

LOCTITE[®]

EQ ACCE Robot D-Series Junc Box 24V

IDH #: 2182205

Equipment Instructions



Equipment Instructions

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Equipment Instructions

1 Please Observe the Following

1.1. Emphasized Sections **Warning!**

Refers to safety regulations and requires safety measures that protect the operator or other persons from injury or danger to life.


 **Caution!**

Emphasizes what must be done or avoided so that the unit or other property is not damaged.


 **Notice:**

A notice gives recommendations for better handling of the unit during operation or adjustment as well as for service activities.


1.2. For Your Safety

 For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility.


 Do not expose the connecting cable to heat, oil, or sharp edges.


 Make sure the Unit stands stable and secure.

 Use only original equipment replacement parts.

 Do not operate the Unit outside its design. Damage to the unit and robot can occur.

 Always disconnect the power supply before servicing the unit.

 Observe general safety regulations for the handling of chemicals such as Loctite® adhesives and sealants. Observe the manufacturer's instructions as stated in the Safety Data Sheet.

 While under warranty, the unit may be repaired only by an authorized Loctite service representative.

Equipment Instructions

1.3. Unpacking and Inspection

Carefully unpack the Loctite® EQ ACCE D-Series Junc Box 24V and examine the items contained in the carton. Inspect the unit for any damage that might have occurred in transit. If such damage has occurred, notify the carrier immediately. Claims for damage must be made by the consignee to the carrier and should be reported to the manufacturer.

1.4. Items supplied

- (1) EQ ACCE D-Series Junc Box 24V
- (1) D-Sub 25 pin cable – male to female
- (1) D-Sub 9 pin cable – male to female
- (1) Equipment Instructions for EQ ACCE D-Series Junc box 24V

2 Description

EQ ACCE D-Series Junc Box 24 V, part number 2182205 provides isolated input and output connections between Loctite 24 Volt D-series robots and external devices such as solenoids and sensors.



The EQ ACCE D-Series Junc Box 24V is **only** compatible with the Loctite 24-volt D-Series and Loctite 24-volt RB15, RB20, & RB40 D-Series robots.



Do not connect EQ ACCE D-Series Junc Box 24V to any other Loctite Robots.

3 Technical Data

Dimensions (L x H x W):	7" x 2" x 10" [177.8 mm x 50.8 mm x 254 mm]
Total weight:	4 lbs. (1.8 Kg)
Operating Voltage:	
Input 1...4:	5 ... 24 VDC
Input 5...8:	24 VDC
Output 1...8:	24 V DC/AC-peak
Output Type:	solid state relay, maximum(peak) current 2.5 Amperes; 1 through 4 normally open; 5 through 8 normally open & normally closed.

4 Installation



Before using the equipment for the first time check it carefully for signs of external damage. If any shipping damage is found DO NOT USE THE EQUIPMENT – return it to your supplier immediately.

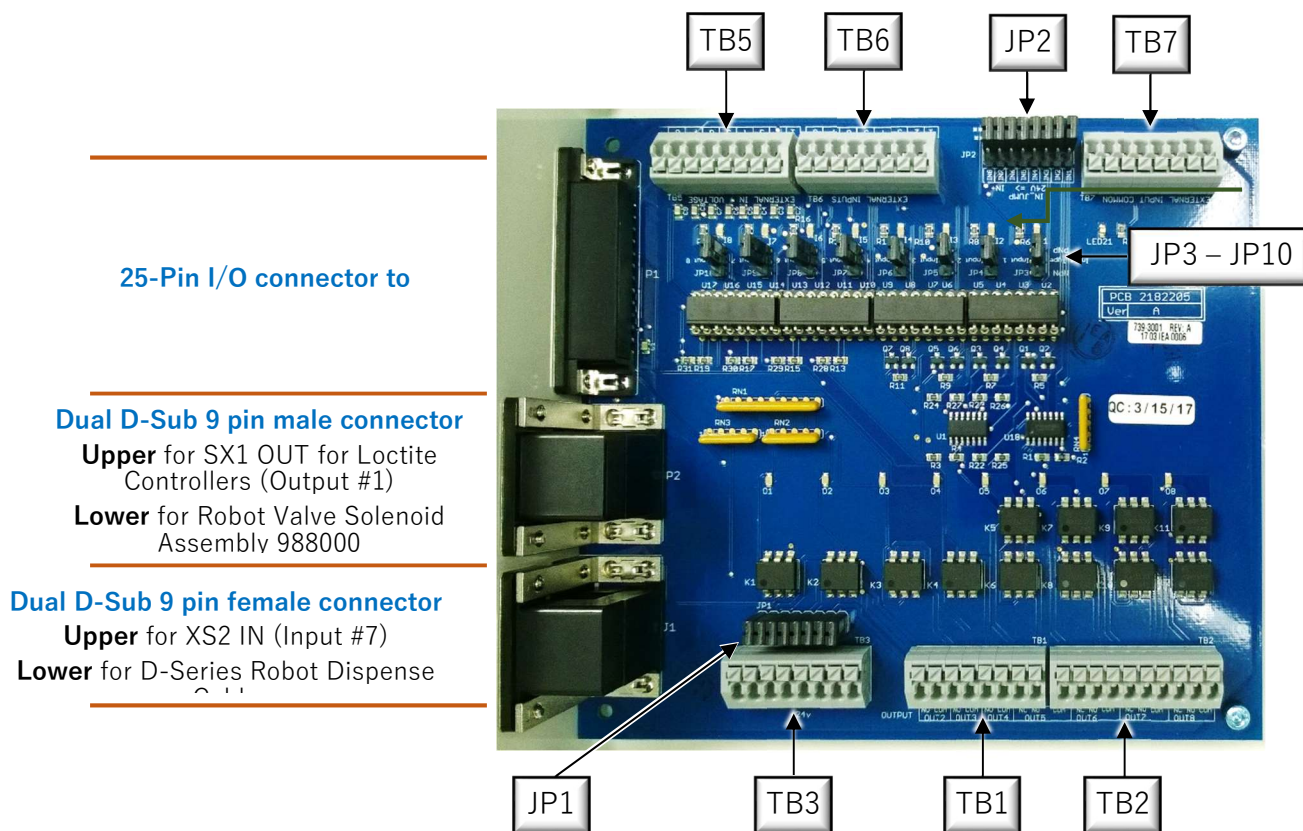
Equipment Instructions

5 Operation

5.1. D-Series Junction Box Internal Layout

Use a 2.5 Allen Hex wrench to remove the 4 cover screws to access the junction box terminal blocks and jumpers.

Terminal Blocks, Connectors, and Jumpers





Terminal	Description	Jumper	Description
TB1 – TB2	Outputs SSR - 2 thru 5	JP1	Jumper for TB1 & TB2 Common Excitation Jumped: Robot 24 VDC Supply NOT Jumped: External Supply
TB3	Robot +24 VDC		
TB5	Excitation, Input 1 thru 8	JP2	Jumper for TB5 Excitation Jumped: Robot 24 VDC Supply NOT Jumped: External Supply
TB6	Input 1 thru 8	JP3 – JP10	Jumper for Input Type NPN (Sink) or PNP (Source)
TB7	Robot 0 VDC & GND		

Input numbers 1 through 4 accept Vcc range +5 to +24 VDC.

Output numbers 1 through 4 are all SPST-NO, numbers 5 through 8 are all SPDT.

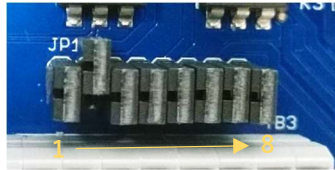
Equipment Instructions

 Output 1 is accessible through D-Sub 9 pin connector on the side of the junction box.

 When using external Vcc for any inputs, remove Jumpers from JP2 for that input to avoid damaging the Junction box.

Jumper setting

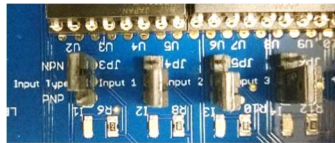
Jumper settings are important when determining input / output excitation and input NPN / PNP configuration.



JP1: used to provide either robot or external voltages to the output COM terminals.

Each jumper is associated with a specific output COM. Jumper for output 1 is next to the JP1 label. Jumpers to the right of output 1 jumper are for the other 7 outputs. Outputs 2 through 8, where jumper for output 8 is the furthest from the JP1 label.

In this image, all outputs are set for robot 24VDC **accept** output number 2. Output 2 is set for external voltage on Output 2 COM.




JP3 through JP10: used to set for input sourcing or sinking. JP3 sets Input 1, JP4 sets Input 2, JP5 sets Input 3, JP6 sets Input 4, JP7 sets Input 5, JP8 sets Input 6, JP9 sets Input 7, and JP10 sets Input 8.

In this image, JP3 is set to NPN for input 1; others in image are set to PNP for inputs 2, 3, & 4.



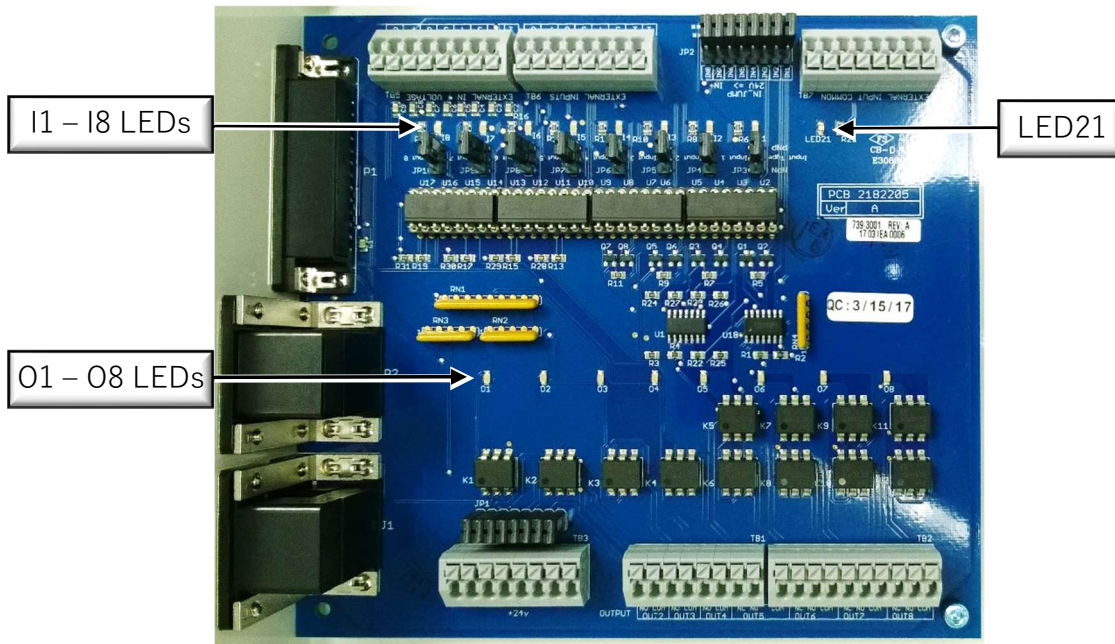
JP2: used to provide either robot or external voltages to TB5 'excitation for inputs 1 thru 8'.

In this image, all inputs are set for external voltage **accept** input number 1. Input number 1 is set for robot 24VDC voltage. Jumpers have labels for which input they are associated with.


 To move jumper position it is best to use electronic tweezers, hemostat type clamp, or small needle nose pliers. Be careful not to crush the jumpers.

Equipment Instructions

Indicator LEDs



Indicator Label	Description
LED21	Power ON – Robot 24VDC is ON and available.
I1-18	Input Indicator – ON input receiving signal
O1-08	Output Indicators – ON output is energized (NO contacts are closed; NC contacts are open)

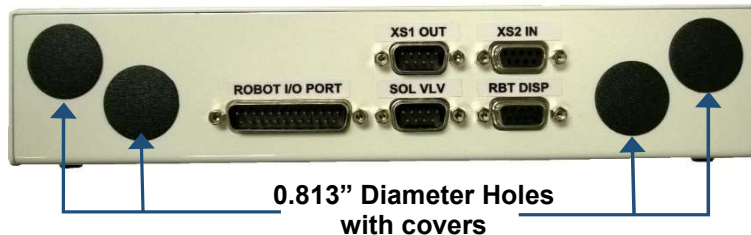
 Remember – robot inputs are revers logic. Robot pendent will display 1 for an input that is OFF and 0 for an input that is ON. Junction box input indicator state will be the same as the input itself.

5.2. Installation of Cord Grips or Strain Reliefs

Four capped locations are provided on the enclosure for customer supplied cord grips.

Hole Diameter: 0.813" [20.7mm]

Number Holes: 4



Equipment Instructions

5.3. Junction Box D-Sub Connections

There are 5 D-sub connectors on the Junction box for 24 Volt D-series robots. See *image on previous page*.

D-SUB Connector pins & Type	Label on D-Series Junction Box	Connection Description
DB25-Male	ROBOT I/O PORT	TO 24 Volt D-Series Robot I/O Port connector
DB9-Male	SOL VLV	Dedicated connection for Solenoid Valve Module 24 VDC for D-Series Robot Material/IDH # 591031.
DB9-Male	XS1 OUT	TO Loctite Controller XS1 start input (Robot Output #1)
DB9-Female	RBT DISP	Dedicated connection for D-Series Dispenser Cable included with Robot
DB9-Female	XS2 IN	Robot Input # 7 typically used for Loctite reservoir low level sensor.

ROBOT I/O PORT connection using a DB25 through cable to robot.

SOL VLV and RBT DISP dedicated for Solenoid Valve Module 24 VDC for D-Series Robot (purchased separately) and D-Series Dispenser Cable (included with Robot).

! Do not connect any other devices to these ports. Will cause damage.

XS1 OUT is robot OUTPUT#1 typically used as start signal to Loctite UV flood or CureJet controllers. Can be used to control an external solenoid valve or relay.

 there is no internal terminal block connection for robot OUTPUT #1.

XS2 IN is robot Input #7 typically used for Loctite product reservoir low level signal. Can also be used with external switch or proximity sensor.

! Do not use the internal terminal block connection for robot Input #7 when using this D-sub connection. Will cause damage to the junction box and robot.

Equipment Instructions

5.4. Input Circuits

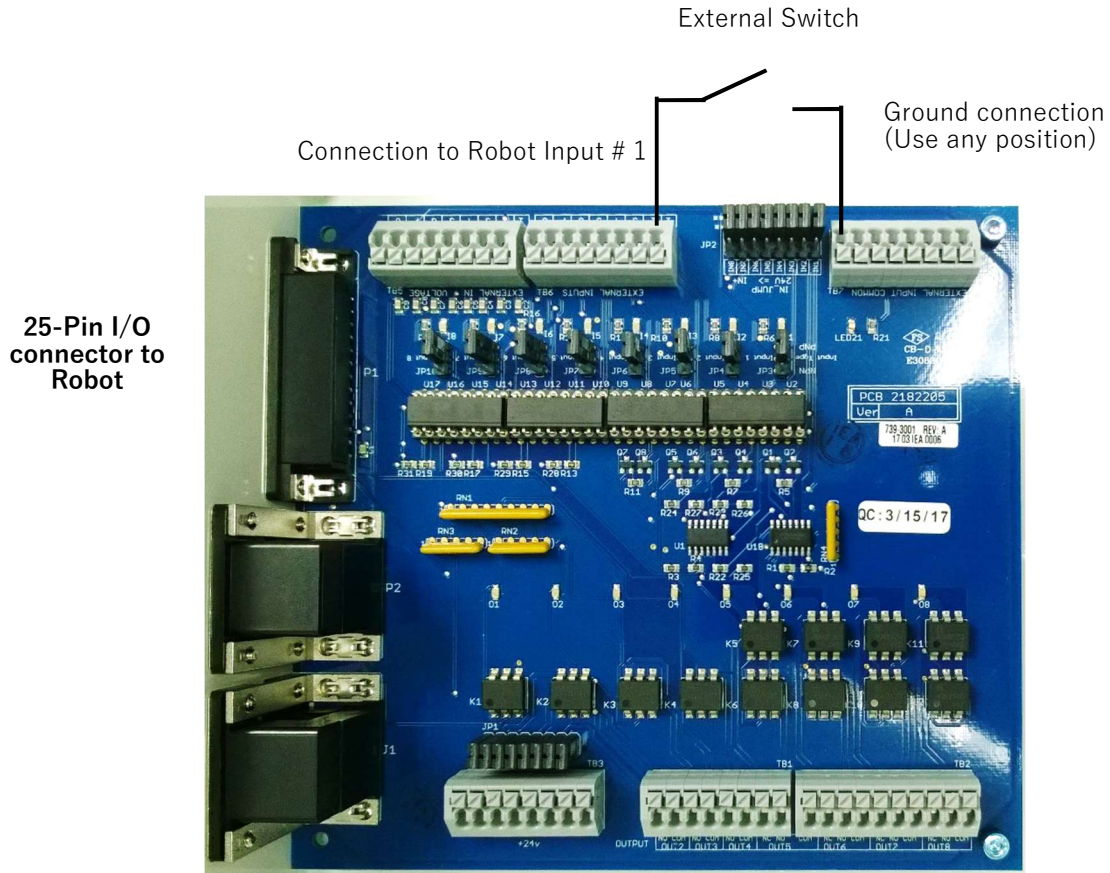
Example 1: Sourcing Input (Negative Logic) with Dry Contact Switch

- Input #x type Jumper installed for NPN.
 - Jumper JP2-INx installed for Robot +24 VDC.
 - Connect one side of the external switch to TB6-x
 - Connect other side of the external switch to ground (TB7 “GND”).
- Where x equals the input number (1 through 8).



Best to use robot internal 24 VDC for a dry contact switch. If an external voltage source is needed, Remove the JP2-INx Jumper. Connect power supply +24 VDC (+5...+24 VDC for inputs 1 through 4) to TB5-x. Connect power supply 0 VDC to TB7-GND.

! Do not use connect an external power supply on an input with jumper JP2-INx installed.

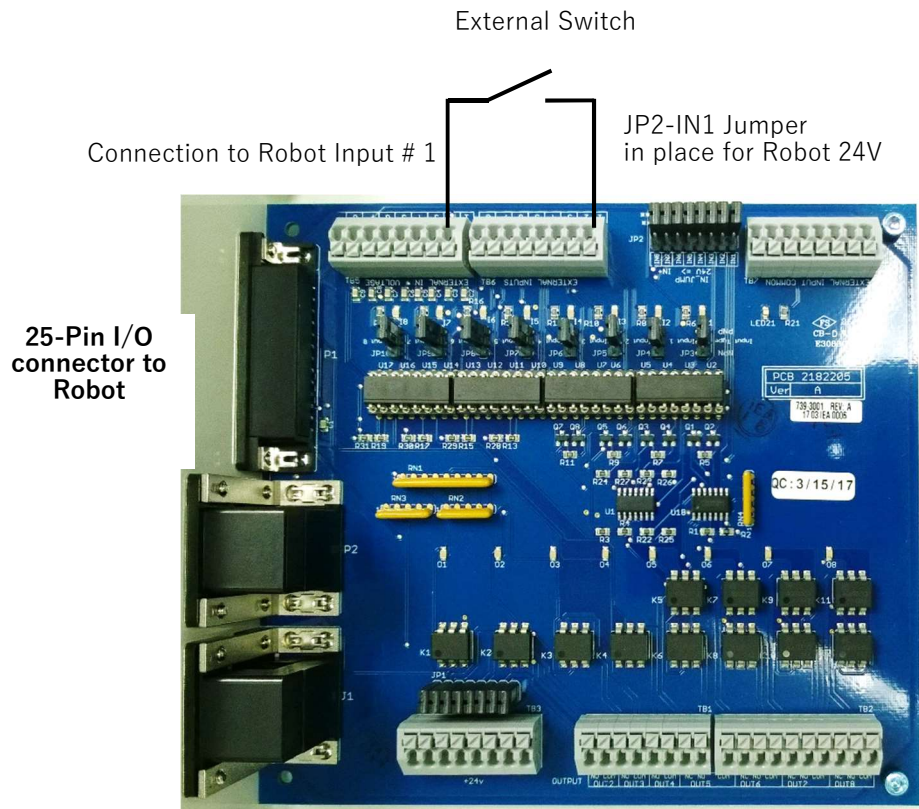


Equipment Instructions

Example 2: Sinking Input (Positive Logic) with Dry Contact Switch

USING ROBOT 24 VDC POWER SUPPLY

- Input #x type Jumper installed for PNP.
 - Jumper JP2-INx installed for Robot +24 VDC.
 - Connect one side of the external switch to TB6-x
 - Connect other side of the external switch to TB5- x
- Where x equals the input number (1 through 8).



External Switch

Connection to Robot Input # 1


JP2-IN1 Jumper
in place for Robot 24V

25-Pin I/O
connector to
Robot

Equipment Instructions

USING EXTERNAL 24 VDC POWER SUPPLY

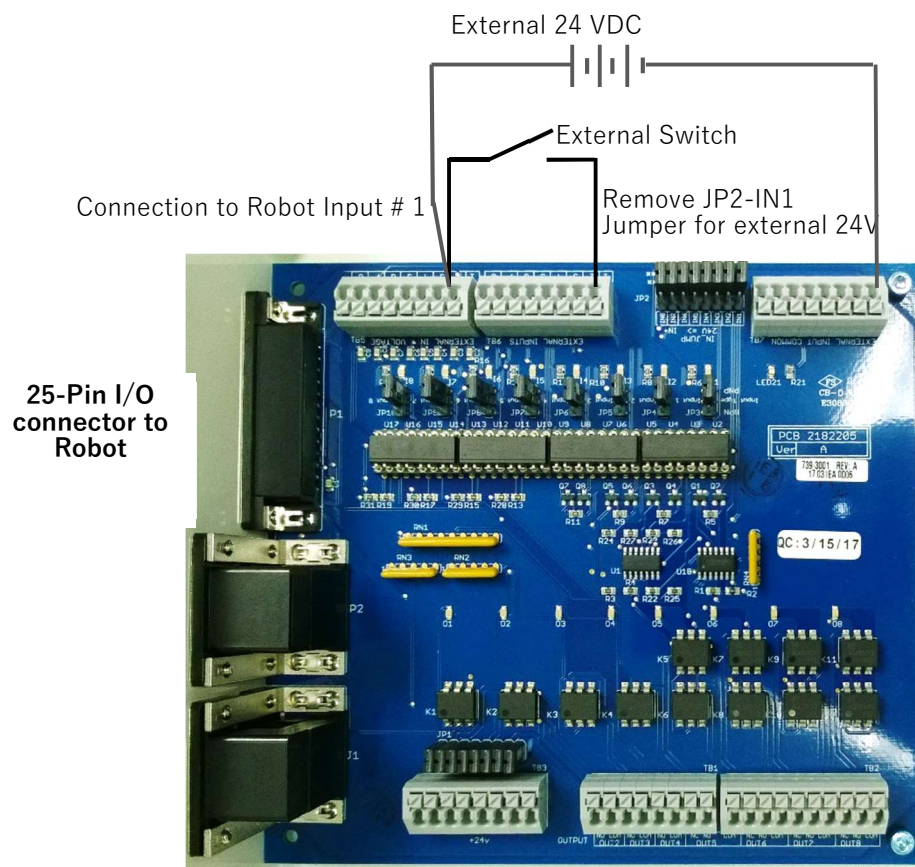
- Input #x type Jumper installed for PNP.
- Remove Jumper JP2-INx for External +24 VDC.

 Inputs 1 through 4 accept 5...24 VDC. Inputs 5 through 8 are 24 VDC.

- Connect one side of the external switch to TB6-x
- Connect other side of the external switch to TB5- x
- Connect power supply 0 VDC to Ground (TB7 “GND”)
- Connect power supply +24 VDC TB5-x

Where x equals the input number (1 through 8).

! Do not use connect an external power supply on an input with jumper JP2-INx installed.

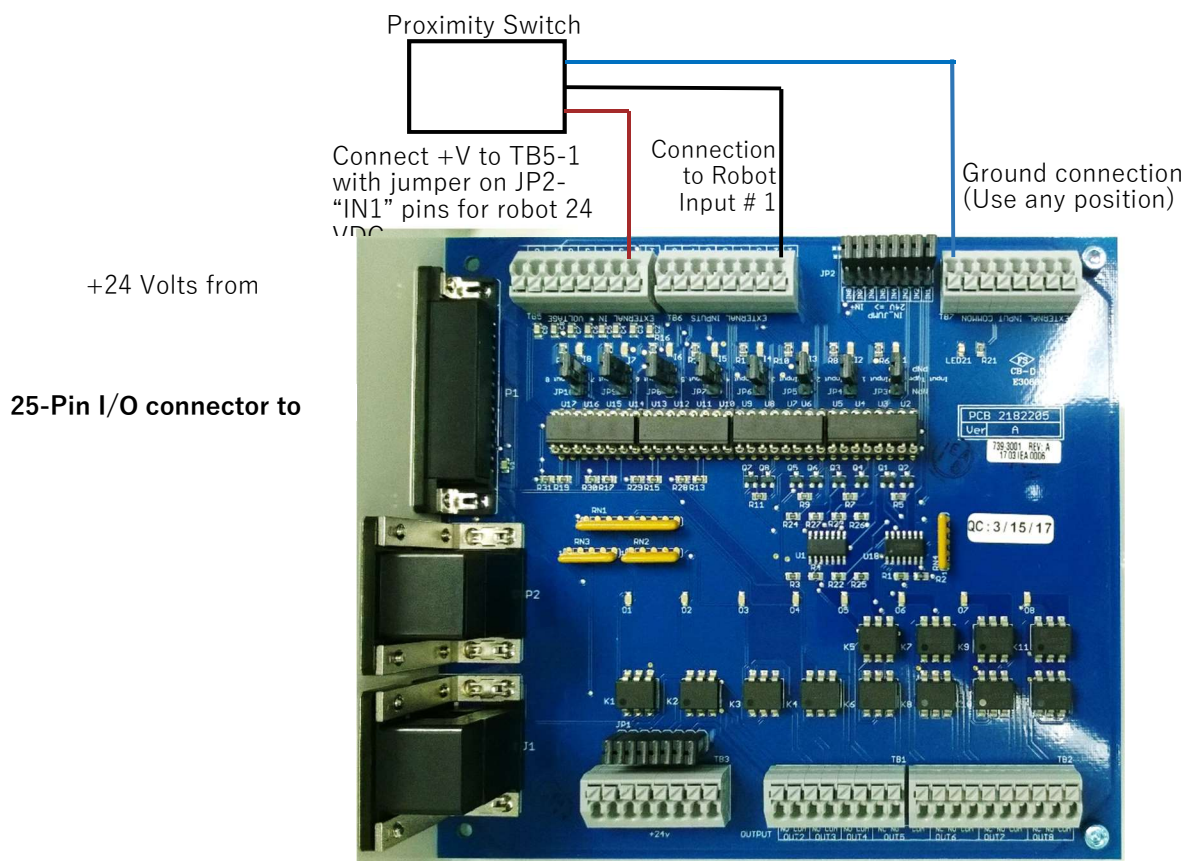


Equipment Instructions

Example 3: Proximity Sensor Input – Sourcing (Negative Logic) / Sinking (Positive Logic)USING ROBOT 24 VDC POWER SUPPLY

- Input #x type Jumper installed for PNP or NPN based on proximity sensor type.
- Jumper JP2-INx installed for Robot +24 VDC.
- Place a Jumper across JP2 pins at “IN1” – Input 1 Internal Robot Voltage
- Proximity Sensor (3-wire):
 - Connect brown wire (+V) to TB5-x.
 - Connect blue wire (0V) to TB7 “GND”.
 - Connect black wire (signal) to TB6-x.

Where x equals the input number (1 through 8).



If the robot input does not register the state change and junction box input LED is registering the state change of the proximity sensor; Change jumper for input type to the other position.

Equipment Instructions

USING EXTERNAL 24 VDC POWER SUPPLY

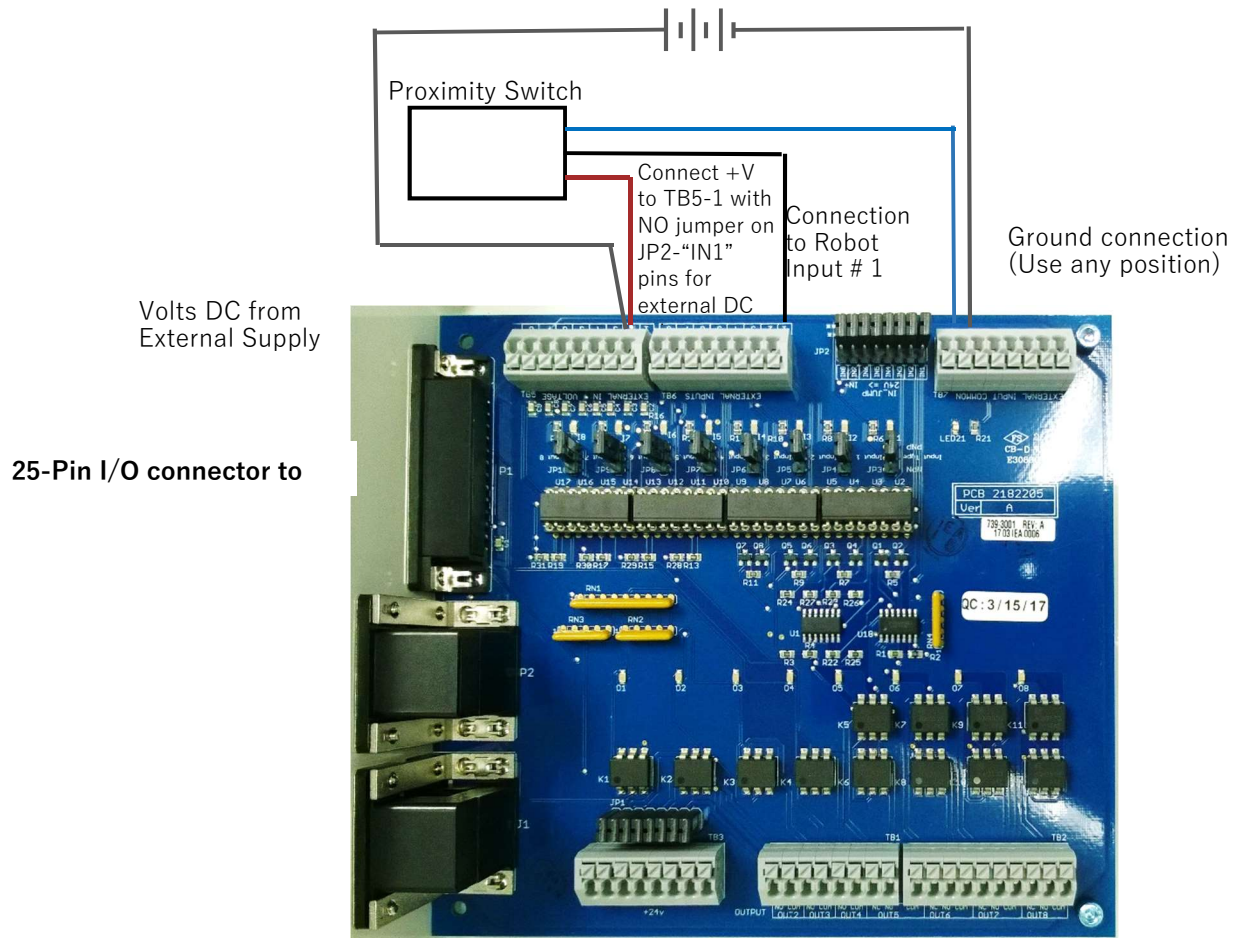
- Input #x type Jumper installed for PNP or NPN based on proximity sensor type.
- Remove Jumper JP2-INx for External +24 VDC.


 Inputs 1 through 4 accept 5...24 VDC. Inputs 5 through 8 are 24 VDC.

- Proximity Sensor (3-wire):
 - Connect brown wire (+V) to TB5-x.
 - Connect blue wire (0V) to TB7 “GND”.
 - Connect black wire (signal) to TB6-x.
- Connect power supply 0 VDC to Ground (TB7 “GND”)
- Connect power supply +24 VDC TB5-x

Where x equals the input number (1 through 8).

! Do not use connect an external power supply on an input with jumper JP2-INx installed.



 If the robot input does not register the state change and junction box input LED is registering the state change of the proximity sensor; Change jumper for input type to the other position.

Equipment Instructions

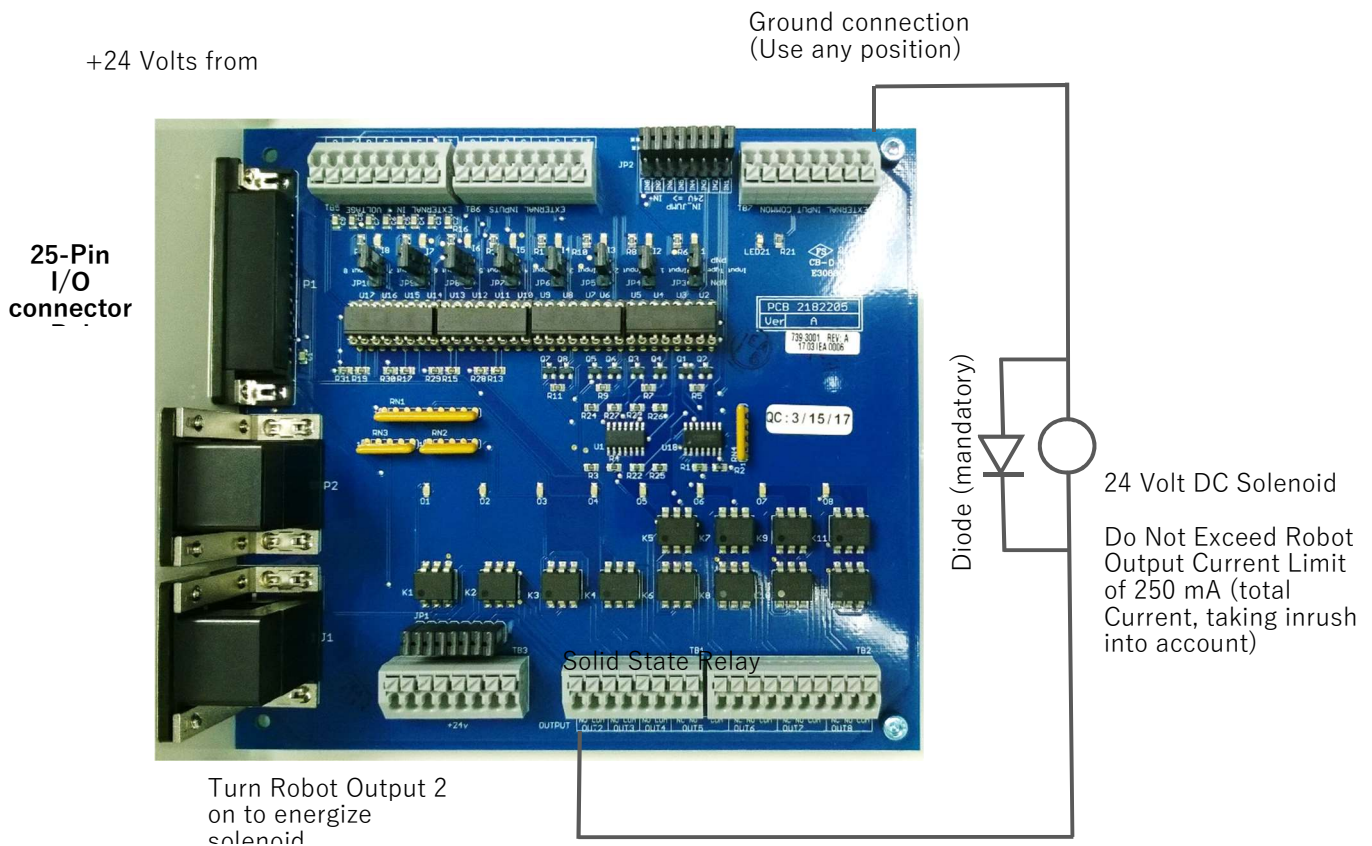
5.5. Output Circuits

Example 4: Sourcing Output (Positive Logic, PNP)

USING ROBOT 24 VDC POWER SUPPLY

- Jumper JP1-x installed - robot +24 Volts at output x common terminal.
 - Connect solenoid control valve coil (+) to OUTx
 - Connect solenoid control valve coil (-) to ground (TB7 "GND").
- Where x equals the input number (1 through 8).

! Suppression Diode is required for all coils or Inductive loads. Make sure that these devices suppression diode. If the device does not have suppression diode, an external suppression diode needs to be added.



Equipment Instructions

USING EXTERNAL 24 VDC POWER SUPPLY

- Remove Jumper JP1-x – External power at output **x** common terminal.

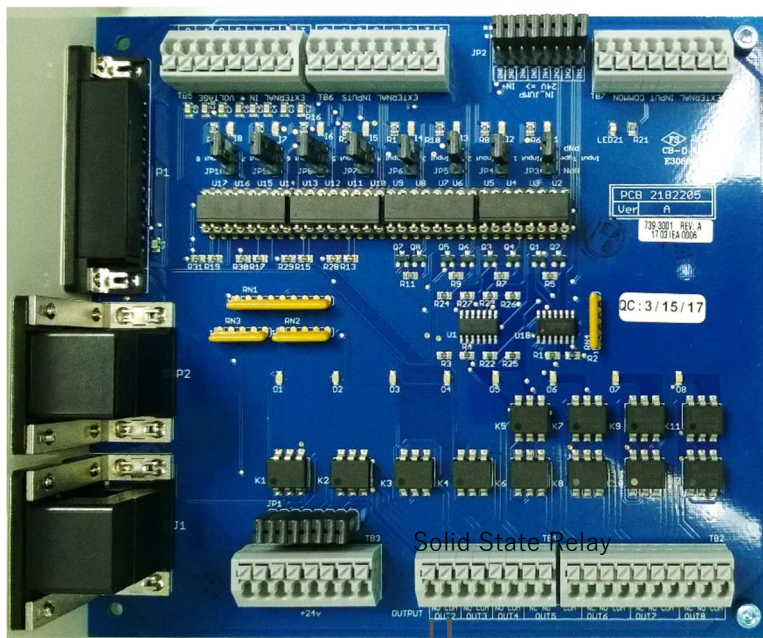
! Do not use connect an external power supply with jumper JP1-x installed.

- Connect solenoid control valve coil (+) to external power supply +V.
- Connect solenoid control valve coil (-) to OUT**x**-NO
- Connect external power supply 0V to OUT**x**-COM

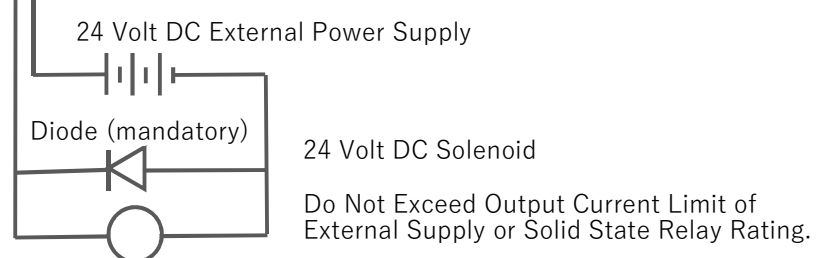
Where **x** equals the input number (1 through 8).

! Suppression Diode is required for all coils or Inductive loads. Make sure that these devices suppression diode. If the device does not have suppression diode, an external suppression diode needs to be added.

25-Pin
I/O
connector



Turn Robot Output 2 on to energize solenoid



Equipment Instructions

Example 5: Sinking Output (Negative Logic, NPN).

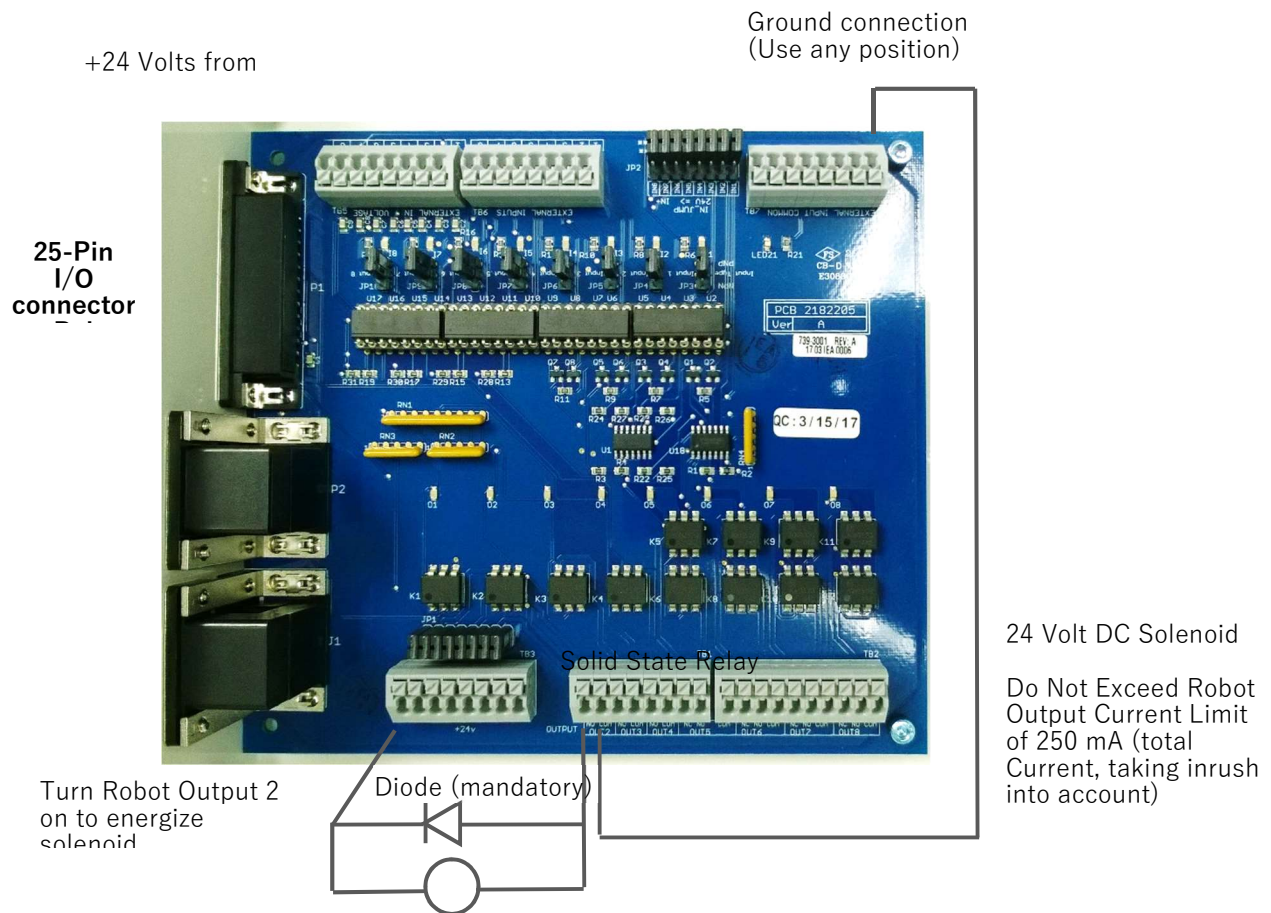
USING ROBOT 24 VDC POWER SUPPLY

- Remove JP1-x installed - robot +24 Volts at output x common terminal.
- Connect OUTx-COM to ground (TB7 “GND”).

! Do not use connect an external power supply or connect to Ground with jumper JP1-x installed.

- Connect solenoid control valve coil (+) to TB3 robot +24VDC
- Connect solenoid control valve coil (-) to OUTx-NO.

! Suppression Diode is required for all coils or Inductive loads. Make sure that these devices suppression diode. If the device does not have suppression diode, an external suppression diode needs to be added.



Equipment Instructions

USING EXTERNAL 24 VDC POWER SUPPLY

- Remove Jumper JP1-x – External power at output x common terminal.

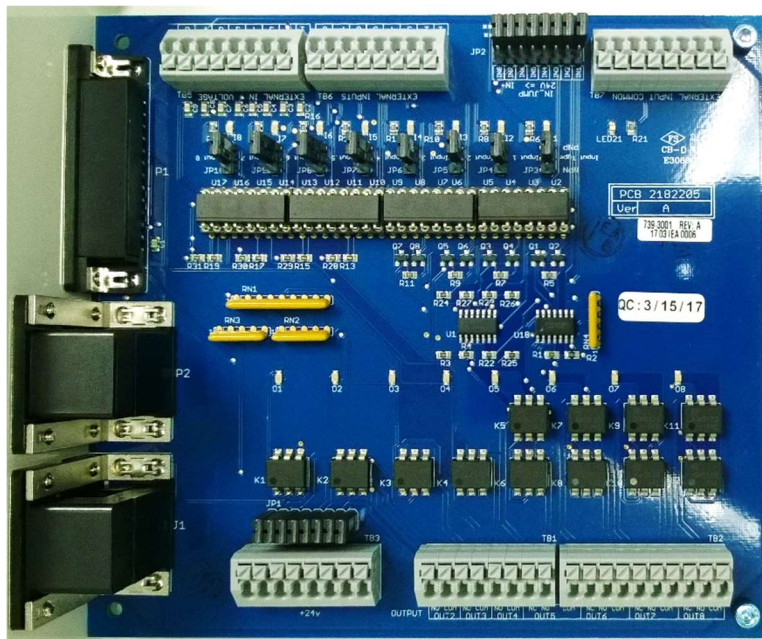
! Do not use connect an external power supply with jumper JP1-x installed.

- Connect solenoid control valve coil (+) to external power supply +V.
- Connect solenoid control valve coil (-) to OUTx-NO
- Connect external power supply 0V to OUTx-COM

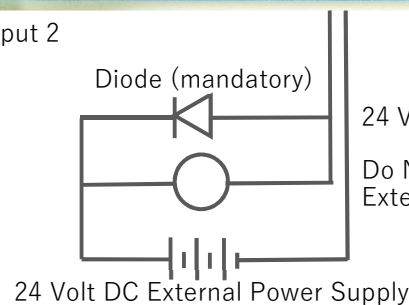
Where x equals the input number (1 through 8).

! Suppression Diode is required for all coils or Inductive loads. Make sure that these devices suppression diode. If the device does not have suppression diode, an external suppression diode needs to be added.

25-Pin
I/O
connector



Turn Robot Output 2 on to energize solenoid



24 Volt DC Solenoid

Do Not Exceed Output Current Limit of External Supply or Solid State Relay Rating.

Equipment Instructions

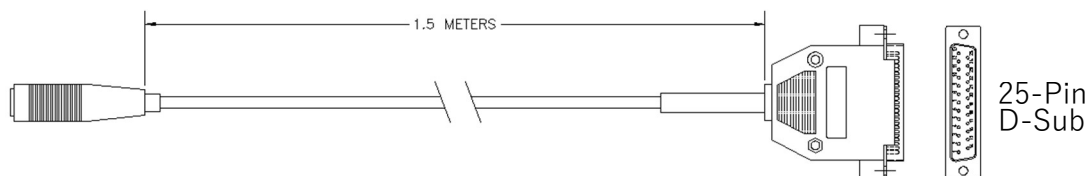
5.6. Installation of Needle Calibration Kit (1569523)



When adding the Needle Calibration Kit to a D-Series Robot with the EQ ACCE D-Series Junc Box 24V, the Needle Calibration Kit needs to be wired through the junction box.

Steps for wiring the Needle Calibration Kit to the EQ ACCE D-Series Junc Box 24V:

- Remove the 25-Pin D-Sub Plug from the cable assembly.
- The outer cable jacket is stripped back to expose 7" [178 mm] of the internal wires.




- Label wires based on D-Sub pin position (see 1st table below).
- Add strain relief to junction box with appropriate sized cord grip.
- Connect wires to the appropriate Junction Box Terminal Blocks (1st table)
- Set Junction Box Jumpers as indicated on second table below.

25 Pin Connector		Wire	Junction Box – Terminal Block	
Pin #	Description	Color	Designation	Description
25	24 VDC	Red	TB3	+24 VDC
1	X Signal	Yellow	TB6-1	IN1
13	GND	Black	TB7	GND
2	Y/Z Signal	White	TB6-2	IN2

Junction Box Jumper Settings for Needle Calibration		
Designation	Setting	Description
JP2-IN1	Installed	Internal +24 VDC
JP2-IN2	Installed	Internal +24 VDC
JP3	NPN	Sourcing Input (Negative Logic)
JP4	NPN	Sourcing Input (Negative Logic)

7 Troubleshooting

 Before proceeding with any repair or maintenance operation turn off and disconnect the main electricity supply to the system.

9 Accessories and Related Components

Loctite Part No.	Description
89XXXX	Cable, Male to Female, D-Sub 25 pin
989432	Cable, Male to Female, D-Sub 9 pin
591031	Solenoid Valve Module 24 VDC for D-Series Robot
1569523	Needle Calibration Kit

Equipment Instructions

10 Connector Pin Assignments

10.1. ROBOT SUB-D CONNECTOR

Pin #	Description	Pin #	Description
1	IN # 1 (X Signal)	14	OUTPUT # 1 (Disp Start)
2	IN # 2 (Y/Z Signal)	15	OUTPUT # 2
3	IN # 3	16	OUTPUT # 3
4	IN # 4 (Disp Ready)	17	OUTPUT # 4
5	IN # 5	18	OUTPUT # 5
6	IN # 6	19	OUTPUT # 6
7	IN # 7 (Low Level)	20	OUTPUT # 7
8	IN # 8	21	OUTPUT # 8
9	NC	22	NC
10	NC	23	NC
11	COM GND	24	+24V
12	COM GND	25	+24V
13	COM GND		

10.2. XS1 OUT SUB-D CONNECTOR

Pin #	Description
1	OUT1-NO
2	No Connection
3	No Connection
4	No Connection
5	Jumper to Pin # 8
6	No Connection
7	No Connection
8	Jumper to Pin # 5
9	OUT1-COM

10.3. XS2 IN SUB-D CONNECTOR

Pin #	Description
1	IN7
2	No Connection
3	No Connection
4	No Connection
5	Robot 0 VDC
6	No Connection
7	No Connection
8	No Connection
9	Robot +24 VDC

Equipment Instructions

10.4. SOL VLV SUB-D CONNECTOR

Pin #	Description
1	No Connection
2	No Connection
3	Robot 0 VDC
4	No Connection
5	No Connection
6	Robot 0 VDC
7	No Connection
8	No Connection
9	to RBT DISP Pin # 1

! Do not use this connector with any other devices. This connection is only reserved for the Solenoid Valve Module 24 VDC for D-Series Robot, Material/IDH # 591031.

10.5. RBT DISP SUB-D CONNECTOR

Pin #	Description
1	to SOL VLV Pin # 1
2	No Connection
3	No Connection
4	No Connection
5	No Connection
6	No Connection
7	No Connection
8	No Connection
9	Robot +24 VDC

! Do not use this connector with any other devices. This connection is only reserved for the for D-Series Dispenser Cable (included with Robot).

Equipment Instructions

11 Warranty

Henkel expressly warrants that all products referred to in this Instruction Manual for (IDH # Loctite® Digital Syringe Dispenser) (hereafter called “Products”) shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefor by the user). The purchaser’s sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Products shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered and in any event, within (12) months after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as (indicate items: fuses, filters, lights, etc.). No such claim shall be allowed in respect of products which have been neglected or improperly stored, transported, handled, installed, connected, operated, used or maintained. In the event of unauthorized modification of the Products including, where products, parts or attachments for use in connection with the Products are available from Henkel, the use of products, parts or attachments which are not manufactured by Henkel, no claim shall be allowed.

No Products shall be returned to Henkel for any reason without prior written approval from Henkel. Products shall be returned freight prepaid, in accordance with instructions from Henkel.

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Equipment Instructions

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