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*OPERATIONS & SERVICE MANUAL*
*Manual # 50-09*
*Revised 12/11/02*

ITW Dynatec

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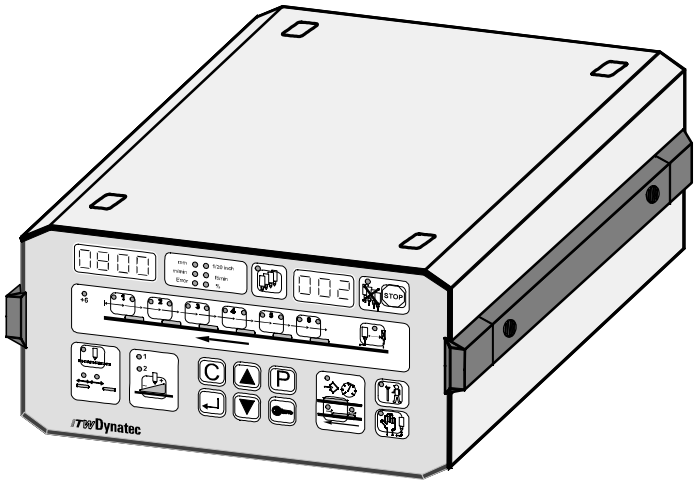
# DPC-4 Distanced-Based Pattern Controller OPERATIONS MANUAL

Software V. 2.70



**IMPORTANT ! - READ ALL INSTRUCTIONS BEFORE OPERATING THIS EQUIPMENT**

It is the customer's responsibility to have all operators and service personnel read and understand this information. Contact your ITW Dynatec customer service representative for additional copies.

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

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

# TABLE OF CONTENTS

# Chapter 1
# SAFETY INSTRUCTIONS

## *Concerning this Instruction Manual*

Every person installing, starting-up, operating, maintaining, repairing or disposing of this system must first read and understand this manual and follow the instructions described herein.

## *Purpose of System*

The DPC-4 controller is designed for use as a triggering device for adhesive application heads. Consult ITW Dynatec before using the DPC-4 in any other manner.

## *Manual Symbols*

**CAUTION**
**This symbol means that failure to observe the specific instructions could cause damage to the equipment.**

**DANGER! HIGH VOLTAGE!**
**This symbol refers to the danger of electrical shock to personnel.**

***NOTE:*** *This symbol indicates a note for handling this unit.*

## *Authorized Use of System*

Only authorized persons who have read and understood the instruction manual(s) or who have been trained by ITW Dynatec may operate this system.

## *Installation, Maintenance, Repair or Disposal of the System*

Only authorized, trained personnel or personnel under their supervision may install, work on or dispose of the system. Electro-technical regulations must be observed.

## *Modifications to the System*

No modifications can be made to the system without consulting ITW Dynatec. Use only factory-recommended parts and fittings. ITW Dynatec does not assume any responsibility for damage which occurs as a result of using parts that are not factory recommended.

### *Working with the Cover Open*

Inside the controller are electric current-carrying components. To avoid personal injury, do not touch them while input power is ON. Disconnect and lockout main power before opening the cover. Then wait a few seconds until all electrical components have discharged.

# Chapter 2
# PRODUCT DESCRIPTION

## *Description*

ITW Dynatec's DPC-4 Pattern Controller (DY2006/4) is a component of an adhesive application system consisting of an adhesive application unit (ASU), hoses and applicator heads.

It has four outputs (channels) capable of triggering the solenoid valves of application heads in such a way that various glue patterns can be produced. Up to six glue tracks and glue stops of different lengths (ie, a "pattern") can be adjusted per application head. These patterns are stored in up to 24 programs.

For fastest operation, the solenoid valves can be triggered with higher than nominal voltage for a short time. This is referred to as "overexcitation". The height of voltage is adjustable and can be switched on or off for individual channels.

Glue flow can be initiated by photo eye or initiator or by external signals. When using the photo eyes or initiators, glue flow is released by corresponding impulses. When using an external input, there is glue flow for the duration of the signal. This method is termed "continuous gluing".

The speed of the production machine is read by an encoder and shown on the controller's LED display. This speed is transmitted as 0–10v voltage to the motor control of a gear-pump-equipped ASU. When production speed varies, glue pressures change accordingly.

In cold glue applications, two IP pressure transducers are controlled separately via two pressure outputs adapting the glue pressures when production speed varies.

A machine contact is provided to release and lock the controller.

The DPC-4 is equipped with a shutter output to prevent the application head's nozzles from drying out during production stops.

Pattern programming can also be controlled through a remote computer with a corresponding program through an RS232 or RS485 interface.

Critical conditions can be displayed by means of audible or optical signals via an output.

## *Specifications*

Operating temperature . . . . . 0 °C to 50 °C (32 °F to 122 °F)
Storage temperature . . . . . -10 °C to 50 °C (32 °F to 122 °F)

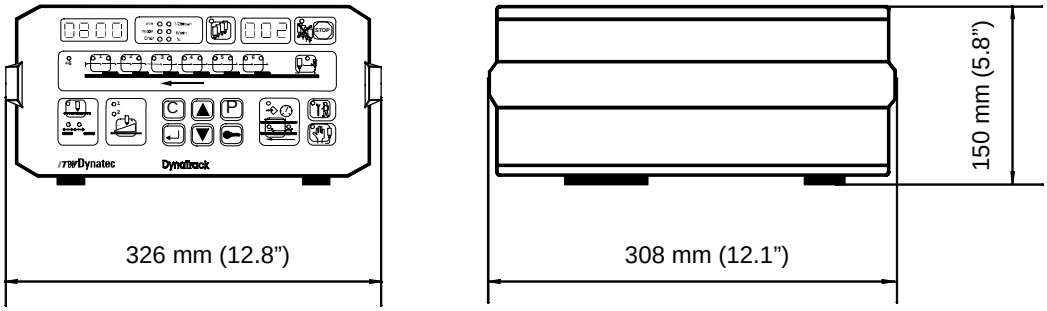
Power supply . . . . . 1/N/PE 230 V/ 50–60 Hz
(selectable 1/N/PE 115 V/ 50–60 Hz)
Power consumption . . . . . 150 VA
Fuse . . . . . 1 A T at 230 V, 2 A T at 115 V

Indication of speed of production machine . . . . . max. 900 m/min (2700 ft/min)
Glue pressure adjustment . . . . . min/max-value 0 to 100 % scaleable
Max. adjustable way . . . . . 8000 mm in steps of 1 mm
80.00 inch in steps of 0.01 mm

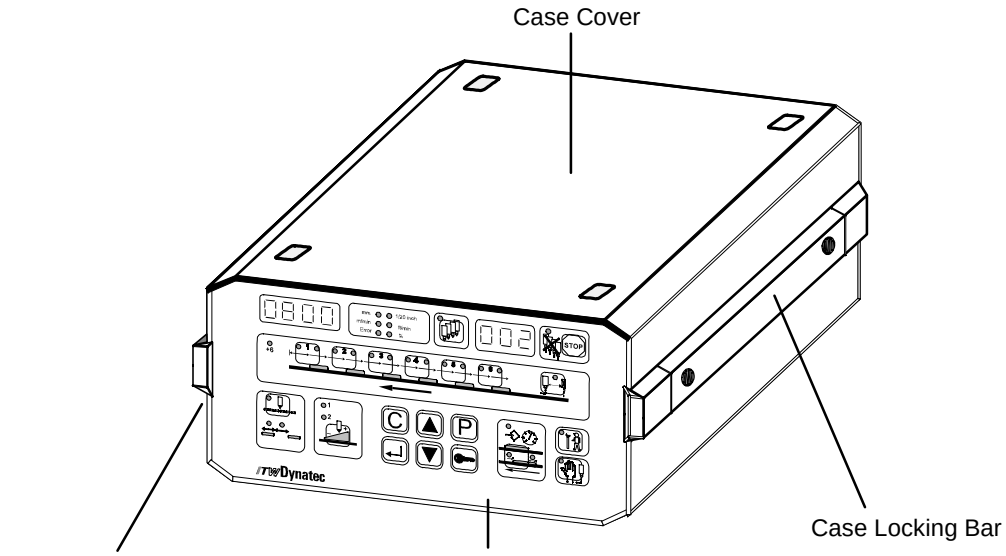
**Channels X1 to X4 for triggering the solenoid valves (short circuit proof)**:
Quantity . . . . . 4
Triggering of solenoid valves:
Normally . . . . . 24 V DC
Overexcitation . . . . . 55 V, 170 V (factory set)
(common value for all channels, can be switched off individually)
Time of overexcitation . . . . . 1.5–2.25 ms, adjustable internally
Wattage capacity per channel . . . . . 40 W maximum
Wattage capacity of all channels . . . . . 120 W maximum
Compensation of switching times . . . . . 0-200 mm (inch)

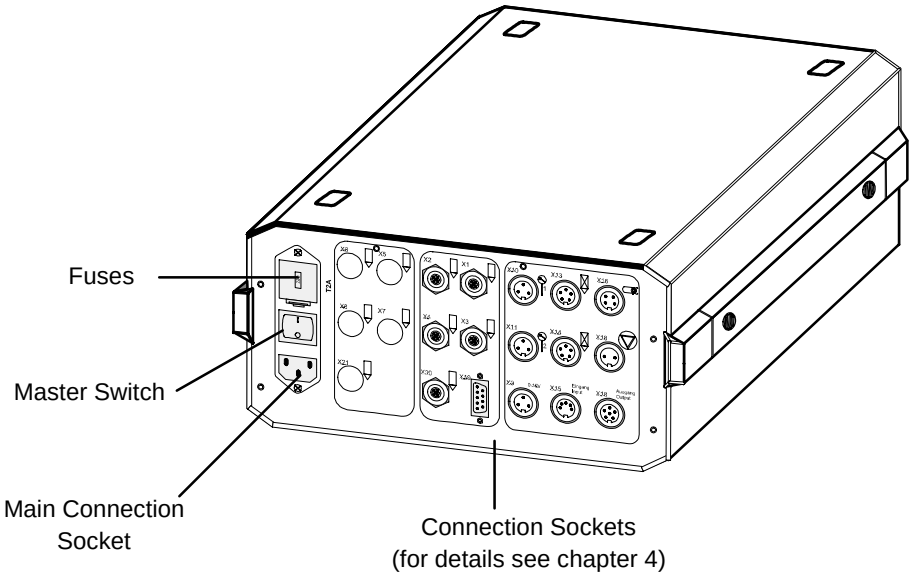
Control voltage X9 . . . . . 0 to 10 V DC, max. 10 mA, scaleable
Pressure control X10 and X11 . . . . . 2 x 4-20 mA, scaleable
Photo eye / sensor X13 and X14 . . . . . 15 V DC, 100 mA maximum,
NPN, PNP (push-pull not admissible)
Input gluing signal X15 . . . . . 15 V DC, NPN
Encoder X16 . . . . . 15 V DC, max. 100 mA, NPN (scaleable from version 2.0)
Machine contact X17 . . . . . NPN
Alarm output X18 . . . . . 24 V DC, 500 mA maximum
RS232, RS485 interface X19 . . . . . future option
Shutter X20 . . . . . 24 V DC, max. 2 A

## Dimensions




## Controller Layout



# Chapter 3
# SYSTEM SETUP

## *Opening of Case*

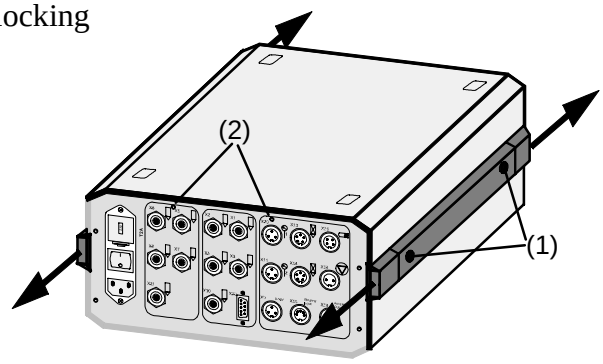
**DANGER! HIGH VOLTAGE!**

**Before opening the unit switch it OFF and disconnect the main plug.**

**DANGER! HIGH VOLTAGE!**

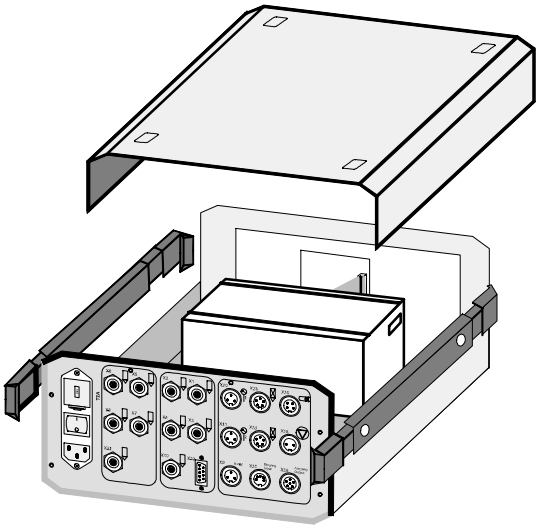
**After switching off the unit, wait a few seconds until all electrical components have discharged voltage.**

1. Press the buttons (illustration ref. #1) at both locking bars and pull them apart.

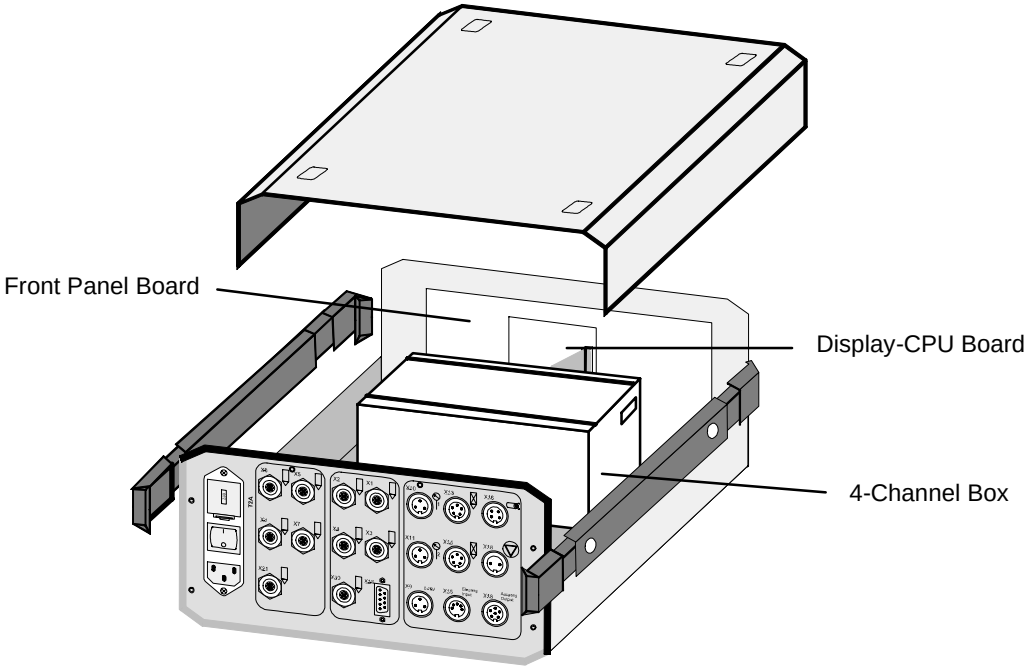



2. Remove screws on the backside (2) if necessary.

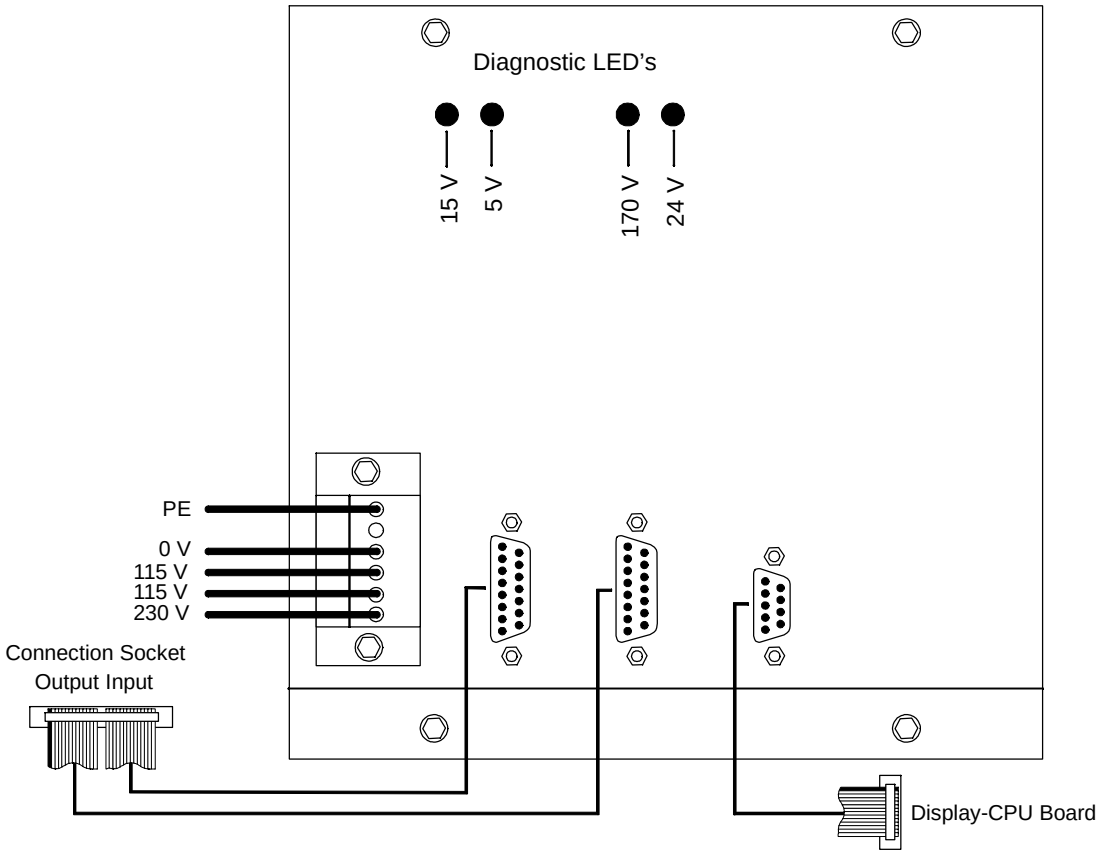
3. Remove the cover from the case.

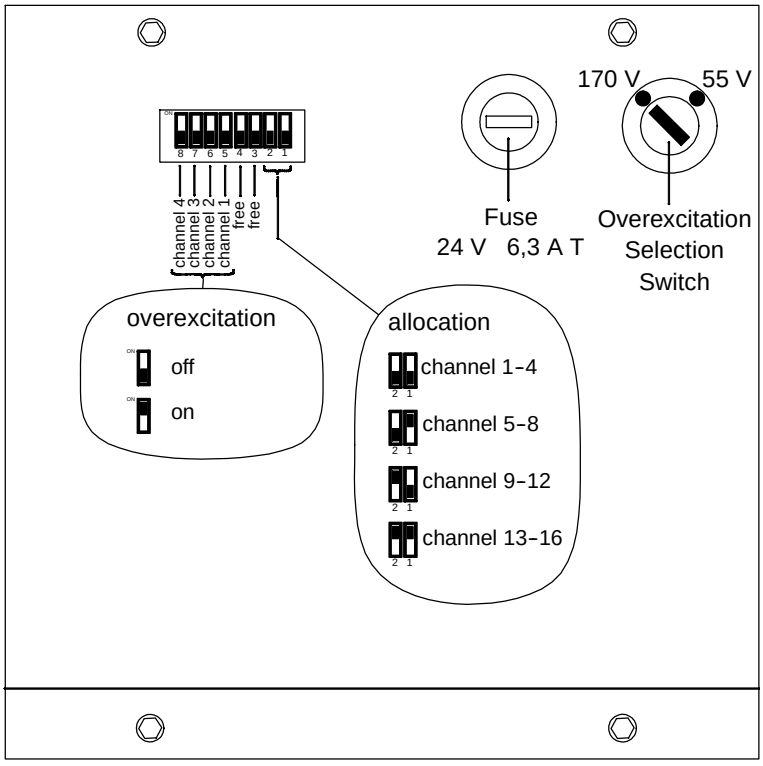


## *Location of Electronic Components*



## *Four-Channel Box*



### *Setting of Overexcitation*

Overexcitation is factory-set to 170 V. If system solenoid valves are not suitable for this voltage, overexcitation must be adjusted, per the following steps:

1. Disconnect, lockout and tag external electrical power.

**DANGER! HIGH VOLTAGE!**

**Before opening the unit switch it OFF and disconnect the main plug.**

**DANGER! HIGH VOLTAGE!**

**After switching off the unit, wait a few seconds until all electrical components have discharged voltage.**

2. Turn the Overexcitation Selection Switch *(page 3-3)* to the desired position.

***NOTE:*** *The brightness of the 170 V LED is governed by the chosen overexcitation.*

3. Close the case and turn ON the unit.

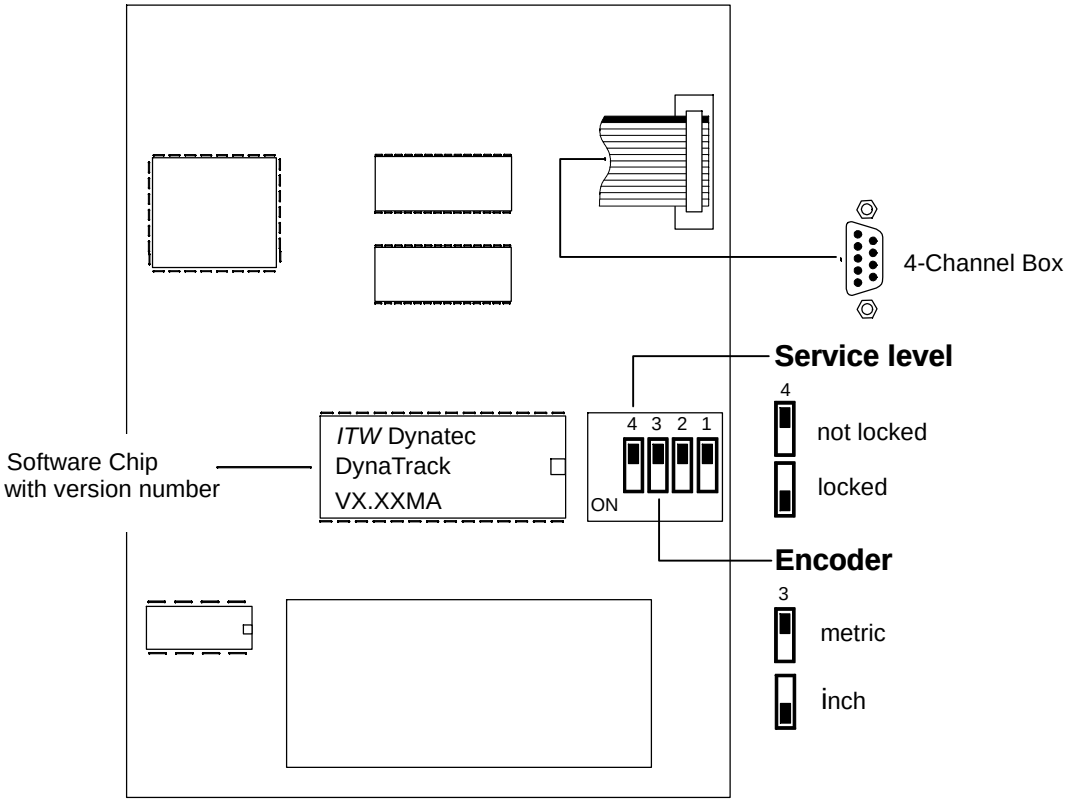
### *Turning On Overexcitation*

Overexcitation can be turned ON or OFF for each channel.

### *Adjustment of Unit Addressing*

ITW Dynatec factory-sets which channels shall be driven with the unit. If replacing the controller, check the adjustment and reset the addressing, if necessary.

### *Display-CPU Board*




### *Adjustment of Encoder Type and Resolution*

The controller can be set to meter- or inch-based encoder types via DIP switch 3. The resolution is described in Chapter 5.

1. Disconnect, lockout and tag external electrical power and open the case.

**DANGER! HIGH VOLTAGE!**
**Before opening the unit switch it OFF and disconnect the main plug.**

**DANGER! HIGH VOLTAGE!**
**After switching off the unit, wait a few seconds until all electrical components have discharged voltage.**

2. Place dip switch 3 in the desired position.
3. Close the case and turn ON the unit.
4. Adjust the resolution of the encoder.
5. Change the service settings, if necessary (see Chapter 5).

# Chapter 4
# START UP

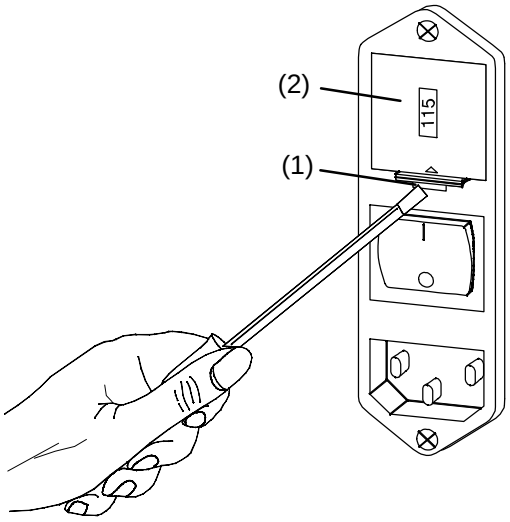
**CAUTION**
**Only authorized and trained personnel may service the DPC-4 Timer. Observe the safety instructions in Chapter 1.**

**CAUTION**
**Be sure that the unit is placed in a dry and dust-free area and not in way of other machinery. Safe accessibility for service personnel must be ensured.**

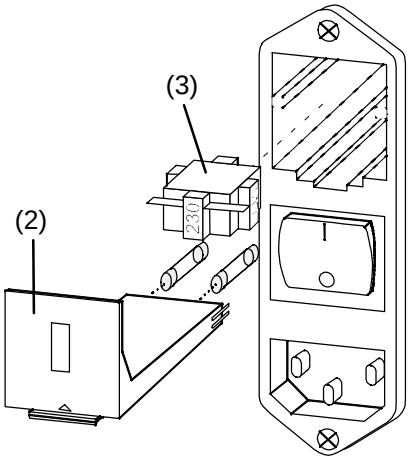
## *Power Supply Selection*

***NOTE:*** *The power supply voltage is adjustable and is visible in a window above the main switch on the rear of the unit. It is factory-set to 230 V (to 115 V in the U.S.).*

**CAUTION**
**Make sure that the power supply is adjusted to the correct value.**



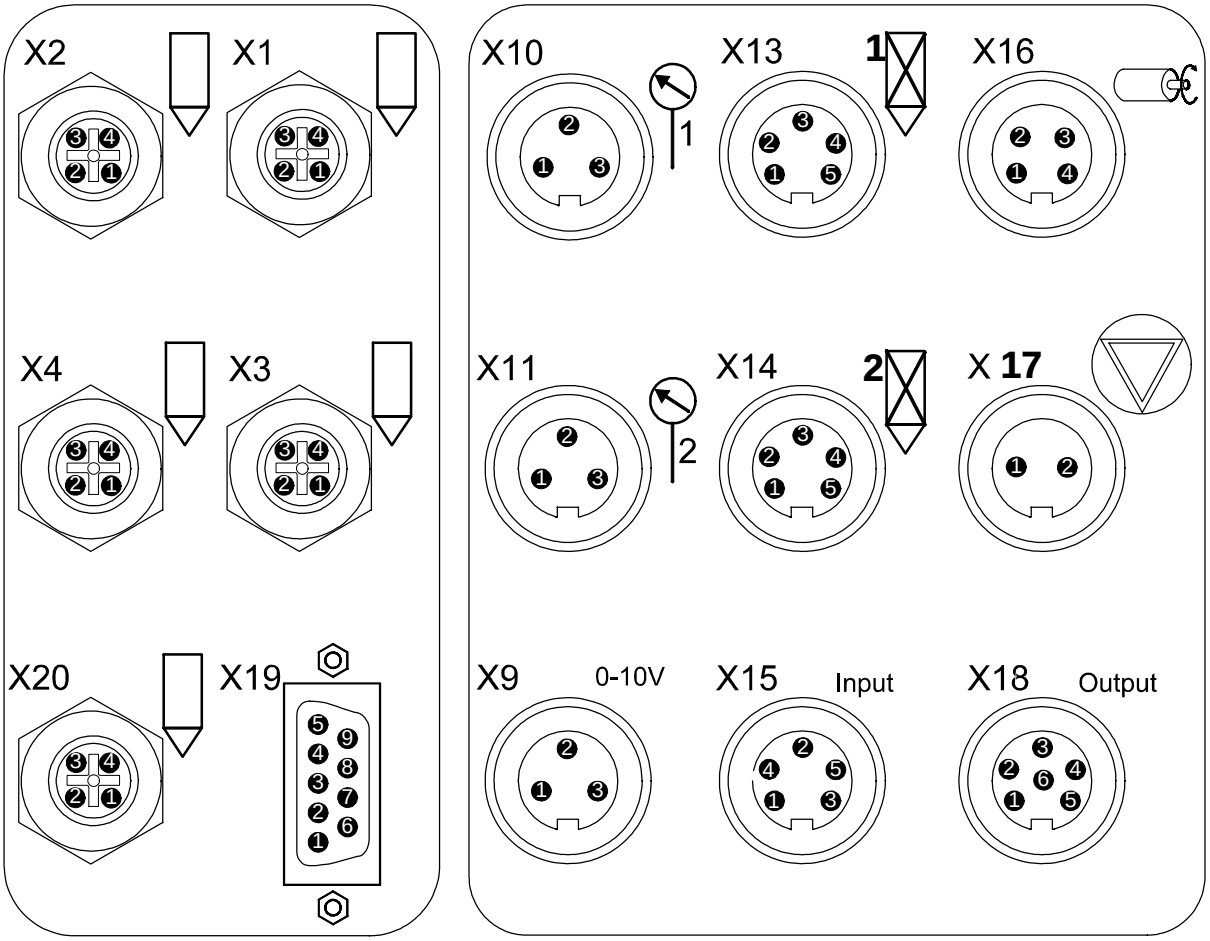

1. Insert a screw driver into the slot (illustration reference #1, at right) above the main switch.
2. Pull out the safety compartment (2).
3. Pull out the voltage selector (3) with pointed pliers.
4. Turn the voltage selector (3) until the desired value is visible.




**CAUTION**
**Factory-installed fuses correspond to factory-set voltage.**

5. Push in the voltage selector (3).
6. Return the safety compartment (2) to its original position and press in until it snaps.
   You can now read your new value in the window.

## *Socket Assignments*

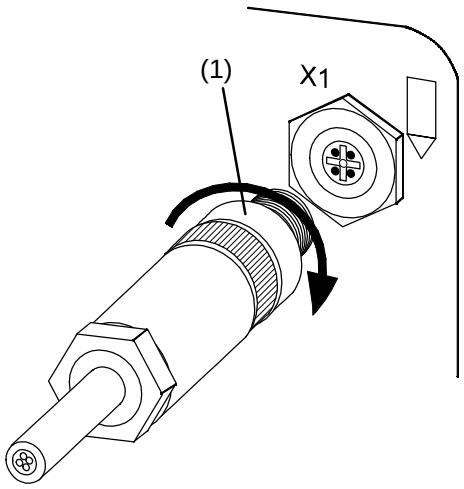



| Socket | Function | Pin Assignment | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| X1, X2, X3, X4 | Triggering of application heads 1 to 4 | + | | - | Screen | | |
| X9 | Voltage 0-10V for ASUs with gear pump | 0 V | | 0 to + 10 V | | | |
| X10, X11 | Output pressure control 1 and 2: 4-20 mA | - | + | | | | |
| X13, X14 | photo eye / sensor 1 and 2 | 0 V | +15 V | Signal NPN/PNP | | | |
| X15 | Continuous gluing input | 0 V | Input 1 NPN | +15 V | Input 2 NPN | 0 V | |
| X18 | Alarm outputs | Alarm 1 | Alarm 1 | Alarm 2 | Alarm 2 | | |
| X16 | Encoder | 0 V | +15 V | Signal NPN | | | |
| X17 | Machine contact | 0 V | Signal NPN | | | | |
| X19 | RS 232 or RS485 | T+ | TXD T- | RXD R+ | R- | GND GND | |
| X20 | Shutter | + | | - | Screen | | |

## *Connecting to the System*

**NOTE:** *Triggering the application heads is caused by overexcitation of 170 V (factory-set). Verify that the application heads are suitable for this voltage. Adjust if necessary (see Chapter 3).*

1. Place all necessary plugs into the corresponding sockets (for assignments see page 4-2).
2. Screw the safety screws (#1 in illustration) tight to the sockets.
3. Connect the main connection cable to the main connection socket at the unit.
4. Connect the unit to the main circuit.

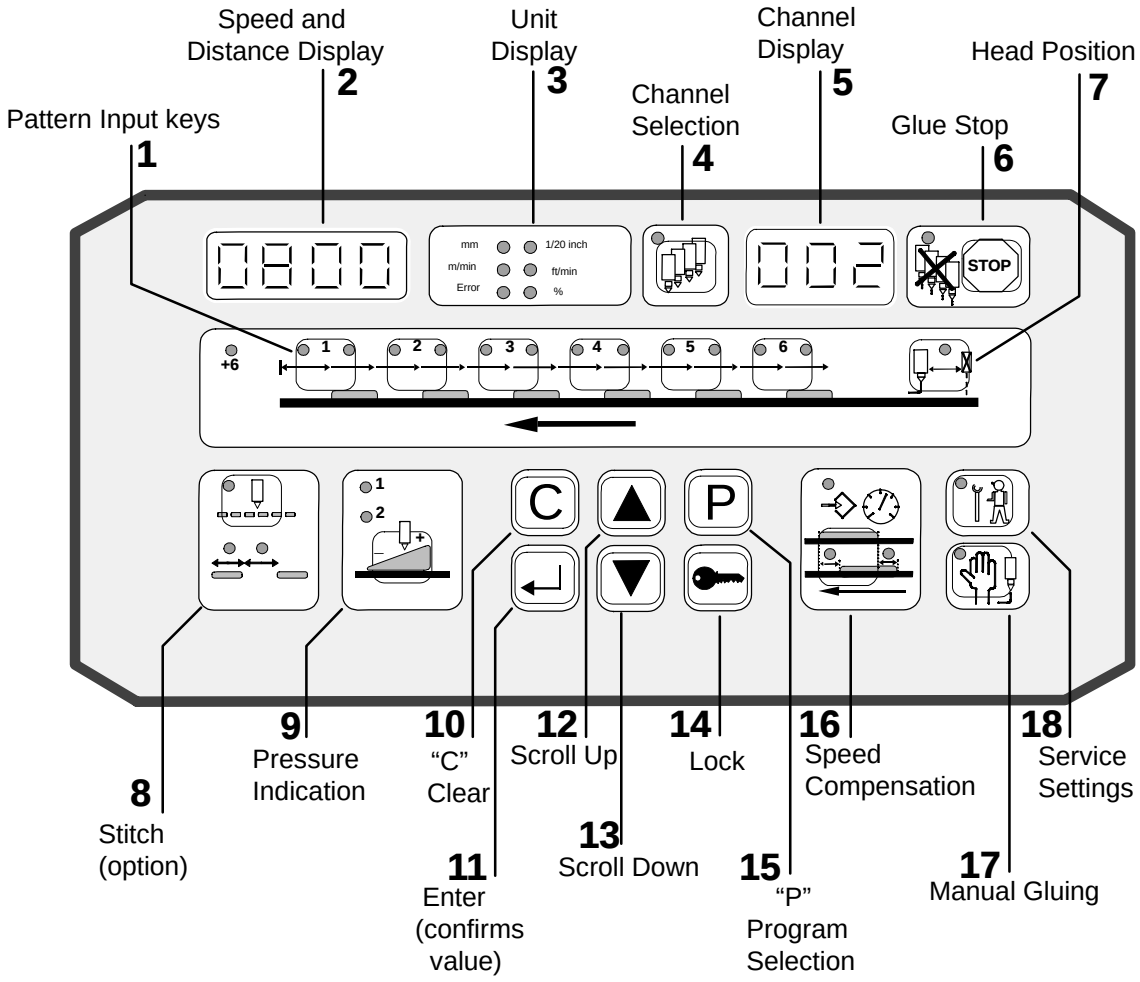



***NOTE:*** *Before turning on the unit, check whether the voltage setting is correct.*

***NOTE:*** *Perform the service settings (see Chapter 5).*

# Chapter 5
# PROGRAMMING

## *Display Panel*




**1** **Pattern input keys:** Depending on demand, the glue pattern can be divided into six beads and six glue stops. The length of beads and glue stops are adjustable and programmable (see page 5-11).

**2** **Speed and distance Display:** Displays the current speed of the production machine, a distance or another parameter.

**3** **Unit indication:** The scale (mm/ inch or meter/feet) of the value on the speed and distance display. Also indicates percentage (%) or "error".

**4** **Channel selection:** To select a desired channel.

**5** **Channel Display:** The selected channel's number or a system setting parameter.

**6** **Stop:** Press this key once to stop glue flow. Press again and glue flow resumes. Glue flow can also be stopped by reaching the minimum machine speed or through an external signal (page 5-16).

**7** **Head position:** In order to ensure that glue flow starts at the intended point, distance between the application head and the photo eye must be set. This value is programmable between 0 and 8000 mm (page 5-11).

**8** **Stitch:** The glue bead can be interrupted In order to conserve adhesive.

**9** **Glue pressure adjustment:** The current pressure is indicated as well as a minimum and maximum glue pressure. Therefore the glue quantity delivered through the application heads can be adjusted. As the speed of the production machine increases, the amount of adhesive automatically increases. The minimum pressure value is the pressure when the production machine stops. The maximum pressure value is the pressure allowed at full speed of the production machine. Both values are adjustable from 0 to 100 % (page 5-9).

**10** **C:** To exit the current menu.

**11** **Enter:** To confirm a selected value.

**12** **Scroll Up**: To increase the value.

**13** **Scroll Down**: To decrease the value.

**14** **Lock:** The controller can be locked to protect the programmed values (page 5-15).

**15** **P: Program selection:** Programmed glue patterns can be stored in up to 24 programs (page 5-11).

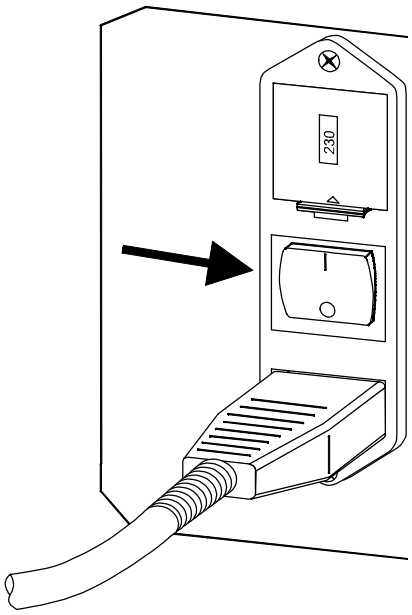
**16** **Compensation of application head switching times:** There are delays between the times that application heads open and close. These delays can be balanced through the compensation of switching times. These values are adjustable between 0 and 200 mm (page 5-14).

**17** **Manual gluing:** Glue flow can be started manually, independent of programmed values (page 5-15).

**18** **Service:** Selects the service settings menu (page 5-4).

### *Turning the Controller ON*

The master switch is on the rear side of the unit.




**CAUTION**
**Make sure that the power supply is adjusted to the correct value.**

### *Software Version Display*

Briefly press the LOCK key.


Press “C” and hold.

The software version is displayed on the speed and distance display (e.g. software version 2.00).

### *Service Settings*

Program the following parameters after installation or modifications to the system:

- **Photo-eye allocation (tr1):** For a selected channel, choose its corresponding photo eye (1 or 2) or turn its photo eye OFF (page 5-5).
- **Glue Starting point as production line acclerates (LSu):** The speed above which gluing begins (page 5-6).
- **Glue Stop point as production line decelerates (LSd):** The speed below which gluing stops (page 5-6).
- **Maximum speed (SPE):** This value determines the speed for the maximum pressure and the maximum compensation (page 5-6).
- **Glue pressure for manual gluing (Pr.C):** In manual gluing mode, this value is programmable between 0 and 100% (page 5-6).
- **Activation, deactivation or change of access code (COD)** (page 5-7).
- **Adjustment of continuous gluing (co.1):** Choose conditions for continuous gluing for each channel (page 5-7).
- **Combination of photo eyes (triggers) (A.tr):** Allows the photo eyes to work independently or in combinaton with each other (page 5-8).
- **Encoder step size (Enc.):** Programs the number of impulses per meter or inch (page 5-8).
- **Trigger Lock #1 (tL1):** Establishes the length of trigger lockout for Trigger Input #1 (X13 connection) (page 5-8).
- **Trigger Lock #2 (tL2):** Establishes the length of trigger lockout for Trigger Input #2 (X14 connection) (page 5-9).
- **Adjustment of slave address (Adr.):** Allows an external computer connection via interface (page 5-9).

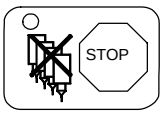
**Channel Selection**

Press the Channel Selection key until the desired channel number appears. The LED lights.


Program the following items, when applicable, for the selected channel:

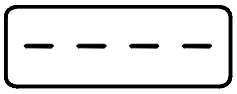
**Photo Eye Allocation (tr.1)**

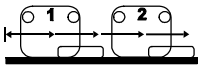
To choose if the selected channel responds to photo eye 1 or 2, or to turn it OFF.



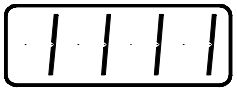

Press STOP.

Press SERVICE twice.



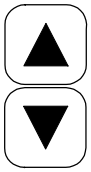




Enter the access code via the Pattern Input keys. (The access code has been factory set to “1111”).



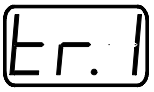

Press ENTER.


***NOTE:*** *If the wrong access code has been entered, the letters “Cod” appear on the display. Press C and repeat the setting with the correct code.*

Scroll UP or DOWN.
0: Channel not used (OFF)
1: Channel responds to photo eye 1
2: Channel responds to photo eye 2

Press ENTER.

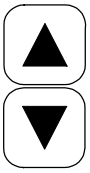



Only the selected channel is programmed.

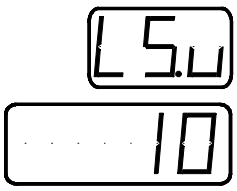
**Glue Start (LSu)**

Program the point at which glue flow will start, as the machine accelerates.

Press SERVICE.



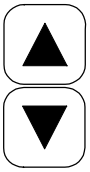
Scroll UP or DOWN until the desired value appears.



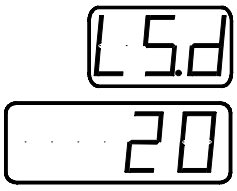

**Glue Stop (LSd)**

Program the point at which glue flow will stop, as the machine decelerates.

Press SERVICE.



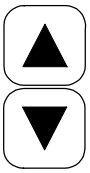
Scroll UP or DOWN until the desired value appears.



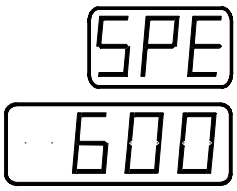

**Maximum Speed Selection (SPE)**

This value determines the speed for the maximum pressure and the maximum compensation.

Press SERVICE.



Scroll UP or DOWN until the desired value appears.

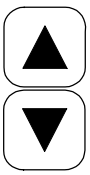



***NOTE:*** *This value is adjustable in steps of 25 m/min. Select the exact value or a value a little higher than desired.*

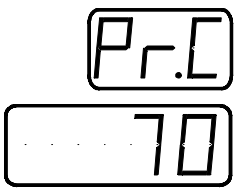
**Glue Pressure for Manual Gluing (Pr.C)**

Used in manual gluing mode, this value is programmable between 0 and 100%.

Press SERVICE.

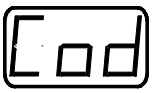


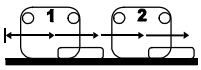
Scroll UP or DOWN until the desired value appears.



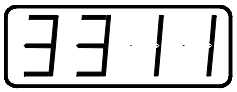
**Activation, Deactivation or Change of Access Code (Cod)**

Press SERVICE.

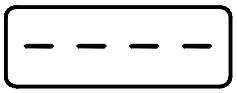


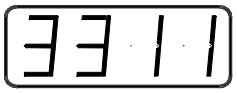

Enter the new access code (e.g. 3311) via the Glue Pattern keys. (The access code is factory set to “1111”).




Press LOCK to deactivate the access code.



Press LOCK again to activate the access code.




**Continuous Gluing Start (co.1, co.2, co.3, co.4)**

Program the conditions for continuous gluing. Adjust each channel individually.

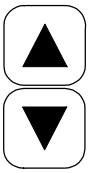
Press SERVICE.


Scroll UP or DOWN until the desired starting condition appears.
0: Continuous gluing OFF (default)
1: Continuous gluing if input 1 from X15 is active
2: Continuous gluing if low speed is reached
3: Continuous gluing if low speed is reached and input 1 is active

**Photo Eye (Trigger) Setup (A.tr)**

Select the photo eyes to work independently or in combination with each other.

Press SERVICE.

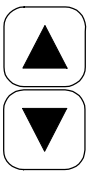
Scroll UP or DOWN until the desired value appears.
0: Each photo eye is independent of the other.
1: Photo eye 2 depends on photo eye 1, i.e. gluing starts when a signal is given by photo eye 1 accompanied by photo eye 2.


Press ENTER.

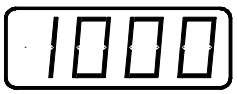
**Encoder Step Size (Enc.)**

Adjust the number of impulses per meter or inch (depending on the encoder used).

Press SERVICE.

Scroll UP or DOWN until the desired value appears.
This value is programmable between 500 and 4000 impulses/m (5.00 and 99.99 impulses/inch).

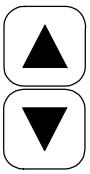



**Trigger Lock #1 (t.L.1)**

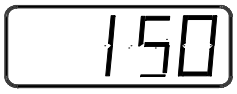
The Trigger Lock establishes the distance the machine must travel, after it receives a trigger input, before it will accept the next trigger input. This is used to avoid a false trigger on a window or other irregularity in the product. The Trigger Lock value is normally set to the actual length of the object being glued. The Control Unit default value is 5mm or 0.50 inches. Care must be taken to reduce this value for products shorter than this length, otherwise product may not be glued consistently.

Trigger Lock #1 allows programming for the trigger device connected to the X13 input on the back panel of the Control Unt.

Press SERVICE.

Scroll UP or DOWN until the desired value appears.
This value is programmable between 5 and 9999mm (0.05 and 99.99 inches).

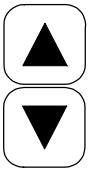



Press ENTER.

**Trigger Lock #2 (t.L.2)**

This parameter is the same as Trigger Lock #1, except that it allows programming for the trigger device connected to the X14 input on the back panel of the Control Unit.

Press SERVICE.

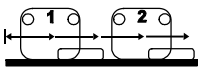
Scroll UP or DOWN until the desired value appears.
This value is programmable between 5 and 9999mm (0.05 and 99.99 inches).


Press ENTER.

**Slave Address (Adr.) OPTION**

Slave address programming is necessary only if an external computer is interfaced.

Press SERVICE.


Enter the slave address via the Glue Pattern keys (1–42).

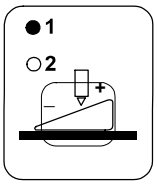

Press ENTER.

**Exit Service Settings**

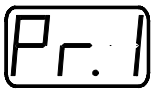

Press C to leave the Service Settings menu. The last selected channel number appears.

## *Pressure Indication and Adjustment*

### Pressure Indication (Pr.1, Pr.2 or Pr.3)




Press the Pressure Indication key.
Pressure indication LED 1 is lit.




The actual pressure in system 1 is indicated (in %).

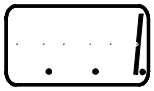

Press the key again and the actual pressure in system 2 (Pr.2) is indicated. Pressure indication LED 2 is lit.

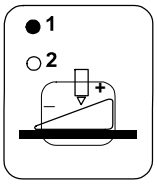
Press the key a third time and the actual pressure in system 3 (Pr.3) is indicated. Pressure indication LEDs 1 and 2 are lit.

### Adjustment of Minimum and Maximum Pressure

Minimum pressure is the pressure at production stop (PL1, PL2, PL3). Maximum pressure is the pressure at maximum production speed (PH1, PH2, PH3).

Press LOCK.

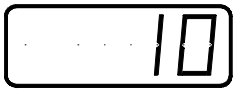


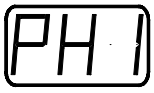

Press Pressure Indication.


The programmed minimum pressure (PL1) in system 1 is shown.


Scroll UP or DOWN until the desired value appears.




By pressing Pressure Indication again, the maximum pressure in system 1 (PH1) can be viewed and changed.



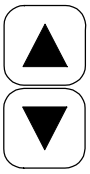

***NOTE:*** *If the Pressure Indication key is pressed a third time the minimum pressure in system 2 is indicated. If this key is pressed a fourth time the maximum pressure in system 2 is indicated, etc.*

## *Glue Pattern Programming*

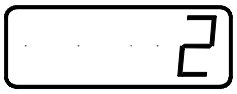
### Program Selection

After programming, the glue patterns are stored as “programs”. There are 24 programs available.


Press P.

Scroll UP or DOWN until the desired program number appears. The orange LEDs on the Pattern Input keys show the number of adjusted glue beads in the corresponding program.



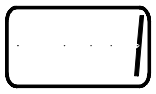

Press ENTER to select the program.

Press C to exit the program.

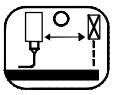
The selected channel number is displayed again.


### Channel Selection

Press the Channel Selection key until the desired channel number appears (the standard version has 4 channels). The following adjustments are applicable for the selected channel.

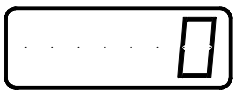


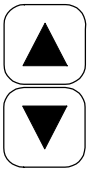

### Head Position



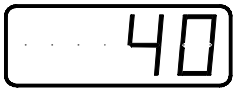
Press the Head Position key.

Measure the distance between the application head and the photo eye (measured value e.g. 40 mm).

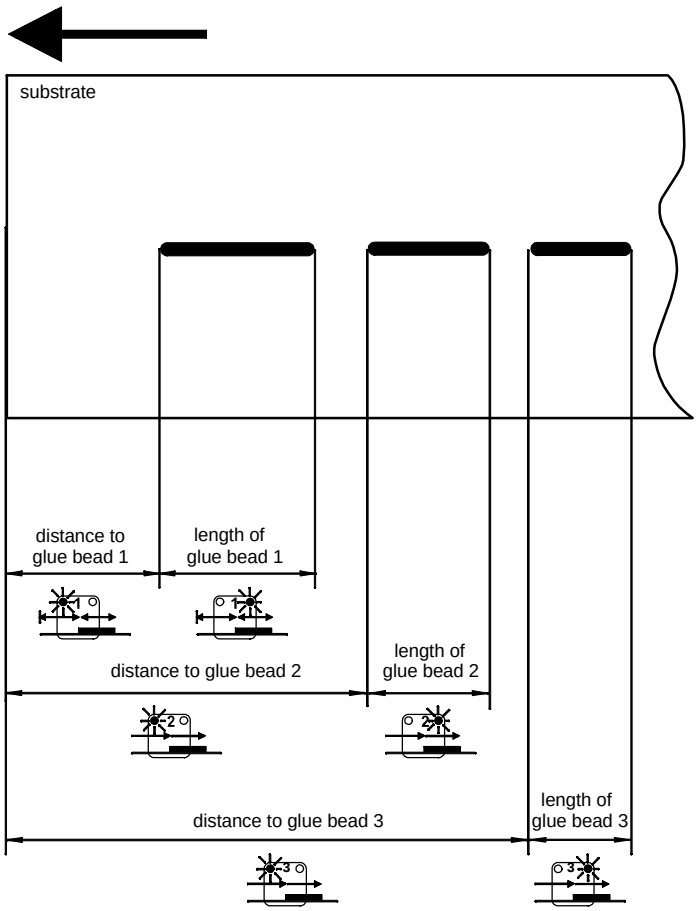


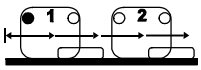



Enter the measured value in mm (inch) by scrolling UP or DOWN.

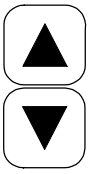


**Programming Glue Distance and Glue Length**

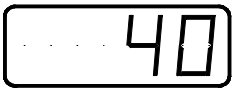


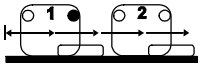



Press key 1.
The key's green LED is lit.

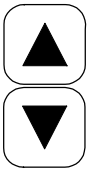


Set the desired distance from the start of the substrate to the start of the first glue bead (e.g. 40 mm) by scrolling UP or DOWN.

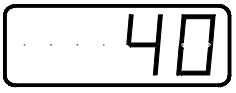




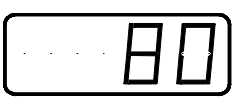
Press key 1 a second time. The key's orange LED is lit.

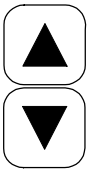


Enter the desired length of the glue bead (e.g. 40 mm) by scrolling UP or DOWN.



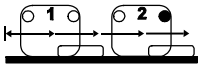
Press key 2.
The key's green LED and all LEDs in the previous keys are lit.



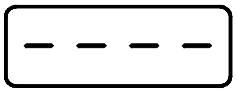


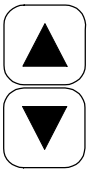
Set the desired distance from the start of the substrate to the start of the 2nd glue bead (e.g. 100 mm) by scrolling UP or DOWN.


***NOTE:*** *If the entered value is less than the sum of the distances previously entered, the letters "ERROR" will briefly flash on the red LED.*
*(This prevents an overlapping of glue beads.)*

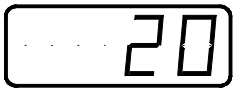



Press key 2 a second time. The key's orange LED is lit.

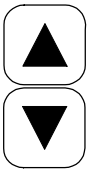


Set the desired length of the second glue bead (e.g. 20 mm) by scrolling UP or DOWN.




***NOTE:*** *If the scroll keys (UP and DOWN) are pressed simultaneously, the distance or glue length are set to a minimum or are switched OFF.*



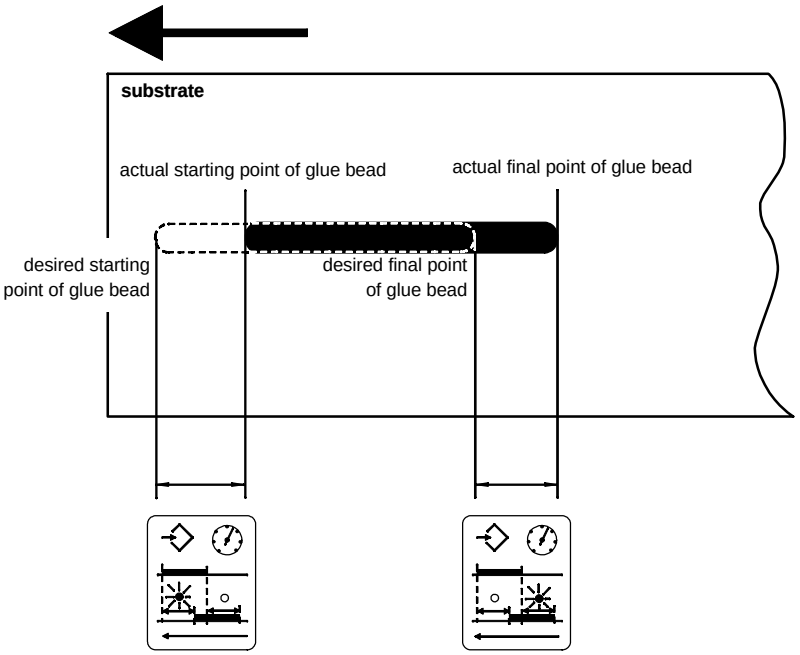
***NOTE:*** *For more glue pattern programs, select the next program number (ie, program #2) and program as described above.*

Press C to exit this menu.

Press C again to indicate the number of glue beads.

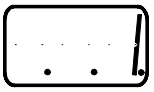
***NOTE:*** *If no key is pressed for 20 seconds, the menu automatically returns to speed indication.*

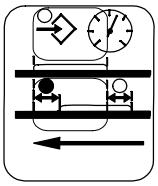
**Compensating the Switching Times of Solenoid Valves**



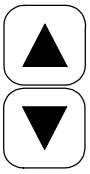

**valid for max. speed**

Press LOCK.

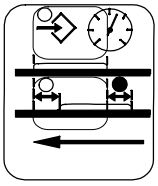




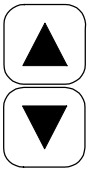
Press Compensation.
The first orange LED is lit.



Measure the delay of glue bead (e.g. 2 mm) and enter this value by scrolling UP or DOWN.

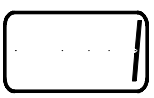


Press Compensation again.
The second orange LED is lit.



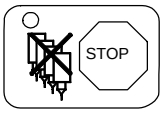
Measure the distance from the point where the glue bead should stop to the point where the glue bead actually stops (e.g. 1 mm) and enter this value by scrolling UP or DOWN.

Press C to exit this menu.



Repeat this adjustment for each channel.

## Activation and Deactivation of Manual Gluing




Press Stop.

Press Channel Selection until the desired channel number appears. All the following settings are valid for the selected channel.

Press Manual Gluing.
The key's LED lights. Manual Gluing is activated.

***NOTE:*** *If the LED is flashing, another channel is already in manual operation.*

The other channels can be switched to manual operation in the same way.

Press Manual Gluing.
The key's LED goes out. Manual Gluing is deactivated.

If more than one channel is in manual operation, press Stop to deactivate manual gluing in all channels.

## Programming Lock

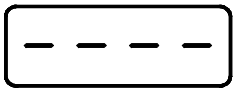
This function prevents unauthorized programming changes.

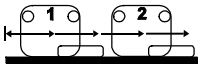

The unit can be locked only if the speed is displayed. If not, press C to return to the speed display.

Press LOCK and hold for a few seconds. The unit is now protected against programming changes.

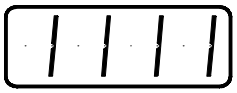

The unit can be unlocked only if the speed is displayed. If not, press C to return to the speed display.

Press LOCK and hold for a few seconds.






The access code can be entered via the Pattern Input keys.

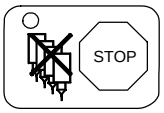


Press ENTER.

### *Shutter Opening (used in cold glue applications only)*

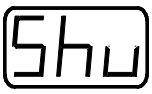
The shutter automatically closes to prevent the nozzles from drying out when not in use.


If the speed is displayed, the shutter can be opened. If not, press C to return to the speed display.




Press STOP.

Press Channel Selection key for 5 seconds.

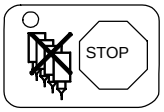



Press Manual Gluing. The shutter is opened.

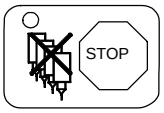
### *Stop Gluing*

Glue flow is stopped by one of the following three methods:

#### 1. Manual Stop




Press Glue Stop. Glue flow is interrupted. The key's red LED lights.




Press Glue Stop again. Glue flow resumes. The LED goes out.

#### 2. Automatic Stop

When the minimum speed (as programmed) is reached, gluing automatically stops. The speed display flashes.

#### 3. By External Signal (at X17)

The Glue Stop LED flashes.

## *Stitching Setup*

For economical glue application, each glue bead can be interrupted several times (”stitching”). Adjustment of stitch length and gap will effect all glue beads in the selected channel.

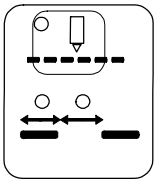
### Stitch Activation/ Deactivation

Press Channel Selection until the desired channel number appears.
The LED is lit.

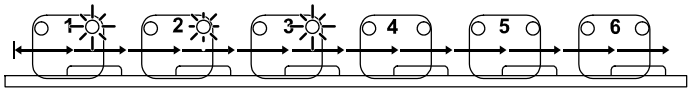


Stitching can be activated only if speed is displayed. If not, press C to return to speed display.

Press Lock.



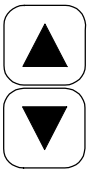
Press the Stitch key.
The LED is lit.
The orange LED’s for glue beads 1 - 6 show the active glue beads.
Stitching is activated when the LEDs flash.


Press the appropriate glue bead’s key to activate or deactivate stitching.

### Stitch Length

The Glue Length LED lights.



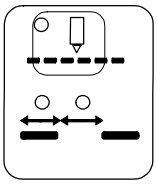
Scroll UP or DOWN to change the stitch length shown in left display.
This adjustment applies for all glue beads in the selected channel.


***NOTE:*** *The smallest increment of stitch length and gap length is one encoder step.*

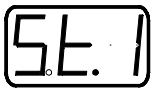
***Example:*** Encoder = 1000 imp/m
stitch increment = 1 mm

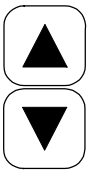
Encoder = 20.00 imp/inch
stitch increment = 0.05 inch

**Stitch Gap**



Press the Stitch key.
The Stitch Gap LED in the Stitch key is lit.



Scroll UP or DOWN to change the stitch gap length shown in left display.
This adjustment applies for all glue beads of this channel which have been activated for stitching.


Press Channel Selection to switch to other channels.
Adjust as outlined above.



Press C to leave the menu.

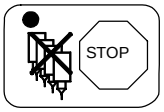
# Chapter 6
# TROUBLESHOOTING

## *Fault Messages*

| Fault message | Possible cause | Remedy |
|---|---|---|
| Code error  | A wrong access code has been entered. | Press “C” and Service key and enter correct access code. |
| | | If the factory-set access code 1111 has been changed and the new code is unknown, change the access code to 1111 via General reset (re-boot) (page 6-2). |
| Short circuit error  | A short-circuit fuse has been triggered in channels 1-4. | Switch the unit OFF and ON. |
| | | If this fault message occurs again after switching the unit OFF and ON again, check the application head and cable for a short circuit. |
| | A short-circuit fuse has been triggered in channels 1–4. Cable of application head has been plugged in with the controller switched ON. | Switch OFF the unit and plug the cable in again. Switch the unit ON. |
| Data error  | Memory component (EPROM) has been replaced (e.g. software update). | Press “C”. All values will be reset to the controller’s defaults (General Reset, see (page 6-2). If this error continues to occur, check for another failure. |
| | Battery of the SRAM component is dead. | This failure can only be repaired by ITW Dynatec service personnel. |
| | Display CPU board has been damaged by electrostatic charge. | This failure can only be repaired by ITW Dynatec service personnel. |
| | Trouble in main power supply. | Check the system power supply and verify that controller setup corresponds (see Chapter 4). |
| Communication error  | Electronic failure. An internal communication error occured. | This failure can only be repaired by ITW Dynatec service personnel. |

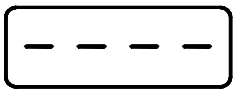
## *General Reset (Re-boot) to Restore System Defaults*

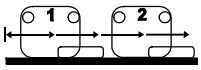
***NOTE:*** *Access code must be activated (page 5-7).*



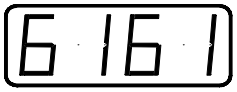

If the STOP LED is not ON, press the STOP key.


Press SERVICE.






Enter code “6161” via the Pattern Input keys.



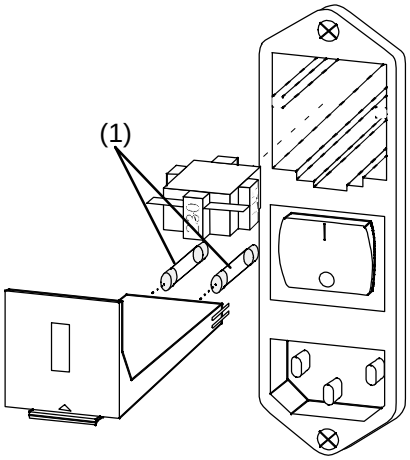

Press ENTER.


Press C.

The unit now has been reset to the following defaults:

| | |
|---|---|
| Access code | 1111 |
| Photo eye allocation (tr.1) | all channels are allocated to photo eye 1 |
| Lead time and gluing length | all gluing stops and tracks are 10 mm (0.2 inch) |
| Lead time of system | 20 mm (0.4 inch) for all channels |
| Starting point at increased speed (LSu) | 20 m/min (160 ft/min) |
| Stop point at reduced speed (LSd) | 30 m/min (240 ft/min) |
| Minimum pressure at machine stop (PL1, PL2, PL3) | 0 % |
| Maximum pressure at max. machine speed (PH1, PH2, PH3) | 100 % |
| Pressure at manual gluing | 70 % |
| Maximum speed (SPE) | 300 m/min (2400 ft/min) |
| Compensation of solenoid valve switching times | 0 mm (0 inch) |
| Encoder step size (Enc.) | 1 mm (0.02 inch) |

# Chapter 7
# PARTS & ACCESSORIES




## *Fuses*

| Item | Part No. | Part | Quantity |
|---|---|---|---|
| 1 | <br>05.11020.004<br>05.11010.004 | Main fuses<br>250 V 2 A T (for 120 V)<br>250 V 1A T (for 230 V) | 2 |
| | 05.11063.004 | Fuse 4 Channel Box<br>24 V 4 A T | 1 |

## *Accessories*

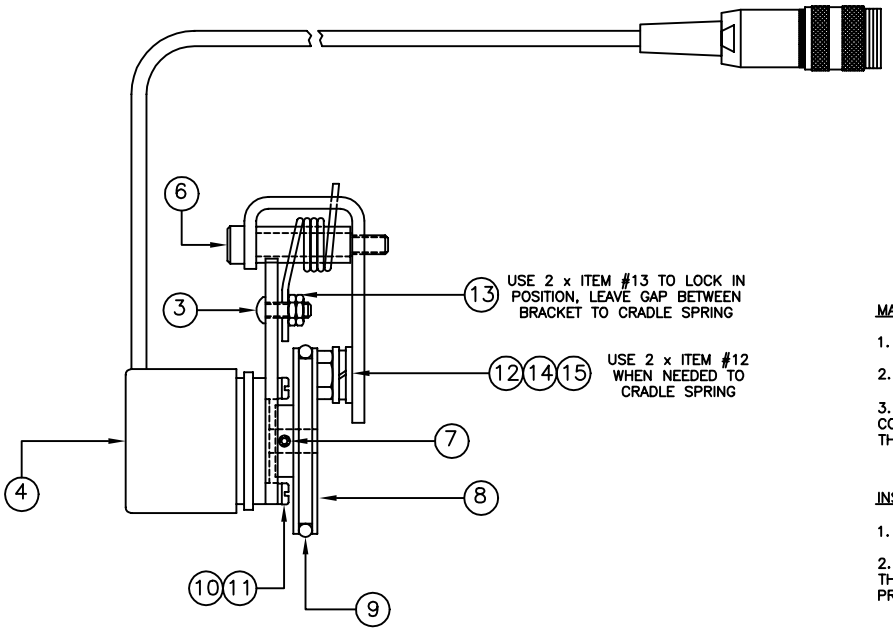
| Item | Part No. | Part Description | Qty. |
|---|---|---|---|
| 1 | ---------- | Main cable (included in scope of supply) | 1 |
| 2 | 05.01013.600 | Adapter cable for application heads M12-C16 | |
| 3 | 05.02104.616 | Connecting cable for solenoid valves of DynaCold, Dyna BF (without plug for application head side), 5 m | |
| 3 | 05.01004.610 | Connecting cable for solenoid valves of DynaCold, Dyna BF (without plug for application head side), 10 m | |
| 4 | 05.01013.610 | Adapter cable (“Y” cable) for connection of 2 solenoid valves | |
| 5 | 05.21004.501 | Connecting cable for solenoid valves of Macon application heads, 5 m | |
| 6 | 05.67000.705 | Automatic pressure control unit 1 connection incl. accessories with one electro-pneumatic transducer 05.67000.102 | |
| 7 | 05.67000.706 | Automatic pressure control unit 1 connection incl. accessories with two electro-pneumatic transducers 05.67000.102 | |
| 8 | 05.67000.102 | Electro-pneumatic transducer EIT 201-002B incl. connecting cable | |
| 9 | 05.67000.105 | Electro-pneumatic transducer IT 601-000 incl. connecting cable | |
| 10 | 05.02103.603 | Connecting cable, 5 m | |
| 11 | 05.65400.501 | Photo eye, round version, 5 ms incl. connecting cable | |
| 12 | 05.65300.105 | Photo eye, flat version, 1 ms incl. connecting cable | |
| 13 | 05.02105.603<br>05.02105.612<br>05.02105.604 | Connecting cable, 5 m<br>Connecting cable,10 m<br>Connecting cable, 25 m | |
| 14 | 70.90000.702 | Encoder 500/U incl. friction wheel, holding device and connecting cable | |
| 15 | 05.02104.603<br>05.02104.612<br>05.02104.604 | Connecting cable, 5 m<br>Connecting cable,10 m<br>Connecting cable, 25 m | |
| 16 | 05.03002.001 | Plug for machine contact, 2 pin | |
| 17 | 05.03003.003 | Plug for control voltage for gear pump units, 3 pin | |
| 18 | 05.03003.005 | Plug for input continuous gluing, 5 pin | |
| 19 | 05.03003.006 | Plug for alarm output, 6 pin | |
| 20 | | Connecting cable for shutter, 4 pin (see item 3) | |

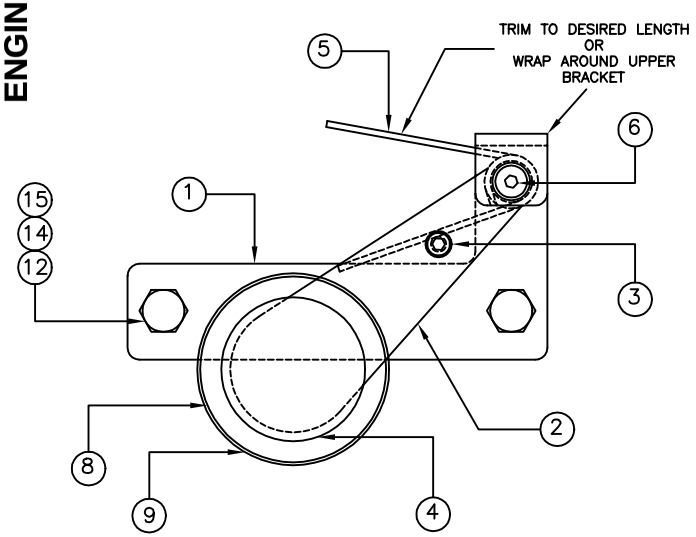
| DWG. NO. | 106233 | SHT. 1 | REV. B |
|---|---|---|---|

REVISIONS

| REL. | REV. | DESCRIPTION | DATE | BY | APPROVED |
|---|---|---|---|---|---|
| N99014 | A | INITIAL RELEASE | 01.26.99 | DHR | |
| 99137 | B | ITEM 3 WAS 105116 | 3.29.99 | BB | |

TACH GENERATOR, WHEEL BRACKET ASSEMBLY PN 106233 REV. B




MANUFACTURING NOTES:

1. ASSEMBLE ALL ITEMS EXEPT 12, 14 & 15.

2. PLACE ITEMS 12, 14 & 15 IN A SMALL BAG.

3. PACKAGE ALL ITEMS, ALONG WITH A "B" SIZED COPY OF THIS DRAWING INTO A BOX TO PROTECT THE EQUIPMENT FROM DAMAGE DURING SHIPMENT.

INSTALLATION NOTES:

1. SET 2006 "Enc" MENU TO 57.9 PPI.

2. USE ONLY MODERATE SPRING PRESSURE ON THE TACH GENERATOR SHAFT TO AVOID PREMATURE BEARING WEAR.

| ITEM | PART NUMBER | QTY. | U/M | DESCRIPTION |
|---|---|---|---|---|
| 15 | N00724 | 2 | EA | SCREW, HHC, 1/4–20 x 0.75 |
| 14 | N00697 | 2 | EA | WASHER,SPRING LOCK |
| 13 | 103121 | 2 | EA | NUT,HEX,M4 |
| 12 | N00688 | 3 | EA | WASHER,FLAT,1/4 |
| 11 | N00853 | 4 | EA | SCREW,FIL HD,4–40x3/8 |
| 10 | N00692 | 4 | EA | WASHER,SPRING LOCK |
| 9 | N06006 | 1 | EA | O–RING–224,VITON,70D |
| 8 | 104649 | 1 | EA | WHEEL,ENCODER DRIVE |
| 7 | 103470 | 1 | EA | SCR,SET,M3–0,5x5 |
| 6 | 104653 | 1 | EA | SCR,SHOULDER,6x30,M5 |
| 5 | 104651 | 1 | EA | SPRING,TORSION,ENCODER PRELOAD |
| 4 | 106232 | 1 | EA | TACH GEN ASY, 1.5"ø, 15V, 360PPR |
| 3 | 106111 | 1 | EA | SCREW, BHS,M4–0.7 x 12 |
| 2 | 104647 | 1 | EA | BRACKET,ENCODER MOUNT |
| 1 | 104648 | 1 | EA | BRACKET,ENCODER SWIVEL |

PARTS LIST

B

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± | DECIMALS XX±.010 .XXX±.005 | ANGLES ±.5

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

| APPROVALS | DATE |
|---|---|
| DRAWN DHR | 01.26.99 |
| CHECKED XXX | XX.XX.XX |

USED ON XXXXXXX

NEXT ASSY. XXXXXXX

DO NOT SCALE DRAWING

COMPUTER DESCRIPTION(25 CHARACTERS) TG/WHL/BRKT ASY, 2006 MINI

ITW Dynatec HENDERSONVILLE, TN

TACH GENERATOR, WHEEL & BRACKET ASY, 2006 MINI

SIZE C | DWG. NO. 106233 | REV. B

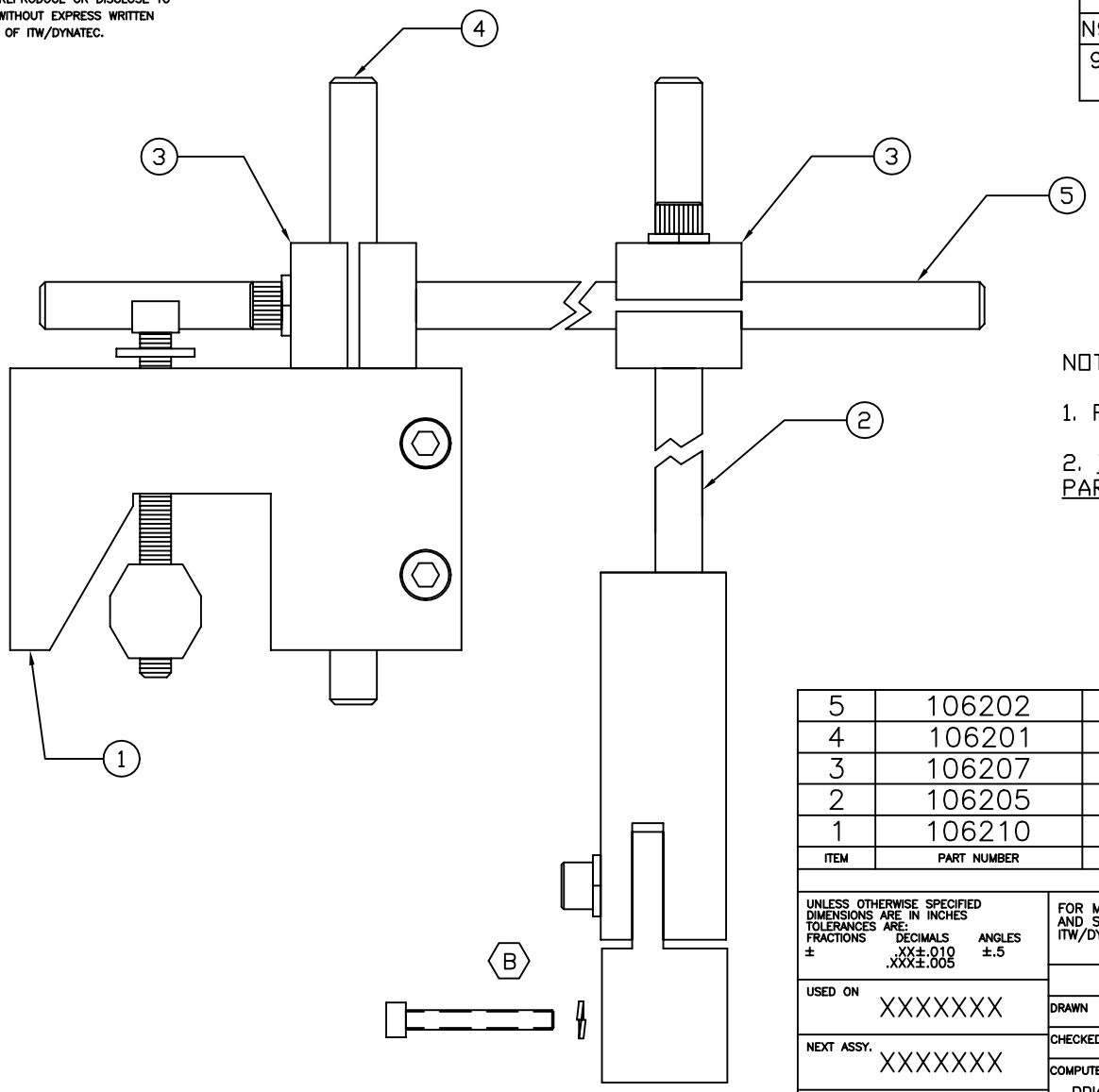
SCALE 1:1 | CAD DRAWIN | SHEET 1 of 1

U/M EA | STATUS A | SOURCE O | GROUP 00

| DWG. NO. | SHT. | REV. |
|---|---|---|
| 106214 | 1 | B |

REVISIONS

| REL. | REV. | DESCRIPTION | DATE | BY | APPROVED |
|---|---|---|---|---|---|
| N98184 | A | INITIAL RELEASE | 01.21.99 | DHR | |
| 99308 | B | CHG DWG TO REFLECT MODS TO ITEM #2 | 06.24.99 | DHR | |




NOTES:

1. PACKAGE ALL PARTS FOR SHIPMENT

2. INCLUDE A COPY OF THIS DRAWING WITH THE PARTS TO ASSIST CUSTOMER ASSEMBLY

| ITEM | PART NUMBER | QTY. | U/M | DESCRIPTION |
|---|---|---|---|---|
| 5 | 106202 | 1 | EA | EXT'N ROD, 3/8" DIA, 10" LONG |
| 4 | 106201 | 1 | EA | EXT'N ROD, 3/8" DIA, 5" LONG |
| 3 | 106207 | 2 | EA | CROSS COUPLE BRACKET ASY |
| 2 | 106205 | 1 | EA | HEAD SUPPORT ROD ASY, 16" |
| 1 | 106210 | 1 | EA | BAR RECEIVER BRACKET ASY |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± | DECIMALS .XX±.010 .XXX±.005 | ANGLES ±.5

USED ON: XXXXXXX

NEXT ASSY.: XXXXXXX

DO NOT SCALE DRAWING

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

| APPROVALS | DATE |
|---|---|
| DRAWN DHR | 01.21.99 |
| CHECKED XXXXXX | XX.XX.XX |

COMPUTER DESCRIPTION(25 CHARACTERS): BRKT ASY, DYNACOLD, NC

ITW Dynatec HENDERSONVILLE, TN

DYNACOLD NON-CONTACT BRACKET ASSEMBLY

U/M: EA
STATUS: A
SOURCE: O

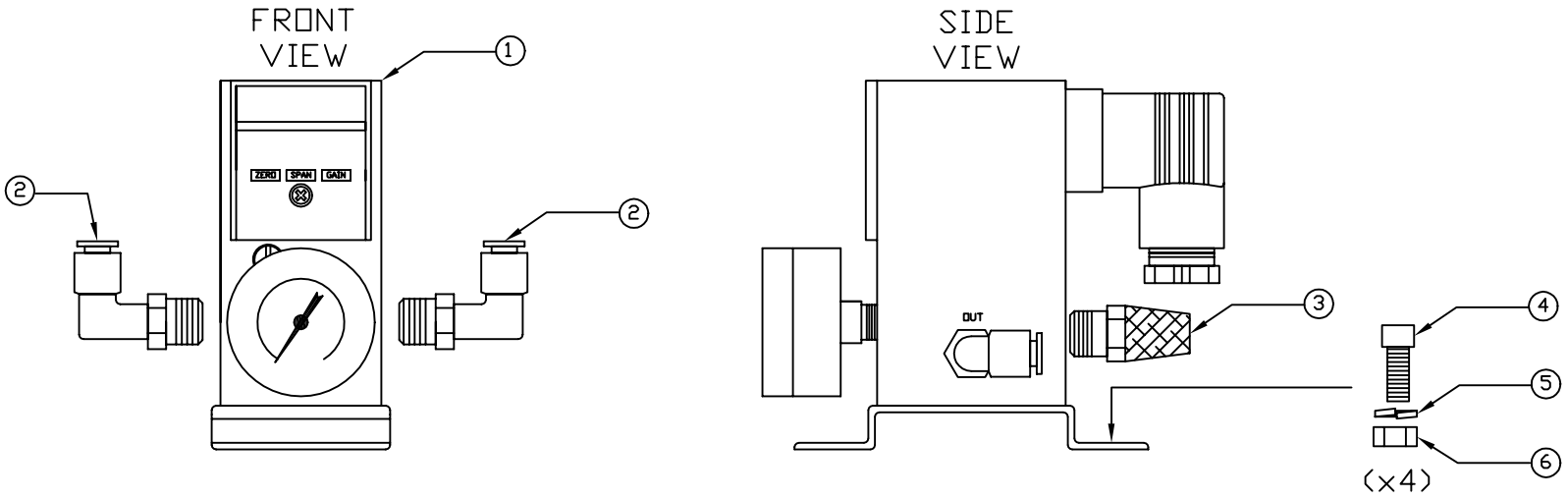
SIZE: B | DWG. NO.: 106214 | REV: B | GROUP: 00

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

105754 1 A

| | | |
|---|---|---|
| N98111 A | INITIAL RELEASE | 05.21.98 DHR |

TRANSDUCER ASSEMBLY PN 105754 REV. A




NOTES TO FACTORY

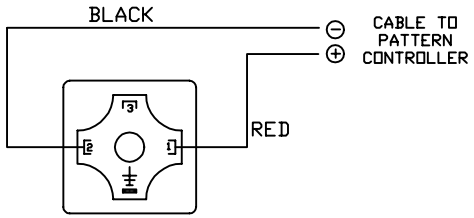
1. BAG ALL LOOSE PARTS FOR ASSEMBLY UPON INSTALLATION

2. INCLUDE A COPY OF THIS DRAWING WITH THE LOOSE PARTS

NOTE TO CUSTOMER

USE THREAD SEALANT WHEN ASSEMBLING ALL FITTINGS

WIRING INFO




| | | | | |
|---|---|---|---|---|
| 6 | N00752 | 4 | EA | NUT, 1/4–20 |
| 5 | 078C011 | 4 | EA | WASHER, LOCK, 1/4 |
| 4 | 078A161 | 4 | EA | SCREW, 1/4–20 X 5/8, SHC |
| 3 | N02535 | 1 | EA | MUFFLER, AIR EXHAUST, 1/4 NPT |
| 2 | N06412 | 2 | EA | FTG, 1/4NPT X 1/4 TUBE, ELBOW |
| 1 | 105753 | 1 | EA | XDUCER, I/P, 4–20 mA |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX±.010 .XXX±.005 ANGLES ±.5

XXXXXXX DHR 05.21.98
XXXXXXX DHR 06.08.98

XDUCER ASY, I/P, 4-20 MA

TRANSDUCER ASSY I/P, 4 TO 20 MA

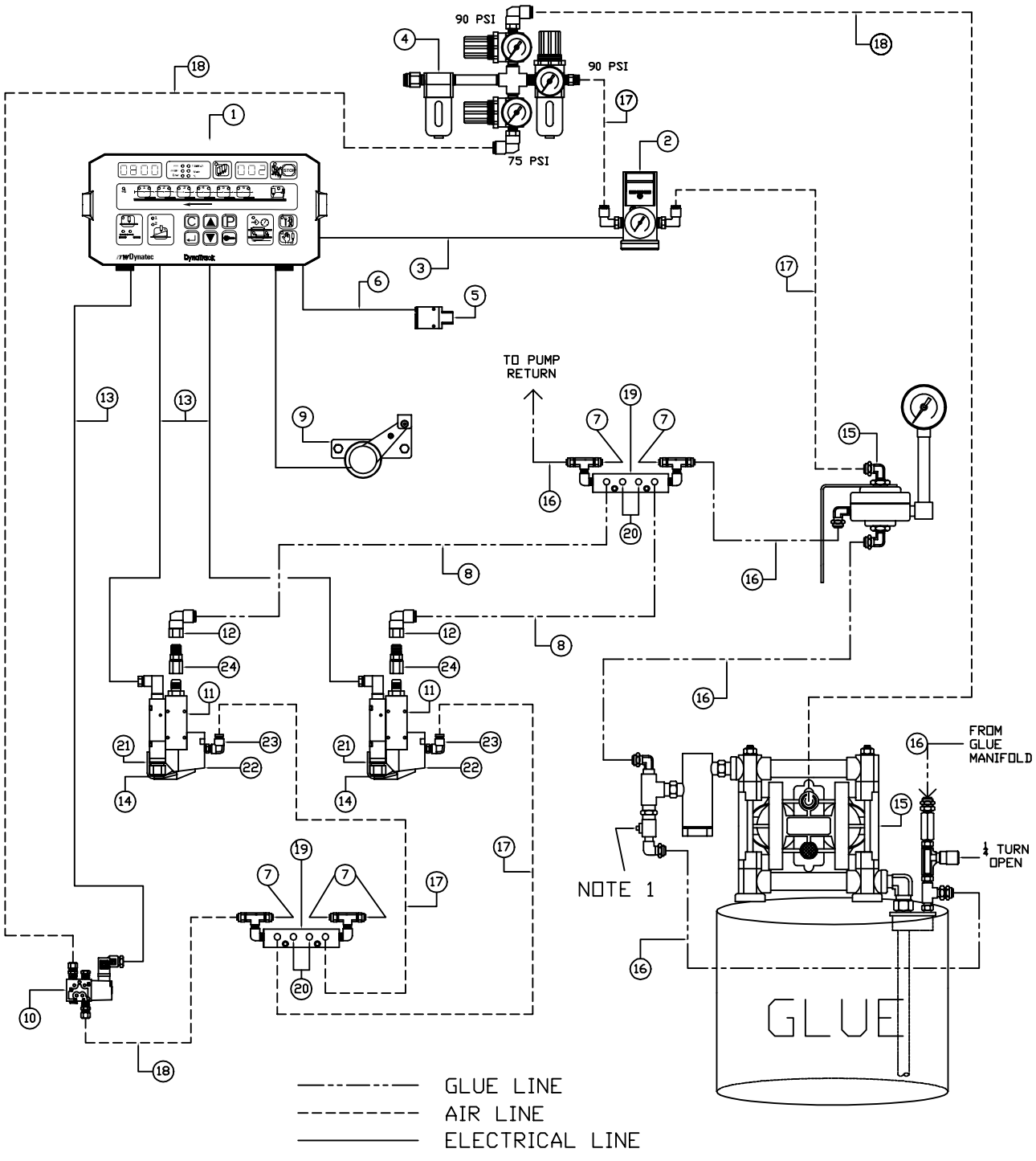
105754

EA P O A 00

1:1 1 of 1



Xref G:\LIBRARY\ACAD\TBLOCK\C.dwg




DYNACOLD NON-CONTACT SYSTEM OVERVIEW p. 1 of 2

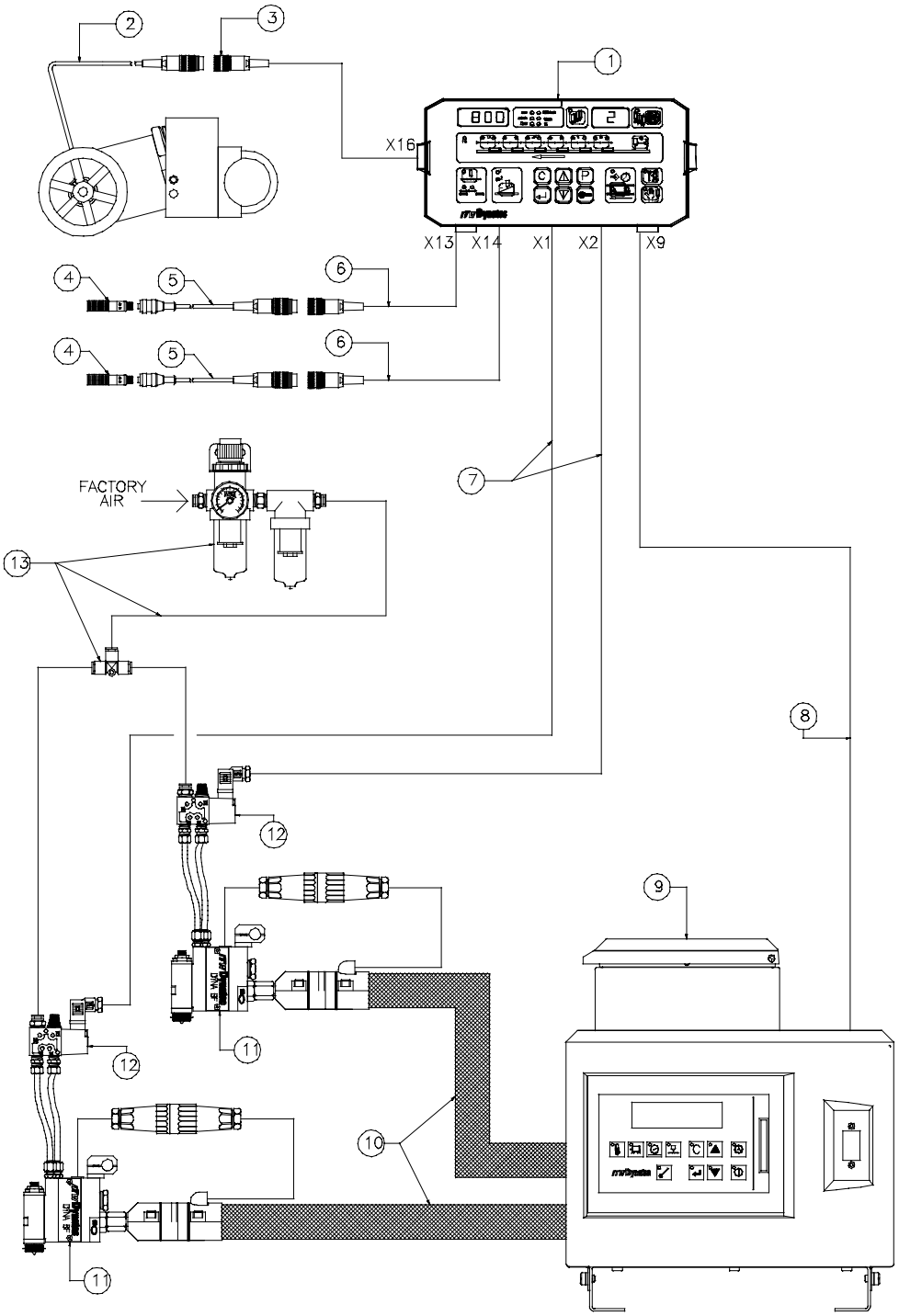
NOTES

1. BALL VALVE CLOSED (LEVER 90° TO VALVE BODY) DURING NORMAL OPS. THIS BYPASS IS USED TO PURGE AIR FROM PUMP WHEN GLUE BARREL IS CHANGED OR TO AGITATE GLUE TO MIX SOLIDS.

2. USE BRACKET, P/N 106214, FOR EACH APPLICATOR.

3. TWO APPLICATORS SHOWN FOR ILLUSTRATIVE PURPOSES.

| | | | | |
|---|---|---|---|---|
| 24 | 106337 | 2 | EA | FITTING, JIC-5(F) x 1/4NPT(M) |
| 23 | NO6651 | 2 | EA | FITTING, ELBOW, 10-32 x 1/4" TUBE |
| 22 | 70.04000.703 | 2 | EA | NOZZLE SEALING DEVICE |
| 21 | 70.04000.762 | 2 | EA | HOLD DOWN DEVICE |
| 20 | 950-020 | 4 | EA | PLUG, 1/8 NPT BRASS |
| 19 | 950-079 | 2 | EA | MANIFOLD ASY |
| 18 | 775-006 | A/N | FT | TUBING, 3/8" COLORED |
| 17 | 775-005 | A/N | FT | TUBING, 1/4" COLORED |
| 16 | 775-003 | A/N | FT | TUBING, 3/8" CLEAR |
| 15 | 552-042 | 1 | EA | FLUID DELIVERY SYSTEM |
| 14 | 91.000XX.102 | 2 | EA | NOZZLE, NON-CONTACT, XXMM |
| 13 | 05.02104.616 | 3 | EA | DYNACOLD CABLE ASY, 5M |
| 12 | 105621 | 2 | EA | FTG, 90°, 1/4 PT x 1/4 TUBE |
| 11 | 70.04304.755 | 2 | EA | DYNACOLD W/ FILTER |
| 10 | 105720 | 1 | EA | SHUTTER CONTROL VALVE ASY |
| 9 | 106233 | 1 | EA | ENDODER W/ WHEEL & BRKT |
| 8 | 775-010 | A/N | FT | TUBE, 1/4" CLEAR |
| 7 | 950-158 | 5 | EA | CAP, PLASTIC, 3/8 TUBE |
| 6 | 05.02105.603 | 1 | EA | SENSOR CABLE ASY, 5M |
| 5 | 105083 | 1 | EA | OPTICAL SENSOR |
| 4 | 551-138 | 1 | EA | AIR TREE ASY, 3 REGULATORS |
| 3 | 105688 | 1 | EA | CBL ASY, PRESSURE XDUCER, 10' |
| 2 | 105754 | 1 | EA | PRESSURE XDUCER ASY |
| 1 | 26.11101.701 | 1 | EA | DPC-4 PATTERN CONTROL |



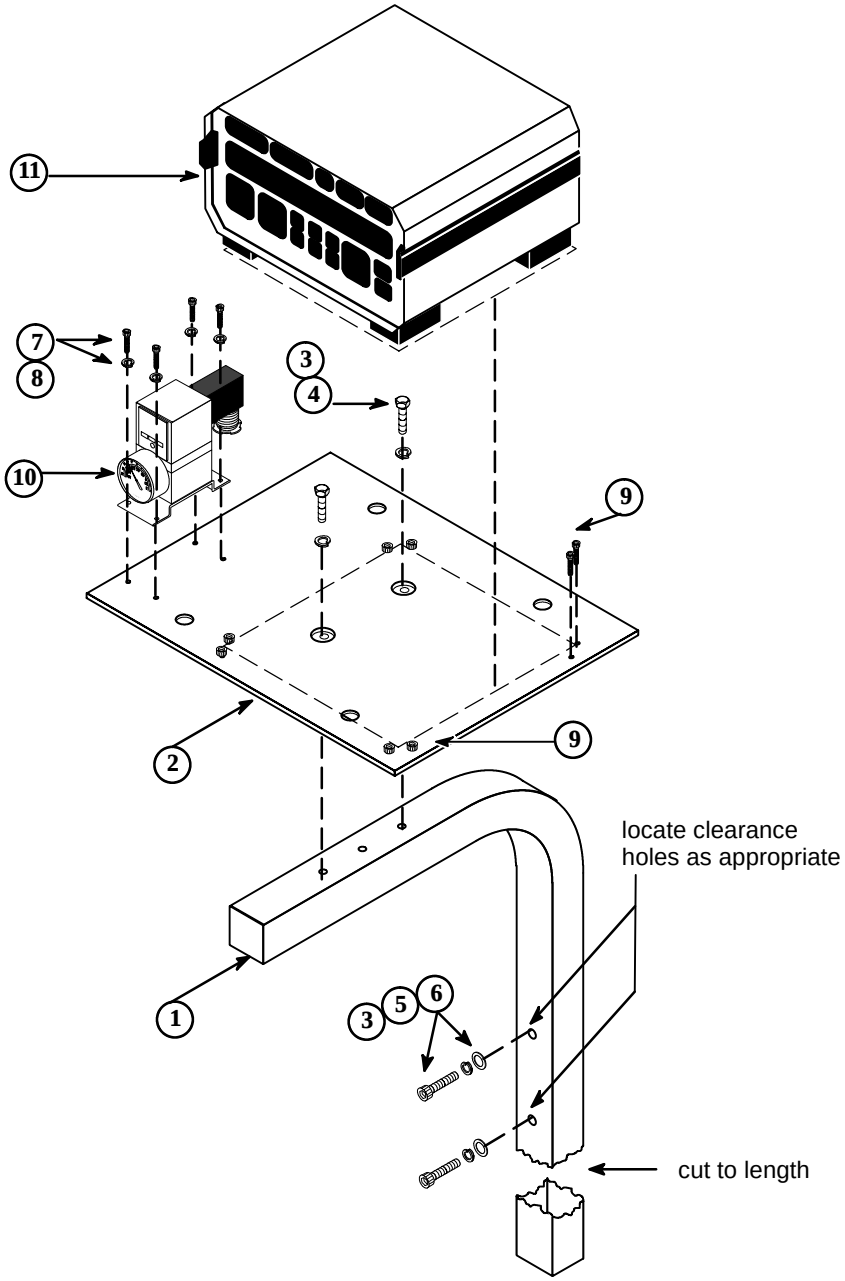

AIR LINE
ELECTRICAL LINE

TYPICAL HOT MELT GEAR PUMP SYSTEM

TYPICAL HOT MELT GEAR PUMP SYSTEM

| ITEM | PART NUMBER | QTY. | U/M | DESCRIPTION |
|---|---|---|---|---|
| 1 | 108730 | 1 | EA | DPC-4 RANDOM LENGTH CONTROL |
| 2 | 107956 | 1 | EA | ENCODER/WHEEL/BRACKET ASY |
| 3 | 05.02104.612 | 1 | EA | ENCODER EXTENSION CABLE, 5M |
| | 05.02104.601 | 1 | EA | ENCODER EXTENSION CABLE, 10M |
| 4 | 108961 | 2 | EA | TRIGGER DEVICE |
| 5 | 108897 | 2 | EA | SENSOR ADAPTER CABLE, 5M |
| 6 | 05.02105.603 | 2 | EA | TRIGGER EXTENSION CABLE, 5M |
| | 05.02105.612 | 2 | EA | TRIGGER EXTENSION CABLE, 10M |
| 7 | 05.02104.616 | 2 | EA | DRIVE OUTPUT CABLE, 5M |
| | 05.01004.610 | 2 | EA | DRIVE OUTPUT CABLE, 10M |
| 8 | 105082 | 1 | EA | 0-10VDC OUTPUT CABLE, 3M |
| 9 | XXXXXX | 1 | EA | HOT MELT ASU (AS REQ) |
| 10 | XXXXXX | 2 | EA | HOT MELT HOSE (AS REQ) |
| 11 | XXXXXX | 2 | EA | HOT MELT APPLICATOR HEAD (AS REQ) |
| 12 | XXXXXX | 2 | EA | SOLENOID KIT, 24VDC (AS REQ) |
| 13 | 100055 | 1 | EA | AIR FILTER/REGULATOR KIT |

NOTE: PART NUMBERS SHOULD BE CONSIDERED AS REPRESENTATIVE ONLY. SPECIFIC PART NUMBERS MAY VARY



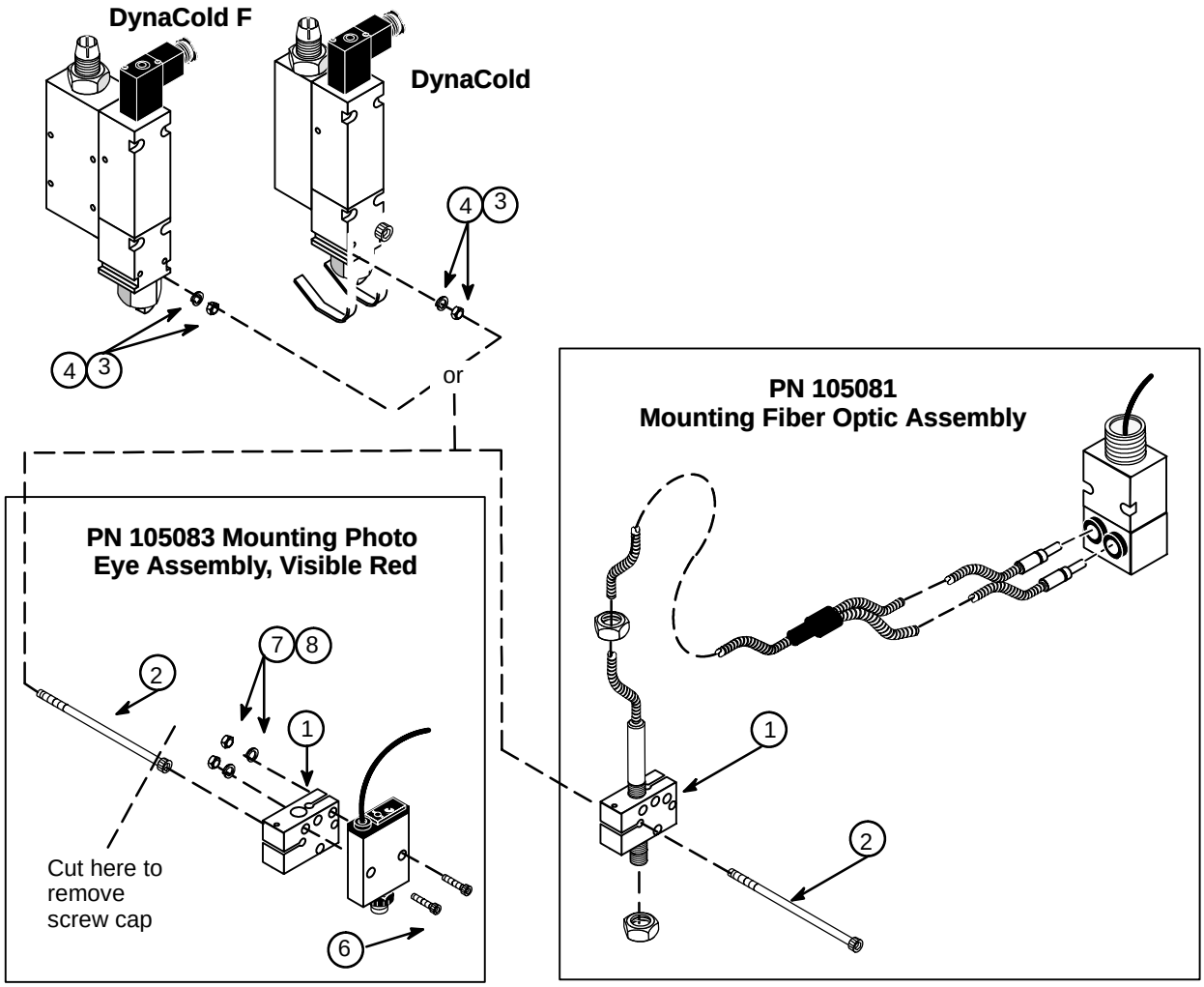

| Item No. | Part Number | Description | Qty. |
|---|---|---|---|
| 1 | 105934 | Support Bracket | 1 |
| 2 | 105935 | Mounting Bracket | 1 |
| 3 | N00592 | 5/16 Lock Washer | 4 |
| 4 | N00739 | 5/16-24 x .25 HHC Screw | 2 |
| 5 | N07809 | 5/16-18 x 2.5 SHC Screw | 2 |
| 6 | 078C008 | 5/16 Flat washer | 2 |
| 7 | 078C027 | Lock Washer, #10 | 4 |
| 8 | N01408 | 10-32 x .375 SHC Screw | 4 |
| 9 | N00804 | 10-32 x .25 SHC Screw | 8 |
| 10 | 105754 | Transducer Assembly (purchased separately) | 1 |
| 11 | 26.11101.701 | DPC-4 Controller (purchased separately) | 1 |

*PN 105947 DPC-4 CONTROLLER BRACKET ASSEMBLY*

# APPENDIX
# Installation Instructions for
# PN 105850 DYNACOLD SENSOR BRACKET ASSEMBLY

## *Introduction*

The DynaCold Sensor Bracket Assembly is designed for use with either the standard or "F" (internal filter) series DynaCold high-speed adhesive applicators. It is capable of mounting a variety of reflective optical sensors offered by ITW Dynatec. The bracket's modular construction allows a significant amount of flexibility to accommodate virtually any installation scenario. Below is provided a sampling of various mounting possibilities for both the standard and "F" series applicators. A two-foot (0.6M) length of 5/32" steel rod is provided with the kit to be cut as required.



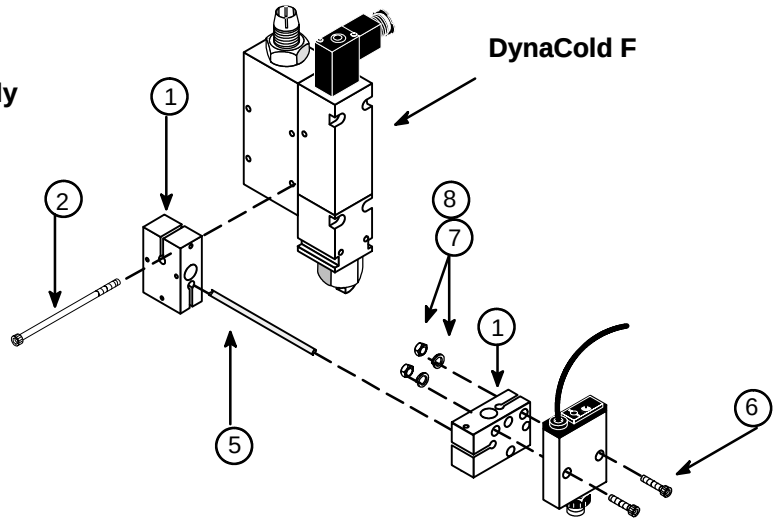

**PN 105850 DynaCold Sensor Bracket Assembly**

| Item No. | Part Number | Description | Qty. |
|---|---|---|---|
| 1 | 105852 | Sensor Bracket Clamp Asy. | 3 |
| 2 | 101691 | M4-0.7 x 40 SHC Screw | 1 |
| 3 | 103121 | M4-0.7 Nut | 1 |
| 4 | 078C029 | Washer Lock #8 | 1 |

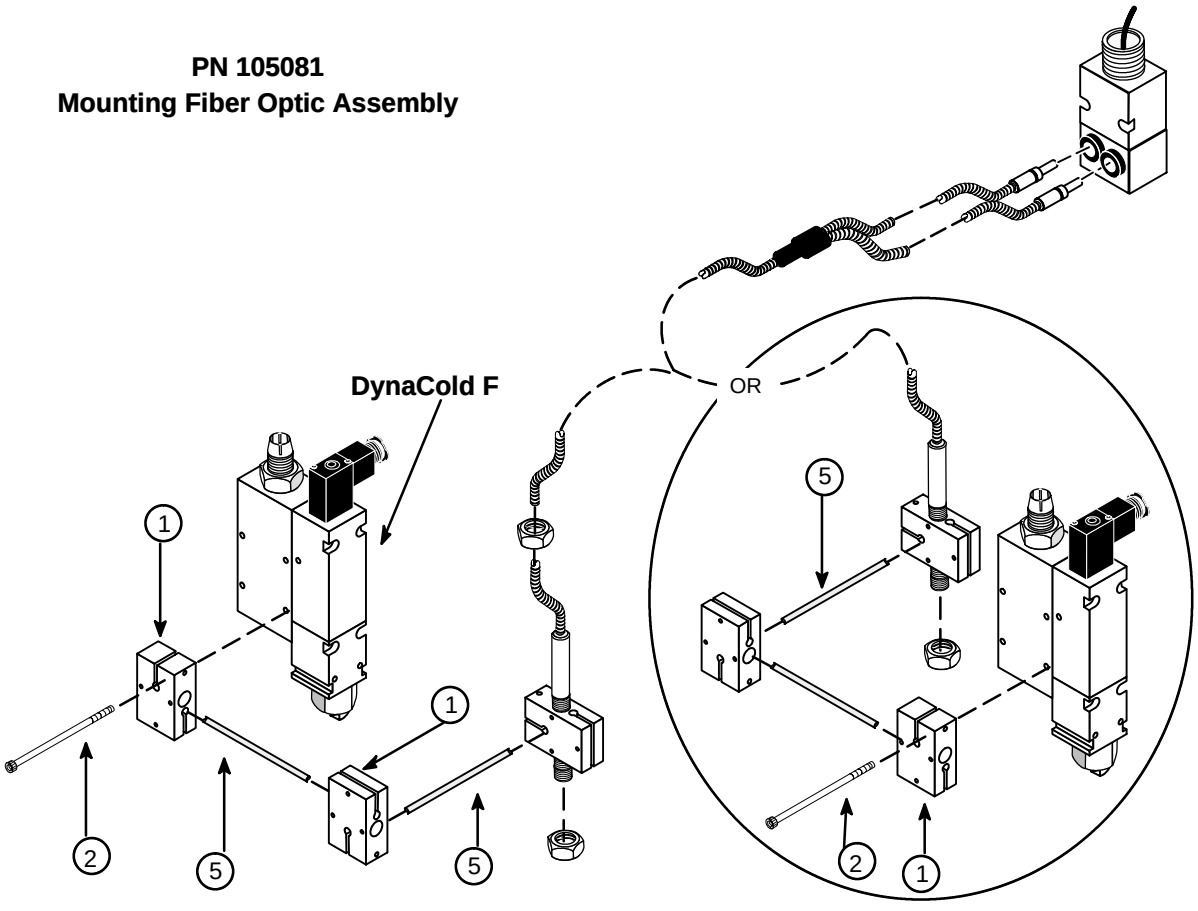
*(cont. next page)*

| PN 105850 DynaCold Sensor Bracket Assembly, cont. | | | |
|---|---|---|---|
| **Item No.** | **Part Number** | **Description** | **Qty.** |
| 5 | 105848 | 0.156 Dia. SS Rod, 24” | 1 |
| 6 | 078A341 | 4-40 x 1.25” SHC Screw | 2 |
| 7 | N05342 | Lockwasher, #4 | 2 |
| 8 | N00941 | Hex Nut, 4-40 | 2 |

**PN 105083**
**Mounting Photo Eye Assembly**
**Visible Red**




**PN 105081**
**Mounting Fiber Optic Assembly**



# APPENDIX

## *PN 105763 Pressure Transducer*

***PN 105763 Pressure Transducer, cont.***

***PN 105763 Pressure Transducer, cont.***

***PN 105763 Pressure Transducer, cont.***

***PN 105763 Pressure Transducer, cont.***