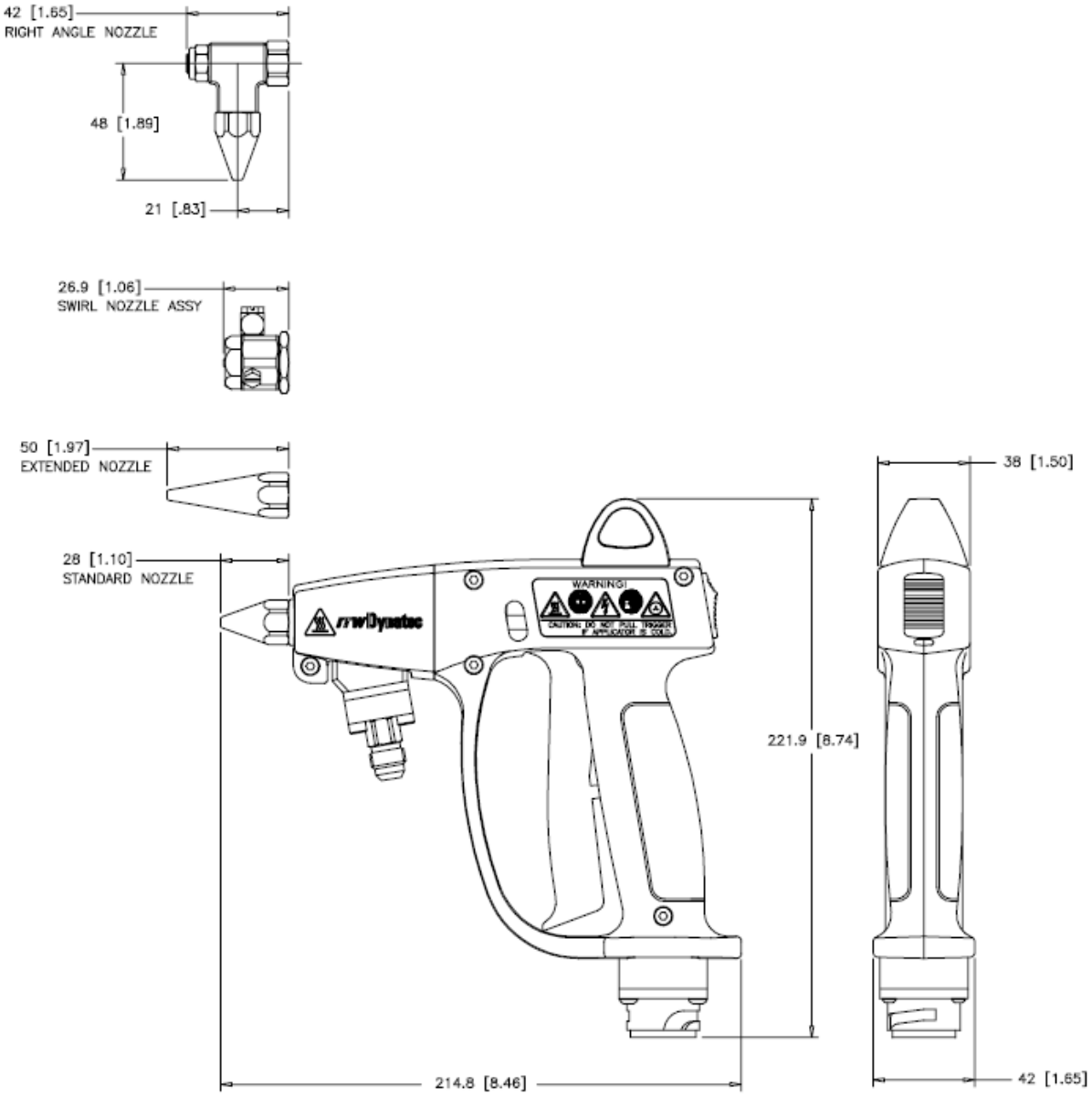
The DG2 applicator's temperature setpoints and system values are controlled, powered and monitored through one of the following Dynatec control systems:
Control System..... D (DCL)
ASU ..... Dynamini, Dynamelt SR Series or M Series

### *3.2.3 Model Designation Guide*



### *3.2.4 Dimensions*

Dimensions are expressed as “mm [inch]”.



# Chapter 4
# Installation & Start-up Operation

**CAUTION**

- All installation or operating procedures must be performed by qualified, trained technicians.
- Before installation and start-up, please read this documentation carefully.
- Pay attention to all the installation and connecting advices.
- Heed all safety instructions mentioned in chapter 2.

## 4.1 Conditions for set-up and mounting

**Electrical connection**

- Necessary electrical connection has to be provided. See electrical schematics.
- Never connect or disconnect plug-and-socket connections under load!
- The applicator's electrical power is supplied by the hose / adhesive supply unit (ASU). No other electrical connection is required.

**Pneumatic connection**

**NOTE**

- Air supply for swirl application may be provided by a Swirl Air Kit on the ASU.
- In any case the air has to be clean and dry! See the following advices under "Quality of compressed air".
- Air lines and fittings must be capable of withstanding temperatures up to 218°C (425°F).

**Quality of compressed Air:**

**CAUTION**

- **In any case, the air has to be clean and dry!**
- **The min. requirement for compressed air supply to solenoids to control automatic Applicators is ISO 8573-1:2010 class 2:4:3.**

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

| ISO 8573-1: 2010 | Solid particles | | | | Water | | Oil |
|---|---|---|---|---|---|---|---|
| Class | Maximum number of particles per m³ | | | Mass concentration | Vapor pressure dew point | Liquid | Total oil content (liquid, aerosol and mist) |
| | 0.1-0.5 µm | 0.5-1 µm | 1-5 µm | mg/m³ | °C | g/m³ | mg/m³ |
| 0 | As stipulated by the equipment user, stricter requirements than class 1. | | | | | | |
| 1 | ≤ 20,000 | ≤ 400 | ≤ 10 | - | ≤ -70 | - | 0.01 |
| 2 | **≤ 400,000** | **≤ 6,000** | **≤ 100** | - | ≤ -40 | - | 0.1 |
| 3 | - | ≤ 90,000 | ≤ 1,000 | - | ≤ -20 | - | **1** |
| 4 | - | - | ≤ 10,000 | - | **≤ +3** | - | 5 |
| 5 | - | - | ≤ 100,000 | - | ≤ +7 | - | - |
| 6 | - | - | - | ≤ 5 | ≤ +10 | - | - |
| 7 | - | - | - | 5-10 | - | ≤ 0.5 | - |
| 8 | - | - | - | - | - | 0.5 - 5 | - |
| 9 | - | - | - | - | - | 5 - 10 | - |
| X | - | - | - | > 10 | - | > 10 | > 10 |

## 4.2 Typical Installation

**CAUTION**

- All installation or operating procedures must be performed by qualified, trained technicians.
- Pay attention to the system's electrical schematics!
- Clean and dry air to the applicator is required.
- All heating elements have to be mounted and operated secured and according to the valid regulations.

**WARNING**

Start with set-up operation only if

- the functioning of the unit is known, and
- the unit installation for start-up operation has been done according to the details given in this chapter. That means all unit components are operable.

Read the documentation thoroughly to avoid breakdowns caused by faulty handling.

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

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

**Installation**

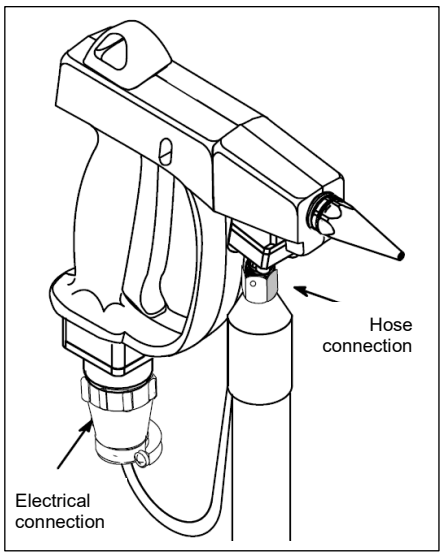
The DG2 applicator is shipped with a four-finger trigger and a bottom-entry hose connect. To reconfigure with a top-entry hose connect, see instructions in Chapter 6 Disassembly.

Screw the union nut of the material hose with an open-end wrench (11/16 inch or 17 mm) to the material hose connection of the applicator and, at the same time, hold the material hose connection with a second open-end wrench (13 mm) stationary.

**NOTE:** Do not rotate the fitting when attaching the hose.
Connect the applicator electrically to the adhesive supply hose with its cable assembly.

A standard bead nozzle with a orifice-Ø 0.055 inch (1.40mm) is factory-installed on all DG2 applicators.
If installation of a different nozzle or nozzle adapter is required, follow this procedure (see illustrations in Chapters 6 and 7):

1. Pull the applicator's trigger to move the needle off the nozzle seat. Hold the trigger and needle in this position while removing and installing nozzles.
2. Use a 17mm wrench to remove the nozzle and to install a different nozzle or nozzle adapter.
3. Seat nozzle or nozzle adapter firmly into the heater body. DO NOT OVERTIGHTEN.
4. Release the applicator's trigger and verify that the needle returns to rest against the nozzle or nozzle adapter seat



**Swirl Application**

Swirl application requires installation of a Swirl Air Kit (see Chapter 7 for ordering guide) onto the ASU. Installation instructions are enclosed with the kit. The swirl nozzle's air line is attached (with the quick release air connection provided at the swivel fitting on the handle) to the air output of the swirl hose.

## 4.3 Typical Start-Up Operation

**CAUTION**

**During operating the unit, heed the following:**

- Heed all safety instructions mentioned in chapter 2.
- Install an appropriate protection device to avoid unintended contact with heated parts and with spilling out hot adhesive. The protection device has to prevent also the operator against not reaching into the adhesive application and against injuring.
- Set the working temperatures strictly within the temperature range given by the adhesive manufacturer. Do not exceed this temperature range.
- Switch the unit off during longer production breaks.
- Switch the unit to standby during shorter production breaks.
- Avoid voltage fluctuation.
- The air supply has to be clean and dry.
- In case of an emergency or exceptional incident, press the emergency stop button in order to stop the unit quickly.

**CAUTION**

The unit is ready for operation, when

- all temperatures are within the tolerances,
- all motors are switched on.

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

- Keep your hands away from running parts of the unit (pumps, motors, rolls or others).

### 4.3.1 Operator Protection

**WARNING HOT SURFACE**

Always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothing when working on or with the hot adhesive application system.

Risk of burns and risk of injury!

Risk of electric shocks! Risk of injury, Mortal danger!

The unit components are getting very hot during operation! Risk of burns!

The adhesive is very hot and pressurized! Risk of burns and risk of injury!

At working temperature, molten adhesive could cause heavy burns. Let spilled out adhesive cool down first, before removing it!

**WARNING**

The DG2 hand-held applicator is designed for use with ITW Dynatec equipment ONLY. Failure to observe this warning could result in personal injury or damage to the equipment.

### 4.3.2 Operation of the Hand-Held Applicator

When the application system is up to temperature and the ASU's pump is switched on, the hand-held applicator will extrude molten adhesive immediately and continuously when its trigger is pulled.

**WARNING**

DO NOT hold the hand-held applicator by its front end (nozzle, adapter, etc.). NEVER point the hand-held applicator at any personnel.

**CAUTION**

Do not pull the DG2's trigger until applicator is up to operating temperature.

**Trigger Safety Lock**

To prevent accidental discharge of adhesive, the applicator's trigger is equipped with a safety trigger lock. When the applicator is not in use, pull the slide switch down to lock. To unlock, push the slide switch up to restore normal trigger function. Exposure of the yellow colored insert below the slide switch indicates the trigger is not locked.

**Temperature Adjustment**

The applicator's temperature is adjustable at the ASU's control panel. The recommended maximum temperature varies depending on adhesive used. A lower application temperature increases the service life of the applicator. The maximum temperature of the applicator is 450°F (232°C).

**Adhesive Flow Adjustment**

For any given nozzle configuration, adhesive flow rate may be adjusted by increasing or decreasing the pump/ pressure output (increased pump/ pressure output delivers more adhesive) or by increasing or decreasing temperature in order to, respectively, decrease or increase viscosity.

**CAUTION**

Do not exceed the recommended maximum temperature for the adhesive you use. This temperature is specified by your adhesive manufacturer.

Do not exceed the factory recommended maximum system pressure of 1000 psi (68 bar) for hand-held applicators. Damage to the applicator can occur at high system pressure.
System pressure is factory set at 350 psi (24 bar) for gear pump model ASUs and 1000psi (68 bar) for piston pump model ASUs.

**Swirl application note:**
After operating temperature is reached, adjust the regulator on the coalescing air filter (at the ASU) to achieve the desired pattern size. Increase air pressure for a larger pattern, decrease air pressure for a smaller pattern. Pattern size can also be changed by varying the swirl air cap. Filament size varies with nozzle size.

### *4.3.3 Operation Checks*

When the hand-held applicator has reached operating temperature, these three functions must be smooth and positive:

1. The trigger will retract smoothly against the spring force to a positive stop. The adhesive will flow from the nozzle in a straight, even stream.
   When released, the trigger will immediately return to the closed position, shutting off the adhesive flow from the nozzle.

2. The safety positively locks the trigger.
   When the safety is released, the trigger will function as described above.

3. The hose connection (axial rotation or ball swivel) turns freely and smoothly.

**NOTE:** Ball swivel hose connections are affected by adhesive pressure and become stiff as pressure increases. However, when the trigger is activated and adhesive flows, pressure in the applicator drops and ball swivel connections move freely.

## 4.4 Shut Down Procedure

**CAUTION! RISK OF BURNS AND INJURY!**

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

**Effect following steps for switching the unit off:**

1. Switch all pumps/motors off.
2. Switch the ASU's main switch off!

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

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

**Removing dirt:**

Remove dirt from all unit components immediately.

Wooden scrapers or cleaner may only be used for cleaning.

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

# Chapter 5
# Maintenance and Troubleshooting

## 5.1 Security advices for maintenance and repair

Heed all security advices given in chapter 2.

Use only original parts from ITW Dynatec, otherwise ITW Dynatec's warranty is void!

Maintenance and repair work is only permitted for skilled personnel!

Always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothing that cover all vulnerable parts of the body while working on the heated unit! Risk of injury or heavy burns!

**High Voltage! Risk of injury and mortal danger!**

- All electrical connections must be made by qualified electrical personnel.
- Care must be taken to assure proper grounding prior to any disassembly.
- Lockout and tag the electrical sources as required.
- Make sure there is no electrical power on the leads you will be connecting.
- When covers are removed, high voltage sources create an electrocution hazard.
- Wear appropriate safety equipment when working with high voltage sources.

**Parts and surfaces of the unit get very hot. High temperatures! Risk of heavy burns!**

**High adhesive temperature and adhesive pressure! Risk of injury or heavy burns!**
Always assume that the system is under pressure, proceed with caution.

Keep a cool-pack, or bucket of clean water near the work area.

Place a heat-resistant catchment container/underlay under the components. Hot adhesive may come out.

CAUTION: At working temperature, molten adhesive could cause heavy burns. Let spilled out adhesive cool down first, before removing it!

CAUTION: Use only lint-free cleaning cloth and suitable cleaner for cleaning! Do not damage surfaces! Do not scratch above them with sharp-edged tools, otherwise the components will get leaky and inoperable!

**WARNING:** All maintenance and repair work has to be done at working temperature, except as noted otherwise. Otherwise there is a risk of damaging the unit components!

**Before any service work disconnect the external power supply and switch the unit voltage-free:**

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

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

1. Disconnect the pressure air supply.
2. Turn the pressure regulator to zero bar, if necessary. Wait approximately 1 minute until the pressure is relieved.
3. Refer to ASU's manual.

## 5.2 Maintenance plan

### CAUTION

- Heed all security advices given in chapter 5.1.
- Use only original parts from ITW Dynatec, otherwise ITW Dynatec's warranty is void!
- When handling the hazardous substances (cleaning agents, etc.), always observe the current safety data sheets.
- Please use only the indicated lubricants and keep the prescribed maintenance intervals. Consider in addition the enclosed regulations of manufactures.
- Punctual and conscientious maintenance of the unit secures not only a trouble-free function, but also prevents expensive repair costs.
- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Place a heat-resistant catchment container/underlay under the components. Hot adhesive may come out.
- Use only lint-free cleaning cloth and suitable cleaner for cleaning! Do not damage surfaces! Do not scratch above them with sharp-edged tools, otherwise the components will get leaky and inoperable!

**Maintenance plan:**

| Operating time/ frequency | Inspection point / maintenance notes |
|---|---|
| Continuous | • Remove dropped out adhesive and scrap adhesive and search for the cause of that, eliminate the cause. |
| Once a day | • Clean the applicator and components from dirt. Wipe the applicator clean of adhesive with a clean cloth while still hot at the end of each shift. |
| Once a week | • Check the needle seal for leaks and replace it, if necessary.<br>• Check the hose connection seal for leaks and replace it, if necessary.<br>• Check the hose fittings for leaks and tighten the fittings, if necessary.<br>• Check the nozzle for proper operation and clean it using the cleaning kit or replace it, if necessary.<br>• Check air supply connections for leaks and tighten if loose or replace if necessary. |
| Once a month | • Check applicator and hose for adhesive buildup and clean or replace them, if necessary. |
| Every 3 months | • Due to temperature differences a loosening of threads (threaded connections) is possible. Check all parts with threads, all screw fittings and<br>• fasteners for tightness and tighten them if necessary. |
| Once a year | • Clean the Applicator.<br>• Complete check-up for wearing. |
| Every two years | • Complete maintenance. |

## 5.3 Nozzle Cleaning

### WARNING

Heed all security advices given in chapter 5.1.

Maintenance and repair work is only permitted for skilled personnel!

Always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothing that cover all vulnerable parts of the body while working on the heated unit! Risk of injury or severe burns!

**During this procedure, hot adhesive can come out of the Applicator under high pressure.**

Components and adhesive are hot when this procedure is being done. Take every precaution to prevent the material and hot surfaces from contacting the skin.

Occasionally nozzles can become clogged with char, residue or other foreign material. This can result in the decrease or even stoppage of adhesive flow from the nozzle.

ITW Dynatec has nozzle cleaning kit available, designed to be orifice-size specific:

- **PN 101878 Nozzle Cleaning Kit:** 0.018 to 0.040 inch (0.45 – 1.02 mm) orifice.

For nozzles sized over 0.040 inch (1.02 mm), an appropriately sized drill bit, turned by hand, may be used to clean the nozzle.

### WARNING HIGH PRESSURE

**Relieve the pressure:**
Before using the nozzle cleaning kit, turn OFF the ASU, then trigger the applicator to relieve adhesive pressure.
If the nozzle orifice is obstructed, relieve adhesive pressure at the manifold/tank of the ASU, where the hose is connected. See ASU's manual.

1. The nozzle must be at operating temperature when cleaned.

2. Turn the ASU OFF. Switch air pressure OFF (to zero) and make sure that the adhesive pressure is relieved.

3. Place a heat-resistant container under the applicator.

4. Use the reamers (cleaning needles) in the kit to clear the nozzle 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.
   Then carefully insert the reamer approximately 3mm (1/8 inch) into the nozzle tip several times, removing any visible debris.

### 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 orifice itself.

5. Turn ON the ASU's pump and activate the hand-held applicator's trigger.

   If the nozzle is still plugged, proceed with the following steps.

6. Turn OFF the ASU's pump. Trigger the applicator to relieve system pressure.

**WARNING HIGH PRESSURE**

DO NOT PROCEED without verifying that the system pressure is relieved. Hot adhesive under pressure could escape when the nozzle is removed.

7. Pull the applicator's trigger to move the needle off the nozzle seat. Hold the trigger and needle in this position and remove the nozzle.

8. From the needle end of the nozzle, clean the orifice again by inserting a reamer of proper diameter.

9. Check inside the nozzle to assure that it is clean.

10. Pull the applicator's trigger to retract the needle.
    Hold the trigger and needle in this position while nozzle is reinstalled. DO NOT OVERTIGHTEN the nozzle into the heater body.

11. Release the trigger.
    Turn ON the ASU's pump and activate the trigger to verify nozzle is clear and adhesive flow is off when the trigger is released.

**After finishing the maintenance or repair works:**

- Remove all materials and tools used during the repair or maintenance from the workspace of the unit.
- Turn the ASU and adhesive pressure ON. Switch to operation temperature and heat the unit up. Wait until all temperatures are within the tolerances and the adhesive in the hopper is molten completely.
- Continue production.

# 5.4 Troubleshooting Guides for Hand-Held Applicator

## *5.4.1 Troubleshooting In General*

**NOTE:** Please re-read all security advices given in chapter 2 before performing any troubleshooting or repair procedures.

All troubleshooting or repair procedures must be performed by qualified, trained technicians.

### DANGER HIGH VOLTAGE

**Some of the procedures in the following Troubleshooting Guide require potentially dangerous electricity to be present. Only qualified service personnel must perform these procedures.**

### WARNING HOT SURFACE

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

**Some of the procedures in the following Troubleshooting Guide require working near hot adhesive.**

**Face shields (preferred) or safety glasses (for minimum protection), heat-resistant protective gloves and long-sleeved clothing must be worn whenever working with or around adhesive application systems.**

**Use proper tools for handling hot melt components.**

**NOTE:** The temperatures measured on the outer surface may deviate significantly from the temperatures set and displayed. This can lead to a false conclusion (e.g. defective heating). Such a difference is normal and depends also largely on the materials used.

### Preliminary Checks:

If the applicator does not operate properly, verify the following before proceeding:

- All pneumatic and electrical connections are correct.
- The Melter is supplied with power and the main power switch is ON.
- Adhesive is in the hopper (tank) and the Melter's pump is running.
- The Melter and Applicator have sufficient air pressure (if the applicator has swirl nozzle).
- The temperature controller is in operation. The setpoints are correct for the application, Melter, Heated Hoses and Applicators. All components are heating properly.

### Using the Troubleshooting Guides:

Please note that there are two Troubleshooting Guides.
The first guide (Ch. 5.4.2) applies to bead and swirl applicators. The second guide (Ch. 5.4.3) applies to swirl applicators only.

### *5.4.2 Troubleshooting Guide for Bead and Swirl Applicators*

| Problem | Possible Cause | Solution |
|---|---|---|
| **1. Adhesive leaks.** | 1. Needle seal inoperative.<br>2. Hose connection seal inoperative.<br>3. Hose fittings leaks. | 1. Check and replace, if necessary.<br>2. Check and replace, if necessary.<br>3. Check and tighten the fittings, if necessary. |
| **2. Trigger action is stiff or frozen.** | 1. Temperature too low. | 1.1 Allow longer warm up.<br>1.2 Check temperature setting. |
| **3. Applicator does not heat.** | 1. Inoperative heater.<br>2. Inoperative sensor.<br>3. Control set incorrectly.<br>4. Inoperative or damaged wiring or connector. | 1. Check resistance per instructions given in this chapter. If needed, replace the heater or cable assembly.<br>2. Check resistance per instructions given in this chapter. If needed, replace the sensor or cable assembly.<br>3. Check control panel for proper temperature setting.<br>4. Check wiring and connector. |
| **4. Applicator overheats.** | 1. Control set incorrectly.<br>2. Inoperative sensor.<br>3. ASU controller malfunctioning. | 1. Check control panel for proper temperature setting.<br>2. Check resistance per instructions given in this chapter. If needed, replace the sensor or cable assembly.<br>3. Refer to ASU manual troubleshooting guides. |
| **5. Adhesive flows even after trigger is released.** | 1. Char on needle seat.<br>2. Needle spring inoperative. | 1. Clean the nozzle. See Ch.5.3.<br>2. Check the spring and replace if necessary. Follow disassembly procedures in Chapter 6. |

### *5.4.2 Troubleshooting Guide for Swirl Applicators Only*

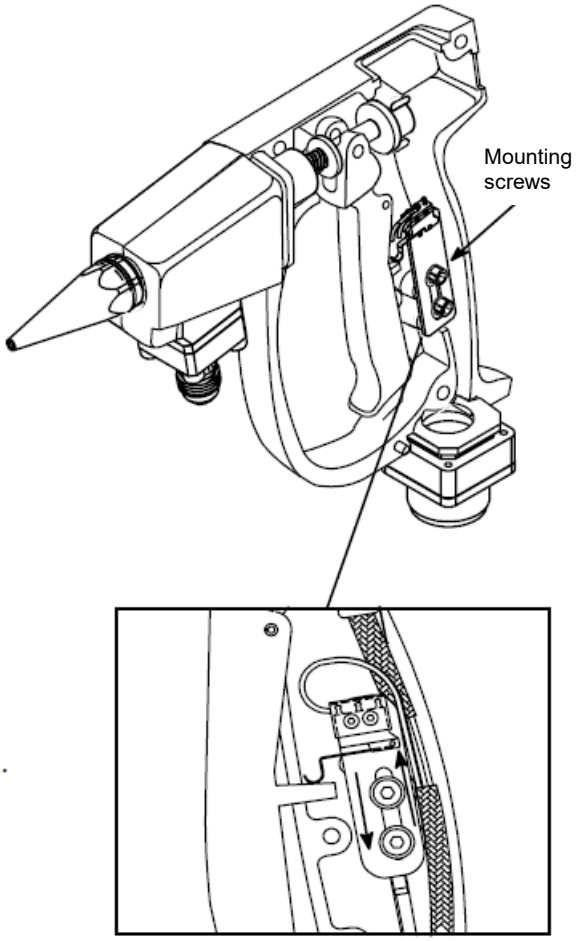
| Problem | Possible Cause | Solution |
|---|---|---|
| **1. Straight bead, no spray.** | 1. No spray air. | 1.1 Check air supply.<br>1.2 Check trigger switch and listen for the activation "click". Adjust trigger switch if necessary.<br>1.3 Check for clogged nozzle. |
| **2. Small spray.** | 1. Low spray air pressure.<br>2. Spray nozzle too small.<br>3. Pump pressure too high. | 1. Increase air pressure.<br>2. Increase nozzle size.<br>3. Decrease ASU's pump pressure. |
| **3. Large spray.** | 1. High spray air pressure.<br>2. Spray nozzle too large.<br>3. Pump pressure too low. | 1. Decrease air pressure.<br>2. Decrease nozzle size.<br>3. Increase ASU's pump pressure. |
| **4. Good spray pattern, application to light.** | 1. Nozzle too small. | 1.1 Increase nozzle size.<br>1.2 Re-adjust air pressure. |
| **5. Good spray pattern, application to heavy.** | 1. Nozzle too large. | 1.1 Decrease nozzle size.<br>1.2 Re-adjust air pressure. |
| **6. Pump does not run (no adhesive application).** | 1. Trigger switch adjustment wrong.<br>2. Trigger switch inoperative. | 1. Re-adjust trigger switch.<br>2. Measure continuity between pins 1 & 2 for DynaControl or Dynamini. Replace trigger switch assembly, if needed. |
| **7. Spray air does not run.** | 1. Trigger switch adjustment wrong.<br>2. Trigger switch inoperative. | 1. Re-adjust trigger switch.<br>2. Measure continuity between pins 1 & 2 for DynaControl or Dynamini. Replace trigger switch assembly, if needed. |

## 5.5 Trigger Switch Adjustment

Follow instructions in Chapter 6 for disassembly of the applicator.
Proceed to the instructions for “Trigger Switch Replacement” to access the switch.
Complete the following steps to adjust the trigger switch:

*NOTE: The applicator’s nozzle must be installed to make this adjustment.*

1. Loosen, but do not remove, the trigger switch’s two mounting screws.
2. Slide the trigger switch and its bracket towards the base of the handle until you hear a click (or check continuity, chart below). The click indicates that the switch has been actuated.
3. Now slide the trigger switch upwards slightly until it clicks (or check continuity, chart below) again. Stop there.
4. Hold the trigger switch in this position and tighten the two trigger switch mounting screws.
5. After re-assembling the handle, check the adjustment by pulling the applicator’s trigger and verifying that you can hear the two clicks (or check continuity again). The switch must be set to actuate in the initial trigger movement before the needle is lifted from its seat in the nozzle.




### *5.5.1 Continuity Chart (Pin Assignment Table)*

An ohmmeter may be used to check actuation.
Check across the pins listed for each system.

| Control Scheme | Trigger Switch Pin numbers |
|---|---|
| Dynamelt, Dynamini | 1 & 2 |

# 5.6 Resistance Charts for RTD Temperature Sensor and Heater

## *5.6.1 Temperature Sensor Resistance*

| Temperature sensor Pt 100 | | |
|---|---|---|
| Temperature | | Resistance in Ohms |
| °F | °C | |
| 32 | 0 | 100 |
| 50 | 10 | 104 |
| 68 | 20 | 108 |
| 86 | 30 | 112 |
| 104 | 40 | 116 |
| 122 | 50 | 119 |
| 140 | 60 | 123 |
| 158 | 70 | 127 |
| 176 | 80 | 131 |
| 194 | 90 | 135 |
| 212 | 100 | 139 |
| 230 | 110 | 142 |
| 248 | 120 | 146 |
| 268 | 130 | 150 |
| 284 | 140 | 154 |
| 302 | 150 | 157 |
| 320 | 160 | 161 |
| 338 | 170 | 165 |
| 356 | 180 | 168 |
| 374 | 190 | 172 |
| 392 | 200 | 176 |
| 410 | 210 | 180 |
| 428 | 220 | 183 |

| Temperature sensor Ni 120 | | |
|---|---|---|
| Temperature | | Resistance in Ohms |
| °F | °C | |
| 32 | 0 | 120 |
| 50 | 10 | 127 |
| 68 | 20 | 135 |
| 86 | 30 | 142 |
| 104 | 40 | 150 |
| 122 | 50 | 158 |
| 140 | 60 | 166 |
| 158 | 70 | 174 |
| 176 | 80 | 183 |
| 194 | 90 | 192 |
| 212 | 100 | 201 |
| 230 | 110 | 210 |
| 248 | 120 | 219 |
| 268 | 130 | 229 |
| 284 | 140 | 239 |
| 302 | 150 | 249 |
| 320 | 160 | 259 |
| 338 | 170 | 270 |
| 356 | 180 | 281 |
| 374 | 190 | 292 |
| 392 | 200 | 303 |
| 410 | 210 | 315 |
| 428 | 220 | 328 |

## *5.6.2 Heater Resistance*

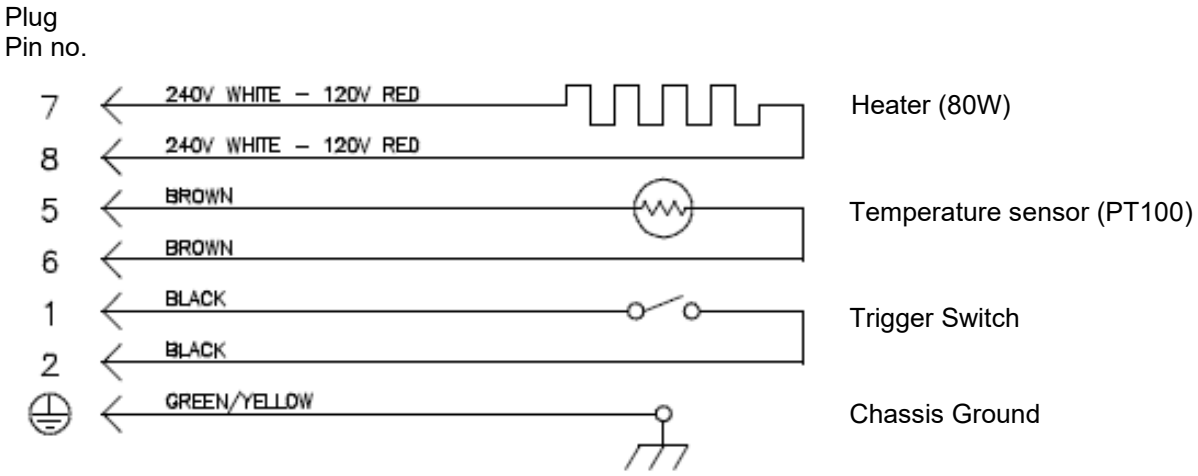
(at room temperature)

| Voltage | Watts | Resistance in Ohms |
|---|---|---|
| 120 | 80 | 190-163 |
| 240 | 80 | 760-651 |

## 5.7 Schematics

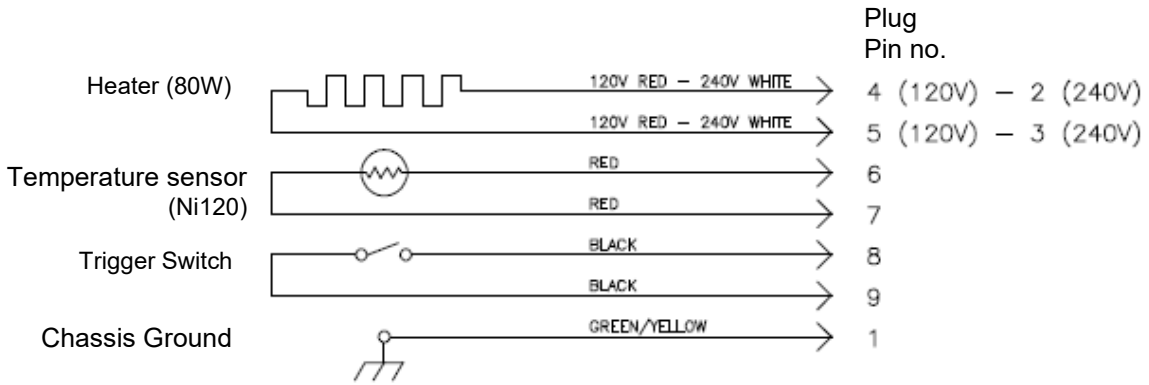
NOTE: For other ITW Dynatec control schemes not shown, or for connection to competitive hot melt equipment, contact your ITW Dynatec equipment supplier.

### *5.7.1 Applicator Schematic, All ITW Dynatec Control Schemes*

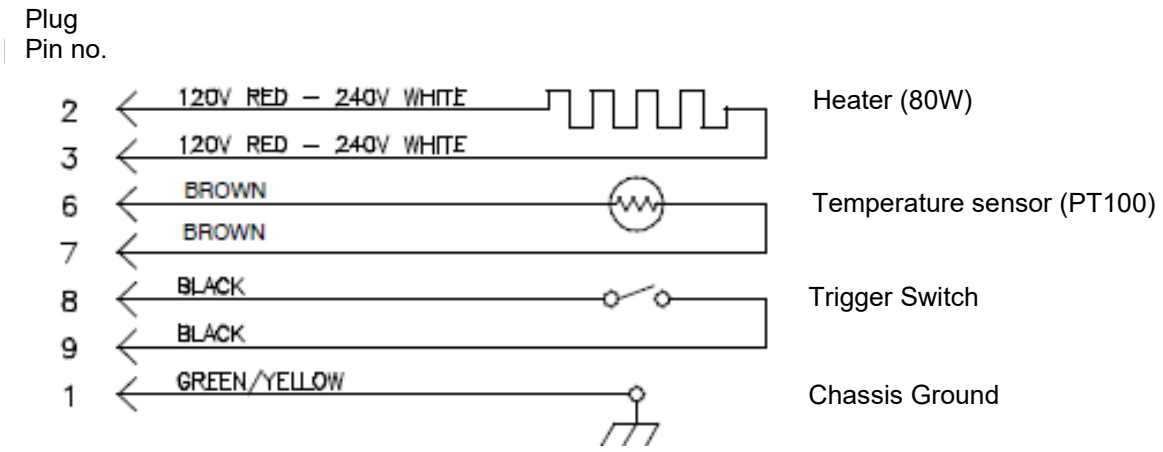



DynaControl
Cable asy, 120V – PN 108572
Cable asy, 240V – PN 108346

### *5.7.2 Applicator Schematic, NDSN, PN 108937*




### *5.7.3 Applicator Schematic, Slautterback, PN111800*



# Chapter 6
# Disassembly and Reassembly Procedures

## 6.1 Disassembly Instructions

**CAUTION:**
The DG2 Applicator must never be heated while in use by means of an external source other than the power cable of the heated hose assembly. The applicator is designed to be connected to the hose to insure proper voltage to the applicator.

For maintenance disassembly, the applicator may be heated by its own heater or by a heat gun to free the parts in contact with adhesive. Avoid excessive heating of plastic parts if a heat gun is used, since overheating may cause damage.

**WARNING**
**Do not begin any disassembly procedure without observing the following safety warnings.**
**All repair procedures must be performed by qualified, trained technicians.**

Use only original parts from ITW Dynatec, otherwise ITW Dynatec's warranty is void!

Always wear safety shoes, heat-resistant protective gloves, safety goggles and protective clothing that cover all vulnerable parts of the body while working on the heated unit! Risk of injury or heavy burns!

**High Voltage!**
Before servicing the applicator, disconnect incoming electrical current by disconnecting the electrical supply cord connected to the hot melt hose. Risk of injury and mortal danger!

**Hot Adhesive, Hot Surface!**
Parts and surfaces of the unit get very hot. Use protective gloves and clothing when handling heated parts.
High temperatures! Risk of heavy burns!

**High Pressure!**
Relieve the adhesive pressure in the hand-held applicator and hose prior to disassembly by turning OFF the ASU and then triggering the applicator.
High adhesive temperature and high adhesive pressure!
Risk of injury or heavy burns!

### *6.1.1 O-Ring Seals*

Replace O-ring seals any time the DG2 applicator is disassembled.
When removing an O-ring, use care not to damage the metal surface against which the O-ring seals. Do not use a sharp object to remove or force the O-ring into place as this will damage the seal. Always use High Temp Lubricant (PN 108700) on O-rings before installing.

### *6.1.2 Cleaning*

To aid in re-assembly, heat the applicator to operating temperature prior to disassembly and clean disassembled parts as they are removed from the applicator.

## 6.2 Disassembly Procedure

NOTE: Refer to illustrations in Chapter 7 as needed).

1. Disconnect the power cable.
   Relieve the pressure: For this, turn OFF the ASU, then trigger the applicator to relieve adhesive pressure.
   If the nozzle orifice is obstructed, relieve adhesive pressure at the manifold/tank of the ASU, where the hose is connected. See ASU's manual.

2. At the hose connection: Hold the applicator's stem on the flats with a 13mm wrench while using an 11/16" wrench to disconnect the union nut of the adhesive supply hose.

3. Lay the applicator down with the five mounting screw holes facing up.

4. Using a 3mm Allen wrench, open the applicator by removing five screws.

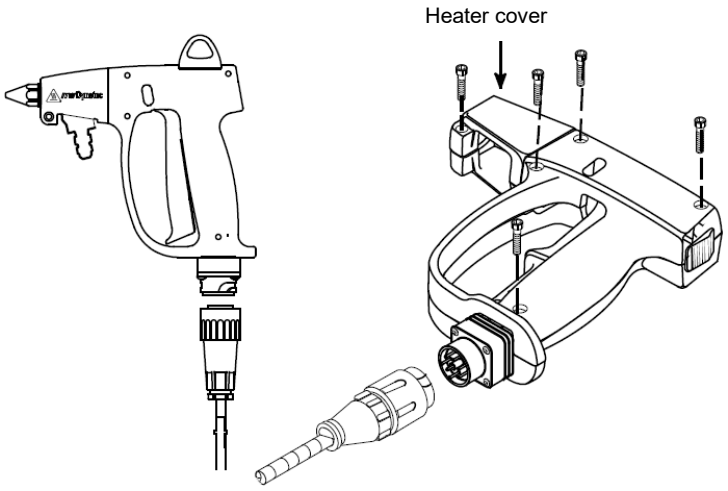
5. Lift off the top half of the applicator's handle and heater cover.

6. Pull trigger pivot pin.

7. Lift out assembly of heater body, needle and trigger.

8. For Spray Applications: If necessary, disconnect the Teflon air tubing from the nozzle by removing the tubing fitting from the spray nozzle adapter.

   NOTE: DO NOT pull the tubing off of the barbed fitting.



## 6.3 Re-assembly Procedures

Except where noted in the following procedures, re-assembly steps are simply the reverse of the disassembly steps. Care must be taken to route the trigger switch, sensor, heater and ground leads so that they are not pinched and do not interfere with moving parts.

**CAUTION:**
Be very careful when re-assembling the applicator. The trigger switch will be damaged if it is not positioned correctly prior to handle re-assembly.

Always verify that the trigger lock is in the “unlocked” position and that the trigger switch’s actuator rests on the trigger (on the rear lug) before re-assembling the applicator. See Ch.6.7.

**NOTE:** If heater cover has been removed, it must be reinstalled before handle is reinstalled.

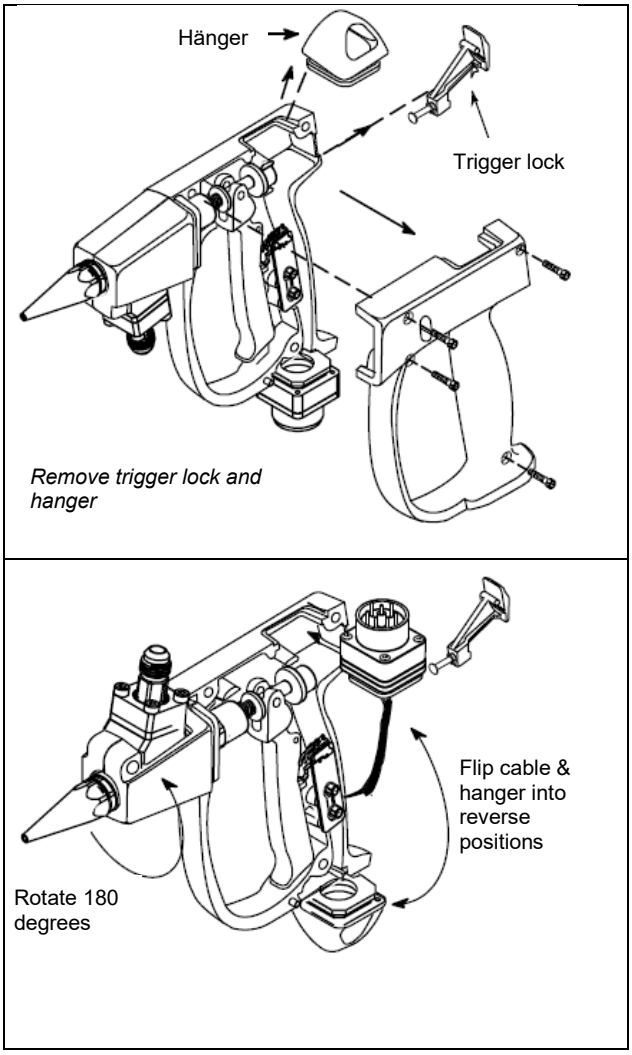
At the final re-assembly step (re-assembly of the top half of the handle), carefully press the handle onto the pivot pin. Do not rock the handle into place as this may cause misalignment of the trigger switch. Carefully press the top half of the handle until it clicks into place.

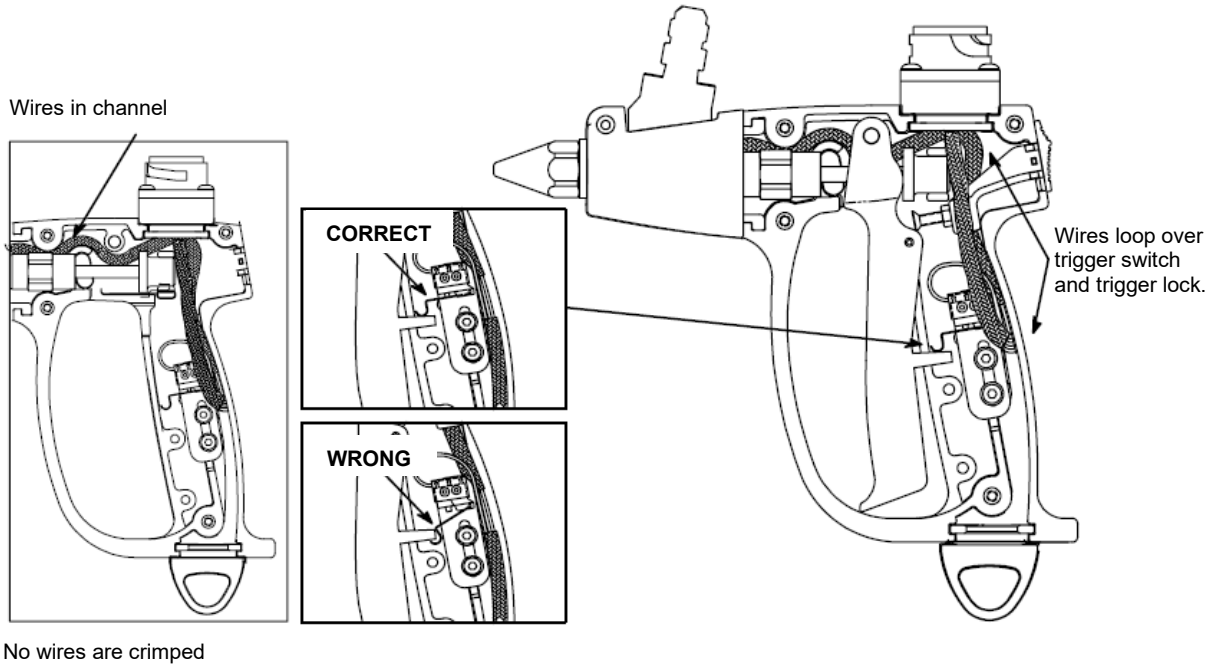
To check for proper alignment of the switch, activate the trigger after re-assembly is complete. If you hear two “clicks” of the trigger switch as it makes and breaks contact, it is aligned properly.

## 6.4 Top-Entry Hose Connect Reconfiguration

The DG2 hand-held applicator may be reconfigured to utilize a top-entry adhesive hose connect.

1. Disconnect the power cable.
2. Lay applicator on its side, with screws facing up.
3. Using a 3mm hex key (provided), open the applicator by removing four screws. Remove the handle.
4. Remove the trigger lock assembly.
5. Lift the heater body and needle assemblies out of the applicator. Rotate them 180 degrees and reinsert them into the applicator.
6. Re-align the trigger pivot pin. Verify that no wires are crimped or pinched. Re-align the trigger switch.
7. Remove the hanger.
8. Lift the cable connector assembly, flip it 180degrees and slide it into the hanger's slot at the top of the applicator. Loop the cable over (not next to) the switch.
9. Insert the hanger into the slot from which the cable connector assembly was removed.
10. Re-insert the lock (place it under the cable). Slide the lock to its "unlock" position.
11. Re-assemble the applicator's handle.



# 6.5 Model Reconfiguration Instructions

The DG2 hand-held applicator may easily be reconfigured from right-angle to straight application or vice versa.

## *6.5.1 Reconfiguration of the Applicator from Right-Angle to Straight Application*

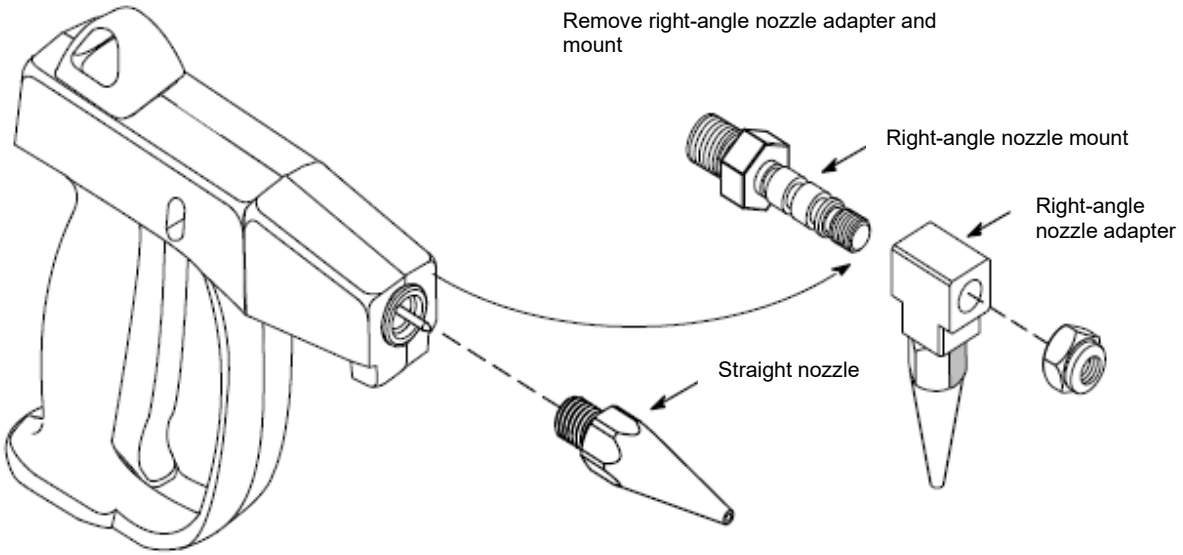
1. Disconnect the power cable and hose and disassemble the top half of the applicator's handle and heater cover as described in Ch. 6.2.

2. Unscrew and remove the right-angle nozzle adapter and right-angle nozzle mount.

3. Tighten the hex seal support of the needle.
   To identify the seal support see illustration in Ch.6.6 Needle Replacement and in Ch. 7.4 Needle Assembly Needle, item 1.

4. Replace the two heater covers and re-assemble the handle.

5. Screw on the straight nozzle.



### 6.5.2 Reconfiguration of the Applicator from Straight to Right-Angle Application

Parts required: a right-angle nozzle adapter and right-angle nozzle mount assembly.

1. Disconnect the power cable and hose and disassemble the top half of the applicator's handle and heater cover as described in Ch. 6.2.

2. Tighten the hex seal support of the needle.
   To identify the seal support see illustration in Ch.6.6 Needle Replacement and in Ch.7.4 Needle Assembly Needle, item 1.

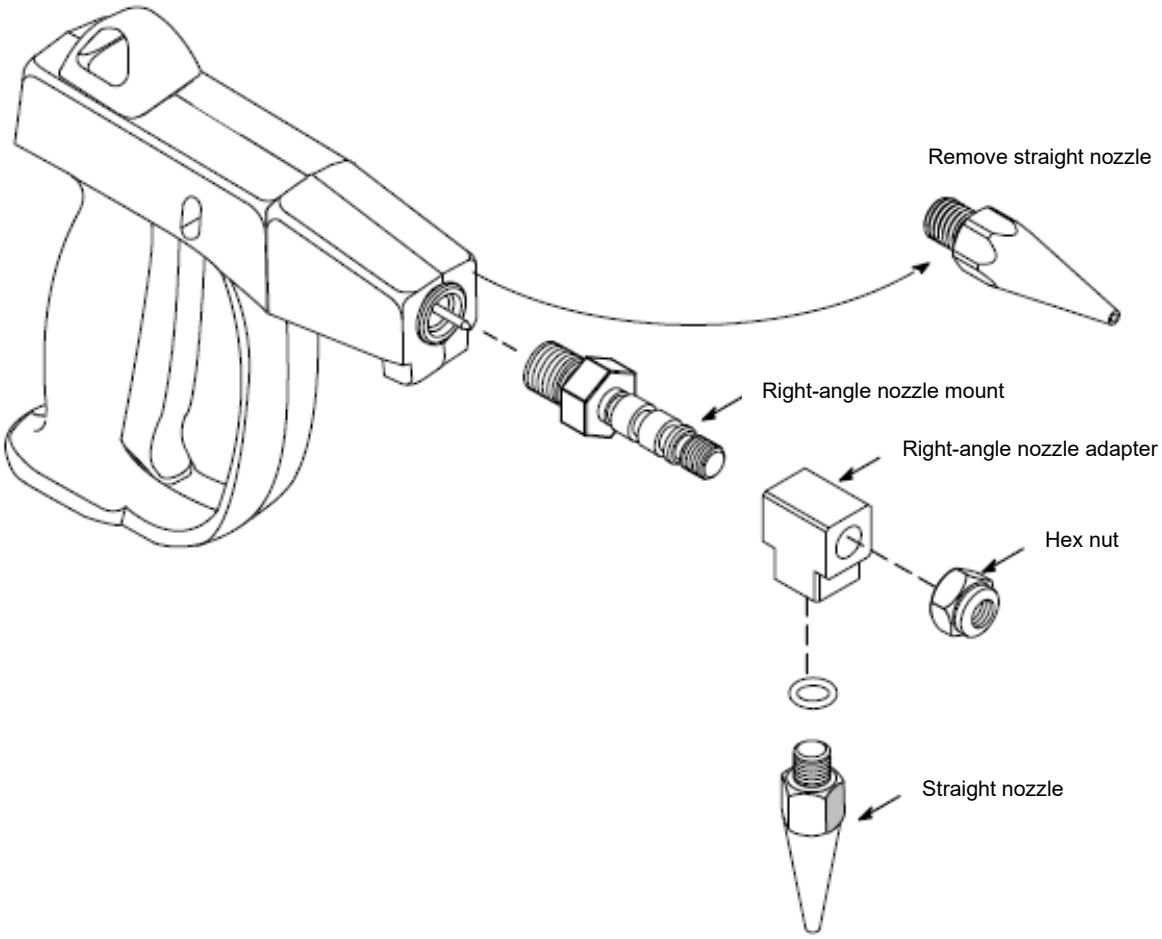
3. Replace the two heater covers and re-assemble the applicator.

4. Screw on the right-angle nozzle mount.

5. Slide the right-angle nozzle adapter onto the mount and secure it in place by tightening the mount hex nut.

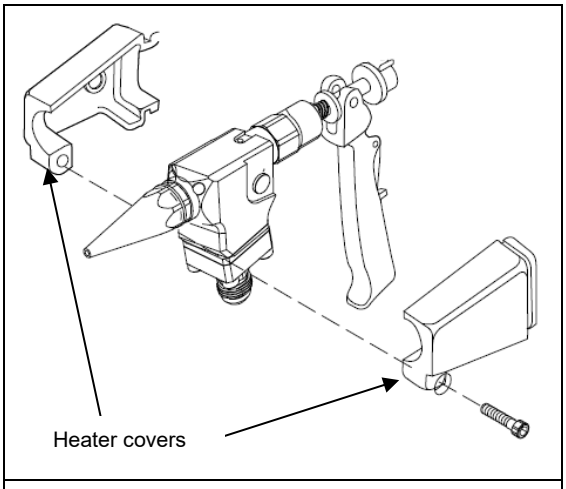
6. Screw the straight bead nozzle into the right-angle nozzle adapter.

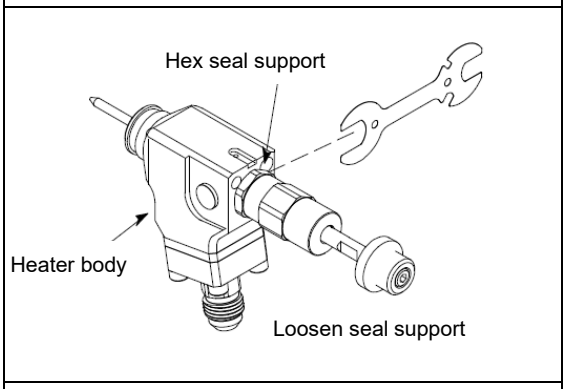
NOTE: When using the right-angle configuration, you may experience some dripping after the trigger is released. This is normal and is due to the combination of increased adhesive volume in the adapter and nozzle, adhesive viscosity and operating temperature.



# 6.6 Needle Replacement

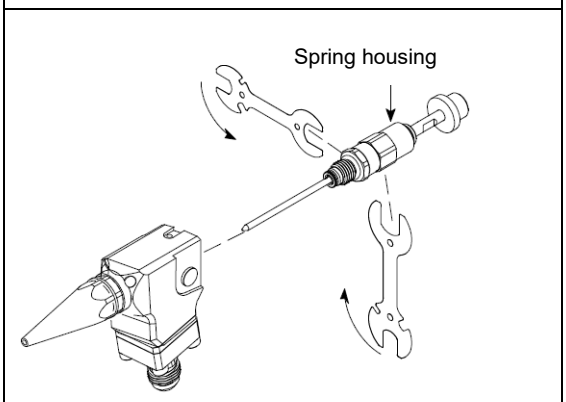
1. Follow disassembly procedures 1 thru 7 in Ch.6.2.
2. Remove the two heater covers.
3. Use the 17mm wrench on the hex seal support and separate the seal support from the heater body.
   NOTE: Refer to needle drawing in Ch.7.4.
4. Slide needle assembly out of the body.
5. Separate the spring housing and the seal support with two 17mm wrenches.
6. Apply localized heat to approximately 500°F (260°C) to the needle assembly. Disassemble while hot.
7. With the 3mm hex key wrench remove the screw that holds the needle pull collar while gripping the needle on the flats.
8. Remove the lock washer and collar assembly. Slide all other parts from the needle.



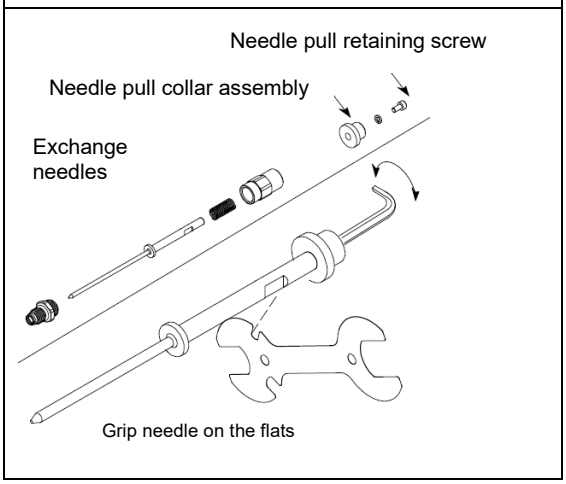




***Re-assembly:***

1. Apply a small amount of high temp lube on the tip of the new needle before slipping it into the seal.
2. Re-assemble the large spring and spring housing onto the needle. Tighten snugly.
3. Apply a thread-lock compound before re-assembly. The use of a surface prep activator (for degreasing) is recommended.



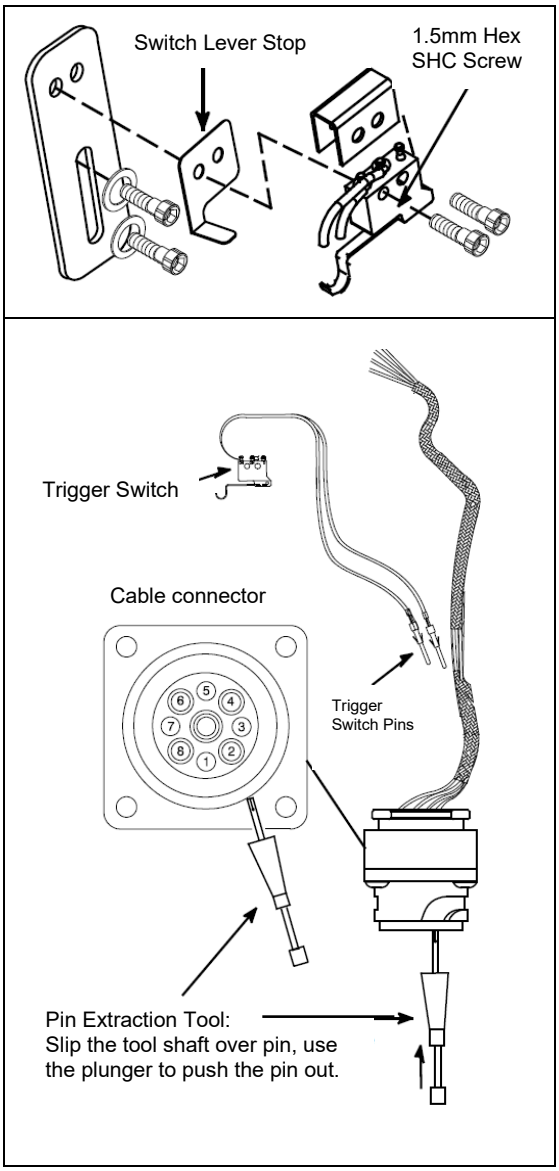

4. Slide on the collar assembly, orienting the large flange towards the point of the needle.
5. Re-assemble the lock-washer and screw. Tighten.
6. Re-assemble the two heater covers.
7. Verify that the trigger switch's actuator rests on the trigger (on the rear lug) before re-assembling the handle.

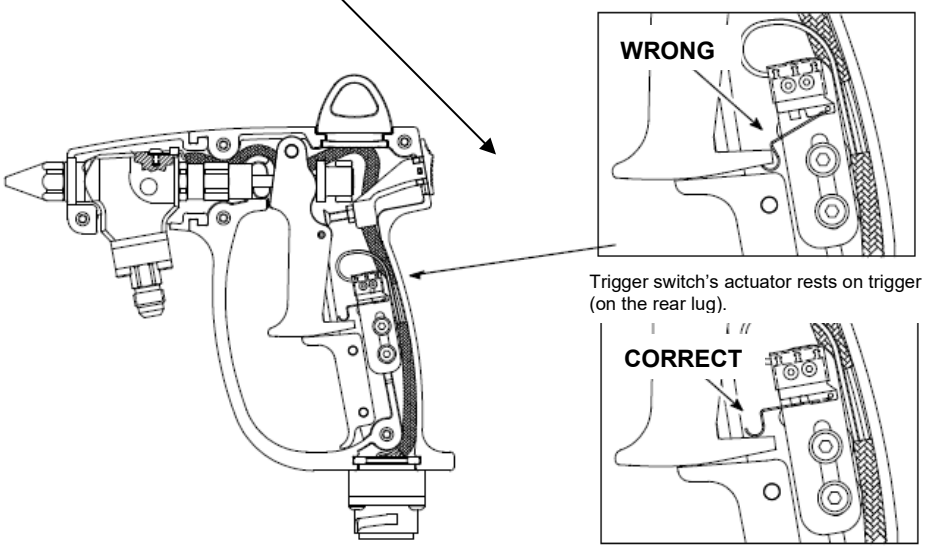


# 6.7 Trigger Switch Replacement

1. Follow disassembly procedures 1 thru 7 in Ch.6.2.
2. Remove the trigger switch bracket's two mounting screws and washers (3mm hex key).
3. Remove the two screws which mount the trigger switch to its bracket (1.5mm hex key). Retain the screws, bracket, insulator, and switch lever stop.
4. At the electrical cable connector: use the pin extraction tool to push the trigger switch's two pins (pin #1 and 2 for DCL models) through the cable connector.
5. Feed the trigger switch's wires through the sleeving. Remove the old switch assembly.
6. Feed the new trigger switch's wires through the sleeving and into the electrical cable connector.
7. Wrap the insulator around the new trigger switch and mount the switch and the switch lever stop to the mounting bracket. Mount the switch assembly into the applicator with the two mounting screws.
8. Adjust the trigger switch using the instructions given in Chapter 5.5 "Trigger Switch Adjustment".
9. Re-assemble the applicator's handle.

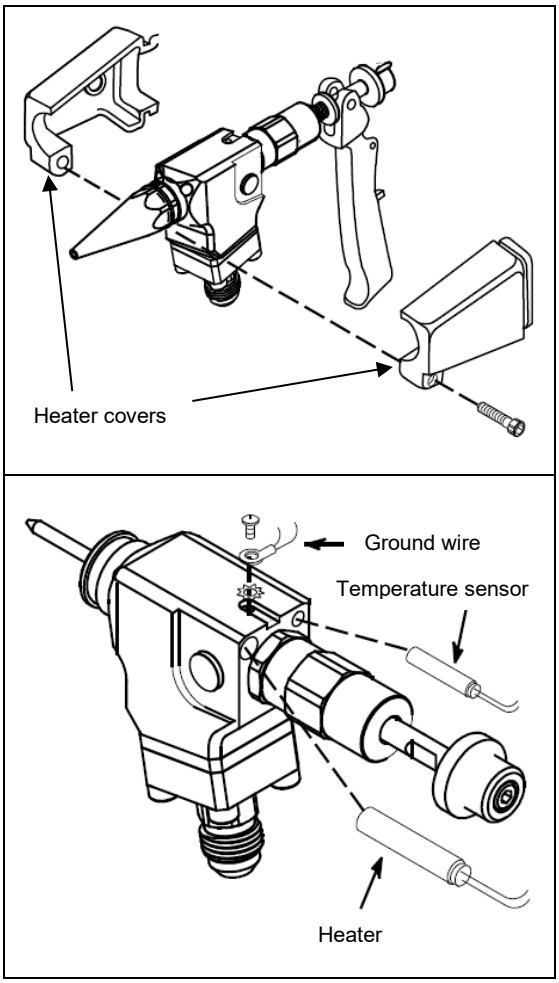
**CAUTION:**
Be very careful when re-assembling the applicator. The trigger switch will be damaged if it is not positioned correctly prior to handle re-assembly.



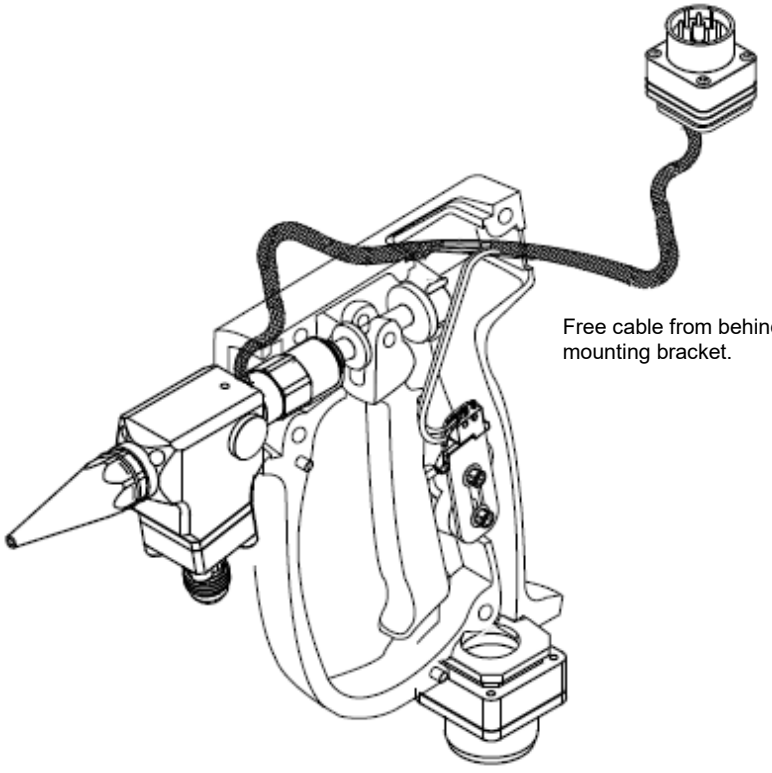
# 6.8 RTD Sensor and/ or Heater Replacement

1. Follow disassembly procedures 1 thru 7 in Ch.6.2.
2. Remove the two heater covers.
3. Disconnect ground wire.
4. Slide the heater and sensor out of their ports.
5. Slide cable from behind the trigger switch mounting bracket.



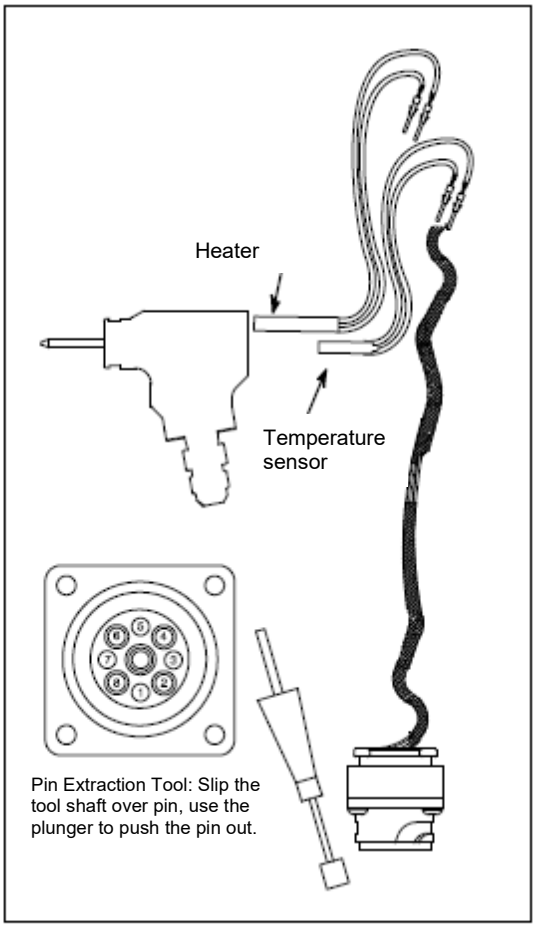

6. If necessary, remove the trigger switch's two mounting screws (3mm hex key) and displace the trigger switch in order to remove the old heater or sensor.
7. At the electrical connector assembly, use the pin extraction tool to push the pins of the sensor (pins #5 and #6 for DCL models) or the heater (pins #7 and #8 for DCL models) through the connector assembly.
8. Feed the wires through the sleeving.

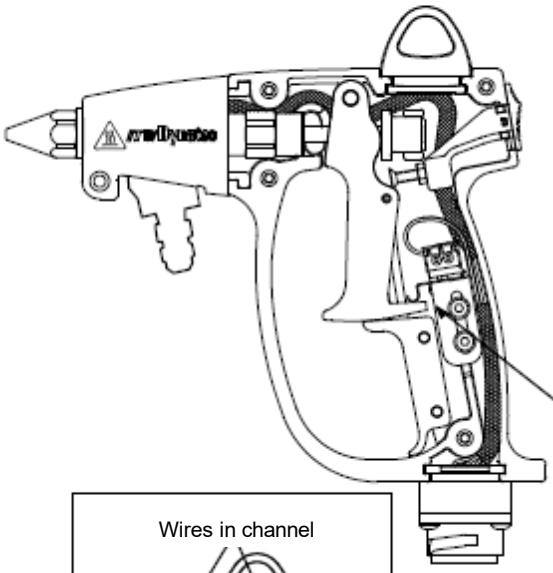
*Continued on next page.*

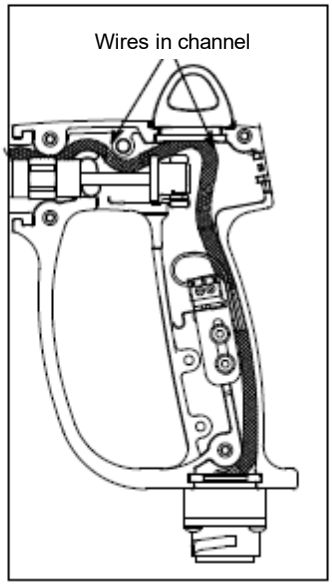


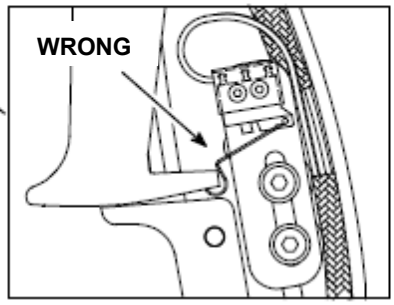
Free cable from behind the trigger switch mounting bracket.

9. Feed the new sensor or heater's wires through the sleeving and into the electrical cable connector.
10. Insert the sensor and heater into their ports in the heater body.
11. Reconnect ground wire.
12. Re-install the trigger switch.
13. Reassemble heater covers to heater body.
14. Verify that wires are not crimped or pinched around obstructions. Verify that the trigger switch actuator rests on the trigger (on the rear lug).
15. Re-assemble the handle.

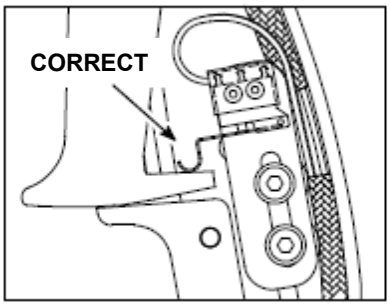





Trigger switch's actuator rests on trigger (on the rear lug).



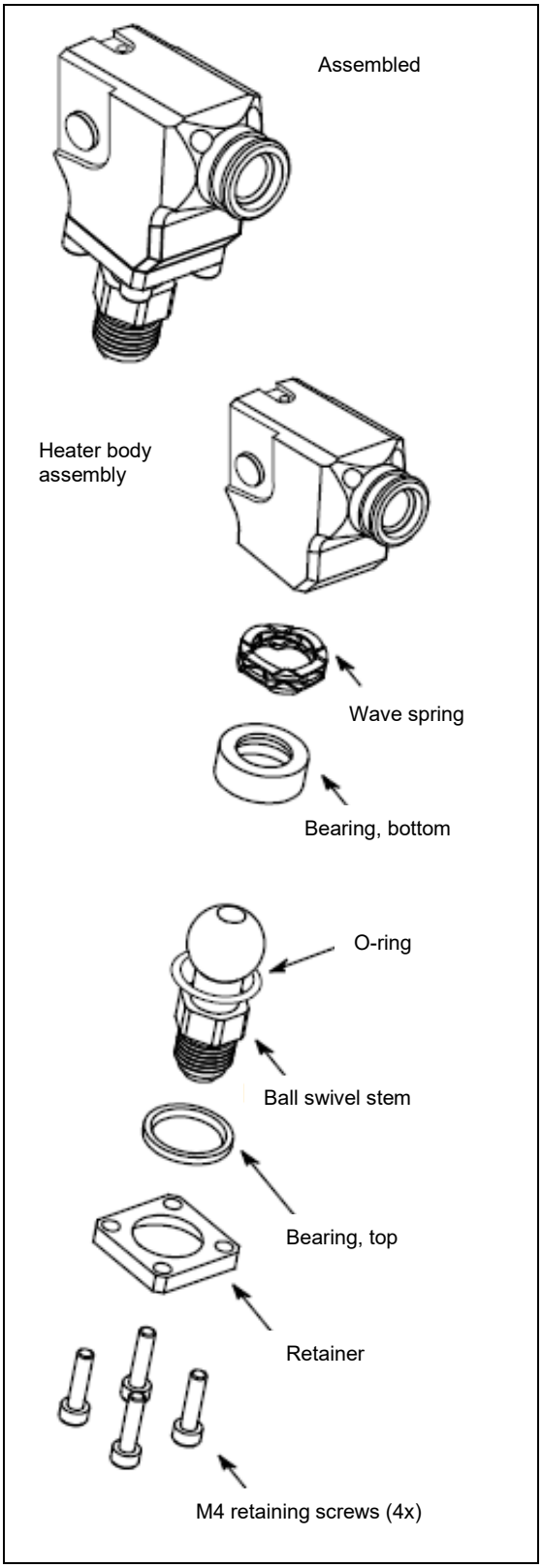
# 6.9 Ball Swivel Rebuild

*NOTE: ITW Dynatec PN 108762 Ball Swivel Rebuild Kit contains all parts necessary for the following rebuild.*

1. Follow disassembly procedures 1 and 2 in Ch.6.2.
2. Remove the ball swivel's retainer by removing the four screws holding it onto the heater body (3mm hex key, provided).

**CAUTION:**
**If a tool is used to aid removal, be careful not to damage the bearing or sealing surfaces in the heater body.**

3. Pull out the ball swivel stem and the top bearing.
4. Remove the bottom bearing and the wave spring.
5. Wipe any adhesive from the heater body cavity.
6. Replace the wave spring.
7. Replace the bottom bearing.
8. Lubricate the new o-ring, then install it over stem ball.
9. Install new ball stem and O-ring.
10. Install the top bearing.
11. Install the new retainer with the flat side facing the bearing.
12. Install one of the screws into one of the holes in the retainer. Install another of the screws into the hole diagonally across from the first screw.
13. Begin to screw down the two screws, alternatively, two or three turns at a time. Continue until these two screws are seated. Verify that the ball swivel stem moves with relative freedom during this procedure.
14. Install the two remaining screws (it is not necessary to alternate these).



## 6.10 Axial Rotation Assembly Rebuild

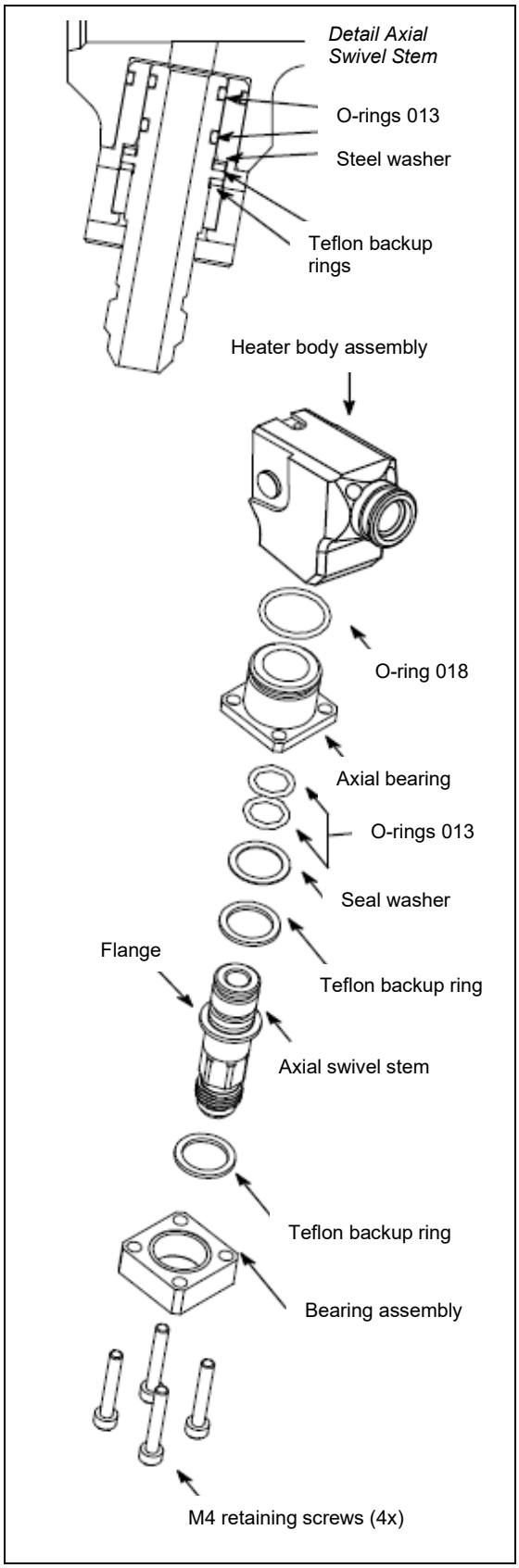
*NOTE: ITW Dynatec PN 108761 Axial Rotation Rebuild Kit contains all parts necessary for the following rebuild.*

1. Follow disassembly procedures 1 and 2 in Ch.6.2.
2. Remove the axial rotation assembly's bearing assembly by removing the four screws holding it onto the heater body (3mm hex key, provided).
3. Pull out the axial rotation stem.

**CAUTION:**
**If a tool is used to aid removal, be careful not to damage the bearing or sealing surfaces in the heater body.**

4. Wipe any adhesive from the heater body cavity.
5. Remove the axial bearing (brass).
6. Place the new O-ring (018) onto the new axial bearing, lubricate the o-ring with TFE lubricant and press bearing into the heater body.
7. Place a new axial rotation stem assembly into the axial bearing.

   NOTE: if your new stem assembly is not assembled, assemble as follows:
   a. Place a Teflon backup ring on either side of the stem's flange.
   b. Insert the steel washer on the heater body side of the stem.
   c. Insert the two O-rings (013) in the o-ring grooves of the stem.
   d. Lubricate the O-rings with TFE grease lubricant.
8. Install the new housing/ bearing assembly:
   a. Install one of the screws into one of the holes in the axial bearing. Install another of the screws into the hole diagonally across from the first screw.
   b. Begin to screw down the two screws, alternatively, two or three turns at a time. Continue until these two screws are seated. Verify that the axial swivel stem moves with relative freedom during this procedure.
   c. Install the two remaining screws (it is not necessary to alternate these).



# Chapter 7
# Component Illustrations and Bill of Materials

## WARNING

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

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

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

# 7.1 DynaGun DG2 Hand-Held Applicator

| Item no. | Part Number | Description | Quantity |
|---|---|---|---|
| 1 | 108318 * | Axial Rotation Body Assembly | 1 |
| 2 | 108319 * | Ball Swivel Body Assembly | 1 |
| 3 | 108320 * | Needle Assembly | 1 |
| 5 | ** | Cable Assembly, DCL, 230 V | 1 |
| | ** | Cable Assembly, DCL, 120 V | 1 |
| 6 | # | Heater cartridge 80 W | 1 |
| 7 | # | Temperature sensor | 1 |
| 8 | # | Trigger Switch Assembly | 1 |
| 9 | # | Connector, Flanged Plug | 1 |
| 10 | # | Adapter, Connector | 1 |
| 11 | # | Screw, M3 x 0.5 x 12 mm | 4 |
| 12 | # | Ground Wire Assembly | 1 |
| 13 | # | Sleeving | 1 |
| 14 | 108758 | Handle Kit | 1 |
| 15 | 108285 ## | Heater Cover, Right Hand | 1 |
| 16 | 108286 ## | Heater Cover, Left Hand | 1 |
| 17 | 108359 ## | Screw, Socket Head Cap, M4 x 0.7 x 14 mm | 5 |
| 18 | 108360 ## | Ring, Insulator | 1 |
| 19 | 108283 ## | Handle, right-hand | 1 |
| 20 | 108373 ## | Label, information | 1 |
| 21 | 108284 ## | Handle, left-hand | 1 |
| 22 | 108372 ## | Label, warning | 1 |
| 23 | 108290 | Hanger | 1 |
| 24 | 108347 | Mount, Trigger switch | 1 |
| 25 | 108348 | Insulator, Trigger switch | 1 |
| 26 | 108349 | Screw, Socket Head Cap, M2 x 0.4 x 8 mm | 2 |
| 27 | 108712 | Washer, .34 x .16 x .019, SST | 2 |
| 28 | 108698 | Screw, Socket Head Cap, M4 x 0.7 x 6 | 2 |
| 29 | 108353 | Trigger Lock Assembly | 1 |
| 30 | 108354 | Trigger Assembly, 4-Finger | 1 |
| 31 | 108356 | Pin, Trigger Pivot | 1 |
| 32 | 108361 | Screw, Phillips Pan Head, M3 x 0.5 x 5 mm | 1 |
| 33 | 108362 | Washer, Lock, External Tooth, M3 | 1 |
| 34 | 108815 | Switch Lever Stop | 1 |
| 37 | * | Nozzle Assembly | 1 |

* See separate drawing/BOM/PN on next pages.
** For cable assembly and component part numbers see Ch.7.9.
# These components are optional and part of Cable assembly.
## These components are part of **Handle Kit 108758.**

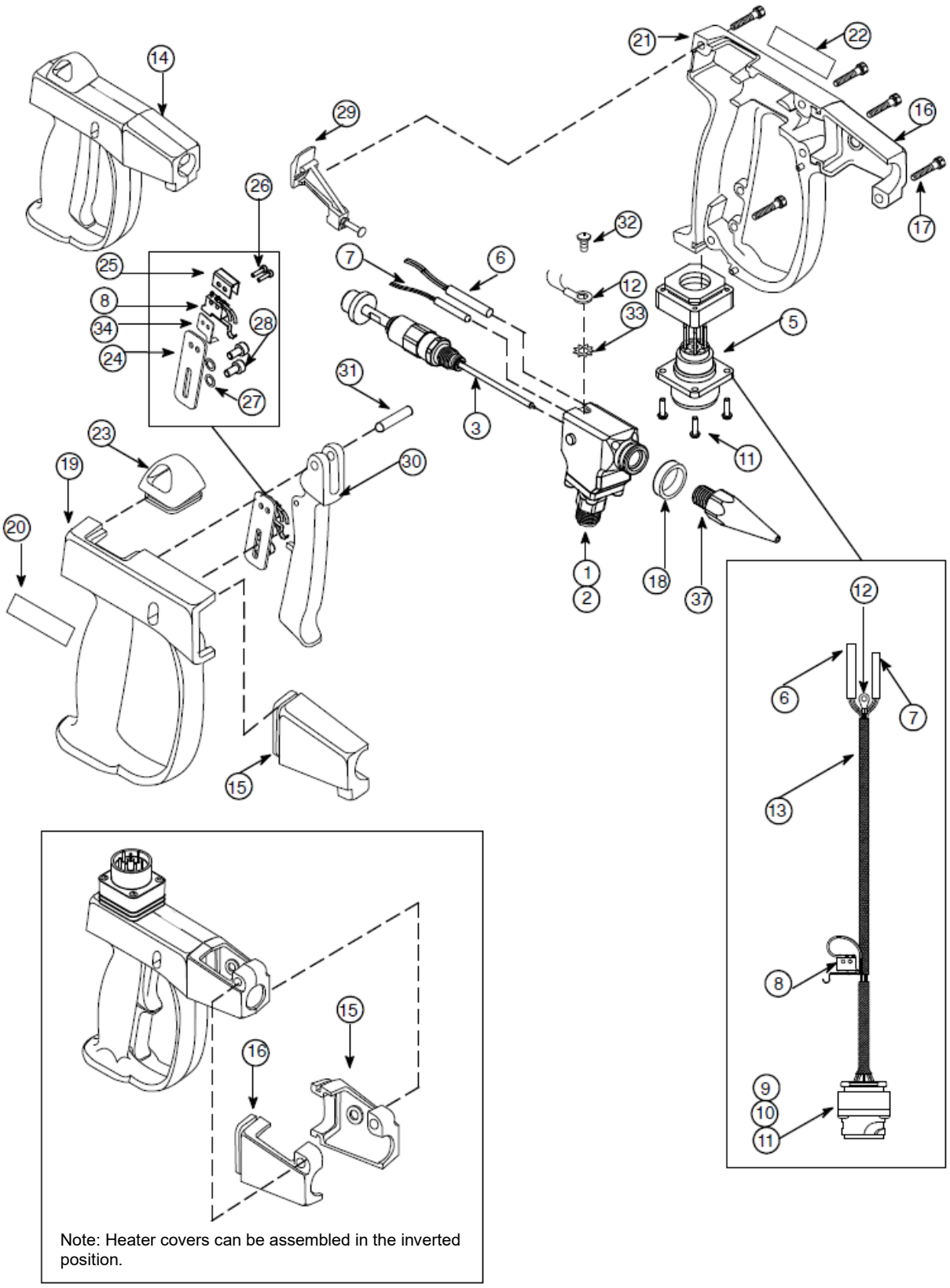
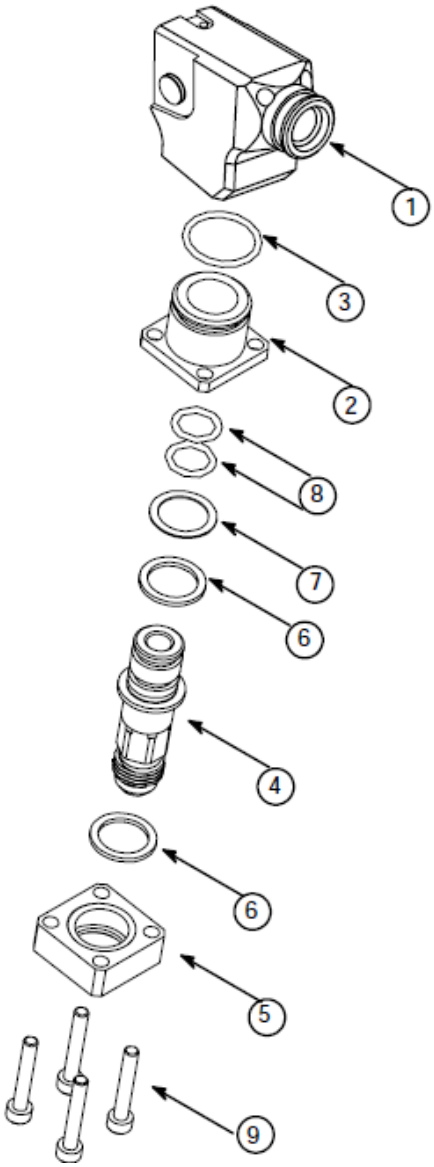


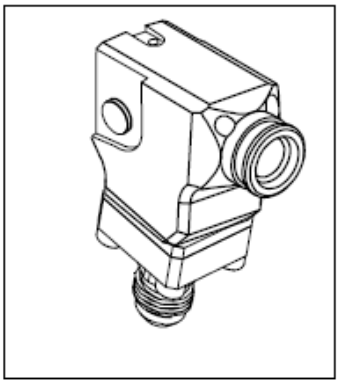

*Illustration: DynaGun DG2 Hand-Held Applicator*

## 7.2 Axial Rotation Body Assembly, PN 108318

| Item no. | Part Number | Description | Quantity |
|---|---|---|---|
| 1 | 108322 | Heater Body Assembly | 1 |
| | 108761 | Kit, Rebuild/Convert, Axial Rotation | 1 |
| 2 | * | Bearing | 1 |
| 3 | N00185 * | O-ring, 018 | 1 |
| 4 | 108339 | Stem | 1 |
| 5 | * | Bearing Assembly | 2 |
| 6 | * | Ring, Backup, --113 Solid TFE | 1 |
| 7 | * | Washer, .745 x .562 x .020 | 2 |
| 8 | N00180 * | O-ring, 013 | 4 |
| 9 | 108588 | Screw, Socket Head Cap, M4 x 0.7 x 25 mm | 1 |
| | 108700 * | Lube, TFE .25 ounce | 1 |

* These components are part of **Bearing and Seal Kit, Axial Rotation, PN 108755.**



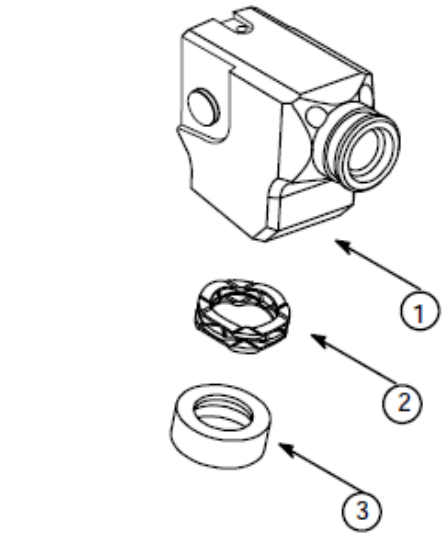



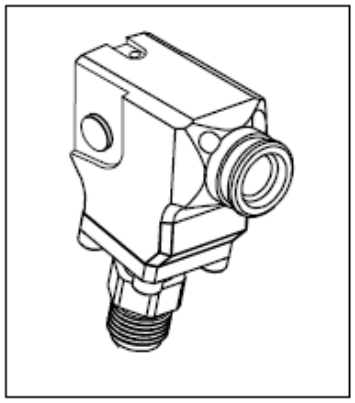
Assembled

## 7.3 Ball Swivel Body Assembly, PN 108319

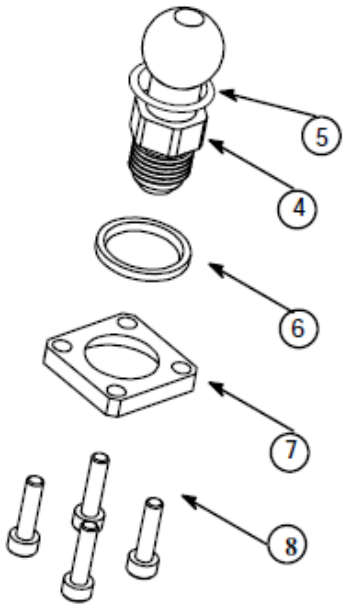
| Item no. | Part Number | Description | Quantity |
|---|---|---|---|
| 1 | 108322 | Heater Body Assembly | 1 |
| | 108762 | Kit, Rebuild/Convert, Ball Swivel | 1 |
| 2 | 103414 * | Spring, Wave, .875” OD | 1 |
| 3 | * | Bearing, Bottom | 1 |
| 4 | 102501 | Stem | 1 |
| 5 | 103415 * | O-ring, –115 | 1 |
| 6 | * | Bearing, Top | 1 |
| 7 | 108344 * | Retainer | 1 |
| 8 | 108359 | Screw, Socket Head Cap, M4x0.7 x 16 mm | 4 |
| | 108700 * | Lube TFE .25 ounce | 1 |

* These components are part of **Bearing and Seal Kit, Ball Swivel, PN 108756.**



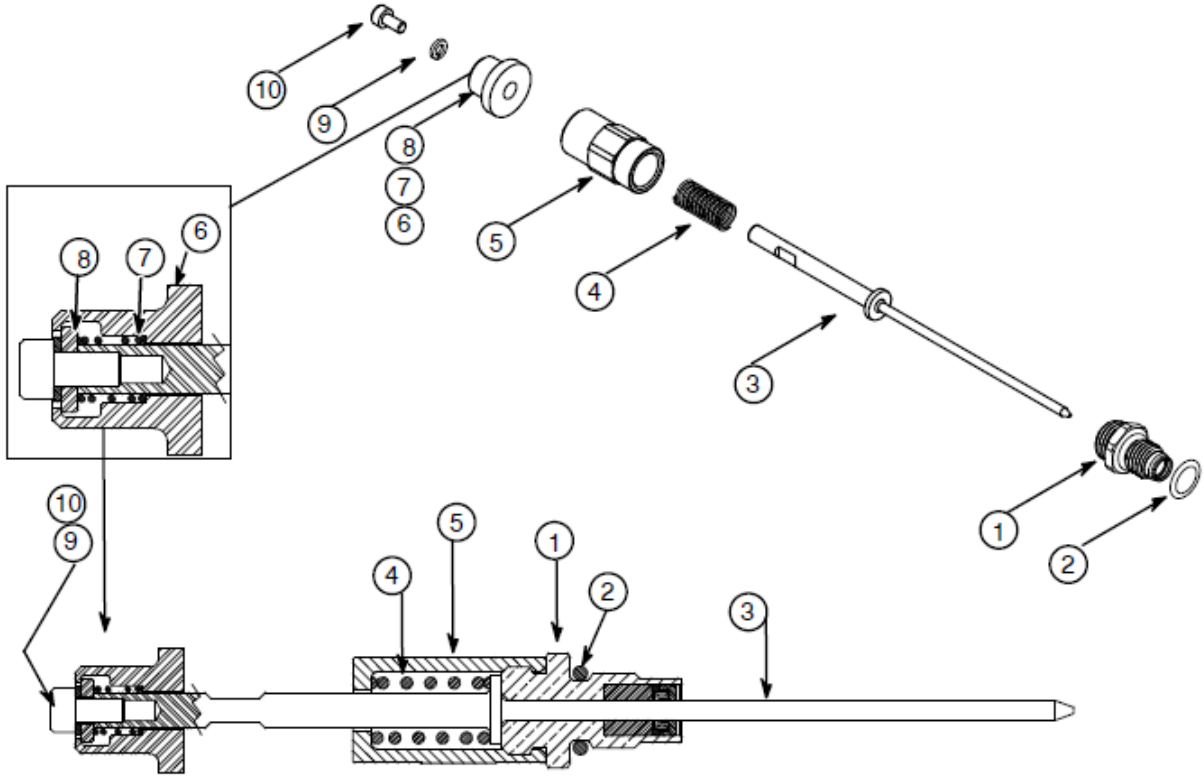
Assembled



## 7.4 Needle Assembly, PN 108320

| Item no. | Part Number | Description | Quantity |
|---|---|---|---|
| 1 | 108707 * | Seal Assembly, Needle | 1 |
| 2 | 108328 | O-ring, 2.2mm W x 9.3mm ID | 1 |
| 3 | 108329 | Needle | 1 |
| 4 | L08491 * | Spring, Compression, .42” OD x .85” Long | 1 |
| 5 | 108331 | Housing, Spring | 1 |
| 6 | 108334 | Collar, Needle Pull | 1 |
| 7 | 108332 * | Spring, Compression, .30” OD x .44” Long | 1 |
| 8 | 108333 | Needle pull collar | 1 |
| 9 | 106198 | Washer, Split Lock, M4 | 1 |
| 10 | 108698 | Screw, Socket Head Cap, M4 x 0.7 x 6 mm | 1 |
|  | 108700 * | Lube TFE .25 ounce * | 1 |

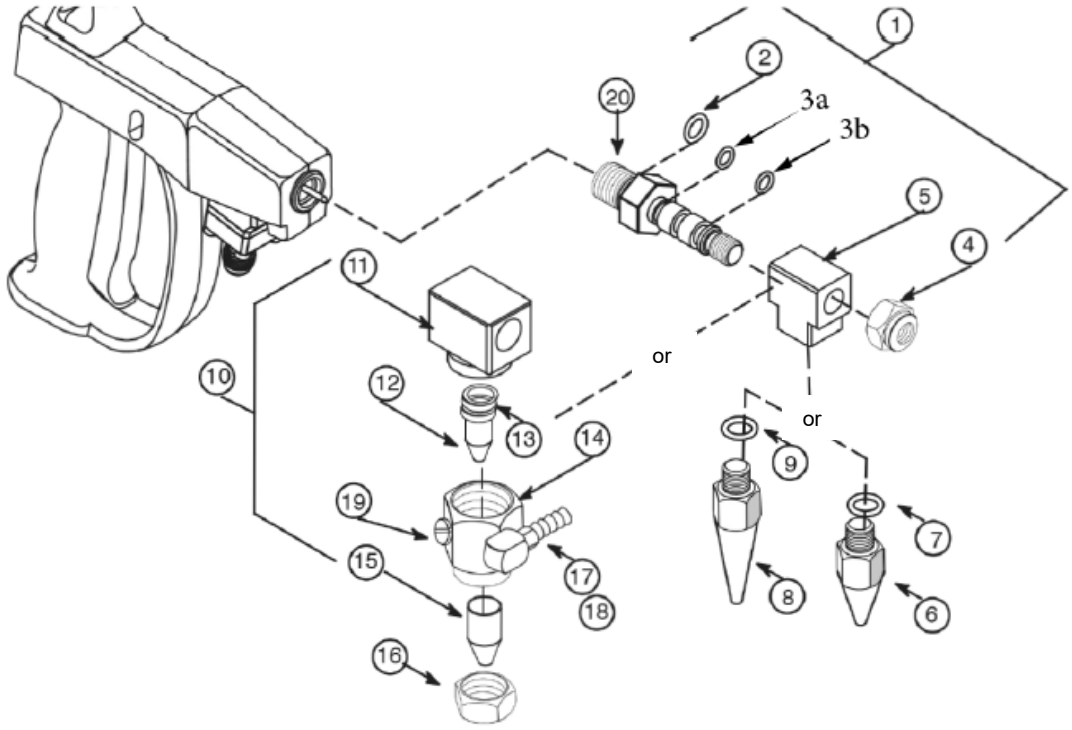
* These components are part of **Needle Seal Kit, PN 108757.**



# 7.5 Mounting Kit for Right Angle Application

| Item no. | Part Number | Description | Quantity |
|---|---|---|---|
| **1** | **108927** | **Mount Assembly for Right Angle Bead Nozzle** (Supplied as part of all DG2 Right Angle Applicator Assemblies) | **1** |
| 2 | 108328 * | O-ring, 2.2mm W x 9.3mm ID | 1 |
| 3a | N00178 * | O-ring, 011 | 1 |
| 3b | N00177 * | O-ring, 010 | 1 |
| 4 | 105126 * | Nut, Lock, nylon insert, M8x1.25 mm | 1 |
| 5 | 108661 * | Adapter, Bead Nozzle, Right Angle (Purchased separately) | 1 |
| 6 | # | Nozzle Assembly, Straight Bead | 1 |
| 7 | 108328 | O-ring, 2.2mm W x 9.3mm ID | 1 |
| 8 | # | Nozzle Assembly, Extended Bead | 1 |
| 9 | 108328 | O-ring, 2.2mm W x 9.3mm ID | 1 |
| **10** | **108663** | **Adapter Assembly for Right Angle Swirl Nozzle** | **1** |
| 11 | 108662 ** | Adapter, Swirl Nozzle, Right Angle | 1 |
| 12 | ** | Nozzle Assembly, Straight | 1 |
| | 104336 ** | Insulation Jacket (not shown) | 1 |
| 13 | N00178 ** | O-ring, 011 | 1 |
| 14 | L18789 ** | Adapter, DynaGun Swirl | 1 |
| 15 | L19610 ** | Baffle, DynaGun Swirl | 1 |
| 16 | ** | Air Cap, Swirl | 1 |
| 17 | N06431 ** | Fitting, Adjustable Elbow, #10-32 male/female | 1 |
| 18 | N06432 ** | Fitting, Barbed, #10-32 male | 1 |
| 19 | N06433 ** | Fitting, Plug, #10-32 | 2 |
| 20 | 108336 * | Mount, right angle nozzle, HA | 1 |

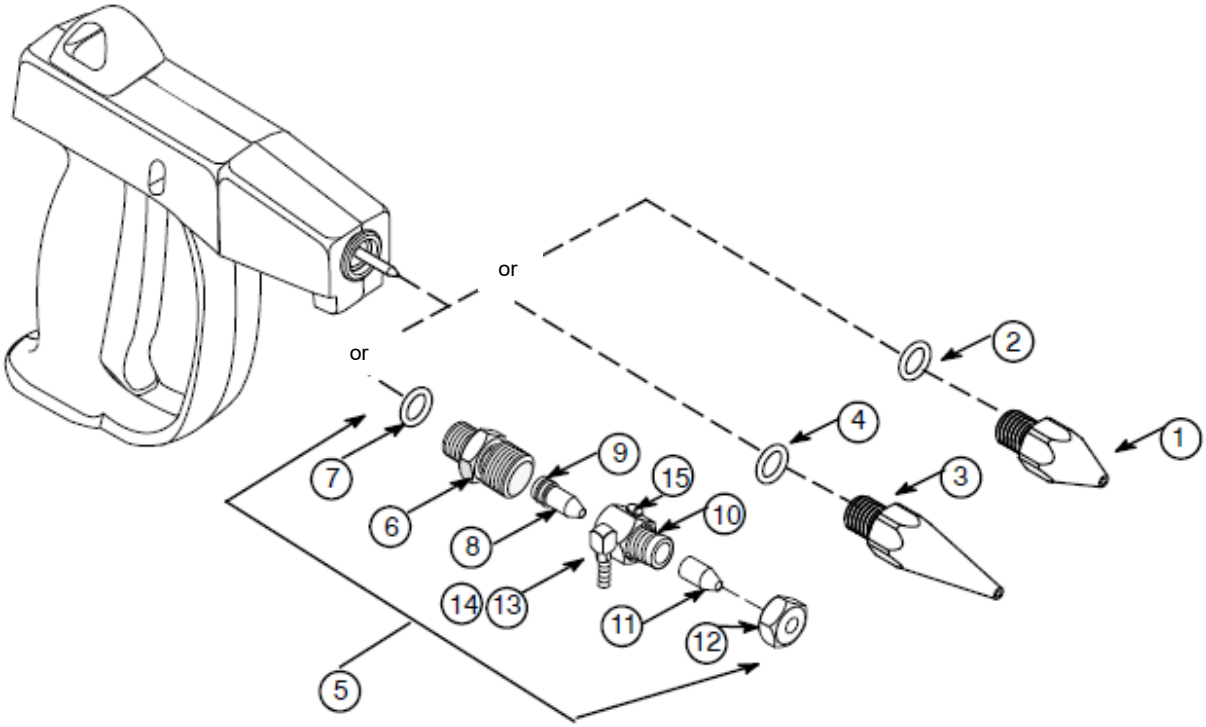
* These components are part of **Mount Assembly for Right Angle Bead Nozzle, PN 108927.**
** These components are part of **Adapter Assembly for Right Angle Swirl Nozzle, PN 108663.**
# See options on next pages.



## 7.6 Mounting Kit for Straight Application

| Item no. | Part Number | Description | Quantity |
|---|---|---|---|
| 1 | # | Nozzle Assembly, Straight Bead<br>(Nozzle Assy .055" P/N 108645, supplied as part of all DG2 Straight Applicator Assemblies. | 1 |
| 2 | 108328 | O-ring, 2.2 mm W x 9.3 mm ID | 1 |
| 3 | # | Nozzle Assembly, Extended Bead | 1 |
| 4 | 108328 | O-ring, 2.2 mm W x 9.3 mm ID | 1 |
| **5** | **108660** | **Adapter Assembly for Swirl Nozzle, Straight** | **1** |
| 6 | 108659 ** | Adapter for Swirl Nozzle, Straight | 1 |
| 7 | 108328 ** | O-ring, 2.2 mm W x 9.3 mm ID | 1 |
| 8 | ** | Nozzle Assembly, Straight | 1 |
| | 104336 ** | Insulation Jacket (not shown) | 1 |
| 9 | N00178 ** | O-ring, 011 | 1 |
| 10 | L18789 ** | Adapter, DynaGun Swirl | 1 |
| 11 | L19610 ** | Baffle, DynaGun Swirl | 1 |
| 12 | ** | Air Cap, Swirl | 1 |
| 13 | N06431 ** | Fitting, Adjustable Elbow, #10-32 male/female | 1 |
| 14 | N06432 ** | Fitting, Barbed, #10-32 male | 1 |
| 15 | N06433 ** | Fitting, Plug, #10-32 | 2 |

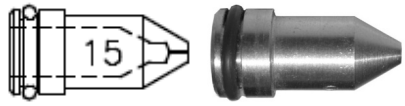
** These components are part of **Adapter Assembly for Swirl Nozzle, Straight, PN 108660.**
# See options on next pages.



# 7.7 Accessories & Options

## *7.7.1 Swirl Nozzles and Air Caps*

### Swirl Nozzle Assembly




| PN | Orifice-Ø mm | Orifice-Ø inch |
|---|---|---|
| 101367 | 0,40 | 0,015 |
| 101368 | 0,50 | 0,02 |
| 101369 | 0,65 | 0,025 |
| 101370 | 0,75 | 0,03 |
| 101371 | 1,00 | 0,04 |
| 101372 | 1,40 | 0,055 |
| 101373 | 1,80 | 0,07 |
| 107584 | 2,29 | 0,09 |
| 101374 | 2,54 | 0,10 |
| | | |

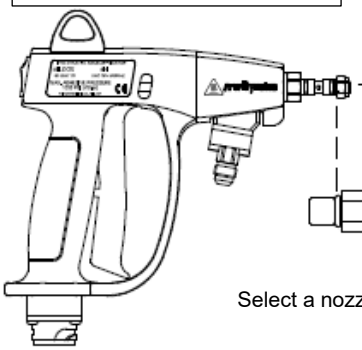
### Swirl (Spray) Air Caps


| PN | Orifice-Ø mm | Orifice-Ø inch | Angle |
|---|---|---|---|
| L18790 | 0.90 | 0,035 | 15° |
| L18791 | 0.90 | 0,035 | 20° |
| L18792 | 0.90 | 0,035 | 25° |
| L18793 | 0.90 | 0,035 | 30° |
| L18794 | 0.90 | 0,035 | 35° |
| L18795 | 1.00 | 0,04 | 15° |
| L18796 | 1.00 | 0,04 | 20° |
| L18797 | 1.00 | 0,04 | 25° |
| L18798 | 1.00 | 0,04 | 30° |
| L18799 | 1.00 | 0,04 | 35° |

Choose Nozzle and Air Cap

Right Angle Swirl Nozzle Adapter PN 108663

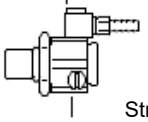
*Right Angle Application*



Right Angle Bead Nozzle Adapter PN 108927

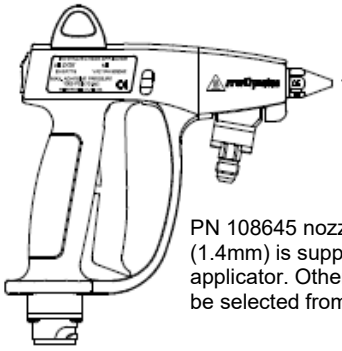
Select a nozzle from list below

Choose Nozzle and Air Cap



Straight Swirl Nozzle Adapter PN 108660

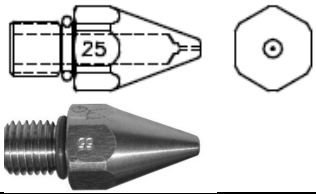
*Straight Application*



PN 108645 nozzle orifice-Ø 0.055 inch (1.4mm) is supplied with the DG2 applicator. Other straight nozzles may be selected from the list below.

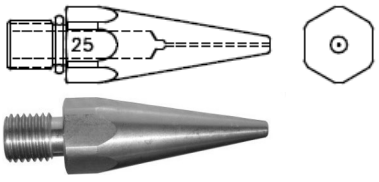
### Single Orifice Bead Nozzles for DG2 Applicators

#### Straight Bead Nozzle Assemblies




| PN | Orifice-Ø mm | Orifice-Ø inch |
|---|---|---|
| 108643 | 0,6 | 0,025 |
| 108644 | 1,0 | 0,04 |
| 108645 | 1,4 | 0,055 |
| 108646 | 1,8 | 0,07 |
| 108647 | 2,2 | 0,09 |

#### Extended Bead Nozzle Assemblies




| PN | Orifice-Ø mm | Orifice-Ø inch |
|---|---|---|
| 108654 | 0,6 | 0,025 |
| 108655 | 1,0 | 0,04 |
| 108656 | 1,4 | 0,055 |
| 108657 | 1,8 | 0,07 |
| 108658 | 2,2 | 0,09 |

### 7.7.2 Swirl Air Kits

Spray models require a Swirl Air Kit installed on the ASU.

| Number of Applicators per ASU | ASU Voltage | Swirl Air Kit PN For Dynamini ASU | Swirl Air Kit PN For Dynamelt S ASU |
|---|---|---|---|
| 1 | 120V | 103484 | - |
| 2 | 120V | 103485 | - |
| 1 | 240V | 103486 (111894) | 104903 (107113) |
| 2 | 240V | 103487 (111895) | 104906 (107114) |
| 1 | 200V | 103496 | 104902 |
| 2 | 200V | 103497 | 104905 |

### 7.7.3 Adapter Cables for Control Schemes

These cable assemblies are installed between the DG2 applicator model DG2DXX and hose.

| Cable Assembly PN | From DG2 Control Scheme | To ASU Control Scheme |
|---|---|---|
| 108691 | DynaControl | Slautterback L5, 120V |
| 108692 | DynaControl | Slautterback L5, 240V |
| 108902 * | DynaControl | Slautterback L4, 120V |
| 108903 * | DynaControl | Slautterback L4, 240V |
| 108950 ** | NDSN | NDSN 2300 or 3000 Series, or ProBlue, 230V |

** DynaControl hose required*
*** NDSN hose required with model DG2NXX applicator*

### 7.7.4 Hoses for Hand-Held Applicator, DN8

| Control System | Voltage | Length | | Hose PN, DN8 | |
|---|---|---|---|---|---|
| | | Meters | Feet | Swirl Applicator | Bead Applicator |
| DynaControl/Dynamini | 240V | 2.4 | 8 | 102173 | 101085 |
| DynaControl/Dynamini | 240V | 3.6 | 12 | 102175 | 101087 |
| DynaControl/Dynamini | 240V | 4.8 | 16 | 102176 | 101088 |
| DynaControl/Dynamini | 240V | 7.2 | 24 | 102178 | 101089 |
| | | | | | |
| Dynamini | 120V | 2.4 | 8 | 102442 | 102439 |
| Dynamini | 120V | 3.6 | 12 | 102444 | 102441 |

### 7.7.5 Abrasion Resistant DynaControl Hoses, DN8

| ASU Voltage | Length | | Hose PN, DN8 | |
|---|---|---|---|---|
| | Meters | Feet | Swirl Applicator | Bead Applicator |
| 120V | 2.4 | 8 | 104637 | 104634 |
| 120V | 3.6 | 12 | 104639 | 104636 |
| | | | | |
| 240V | 2.4 | 8 | 104640 | 104562 |
| 240V | 3.6 | 12 | 104642 | 104564 |
| 240V | 4.8 | 16 | 104643 | 104565 |
| 240V | 6.0 | 20 | 104644 | 104566 |
| 240V | 7.2 | 24 | 104645 | 104567 |

# 7.8 Service-Kits

## *7.8.1 Needle Seal Kit, PN 108757*

| Part Number | Description |
|---|---|
| 108707 | Needle Seal Assembly |
| 108332 | Compression Spring, 0.360OD, 0.026d, 1.12LG |
| L08491 | Compression Spring, 0.42OD, 0.072d, 0.853LG |
| 108700 | TFE Lube, 0.25 oz. |

## *7.8.2 Handle Kit, Service Part, PN 108758*

| Part Number | Description |
|---|---|
| NFS* | Heater Cover, RH |
| NFS* | Heater Cover, LH |
| NFS* | Handle, RH |
| NFS* | Handle, LH |
| 108359 | SHC Screw, M4 x 0.7 x 16 (Qty. 5) |
| 108360 | Insulator Ring |

NFS* = Not for Sale Separately.

## *7.8.3 Axial Rotation Rebuild/ Conversion Kit, PN 108761*

| Part Number | Description |
|---|---|
| NFS* | Axial Rotation Bearing |
| 108339 | Axial Rotation Stem |
| NFS* | Washer, .745x.562x.020, SST |
| NFS* | Backup Ring, -113 Solid TFE (Qty. 2) |
| 108588 | SHC Screw, M4x0.7x25 (Qty. 4) |
| NFS* | Axial Roller Bearing Assembly |
| N00180 | O-ring 013 (Qty. 2) |
| N00185 | O-ring 018 |
| 108700 | TFE Lube, 0.25 oz. |

NFS* = Not for Sale Separately.

## *7.8.4 Axial Rotation Bearing/ Seal Kit, PN 108755*

| Part Number | Description |
|---|---|
| NFS* | Axial Rotation Bearing |
| N00180 | O-ring 013 (Qty. 2) |
| N00185 | O-ring 018 |
| NFS* | Axial Roller Bearing Assembly |
| NFS* | Backup Ring, -113, Solid TFE (Qty. 2) |
| NFS* | SST Washer, 0.745 x 0.562 x 0.020 |
| 108700 | TFE Lube, 0.25 oz. |

NFS* = Not for Sale Separately.

### 7.8.5 Ball Swivel Rebuild/ Conversion Kit, PN 108762

| Part Number | Description |
|---|---|
| 102501 | Ball Swivel Stem |
| 103414 | Wave Spring |
| 103415 | O-ring 115 |
| NFS* | Ball Swivel Bearing, Bottom |
| NFS* | Ball Swivel Bearing, Top |
| 108344 | Ball Swivel Retainer |
| 108359 | SHC Screw, M4x0.7x16 (Qty. 4) |
| 108700 | TFE Lube, 0.25 oz. |

NFS* = Not for Sale Separately.

### 7.8.6 Ball Swivel Bearing/ Seal Kit, PN 108756

| Part Number | Description |
|---|---|
| 103414 | Wave Spring |
| 103415 | O-ring 115 |
| NFS* | Bottom Ball Swivel Bearing |
| NFS* | Top Ball Swivel Bearing |
| 108700 | TFE Lube, 0.25 oz. |
| 108344 | Ball Swivel Retainer |

NFS* = Not for Sale Separately.

### 7.8.7 Tool Kit, Hand-held Applicator, PN 108622

| Part Number | Description |
|---|---|
| NFS* | Extractor, Connector Pin |
| NFS* | Tag, Caution, Wire Harness |

NFS* = Not for Sale Separately.

## 7.9 Cable Assemblies and Component Guide

| Description | PN for DynaControl Code D * | PN for NDSN Control Code N * | PN for Slautterback Control Code S * |
|---|---|---|---|
| **Cable Asy. 120V** | 108572 | 108935 | 111801 |
| **Cable Asy. 240V** | 108346 | 108936 | 111802 |
| | | | |
| **Heater Asy 80W. 120V** | 108574 | 108693 | 108693 |
| **Heater Asy 80W. 240V** | 108364 | 108694 | 108694 |
| | | | |
| **RTD Sensor Asy** | 108365 (Pt 100 sensor) | 108934 (Ni 120 sensor) | 109081 (Pt 100 sensor) |
| | | | |
| **Trigger Switch Asy** | 108367 | 108696 | 108696 |
| | | | |
| **Connector, flanged plug 120V** | 108575 | N03567 | N03567 |
| **Connector, flanged plug 240V** | 108368 | N03567 | N03567 |
| | | | |
| **Ground Wire Asy** | 108371 | 108697 | 108697 |

* See 3.2.3 Model Designation Guide for code.

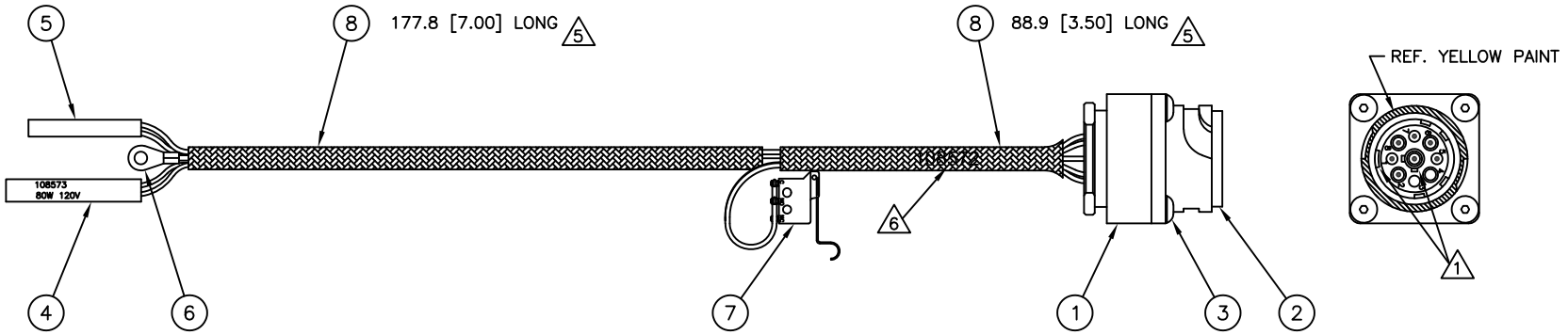
See also cable drawings/BOM on next pages.

### 7.9.1 Cable asy, for DynaControl, 120V, PN 108572

DWG. NO. 108572 | SH 1 | REV. D

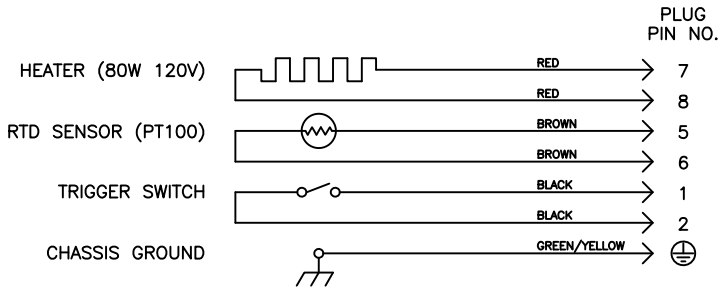
REVISIONS

| REL. | REV. | DESCRIPTION | DATE | BY | APPROVED |
|---|---|---|---|---|---|
| 02293 | A | PRODUCTION RELEASE. | 12.16.02 | PJD | |
| 02663 | B | CORRECTED DIAGRAM, HTR LEADS WERE WHITE. | 12.19.02 | PJD | |
| 09012 | C | DELETED NOTE 2 | 1.16.09 | BB | |
| 142015 | D | ITEM 3 WAS 108370 | 04.21.15 | JC | |




NOTES:

1. NOTE ORIENTATION OF SMALL INDEX KEYS AND LARGE INDEX TAB TO VERIFY VOLTAGE OF CONNECTOR.
2. 
3. ASSEMBLE COMPONENTS (ITEMS 4–8) BEFORE INSERTING PIN CONTACTS INTO PLUG CONNECTOR.
4. INSERT PIN CONTACTS AS SHOWN IN WIRING DIAGRAM.
5. NOTE THAT SLEEVING LENGTH INSTALLED IS LESS THAN CUT LENGTH.
6. WRITE CABLE ASSY PART NO. ON SLEEVING WITH INDELIBLE INK PEN.




WIRING DIAGRAM, DYNACONTROL, 120V

| ITEM | PART NUMBER | QTY. | U/M | DESCRIPTION |
|---|---|---|---|---|
| 8 | 108787 | .88 | FT | SLEEVING, FIBERGLASS, #7 |
| 7 | 108367 | 1 | EA | TRIGGER SWITCH ASSY, DCL |
| 6 | 108371 | 1 | EA | GROUND WIRE ASSY, DCL |
| 5 | 108365 | 1 | EA | SENSOR ASSY, PT100, DCL |
| 4 | 108574 | 1 | EA | HEATER ASSY, 80W, 120V, DCL |
| 3 | 108081 | 4 | EA | SCR,BTN HD,M3X8,BLK |
| 2 | 108575 | 1 | EA | CONNECTOR, FLANGED PLUG, DCL, 120V |
| 1 | 108369 | 1 | EA | ADAPTER, CONNECTOR, DCL |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS.
TOLERANCES ARE:
DECIMALS ANGLES
.X = ±0.25 ±.5°
.XX = ±0.10

FOR MACHINING STANDARDS AND SYMBOLS, SEE ITW/DYNATEC SPEC. A05800

USED ON: DG2 HAND APPL.

NEXT ASSY.

DO NOT SCALE DRAWING

| APPROVALS | DATE |
|---|---|
| DRAWN PJD | 8.08.01 |
| CHECKED | |

COMPUTER DESCRIPTION(25 CHARACTERS): CABLE ASSY,HA,DCL,120V

ITW Dynatec HENDERSONVILLE, TN

CABLE ASSY, HAND APPL, DCL, 120V

U/M EA | STATUS M | SOURCE

SIZE C | DWG. NO. 108572 | REV. D | GROUP

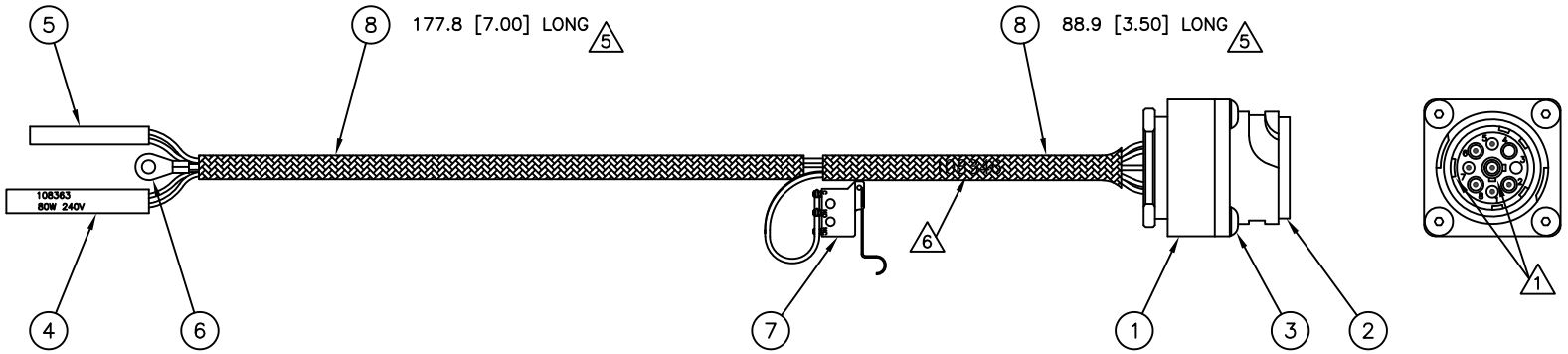
SCALE 1:1 | CAD DRAWING | SHEET 1 of 1

### 7.9.2 Cable asy, for DynaControl, 240V, PN 108346

DWG. NO. 108346 | SH 1 | REV. C

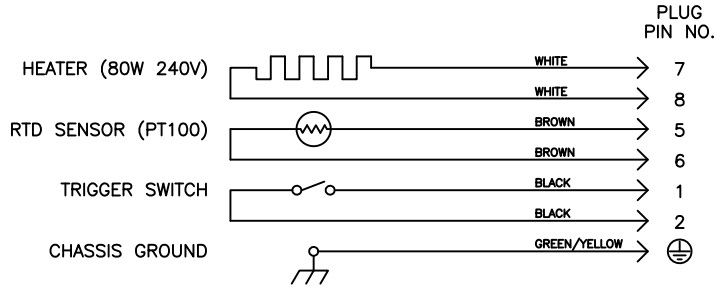
REVISIONS

| REL. | REV. | DESCRIPTION | DATE | BY | APPROVED |
|---|---|---|---|---|---|
| 02293 | A | PRODUCTION RELEASE. | 12.16.02 | PJD | |
| 09012 | B | DELETED NOTE 2 | 1.16.09 | BB | |
| 14205 | C | ITEM 3 WAS 108370 | 04.21.15 | JC | |




NOTES:

1. NOTE ORIENTATION OF SMALL INDEX KEYS AND LARGE INDEX TAB TO VERIFY VOLTAGE OF CONNECTOR.
2. 
3. ASSEMBLE COMPONENTS (ITEMS 4–8) BEFORE INSERTING PIN CONTACTS INTO PLUG CONNECTOR.
4. INSERT PIN CONTACTS AS SHOWN IN WIRING DIAGRAM.
5. NOTE THAT SLEEVING LENGTH INSTALLED IS LESS THAN CUT LENGTH.
6. WRITE CABLE ASSY PART NO. ON SLEEVING WITH INDELIBLE INK PEN.




WIRING DIAGRAM, DYNACONTROL, 240V

| ITEM | PART NUMBER | QTY. | U/M | DESCRIPTION |
|---|---|---|---|---|
| 8 | 108787 | .88 | FT | SLEEVING, FIBERGLASS, #7 |
| 7 | 108367 | 1 | EA | TRIGGER SWITCH ASSY, DCL |
| 6 | 108371 | 1 | EA | GROUND WIRE ASSY, DCL |
| 5 | 108365 | 1 | EA | SENSOR ASSY, PT100, DCL |
| 4 | 108364 | 1 | EA | HEATER ASSY, 80W, 240V, DCL |
| 3 | 108081 | 4 | EA | SCR,BTN HD,M3X8,BLK |
| 2 | 108368 | 1 | EA | CONNECTOR, FLANGED PLUG, DCL, 240V |
| 1 | 108369 | 1 | EA | ADAPTER, CONNECTOR, DCL |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS. TOLERANCES ARE: DECIMALS .X = ±0.25 .XX = ±0.10 ANGLES ±.5°

FOR MACHINING STANDARDS AND SYMBOLS, SEE ITW/DYNATEC SPEC. A05800

USED ON: DG2 HAND APPL.

NEXT ASSY.

DO NOT SCALE DRAWING

| APPROVALS | DATE |
|---|---|
| DRAWN PDD | 8.08.01 |
| CHECKED | |

COMPUTER DESCRIPTION(25 CHARACTERS): CABLE ASSY,HA,DCL,240V

ITW Dynatec HENDERSONVILLE, TN

CABLE ASSY, HAND APPL, DCL, 240V

U/M: EA | STATUS: M | SOURCE

SIZE C | DWG. NO. 108346 | REV. C | GROUP

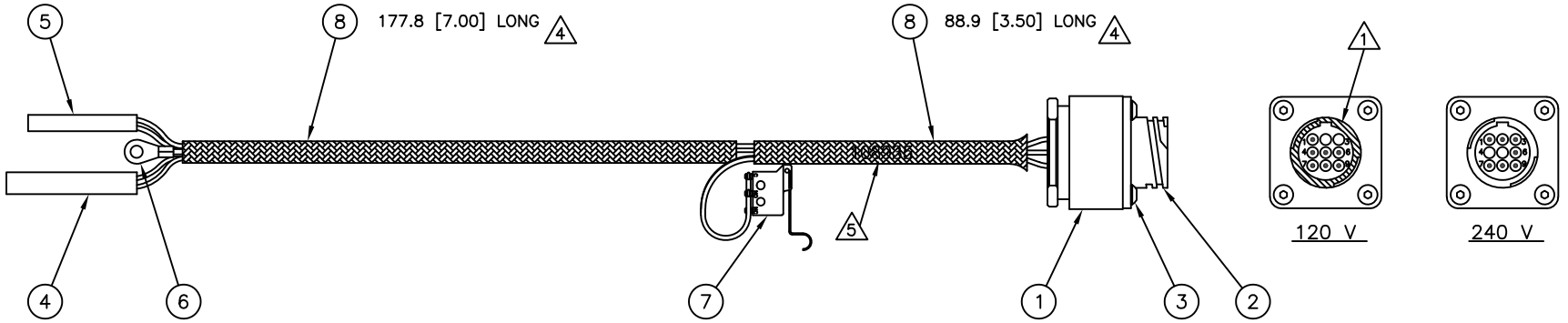
SCALE 1:1 | CAD DRAWING | SHEET 1 of 1

### 7.9.3 Cable asy, for NDSN Control, 120V PN 108935 and 240V PN 108936

DWG. NO. 108935 | SH 1 | REV. C

REVISIONS

| REL. | REV. | DESCRIPTION | DATE | BY | APPROVED |
|---|---|---|---|---|---|
| 02293 | A | PRODUCTION RELEASE. | 12.16.02 | PJD | |
| 06075 | B | 120V HTR PINS WERE 2 & 3, NOW 4 & 5. | 1.17.06 | PJD | |
| 142015 | C | ITEM 3 WAS 108370 | 04.21.15 | JC | |

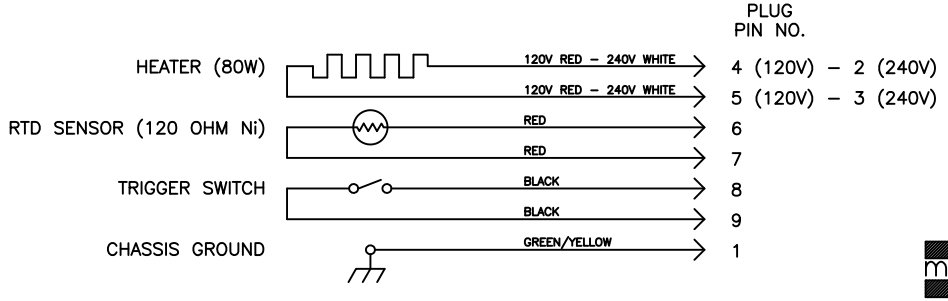



NOTES:

1. FOR 120V CABLE ASSY ONLY, COAT END OF CONNECTOR WITH YELLOW PAINT, TWO APPLICATIONS, USING FELT TIP MARKER PEN (ITEM 9).
2. ASSEMBLE COMPONENTS (ITEMS 4–9) BEFORE INSERTING PIN CONTACTS INTO PLUG CONNECTOR.
3. INSERT PIN CONTACTS AS SHOWN IN WIRING DIAGRAM.
4. NOTE THAT SLEEVING LENGTH INSTALLED IS LESS THAN CUT LENGTH.
5. WRITE CABLE ASSY PART NO. ON SLEEVING WITH INDELIBLE INK PEN.

## CABLE ASSY TABULATION

| CABLE ASSY PART NO. | DESCRIPTION | HEATER ASSY ITEM 4 PART NO. | YELLOW PAINT ITEM 9 QTY REQ'D |
|---|---|---|---|
| 108935 | 120V | 108693 | A/R |
| 108936 | 240V | 108694 | – |




WIRING DIAGRAM, DG2, NORDSON UPGRADE

| ITEM | PART NUMBER | QTY. | U/M | DESCRIPTION |
|---|---|---|---|---|
| 9 | 108737 | SEE TAB | EA | MARKER PEN, PAINT, YELLOW |
| 8 | 108787 | .88 | FT | SLEEVING, FIBERGLASS, #7 |
| 7 | 108696 | 1 | EA | TRIGGER SWITCH ASSY, HA, AMP CONN |
| 6 | 108697 | 1 | EA | GROUND WIRE ASSY, HA, AMP CONN |
| 5 | 108934 | 1 | EA | SENSOR ASSY, HA, Ni RTD |
| 4 | SEE TAB | 1 | EA | HEATER ASSY, 80W, AMP CONN |
| 3 | 108081 | 4 | EA | SCR,BTN HD,M3X8,BLK |
| 2 | N03567 | 1 | EA | CONNECTOR, AMP SQ FLG RECEPT, 13–9 |
| 1 | 108933 | 1 | EA | ADAPTER, CONNECTOR, 13–9 SQ FLANGE PLUG |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS. TOLERANCES ARE: DECIMALS X = ±0.25, .XX = ±0.10; ANGLES ±.5°

FOR MACHINING STANDARDS AND SYMBOLS, SEE ITW/DYNATEC SPEC. A05800

ITW Dynatec HENDERSONVILLE, TN

U/M EA

USED ON: DG2 HAND APPL.

NEXT ASSY.

DO NOT SCALE DRAWING

| APPROVALS | DATE |
|---|---|
| DRAWN PJD | 11.15.01 |
| CHECKED | |

COMPUTER DESCRIPTION(25 CHARACTERS): CABLE ASSY,HA,N,120V

CABLE ASSY, HAND APPL, NORDSON

STATUS M SOURCE

SIZE C | DWG. NO. 108935 | REV. C | GROUP

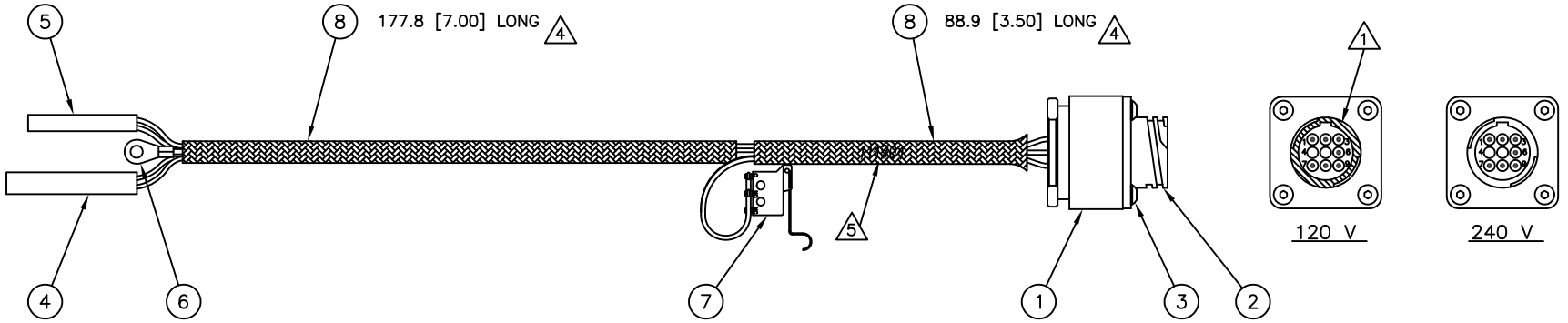
SCALE 1:1 | CAD DRAWING | SHEET 1 of 1

### 7.9.4 Cable asy, for Slautterback Control, 120V PN 111801 and 240V PN 111802

DWG. NO. 111801 | SH 1 | REV. B

REVISIONS

| REL. | REV. | DESCRIPTION | DATE | BY | APPROVED |
|---|---|---|---|---|---|
| N05003 | A | ORIGINAL RELEASE. | 01.13.05 | PJD | |
| 14205 | B | ITEM 3 WAS 108370 | 04.21.15 | JC | |

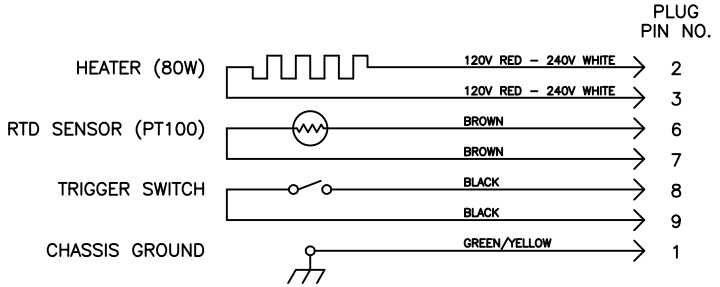



NOTES:

1. FOR 120V CABLE ASSY ONLY, COAT END OF CONNECTOR WITH YELLOW PAINT, TWO APPLICATIONS, USING FELT TIP MARKER PEN (ITEM 9).
2. ASSEMBLE COMPONENTS (ITEMS 4–9) BEFORE INSERTING PIN CONTACTS INTO PLUG CONNECTOR.
3. INSERT PIN CONTACTS AS SHOWN IN WIRING DIAGRAM.
4. NOTE THAT SLEEVING LENGTH INSTALLED IS LESS THAN CUT LENGTH.
5. WRITE CABLE ASSY PART NO. ON SLEEVING WITH INDELIBLE INK PEN.

## CABLE ASSY TABULATION

| CABLE ASSY PART NO. | DESCRIPTION | HEATER ASSY ITEM 4 PART NO. | YELLOW PAINT ITEM 9 QTY REQ'D |
|---|---|---|---|
| 111801 | 120V | 108693 | A/R |
| 111802 | 240V | 108694 | – |




WIRING DIAGRAM, DG2, SLAUTTERBACK UPGRADE

| ITEM | PART NUMBER | QTY. | U/M | DESCRIPTION |
|---|---|---|---|---|
| 9 | 108737 | SEE TAB | EA | MARKER PEN, PAINT, YELLOW |
| 8 | 108787 | .88 | FT | SLEEVING, FIBERGLASS, #7 |
| 7 | 108696 | 1 | EA | TRIGGER SWITCH ASSY, HA, AMP CONN |
| 6 | 108697 | 1 | EA | GROUND WIRE ASSY, HA, AMP CONN |
| 5 | 109081 | 1 | EA | SENSOR ASSY, HA, PT100 RTD, AMP CONN |
| 4 | SEE TAB | 1 | EA | HEATER ASSY, 80W, AMP CONN |
| 3 | 108081 | 4 | EA | SCR,BTN HD,M3X8,BLK |
| 2 | N03567 | 1 | EA | CONNECTOR, AMP SQ FLG RECEPT, 13–9 |
| 1 | 108933 | 1 | EA | ADAPTER, CONNECTOR, 13–9 SQ FLANGE PLUG |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS. TOLERANCES ARE: DECIMALS .X = ±0.25 .XX = ±0.10 ANGLES ±.5°

FOR MACHINING STANDARDS AND SYMBOLS, SEE ITW/DYNATEC SPEC. A05800

ITW Dynatec HENDERSONVILLE, TN

U/M EA

USED ON DG2 HAND APPL.

NEXT ASSY.

DO NOT SCALE DRAWING

| APPROVALS | DATE |
|---|---|
| DRAWN PJD | 01.03.05 |
| CHECKED | |

COMPUTER DESCRIPTION(25 CHARACTERS): CABLE ASSY,HA,SLT,120V

CABLE ASSY, HAND APPL, SLAUTTERBACK

STATUS M SOURCE

SIZE C | DWG. NO. 111801 | REV. B | GROUP

SCALE 1:1 | CAD DRAWING | SHEET 1 of 1

## 7.10 Recommended Spare Parts

| Part Number | Description | Quantity |
|---|---|---|
| 108700 | TFE Lube, 0.25 oz. | 1 |
| * | Trigger Switch Asy | 1 |
| * | RTD Sensor Asy | 1 |
| * | Heater Asy 80W, 120V | 1 |
| * | Heater Asy 80W, 240V | 1 |
| 108328 | O-ring 2.2W x 9.3ID | 10 |
| 103415 | O-ring 115 (ball swivel models only) | 5 |
| N00180 | O-ring 013 (axial rotation models only) | 5 |
| N00185 | O-ring 018 (axial rotation models only) | 5 |
| N00177 | O-ring 010 (right angle nozzle adapter) | 5 |

* Choose part for your Control System from “7.9 Cable Assemblies and Component Guide”.

### *7.10.1 Nozzle Cleaning Kit, PN 101878*

PN 101878 Nozzle Cleaning Kit, for nozzle orifices of 0.018 to 0.040 inch (0.45 – 1.02 mm).

# Manual Revisions

| Revision | Page/ Chapter | Description |
|---|---|---|
| Rev.9.23 | - | New manual layout. |
| Rev.11.23 | - | Two-finger trigger option removed. |

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