



# Electronic Distributor Control

## Installation and Operation Manual

PNEG-1813

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GSIGROUP



PNEG-1813



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# 1. Safety

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## Safety Guidelines

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting **personal safety** and **preventing equipment problems**. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below. Please read the manual and pay attention to these sections. Failure to read this manual and its safety instructions is a misuse of the equipment and may lead to serious injury or death.



**This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**



**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



**NOTICE** is used to address practices not related to personal injury.

## 1. Safety

### Safety Instructions

Our foremost concern is your safety and the safety of others associated with this equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation where **SERIOUS INJURY** or **DEATH** may occur.

This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

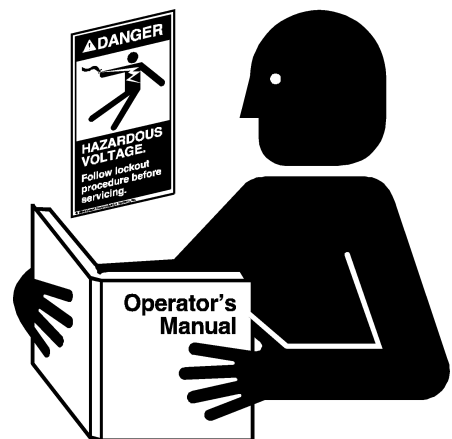
#### Follow Safety Instructions

Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machinery in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual or need assistance, contact your dealer.



#### Read and Understand Manual

#### Practice Safe Maintenance

Understand service procedures before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is in operation. Keep hands, feet and clothing away from rotating parts.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any built up grease oil and debris.



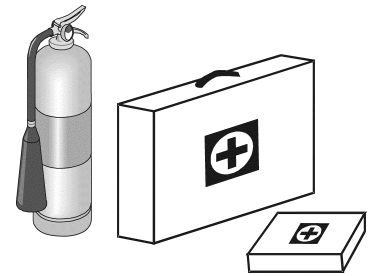
#### Maintain Equipment and Work Area

### Prepare for Emergencies

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.



**Keep Emergency Equipment Quickly Accessible**

### Wear Protective Clothing

Wear close fitting clothing and safety equipment appropriate to the job.

Remove all jewelry.

Long hair should be tied up and back.

Safety glasses should be worn at all times to protect eyes from debris.

Wear gloves to protect your hands from sharp edges on plastic or steel parts.

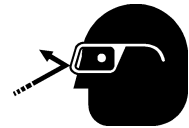
Wear steel toe boots to help protect your feet from falling debris. Tuck in any loose or dangling shoe strings.

A respirator may be needed to prevent breathing potentially toxic fumes and dust.

Wear hard hat to help protect your head.

Wear appropriate fall protection equipment when working at elevations greater than six feet (6').

**Eye Protection**



**Gloves**



**Steel Toe Boots**



**Respirator**



**Hard Hat**

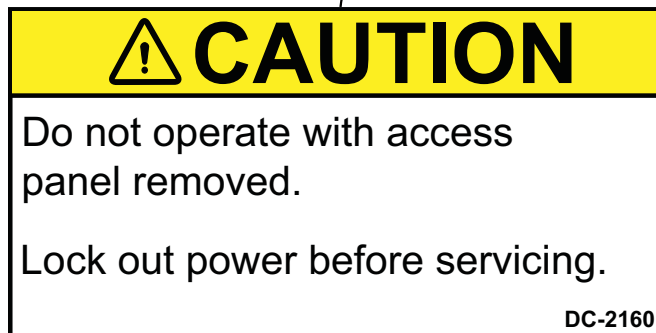
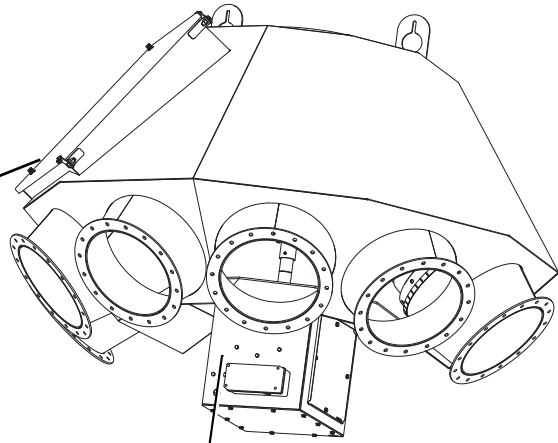
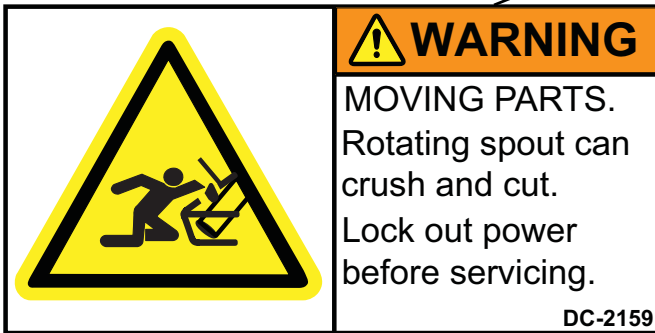


**Fall Protection**



## Safety Decals

The decals are located as shown below:





## 2. Installation

### Electronic Distributor Control Shaft Installation

Install the shaft (DEC0009) to the distributor shaft using two (2) roll pins (S-9288). **NOTE:** Flag extension should be installed in line with the spout to ensure proper alignment with the sensor. (See Figure 2A.)

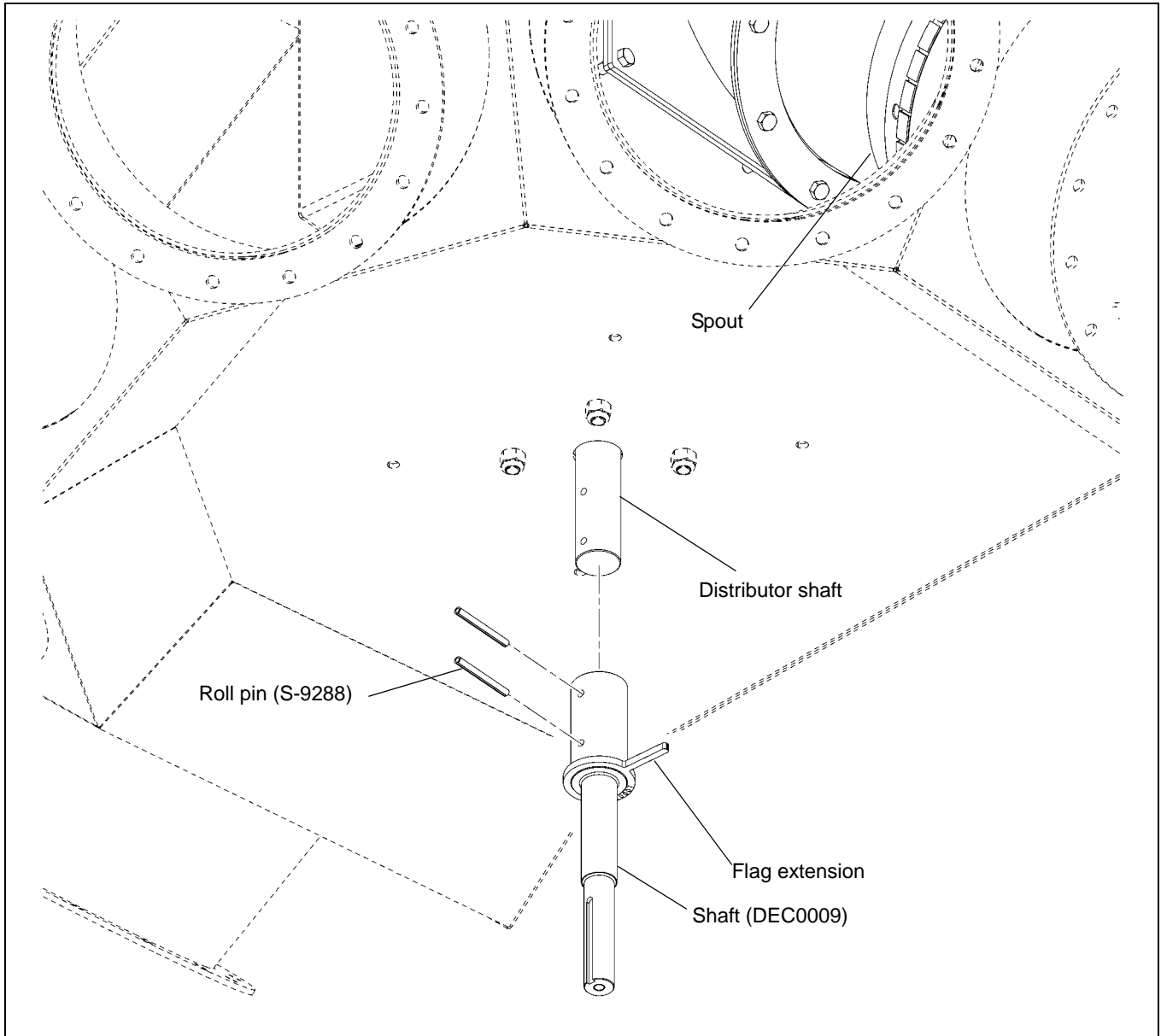


Figure 2A Electronic Distributor Control Shaft

## 2. Installation

### Electronic Distributor Enclosure Installation

Install the enclosure (DEC0005) to the distributor using four (4) 3/8 bolts (S-7469) and nylock nuts (S-7383). (See [Figure 2B.](#))

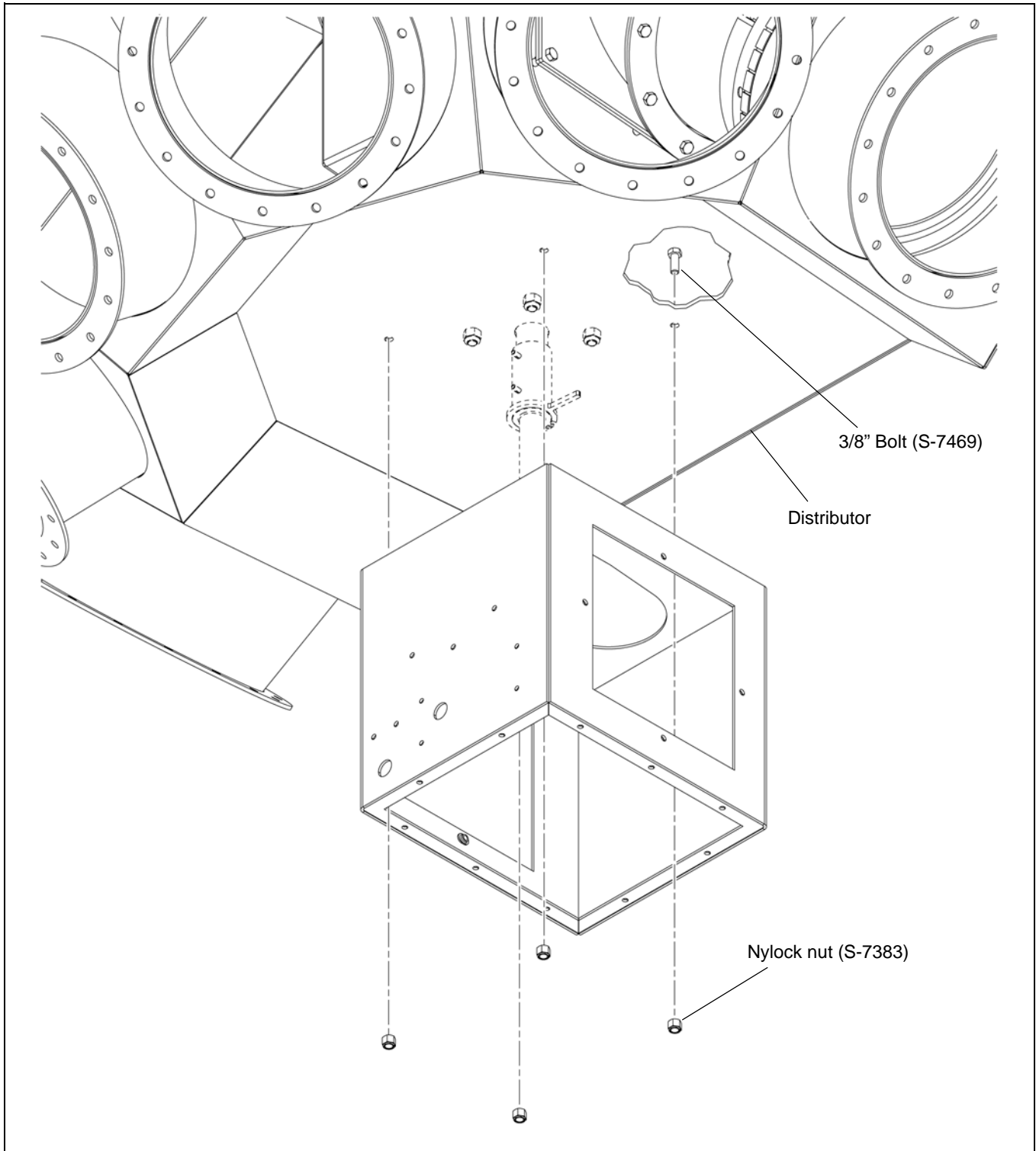
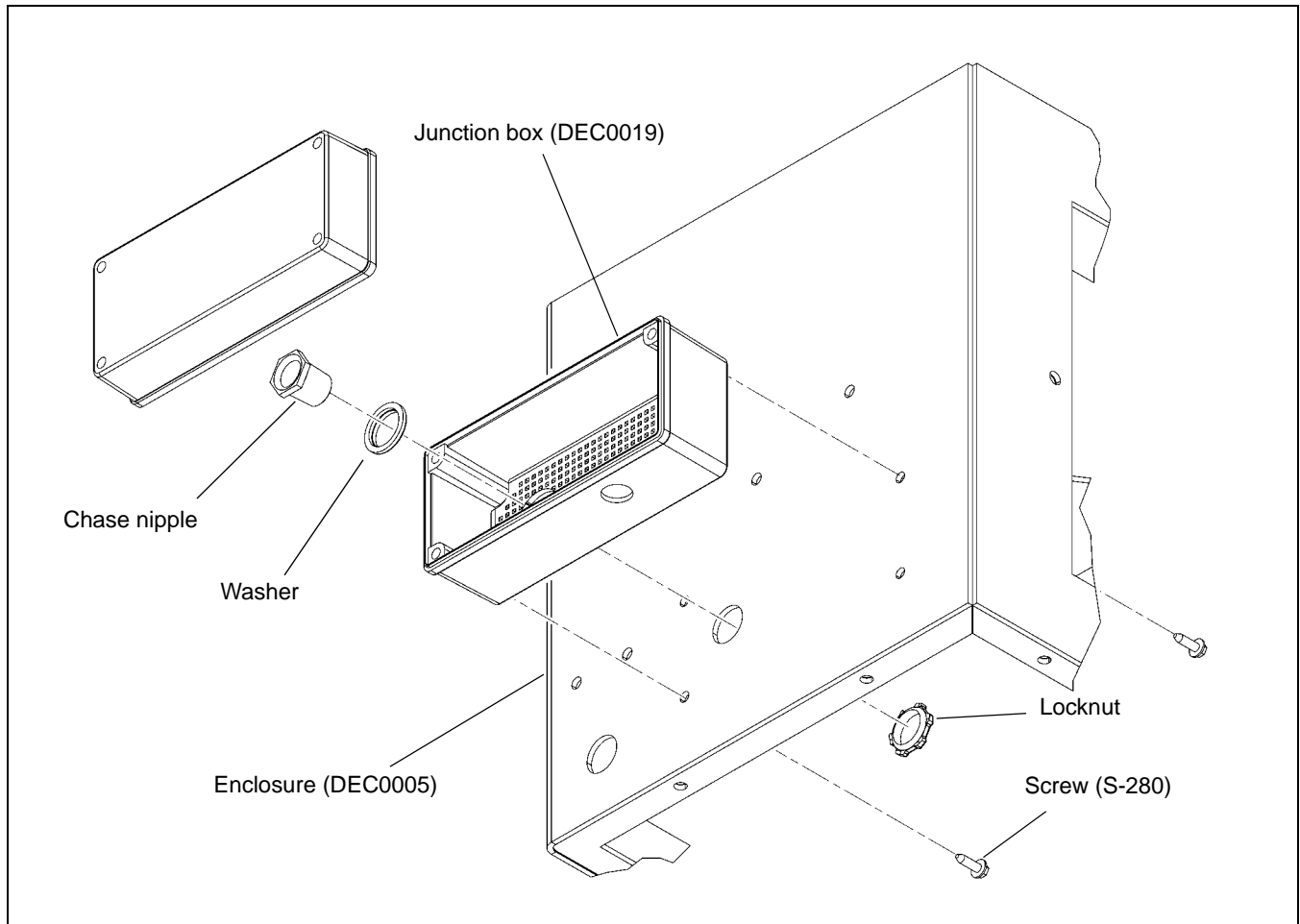


Figure 2B *Electronic Distributor Enclosure*

## Junction Box Installation

Install the junction box (DEC0019) to the enclosure (DEC0005) using four self-drilling screws (S-280). Install the chase nipple, washer, and locknut. (See Figure 2C.)



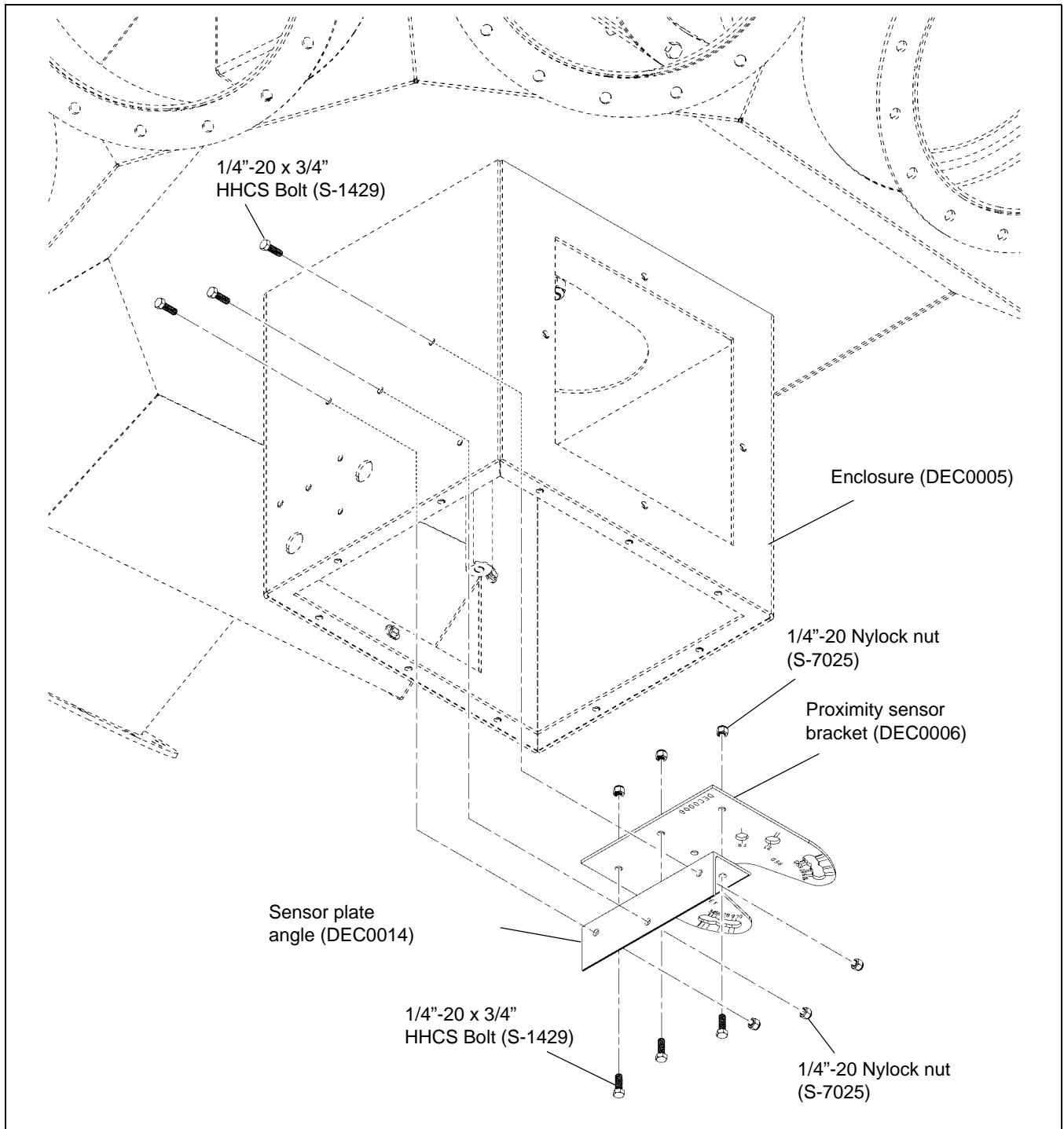
**Figure 2C** Junction Box

## 2. Installation

### Sensor Plate Angle and Proximity Sensor Bracket Installation

Assemble the sensor plate angle (DEC0014) to the proximity sensor bracket (DEC0006) using three 1/4"-20 x 3/4" HHCS bolts (S-1429) and 1/4"-20 nylock nuts (S-7025) as shown in [Figure 2D](#).

Attach the proximity sensor bracket (DEC0006) to the inside of the enclosure (DEC0005) using three 1/4"-20 x 3/4" HHCS bolts (S-1429) and 1/4"-20 nylock nuts (S-7025). ([See Figure 2D](#).)



**Figure 2D** Sensor Plate Angle and Proximity Sensor Bracket

## Proximity Sensor Location and Installation

**NOTE:** The location of the proximity sensor will be determined by the size of the distributor. Using the table shown in [Figure 2E](#), locate the diameter and number of spouts of the distributor being used and note the proximity sensor reference number. This reference number is marked on the bottom of the proximity sensor bracket (DEC0006) and identifies the location for installing the proximity sensors (DEC0018).

Install the two proximity sensors (DEC0018) into the proximity sensor bracket (DEC0006) at the appropriate locations determined from the table. (See [Figure 2F](#).)

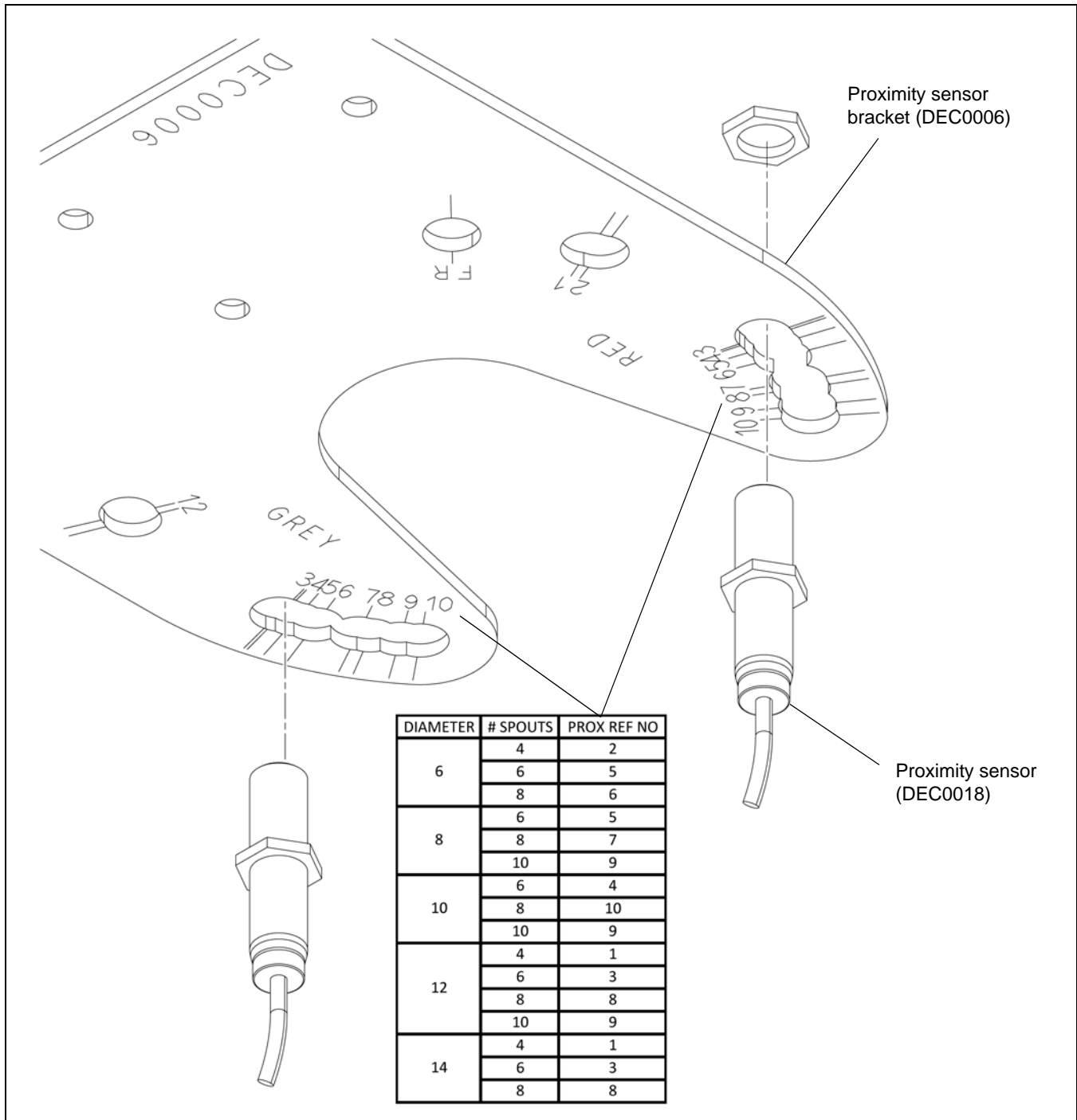
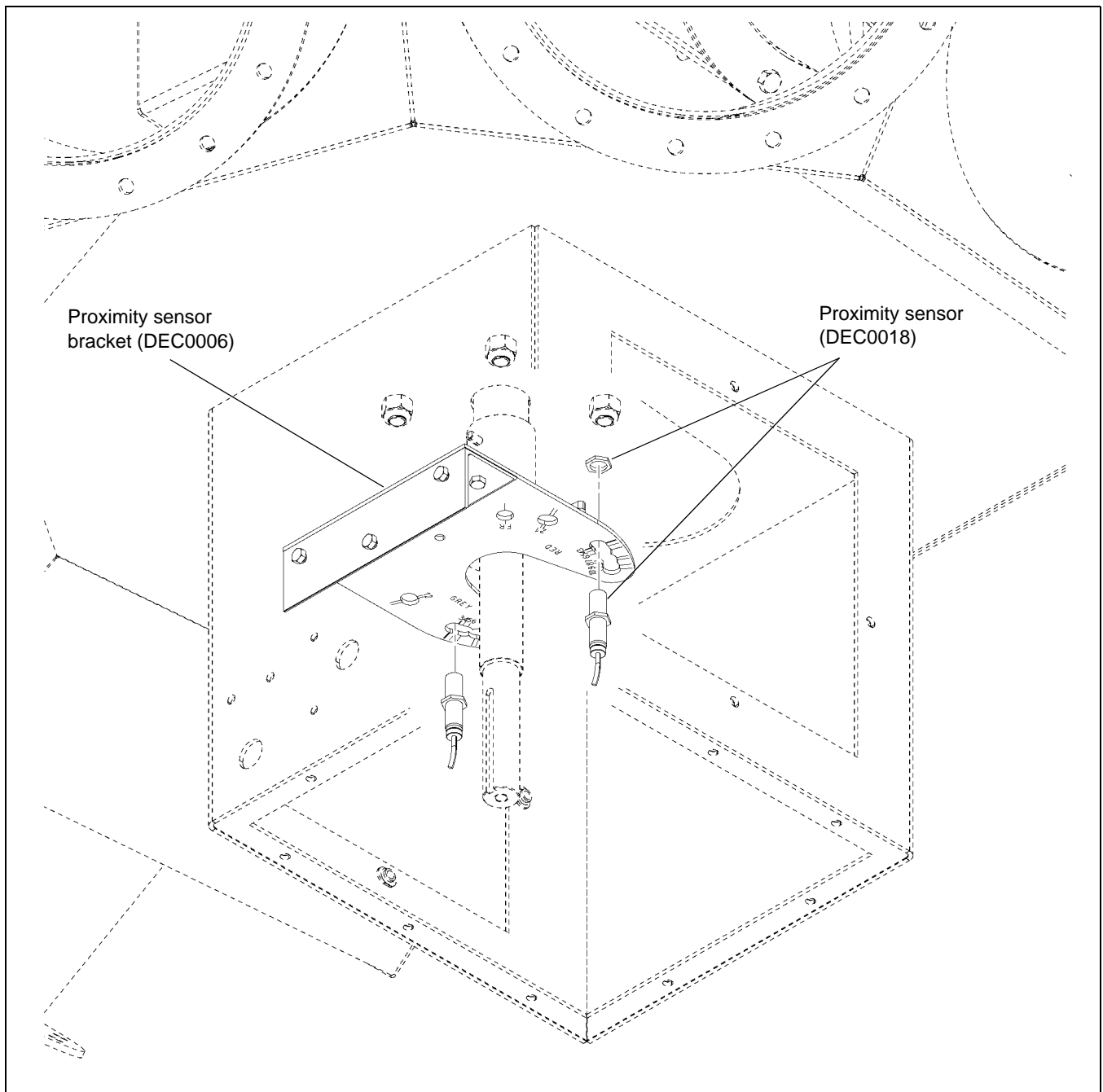


Figure 2E Proximity Sensor Location

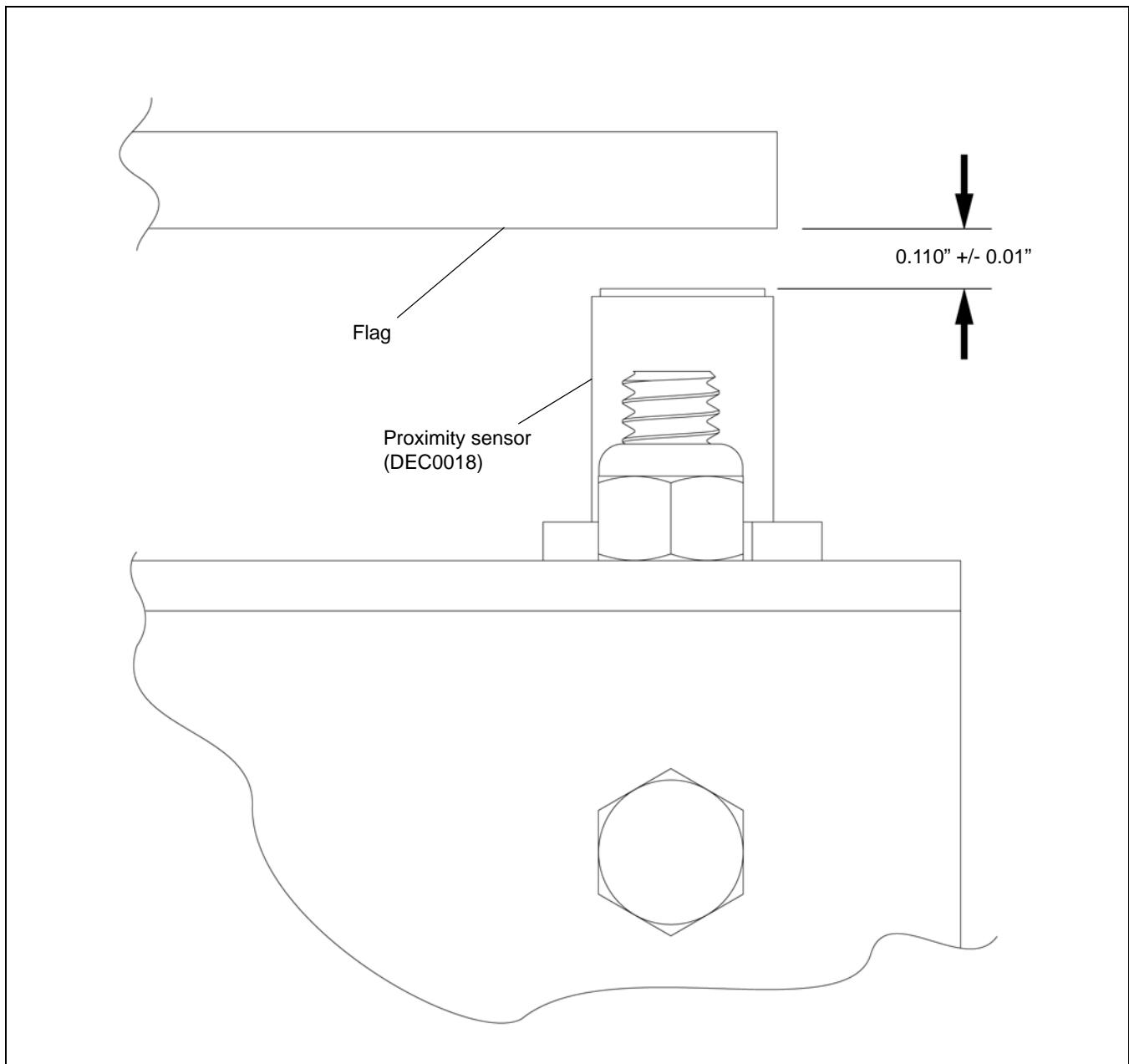
## 2. Installation



**Figure 2F** *Proximity Sensor Installation*

## Proximity Sensor Adjustment

Set the clearance of the two proximity sensors (DEC0018) to  $0.110'' \pm 0.01''$  from the face of each sensor to the flag on the shaft (DEC0009). (See Figure 2G.)



**Figure 2G** Proximity Sensor Adjustment

## 2. Installation

### Encoder and Bracket Installation

Install the encoder (DEC0017) to the encoder mounting bracket (DEC0016) using the three #10-32 bolts (S-10167) and #10 washers (S-7223) as shown in [Figure 2H](#).

Tighten the encoder collar set screw as shown in [Figure 2I](#) to 8 in-lb.

Install the encoder mounting bracket (DEC0016) to the proximity sensor bracket (DEC0006) using the 1/4"-20 x 3/4" HHCS bolt (S-1429), 1/4" washer (S-2126), and 1/4"-20 nylock nut (S-7025) as shown in [Figure 2J](#).

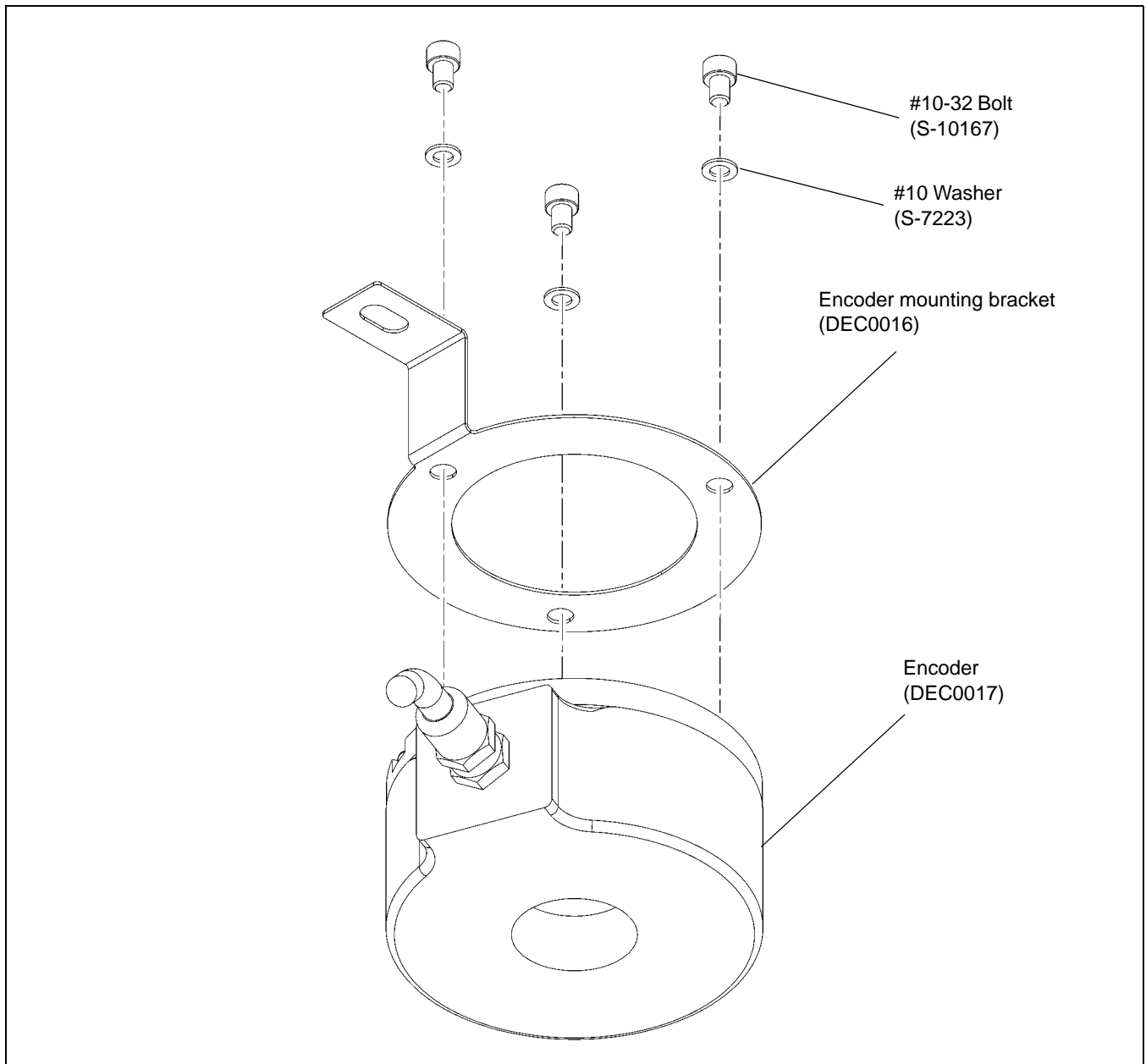


Figure 2H Encoder to Mounting Bracket



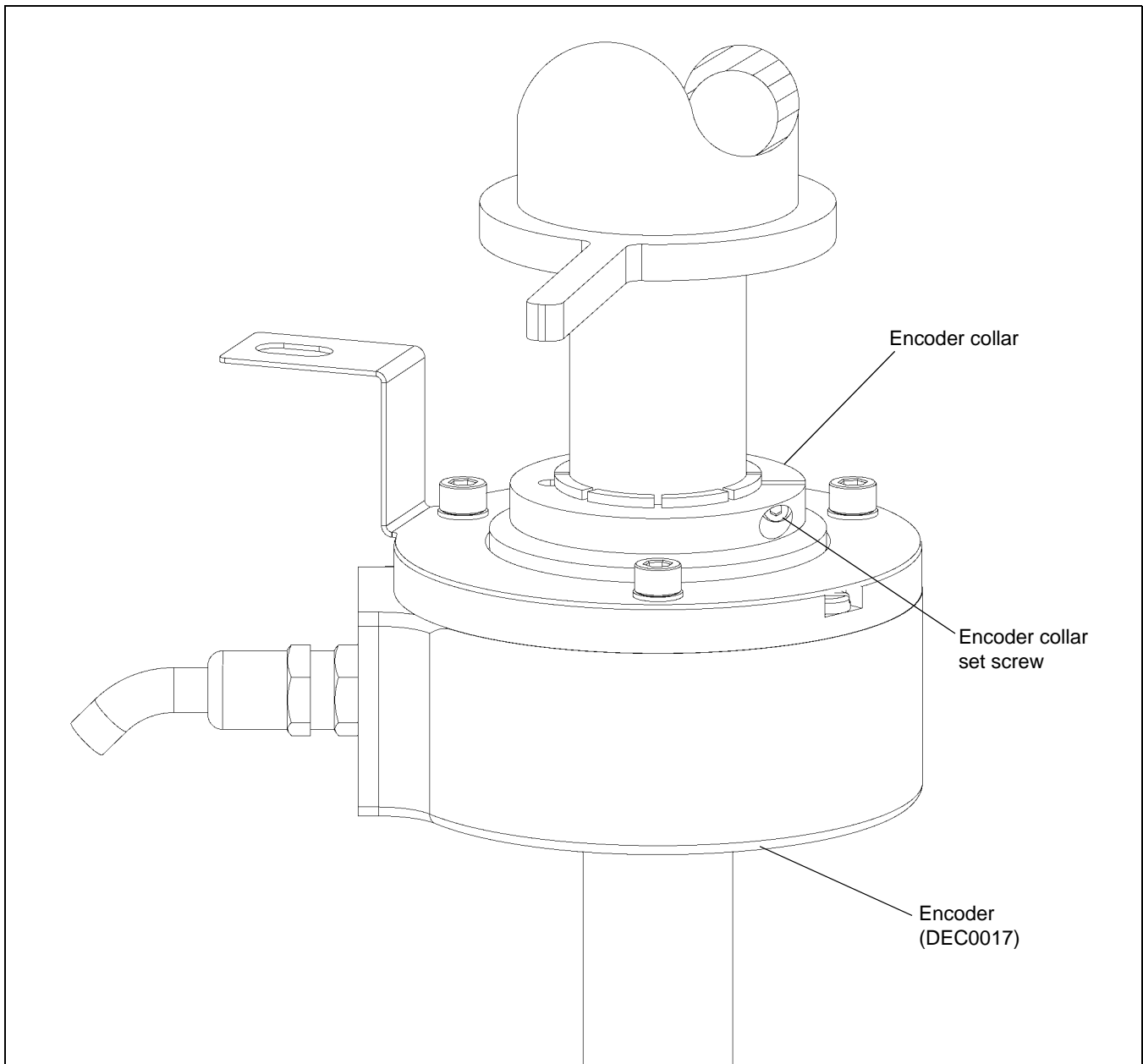
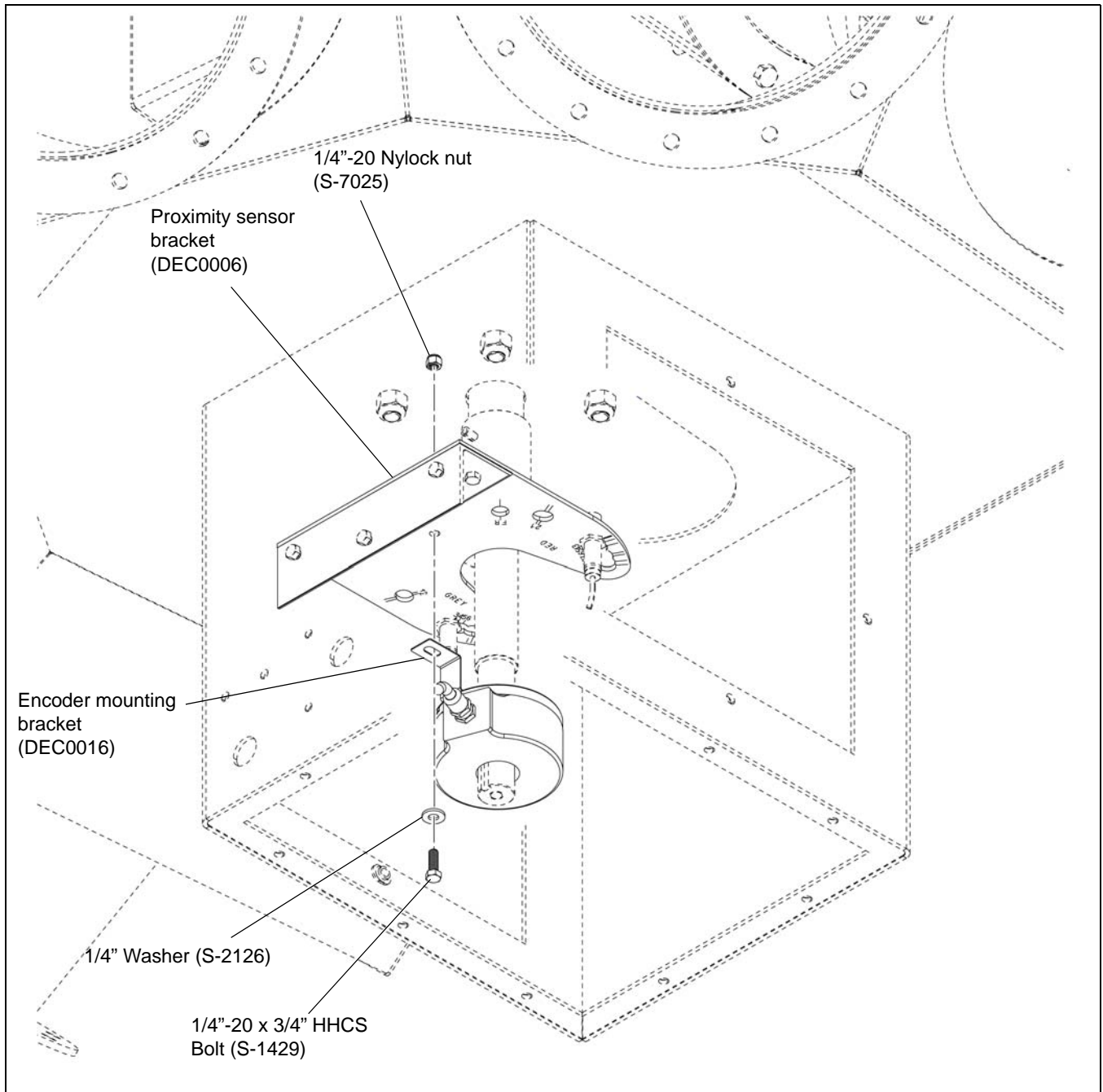


Figure 21 Encoder Collar Set Screw

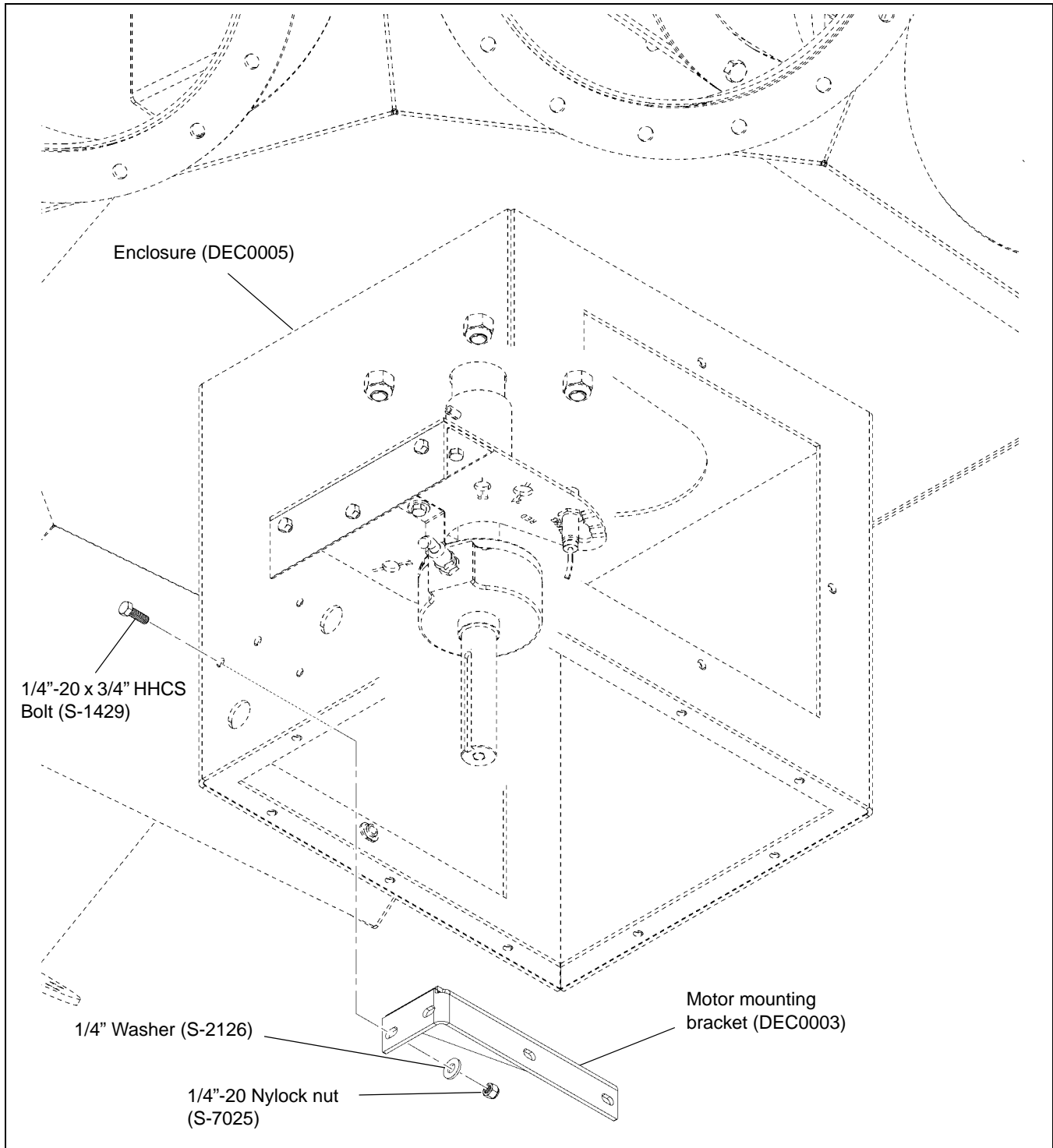
## 2. Installation



**Figure 2J** *Mounting Bracket to Proximity Sensor Bracket*

## Motor Mounting Bracket Installation

Install the motor mounting bracket (DEC0003) to the enclosure (DEC0005) using two 1/4"-20 x 3/4" HHCS bolts (S-1429), 1/4" washers (S-2126), and 1/4"-20 nylock nuts (S-7025) as shown in [Figure 2K](#).

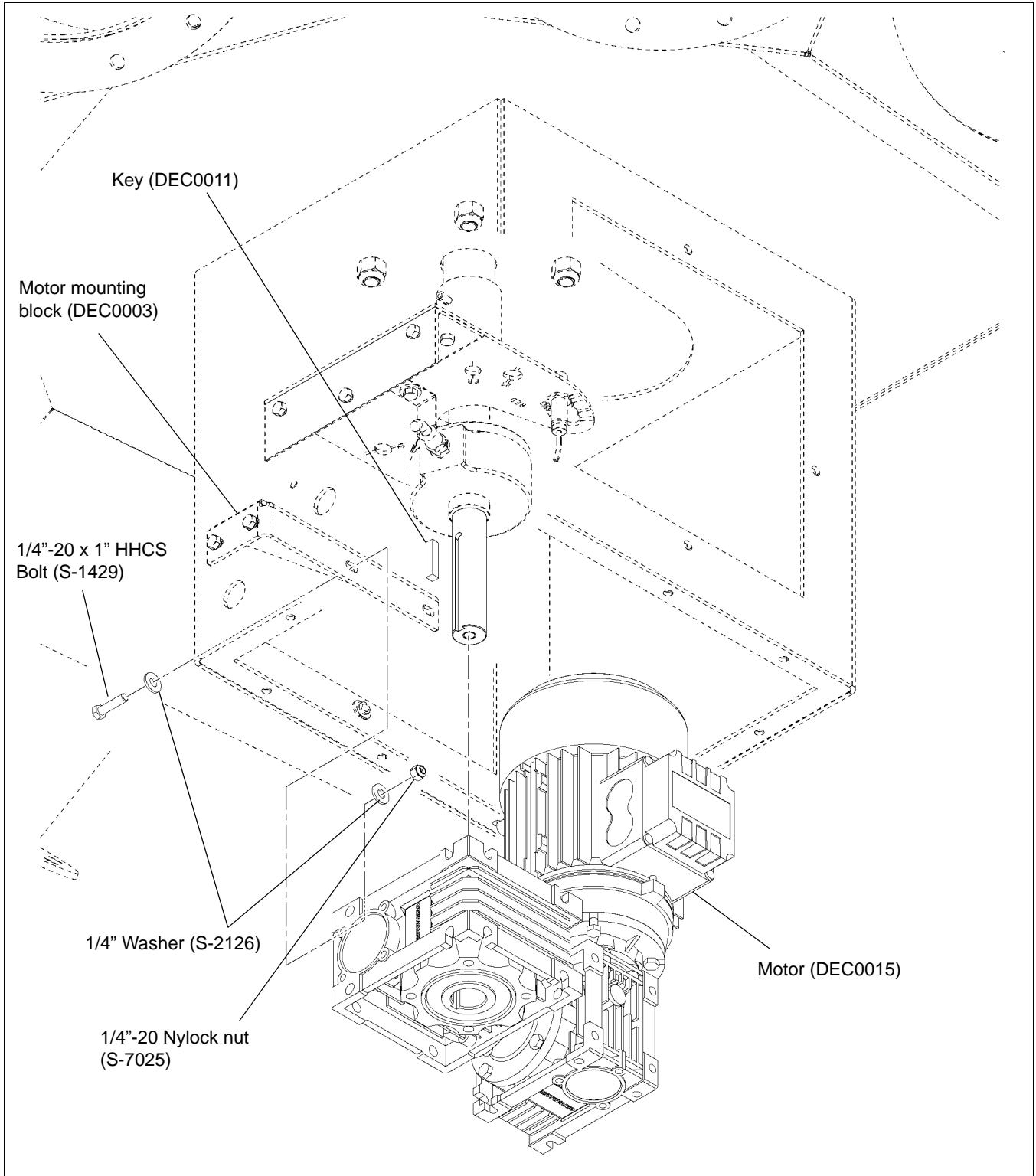


**Figure 2K** Motor Mounting Bracket

## 2. Installation

### Control Motor Installation

Install the motor (DEC0015) to the motor mounting bracket (DEC0003) using two 1/4"-20 x 1" HHCS bolts (S-6998), four 1/4" washers (S-2126), and two 1/4"-20 nylock nuts (S-7025) as shown in [Figure 2L](#).



**Figure 2L** Control Motor Installation

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## Wire and Fitting Selection Recommendations

**NOTE:** *The power cable, encoder cable, proximity sensor cables, motor cable, and electrical fittings are not supplied with the electronic distributor control. The following recommendations should be followed when selecting wire types and electrical fittings:*

For the proximity sensor and encoder cables from the junction box to the control panel, use 10 conductor or greater shielded cable, 22 AWG or larger, and rated for the environment. If the wiring is run outside of conduit, it should be rated for UV.

For the motor cable from the motor to the control panel, use 4 conductor cable, shielded, 16 AWG or larger, and rated for the environment. If the wiring is run outside of conduit, it should be rated for UV.

All conduit and fittings should be outdoor-rated to keep things adequately sealed.

## 2. Installation

### Distributor to Junction Box Electrical Connections

Connect wiring from proximity sensors (DEC0018) and encoder (DEC0017) to junction box terminal block as shown in [Figure 2M](#). **NOTE:** The grey and red color identifiers indicate the location of the proximity sensors and are shown on the bottom of the proximity sensor bracket (DEC0006).

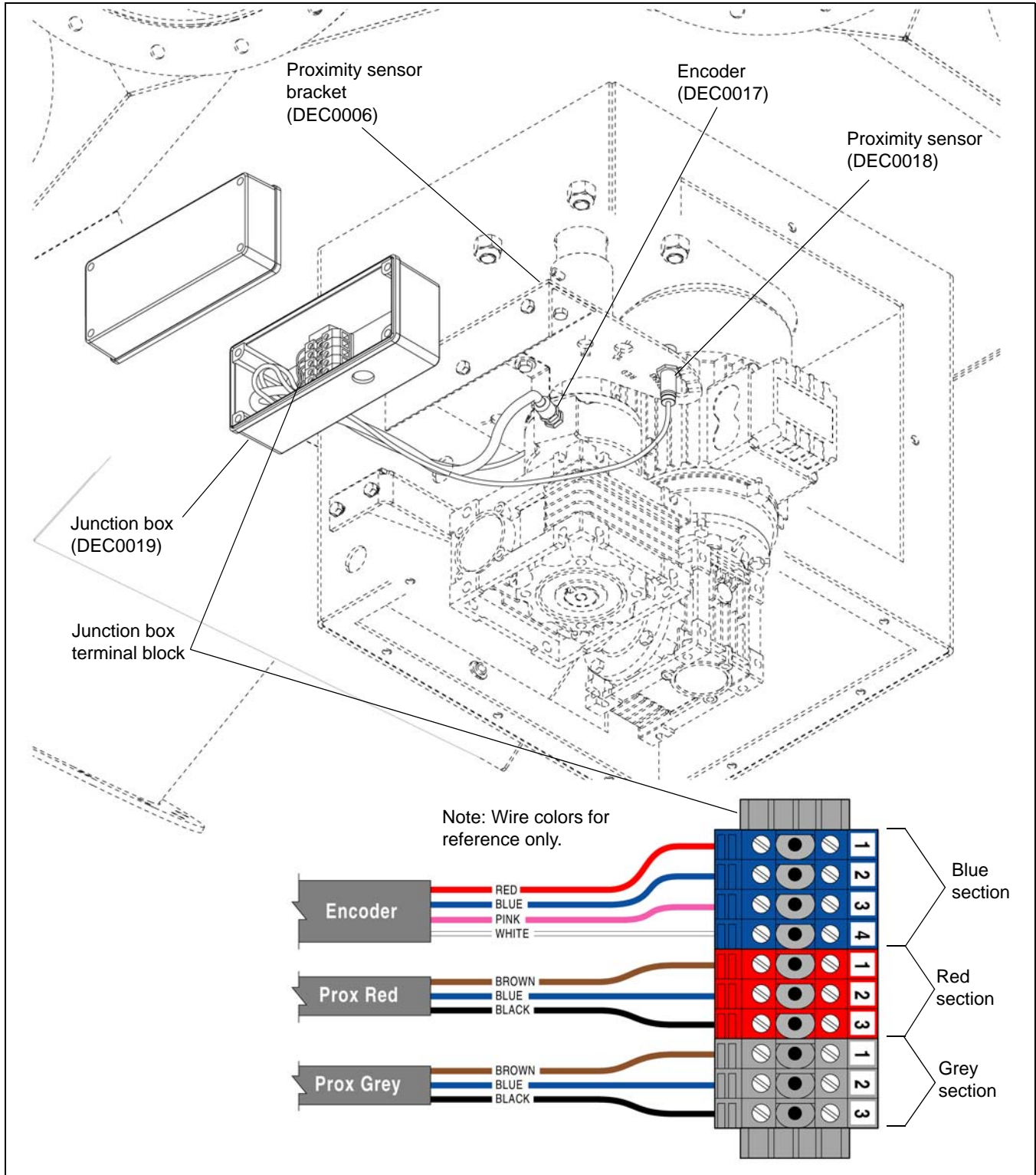


Figure 2M Distributor to Junction Box Electrical Connections



## Control Panel Cable to Distributor Fitting Connections

Connect the motor cable from the control panel to the distributor enclosure (DEC0005) and connect the proximity sensors and encoder cable from the control panel to the junction box (DEC0019) using suitable fittings. (See [Figure 2N.](#))



**Figure 2N**

## 2. Installation

### Motor Cable to Motor Junction Box Fitting Connections

Remove the four motor junction box cover screws and the motor junction box cover as shown in [Figure 20](#).

Connect the motor cable to the motor junction box using suitable fittings. ([See Figure 20.](#))

Cable fitting connection to motor junction box



Figure 20



## Motor Wiring to Motor Junction Box Electrical Connections

Connect the motor wiring to the motor wiring terminal block as shown in [Figure 2P](#) and re-install the motor junction box cover and screws.

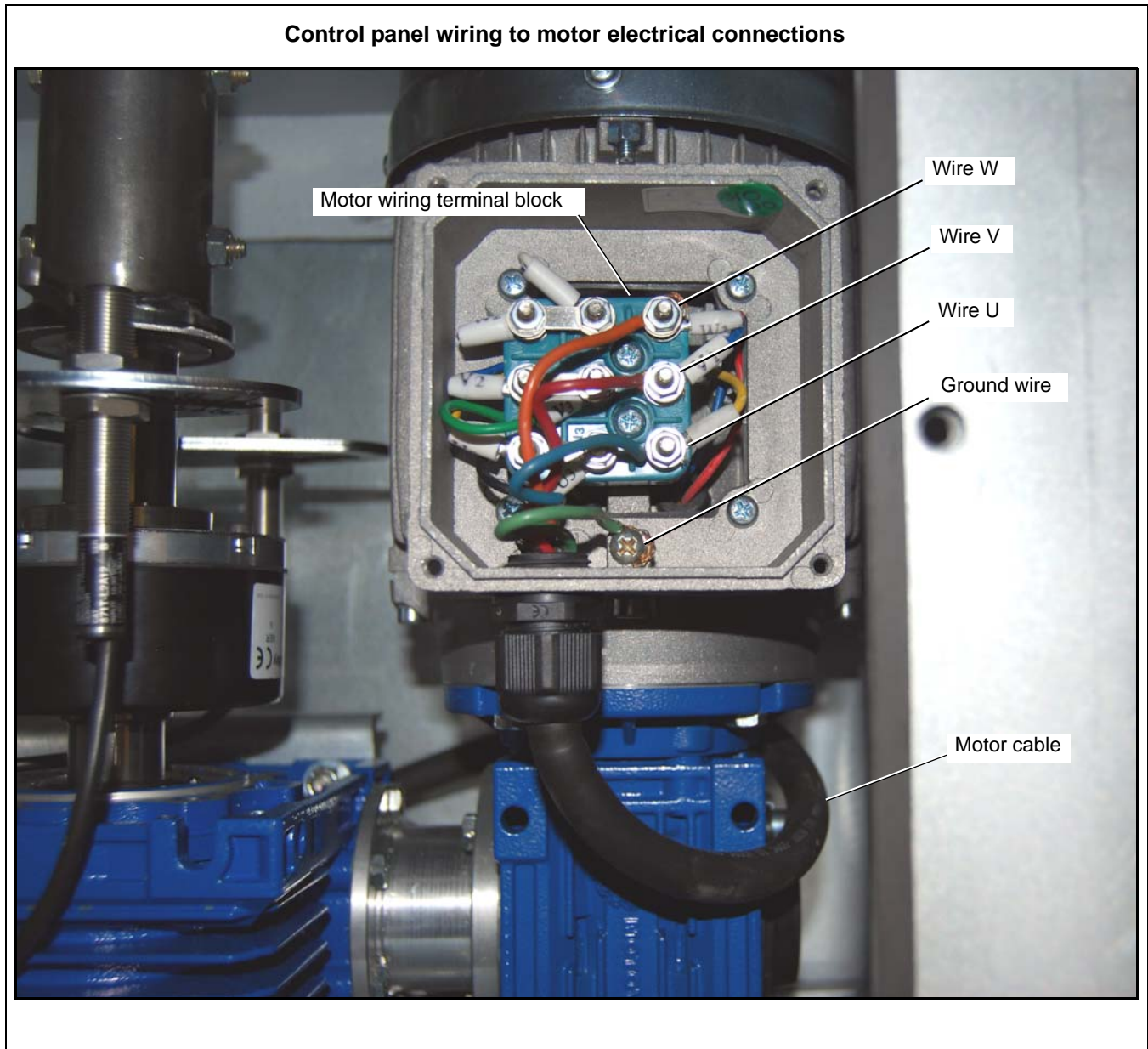
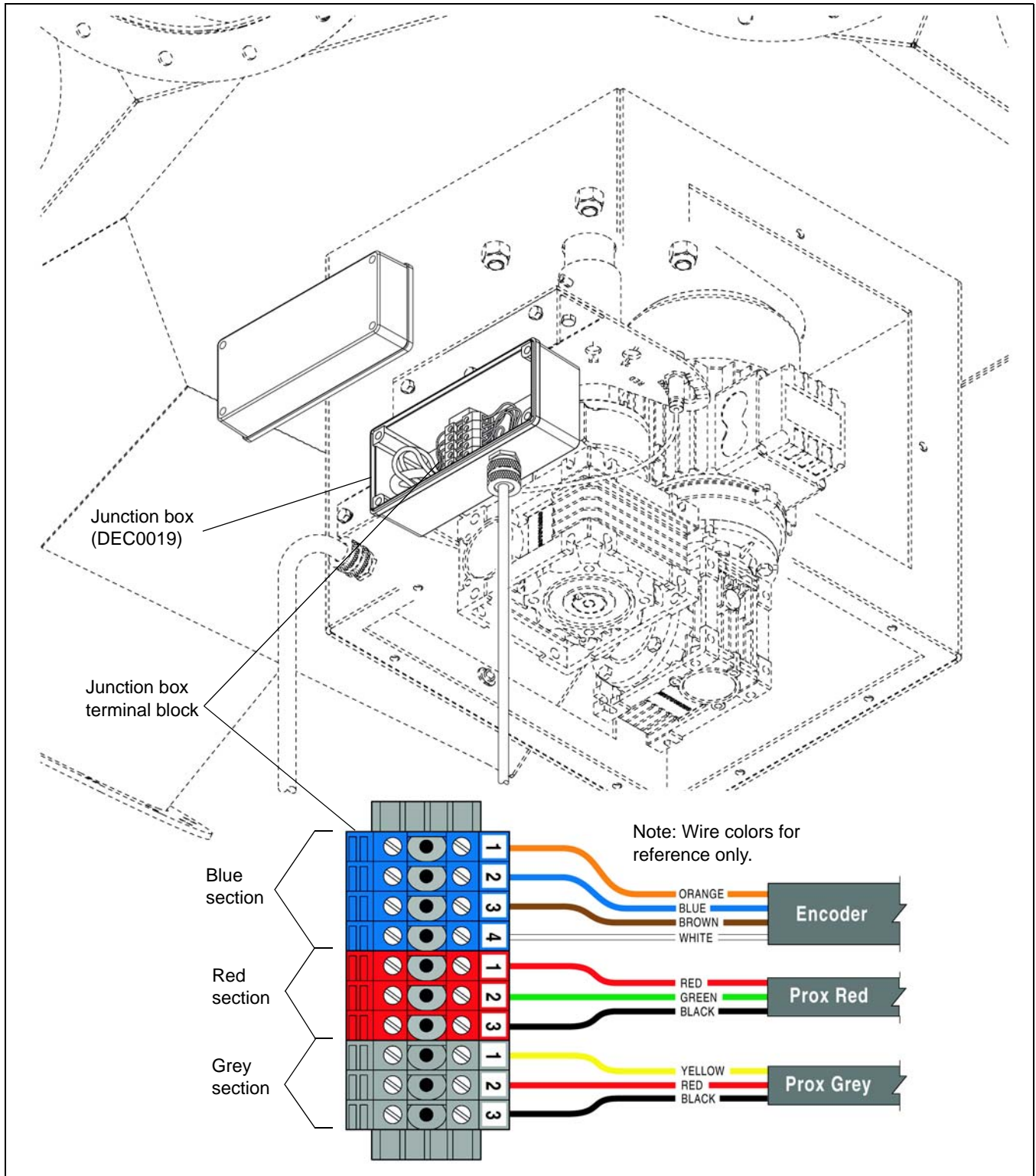


Figure 2P

## 2. Installation

### Control Panel Wiring to Junction Box Electrical Connections

Connect the wiring from the control panel to the junction box (DEC0019) terminal block as shown in [Figure 2Q](#). **NOTE:** The grey and red color identifiers indicate the location of the proximity sensors and are marked on the bottom of the proximity sensor bracket (DEC0006).



**Figure 2Q** Control Panel Wiring to Junction Box Electrical Connections

## Enclosure Covers Installation

Install the two side access covers (DEC0012) using four 1/4"-20 x 3/4" HHCS bolts (S-1429) and 1/4" lock washer (S-2041) each and install the bottom enclosure cover (DEC0013) using ten 1/4"-20 x 3/4" HHCS bolts (S-1429) and 1/4" lock washers (S-2041) as shown in [Figure 2R](#).

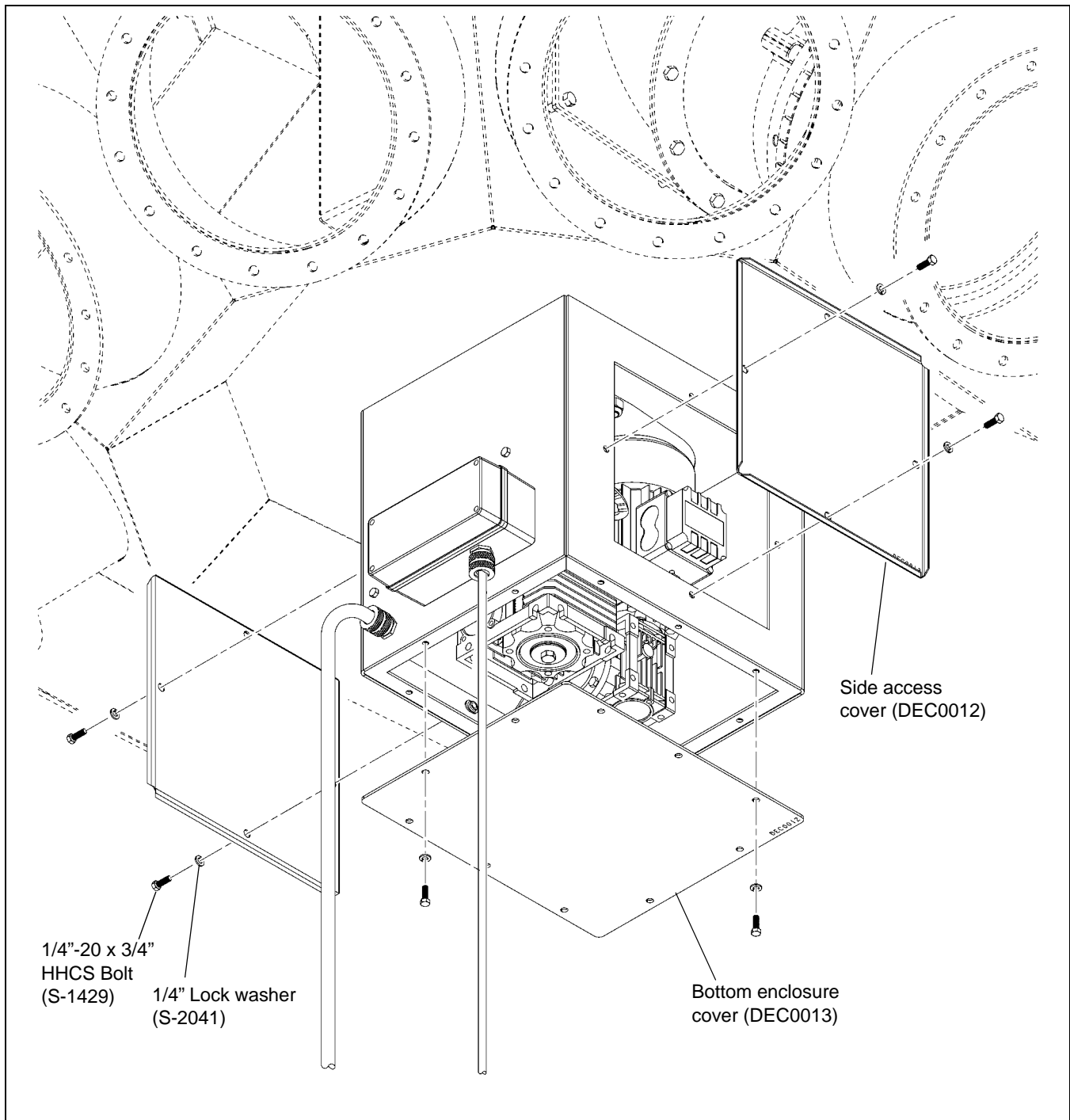


Figure 2R Enclosure Covers Installation



# Control Panel Wiring from Motor Electrical Connections

Connect the motor wiring to the motor power terminal block in the control panel as shown in *Figure 2S*.

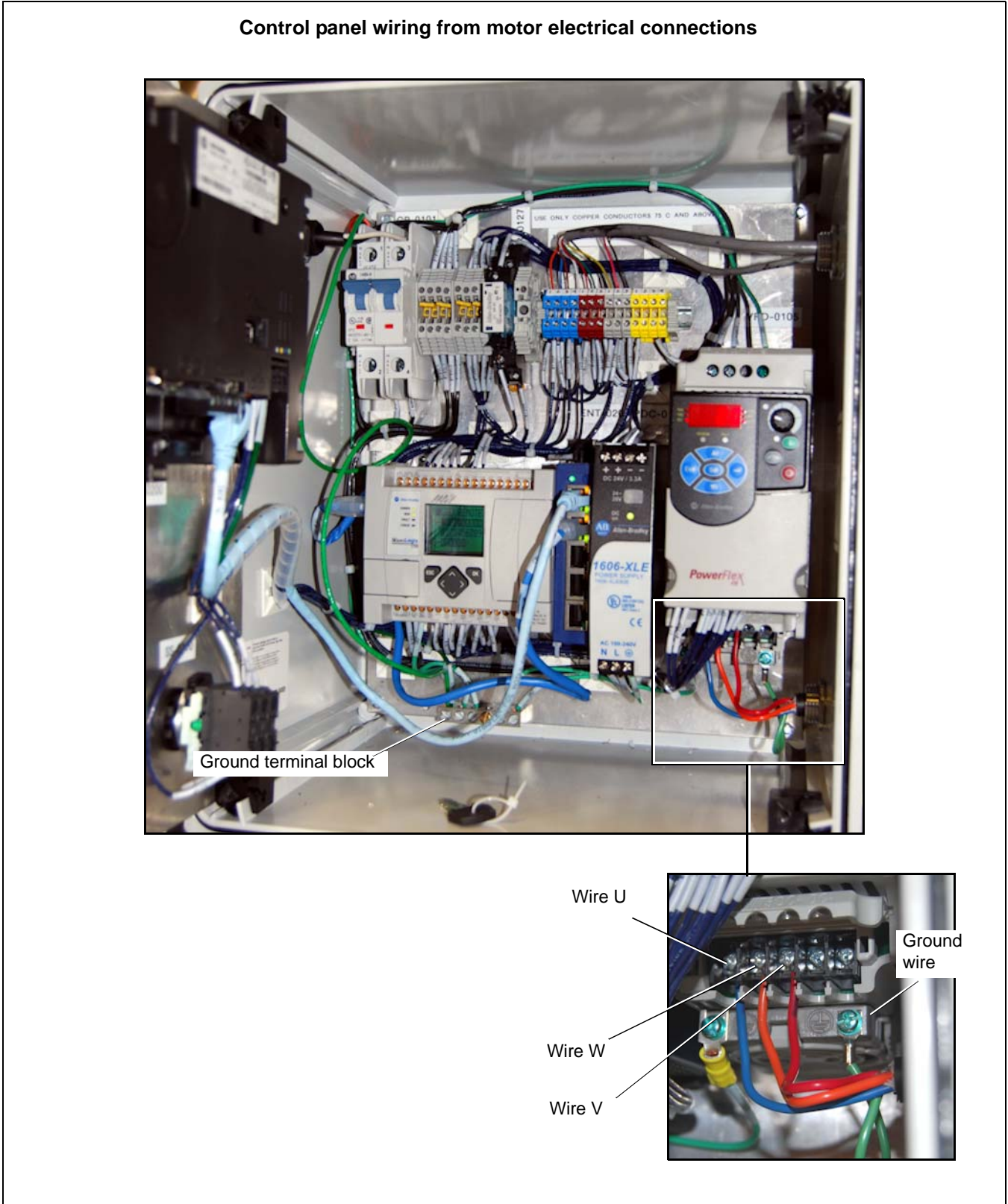


Figure 2S

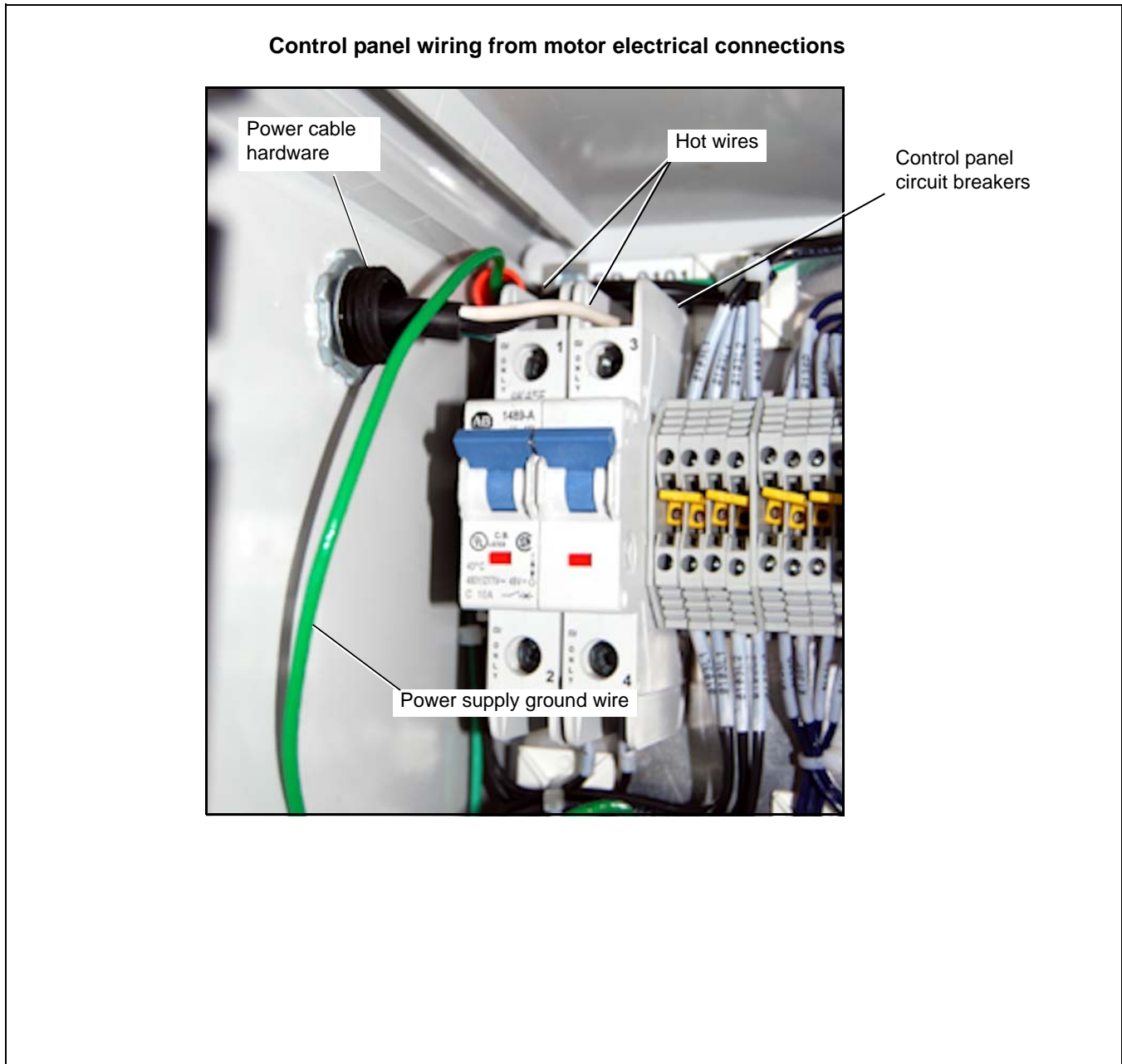
## Power Supply Wiring to Control Panel Electrical Connections

**NOTE:** Ensure the power supply voltage source is off before installation.

Install power supply cable through the control panel using suitable hardware as shown in [Figure 2T](#).

Connect the power supply hot wires to the control panel circuit breakers as shown in [Figure 2T](#).

Connect the power supply ground wire as shown in [Figure 2T](#) to the ground terminal block shown in [Figure 2S](#).



**Figure 2T**

### Control Panel Installation Guidelines

The following recommendations should be followed when installing and mounting the control panel:

All wiring should be performed by a licensed/qualified electrician in accordance with the National Electric Code (NEC), state codes, and local codes.

Never mount the control panel immediately beside or above heat generating equipment, or directly below water or steam pipes.

The atmosphere surrounding the control panel must be free of combustible vapors, chemical fumes, and corrosive materials.

The location of the control panel and the routing of cables should provide safe access for maintenance and suitable operation of the control panel.

Mount the control panel on a flat, vertical surface using 1/4" fasteners.

Ensure that the mounting surface is sufficient to support the weight of the control panel.

### 3. Operation Procedures

## Initializing Screen

When powering up the distributor the first screen that appears is the “Initializing” screen (See Figure 3A.) Press “OK” to proceed to the “Main” screen. See “Main Screen” on page 31.

**NOTE:** Pressing “OK” button after first time power up after a retrofit will bring you to the configuration screen.



Figure 3A Help Menu

**NOTE:** The following screens are taken from various models of distributors, which may result in differences between this manual and that of your actual display.

## Main Screen

Depending on the number of spouts in your current configuration, one of the following screens will be displayed (See Figure 3B.) The name of the current spout is indicated at the top of the screen, and is indicated in the graphic with a green circle. At the bottom of the screen are three buttons to navigate to either the Help Menu, Move Screen, or Setup Menu.

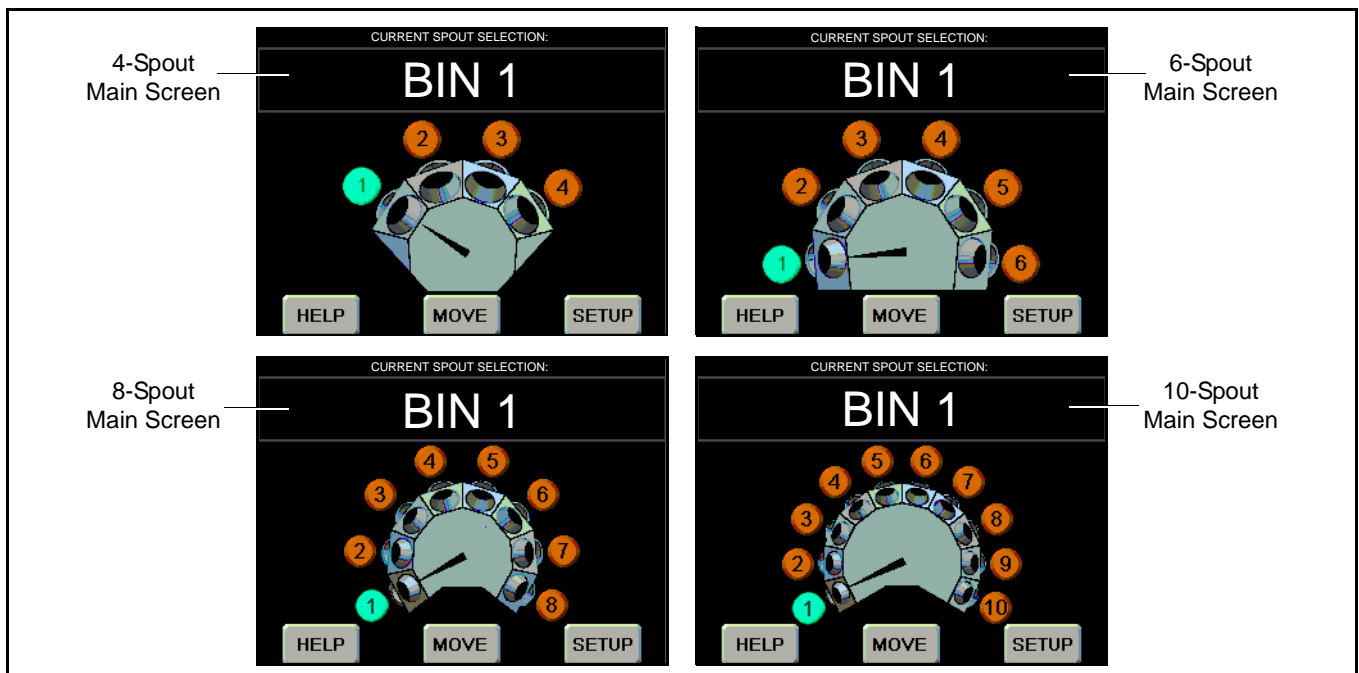


Figure 3B

## Help Menu Screen

The help menu has three options for displaying troubleshooting information for different faults that may appear during the operation of your distributor.

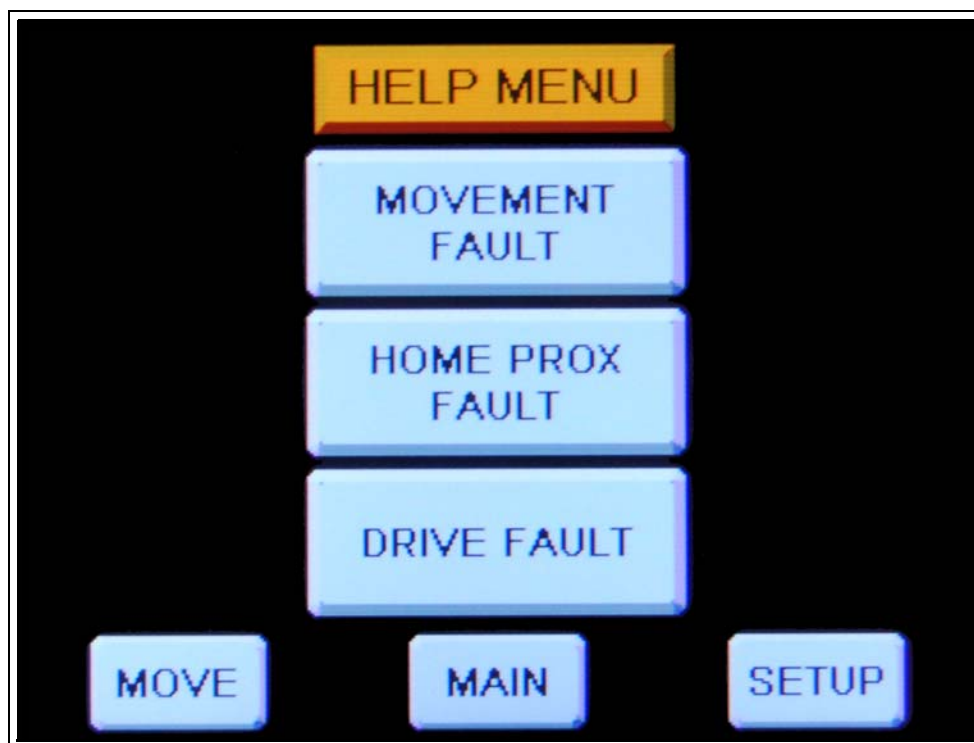


Figure 3C Help Menu Screen

**Movement Fault:** Displays the “Movement Fault” screen which offers possible causes and solutions to faults caused by distributor movement ([See Figure 3D on Page 33.](#))

**Home Prox Fault:** Displays the “Home Sensor Fault” screen which offers possible causes and solutions to faults caused by a proximity switch failure ([See Figure 3E on Page 33.](#))

**Drive Fault:** Displays the “VFD” Fault screen which offers possible causes and solutions to faults caused by the variable frequency drive ([See Figure 3F on Page 34.](#))



## Movement Fault Screen

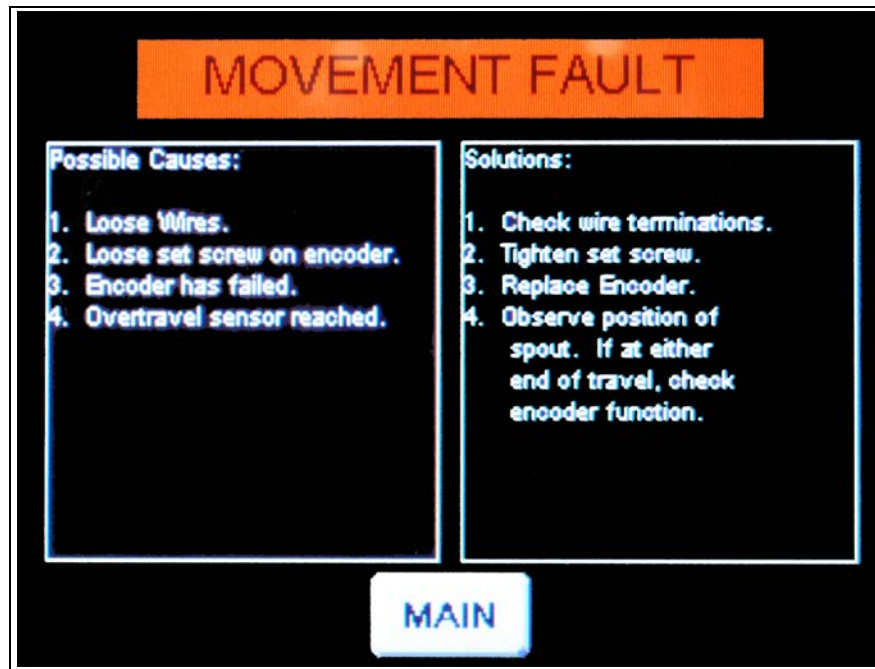


Figure 3D Movement Fault Screen

## Home Prox Fault Screen

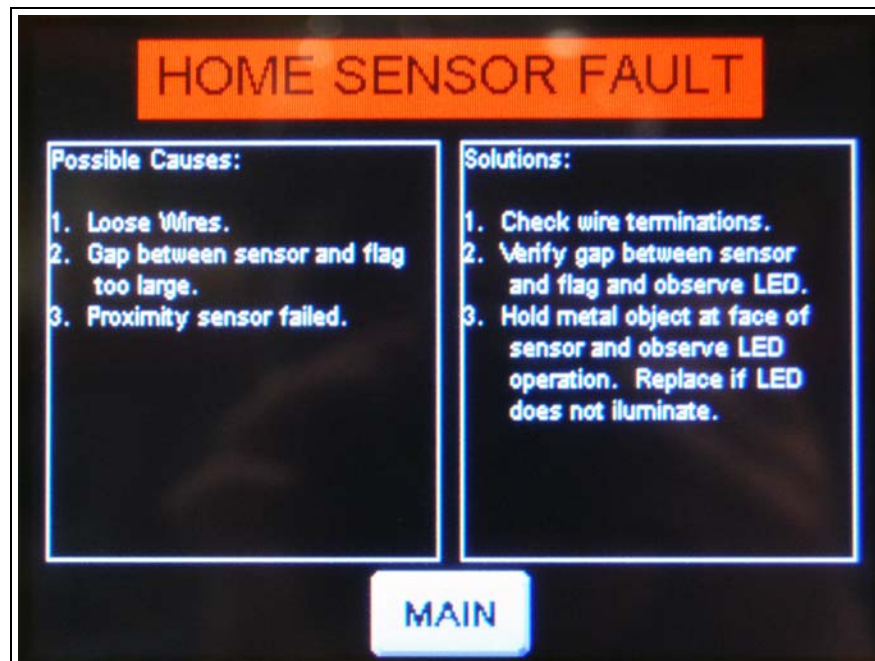


Figure 3E Home Prox Fault Screen

Drive Fault Screen

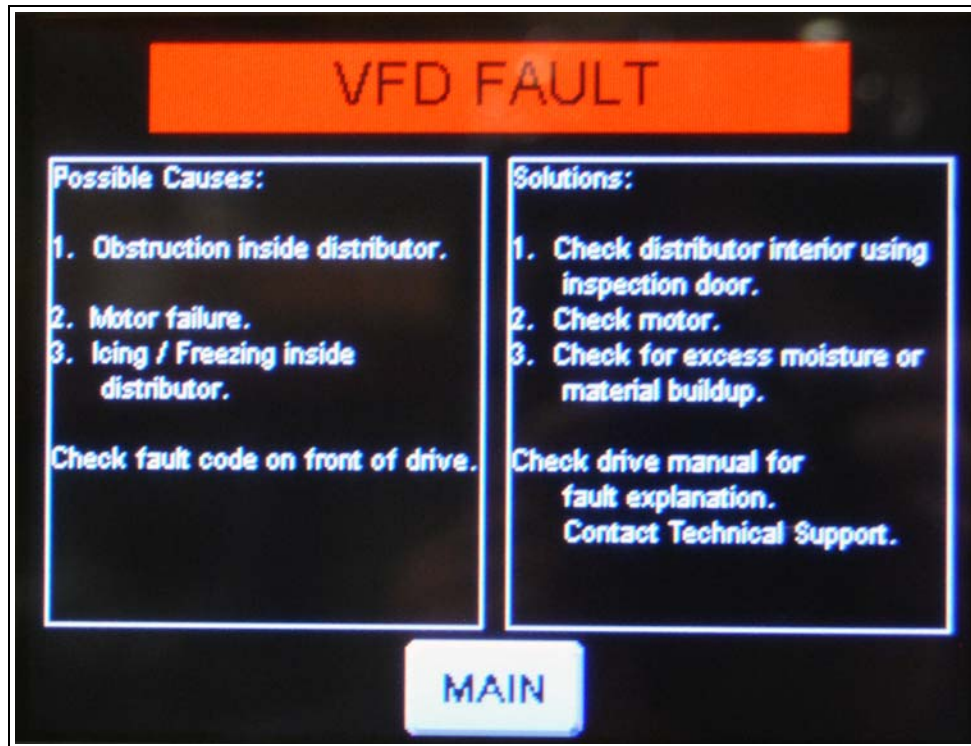


Figure 3F Drive Fault Screen

## Move Screen

This screen allows the user to change the distributor's current spout position. The green highlighted spout number indicates the current selection. A spout number with a red circle with a line through it indicates a position that is currently locked out (See "Position Lock-Out Screen" on page 42.)

**NOTE:** The default names for each spout will be "BIN #", see "Position Names Screen" on Page 38 for customizing the spout names.



Figure 3G Move Screen

### Moving Spout Position:

1. From the "Main" screen or the "Setup Menu" select "MOVE" to view the "Move Position" screen (See Figure 3G.).
2. On the "Move Position" screen, select the position you want the spout to move to by pressing the spout name on the screen.
3. The "Main Menu" screen will now display a flashing message "Moving to" at the top of the screen, the selected spout number will flash yellow while the pointer is moving to the selected spout. The destination spout number will turn green when the move is complete.

### Verifying Spout Alignment:

**NOTE:** In the following steps, the distributor must be in a position to view the spout location in the distributor to verify that it lines up correctly. If the distributor is installed above ground level, two people will be needed; one to verify the alignment of the distributor spout and one to operate the controller.

1. From the "Main" screen or the "Setup Menu" select "MOVE" to view the "Move Position" screen (See Figure 3G.)

### 3. Operation Procedures

2. On the “Move Position” screen, select the position you want the spout to move to by pressing the spout name on the screen.
3. The “Main Menu” screen will now display a flashing message “Moving to” at the top of the screen, the selected spout number will flash yellow while the pointer is moving to the selected spout. The destination spout number will turn green when the move is complete.
4. Once the spout has finished moving, visually check and verify the spout is centered with the distributor discharge spout. If alignment requires adjustment, see “Position Locations Screen” [on Page 38](#) to adjust the positioning.
5. Repeat procedure for any other spouts that were repositioned.

### Setup Menu Screen

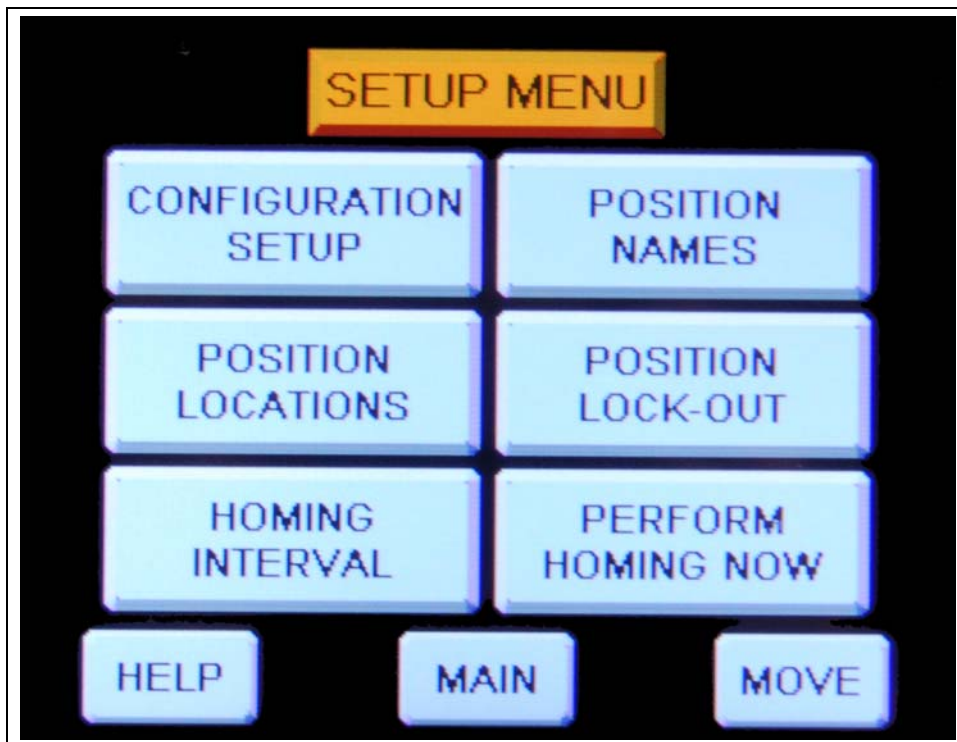


Figure 3H Setup Menu Screen

**Configuration Setup:** Displays the machine setup screen that allows the user to change the distributor’s parameters or reload default values. See “Configuration Setup Screen” on page 37.

**Position Names:** Allows the user to assign or change the name of each spout position, and to create or change a name for the distributor. See “Position Names Screen” on page 38.

**Position Locations:** Displays the positioning screen which allows the user to set the value that aligns the spouts with the distributor. See “Position Locations Screen” on page 40.

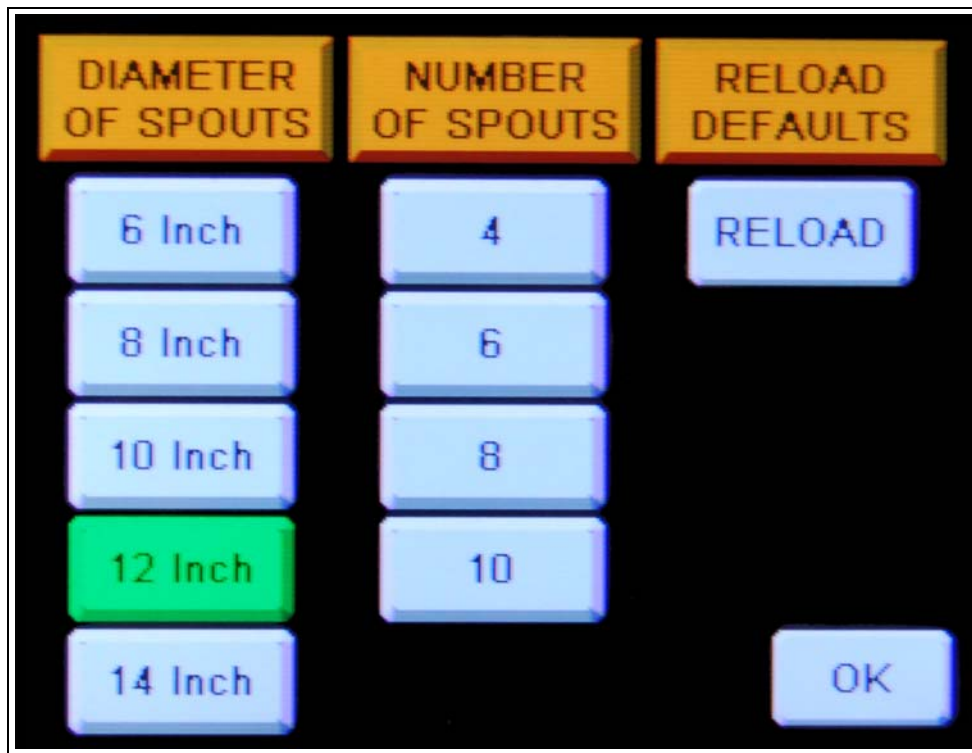
**Position Lock-out:** Allows the user to lock or unlock spouts from being used. See “Position Lock-Out Screen” on page 42.

**Homing Interval:** Allows the user to set the number of times before the “Perform Homing Now” warning appears. See “Homing Interval Screen” on page 43.

**Perform Homing Now:** Press this to perform the homing operation to re-calibrate the distributor.

## Configuration Setup Screen

This screen allows the user to change the distributor's spout diameter property, total of number of spouts, and for resetting the distributor back to the default settings.



**Figure 3I** Configuration Setup Screen

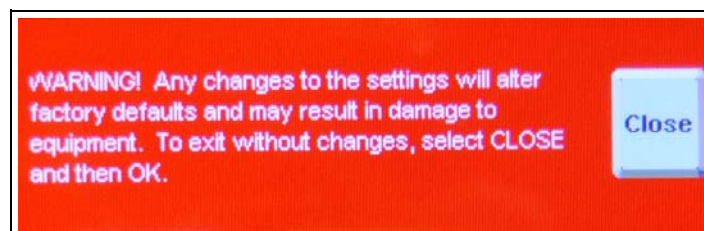
**Diameter of Spouts:** Press the button that matches the size of the spout that is currently installed on the distributor. The diameter that is selected will turn green and the number of spouts available for that diameter will be displayed.

**Number of Spouts:** Press the button that matches the current configuration of your distributor. The number that is selected will turn green. The number of spout options will change according to the diameter of spout selected.

**Reload Defaults:** If during operation, any configuration parameters are altered from the original settings, pressing this button will revert settings to the default values.

**OK:** Press this button to save your current configuration and be brought back to the Setup Menu.

**NOTE:** A warning message will appear if distributor has already been previously configured.  
(See Figure 3J.)



**Figure 3J**



### 3. Operation Procedures

#### Position Names Screen

This screen allows the user to individually name each of the of the distributor discharge spouts and is also used to create or modify a distributor name.

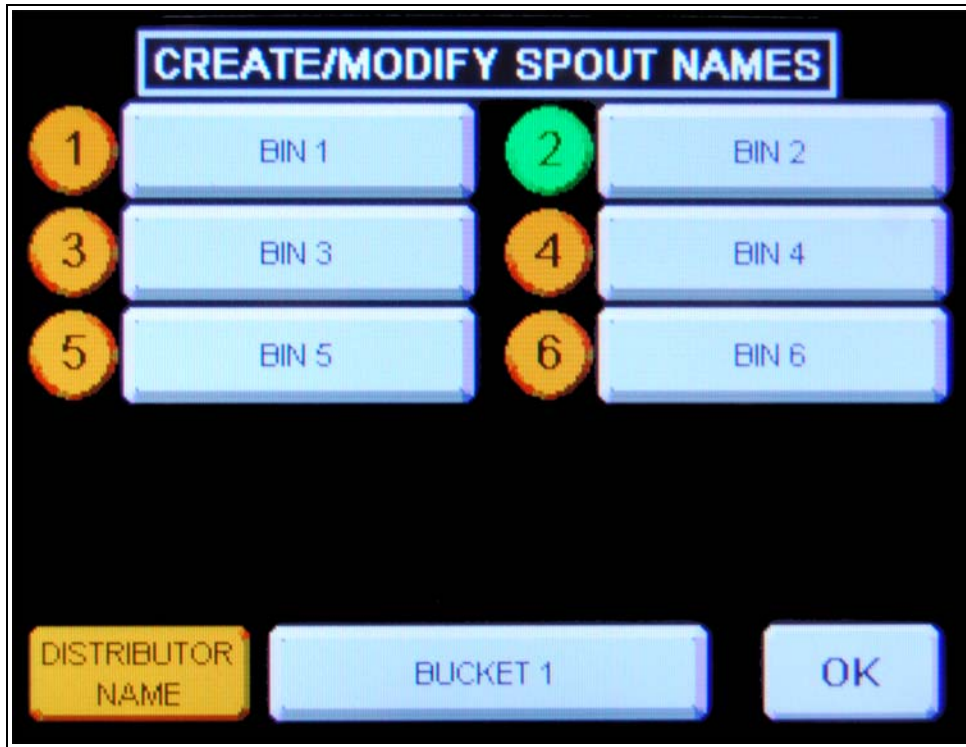


Figure 3K Create/Modify Spout Names

#### Create/Modify Spout Name:

1. From the "Setup Menu", select "Position Names" to bring up the "Create/Modify Spout Names" screen.
2. Press the spout name to be modified to display an alphanumeric keypad.  
(See Figure 3L.)



Figure 3L Alphanumeric Keypad

3. Type in the desired name for the spout position and press “enter”. ←
4. Select “OK” to return to “Setup Menu”.

**Create/Modify Distributor Name:**

1. From the “Setup Menu”, select “Position Names” to bring up the “Create/Modify Spout Names” screen.
2. Next to ochre “Distributor Name” label, press the distributor name to display an alphanumeric keypad (*See Figure 3L.*)
3. Type in the desired name for distributor press “enter”. ←
4. Select “OK” to return to “Setup Menu”.

### 3. Operation Procedures

#### Position Locations Screen

This screen allows the user to adjust the spout positioning so it lines up with the center of the distributor discharge. Adjustments can be made individually or an offset can be used to adjust all spouts by the same amount.

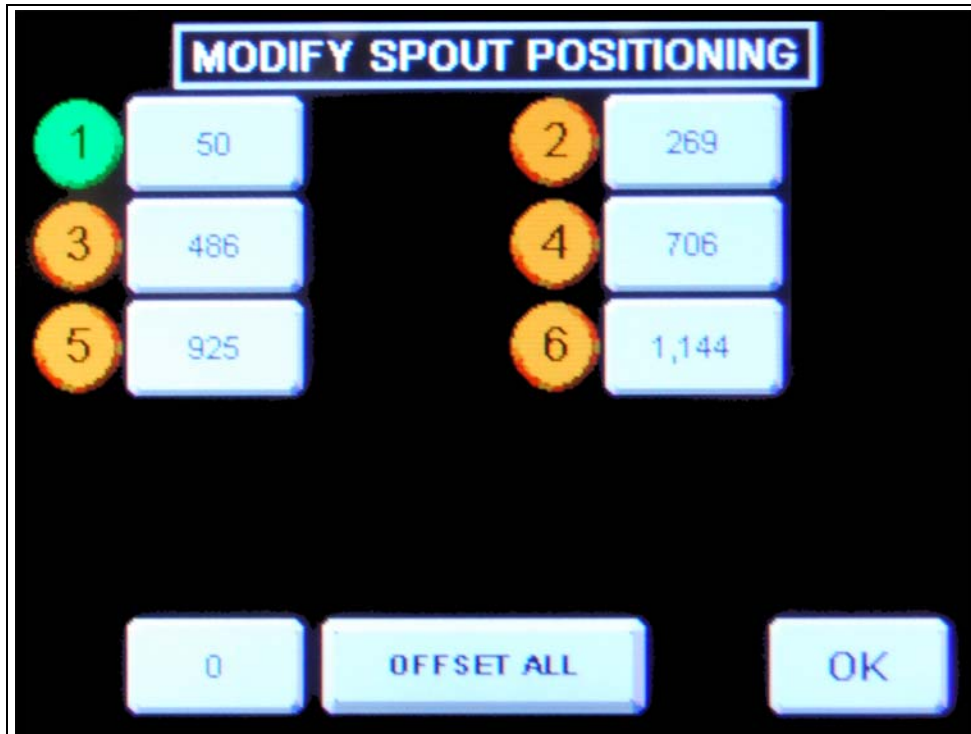


Figure 3M *Modify Spout Positioning*

#### Modify Spout Positioning:

1. From the "Setup Menu", select "Position Locations" to bring up the "Modify Spout Positioning" screen.
2. In the "Modify Spout Positioning" screen select the spout that requires adjustment by touching the value pad next to the spout number balloon. A number keypad will display (See Figure 3N.)

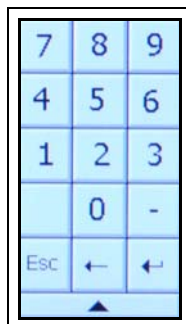


Figure 3N *Number Keypad*



3. Insert the desired value and press “enter”. ←↵

**NOTE:** *Entering a value larger than the existing value will move spout position to the left, entering a smaller value will move the position to the right.*

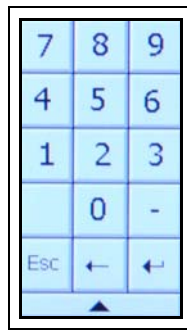
4. Select “OK” to return to “Setup Menu”.

5. Verify spout alignment with distributor. See “Verifying Spout Alignment:” on page 35.

#### Offset All:

1. From the “Setup Menu”, select “Position Locations” to bring up the “Modify Spout Positioning” screen.

2. In “Modify Spout Positioning” screen select the “0” key pad next to “OFFSET ALL”. A number keypad will display (See Figure 30.)



**Figure 30** Number Keypad

3. Insert the desired offset value and press “enter” ←↵

To offset the spouts to the left, use a positive value and to offset to the right, use a negative value.

**NOTE:** *A maximum offset at any one time is +/- 5.*

4. Select “OK” to return to “Setup Menu”.

5. Verify each spout alignment with distributor. See “Verifying Spout Alignment:” on page 35.

### 3. Operation Procedures

#### Position Lock-Out Screen

The Position Lockout allows you to lock out a distributor discharge spout position so it can not be used until it is manually unlocked.

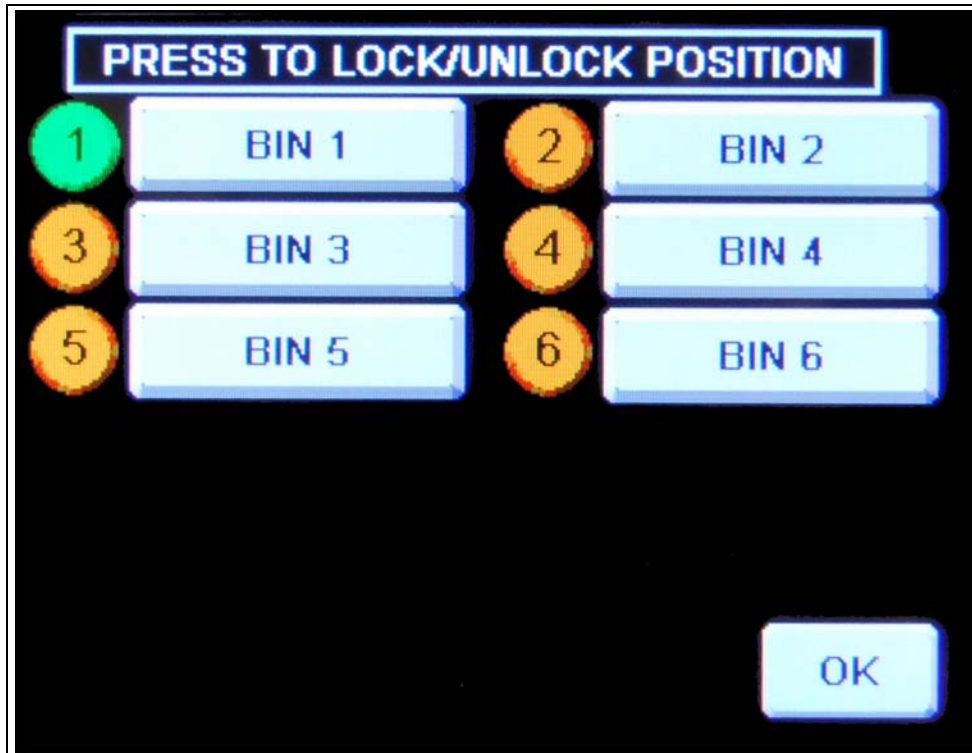


Figure 3P Lock/Unlock Position

#### Lock/Unlock Position:

1. From the "Setup Menu", select "Position Lock-out" to display the "Lock/Unlock Position" setup screen.
2. Press name of spout to toggle between locked and unlocked. When in the locked position the number balloon will change to a red circle with a line through it.

**NOTE:** *The position that the distributor is currently located, indicated by a green number balloon icon, can not be locked out. Move the spout position to a different location then try again. See "Move Screen" on page 35.*

3. Select "OK" to apply changes and return to "Main Menu".

## Homing Interval Screen

The homing interval screen allows the user to set the number of times the distributor position may be moved before a warning displays for home position recalibration. The lower the value of this number, the greater the positioning accuracy. A default value of 50 is standard.

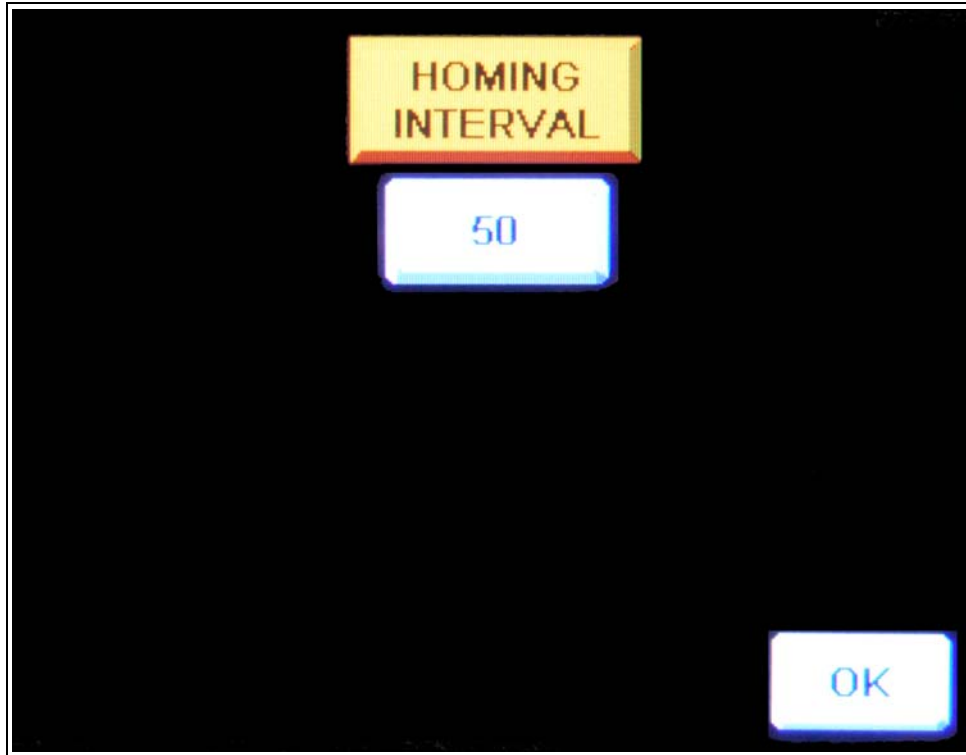


Figure 3Q Homing Interval Screen

### Setting Homing Interval:

1. To access the homing interval from the “Setup Menu”, select “Homing Interval” to display the “Homing Interval” setup screen.
2. Press the button under the “Homing Interval” label. A number keypad will display (See [Figure 3O.](#))

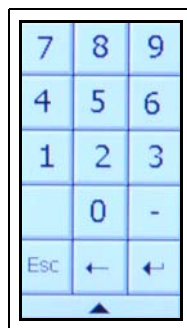
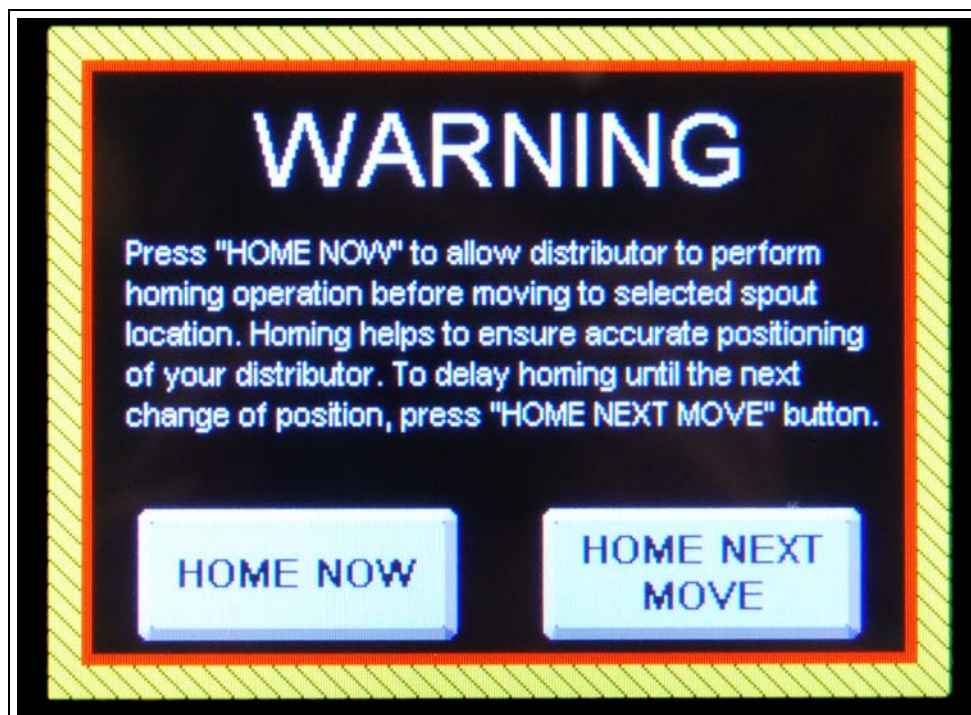


Figure 3R

3. Insert the desired interval and press “enter” ←
4. Select “OK” to apply changes and return to “Main Menu”.

## Homing Warning

To help ensure accurate positioning of the distributor a homing warning will display when the number of times the distributor is repositioned is equal to the homing interval. This message will occur every time that a spout move is attempted until the homing procedure is completed. The user will be given two options: "Home Now" and "Home Next Move".



**Figure 3S** *Homing Warning*

**Home Now:** Select to perform the homing calibration immediately. The user interface will return to the "MAIN" screen and "Homing" will flash on and off in yellow. After homing is complete, the spout will return to the selected position.

**Home Next Move:** Select "Home Next Move" to skip the homing operation and move to the selected position. The user interface will continue to prompt you to home the unit during every subsequent move until homing is performed.

## Manual Override

Located on the front of the controller is a manual/jog dial. This manual override is key locked and should only be used in case of a major equipment failure. It allows for manually moving the spout in the direction you turn the dial when the key is inserted.

It is recommended that two people perform this procedure. One person to operate the manual/jog dial and another to look through the distributor and verify alignment of the spout.

**NOTE:** Panel will not close with key inserted in the manual/jog dial. Always keep key in a safe location for access by authorized personnel only.



Figure 3T

# NOTES

# Distributor Assembly

INCHES		INCHES		INCHES	
ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY
1	1	DFB12645G	12 6 - HOLE DISTRIBUTOR ASSEMBLY	1	1
2	1	DEC0009	WELDMENT, SHAFT & FLAG, 1/2 HP DIST CTRL	2	1
3	1	DEC0005	WELDMENT, ENCLOSURE, 1/2 HP DIST CTRL	3	1
4	1	DEC0014	ANGLE SENSOR PLATE MTG, 1/2 HP DIST CTRL	4	1
5	1	DEC0006	BRACKET, PROX SENSOR, 1/2 HP DIST CTRL	5	1
6	1	DEC0015	GMTR, DBL WRM, 1/2 HP, 400.1, DIST CTRL	6	1
7	1	DEC0003	BRACKET, MOTOR MOUNT, 1/2 HP DIST CTRL	7	1
8	1	DEC0016	BRACKET, ENCODER MOUNT, DIST CTRL	8	1
9	1	DEC0017	ENCODER, INCR, 2048 PPR, 30MM, DIST CTRL	9	1
10	2	DEC0018	SENSOR, PROXIMITY, INDUCTIVE, 12MM, S=4	10	2
11	1	DEC0019	BOX, JUNCTION, 1/2 HP DIST CTRL	11	1
12	2	DEC0013	COVER, SIDE ACCESS, 1/2 HP DIST CTRL	12	2
13	1	DEC0012	COVER, ENCLOSURE BTM, 1/2 HP DIST CTRL	13	1
14	18	S-2041	WASHER-LOCK SPLIT 1/4 MED ZN	14	18
15	27	S-1429	1/4" SAE WASHER	15	27
16	7	S-2126	BOLT HHCS 1/4 - 20 X 1 1/2 ZN GR5	16	7
17	2	S-6988	NUT NYLOCK 1/4 - 20 ZN GR5	17	2
18	11	S-7025	SPRING PIN .250 X 2.50" LONG	18	11
19	2	S-9288	BOLT HHCS 3/8 - 16 X 1 1/2 ZN GR5	19	2
20	5	S-7469	NUT NYLOCK 3/8-16 ZN GR5	20	5
21	4	S-7383	WASHER FENDER 5/16 X 1-1/2 ZN	21	4
22	1	S-7569	SCREW SDS #10-16 X 5/8 HWH ZN	22	1
23	4	S-280	WASHER SPLCK #10	23	4
24	3	S-7223	BOLT, SHCS #10-32 X 1/4 ZN	24	3
25	3	S-10167		25	3

**ASSEMBLY PROCEDURE:**

1. INSTALL SHAFT (DEC0009), WITH PROVIDED ROLL PINS (S-9288)
2. INSTALL ENCLOSURE (DEC0005) WITH 3/8 BOLTS AND NYLOCK NUTS
3. INSTALL JUNCTION BOX (DEC0019) WITH SELF-DRILL SCREWS (S-280)
4. INSTALL SENSOR MOUNTING ANGLE (DEC0014) AND PLATE (DEC0006)
5. INSTALL SENSORS (DEC0018, 2 EA) & SET CLEARANCE (SEE DETAIL A)
6. INSTALL ENCODER (DEC0017), TORQUE SET SCREW TO 8 IN-LBS
7. INSTALL MOTOR (DEC0015) AND MOUNTING BRACKET (DEC0003)
8. INSTALL BOTTOM (DEC0012) AND SIDE (DEC0013) COVERS

**DETAIL A**  
SCALE 0.400

**NOTE:**  
INSTALL SENSORS PER SENSOR LOCATION TABLE SHOWN IN FIG 2E, ON BOTH SIDES, SET 0.110 +/- 0.01 CLEARANCE FROM FACE OF EACH SENSOR TO FLAG ON SHAFT

DATE	BY	INITIAL RELEASE	REVISION DESCRIPTION
5/27/11	C		

DATE	BY	DRAWN	MAT	CHKD	BY	ASSY	WT
10-MAY-11		3 <sup>rd</sup>					899.805

DESCRIPTION	DATE	REV
12 6-HOLE 45 DEG. DIST. ASSY, ELEC. CTRL		1

SIZE	A	REV
DFB12645G-EC		1

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# NOTES

## 5. Troubleshooting

### Error Messages

#### Message:

*The value entered was greater than the allowable deviation from the original position. Please enter a value between X and Z.*

#### Reason:

This error is displayed when a position count value outside the acceptable range is entered while in the “Modify Spout Position” screen.

#### Remedy:

Enter a value between X and Z on the “Modify Spout Position” screen.

#### Message:

*WARNING! Any changes to the settings will alter factory defaults and may result in damage to equipment. To exit without changes, select CLOSE and then OK.*

#### Reason:

This message is displayed as you enter the “Configuration Setup” screen.

#### Message:

*The Home proximity sensor was not detected. The homing process failed. Please check for proper operation of the sensor.*

#### Reason:

This error is displayed when attempting to perform a “Homing” operation and the controller fails to receive a proximity sensor signal before the time out period is reached.

#### Remedy:

Check wiring, wiring connections, and proximity sensors. Repair or replace as necessary.

#### Message:

*The position feedback does not match expected behavior. Please check for proper operation of the encoder.*

#### Reason:

This error is displayed if the spout does not reach the desired position count while performing a “MOVE” operation.

## 5. Troubleshooting

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### **Remedy:**

Check wiring, wiring connections, and encoder. Repair or replace as necessary.

### **Message:**

*The VFD has faulted. Please check for proper operation of the VFD.*

### **Reason:**

This error displays when the variable frequency drive does not perform properly.

### **Remedy:**

Repair or replace the VFD as necessary.

### **Message:**

*The bucket elevator is running. Please stop feed before moving.*

### **Reason:**

This error displays when trying to perform a move while bucket elevator is running.

### **Remedy:**

Stop bucket elevator before performing spout move.

### **Message:**

*You cannot lockout this position because it is currently in use. Move the spout to a different position and then lockout this position.*

### **Reason:**

This error displays when trying to lock out a spout position that is in use.

### **Remedy:**

Move spout to a different position and then lockout this position.

### **Message:**

*You are attempting to move to the currently selected position. Please select a different position.*

### **Reason:**

This error displays when trying to move spout to current position.

**Remedy:**

Select a different position.

**Message:**

*You cannot select a locked-out position. Please select a different position.*

**Reason:**

This error displays when trying to choose a spout position that is locked out.

**Remedy:**

Select a different position.

**Message:**

*The spout has drifted out of position. Please verify current position of the spout.*

**Reason:**

This error occurs when spout position reading changes without a move command being issued.

**Remedy:**

Check mechanical components for looseness, wear, or damage. Repair or replace as necessary.

# NOTES

# 6. Schematic and Wiring Diagrams

## White Panel Layout

REV. NUMBER	DESCRIPTION	DATE	DRAWN BY	CHECKED BY	APPROVED BY
AS BUILT		07/05/11	MEB		
△					
△					
△					

REV. NUMBER	DESCRIPTION	DATE	DRAWN BY	CHECKED BY	APPROVED BY
43	ENET CABLE		BEILDEN		ANDERSON
39	GROUND BAR		ELECTRICIAN		EGGERS
38					
37					
36					
35					
34	1/2" EXTENDED CHASE NUTS		ARLINGTON		506L
33	1/2" SEALING RINGS		EGS		STOES
32	1/2" PLASTIC BUSHING		EGS		STOES
31	1/2" PLASTIC BUSHING		EGS		STOES
30	5-PIN ETHERNET SWITCH		HORCHMAN		SPIDER STX
29	14 X 18 STAIN AMB PANEL		HOPFMAN		ALCANTARA
28	14 X 18 STAIN AMB PANEL		HOPFMAN		ALCANTARA
27	14 X 18 STEEL BACKPLATE		HOPFMAN		ALCANTARA
26	2-POLE JUMPER		ALLEN-BRABLEY		1492-LJ2-2
25	END BRASSER		ALLEN-BRABLEY		1492-EL3
24	NET TERMINAL		ALLEN-BRABLEY		1492-TJ
23					
22	STANDARD RAIL END BRASSER		ALLEN-BRABLEY		1492-LJ25
21	20VAC 1/20P POWERLEK 4M BRIVE		ALLEN-BRABLEY		20P-AP0003
20	3.3M 1/2W 5% RES		ALLEN-BRABLEY		3.3M-1/2W
19	MODULOK 100 100/240VAC		ALLEN-BRABLEY		1742-100VA
18	3.3M 1/2W 5% RES		ALLEN-BRABLEY		3.3M-1/2W
17	3 POS KEY S.S. 250MS KEY CODE 3005		ALLEN-BRABLEY		3005P-K304
16	3 POS KEY S.S. 250MS KEY CODE 3005		ALLEN-BRABLEY		3005P-K304
15	250MA FRA. NC CONTACT BLOCK		ALLEN-BRABLEY		800P-201
14	250MA FRA. NC CONTACT BLOCK		ALLEN-BRABLEY		800P-201
13	1.5M 1/2W 5% RES		ALLEN-BRABLEY		1489-AC120
12	1.5M 1/2W 5% RES		ALLEN-BRABLEY		1489-AC120
11	5.1M 1/2W 5% RES		ALLEN-BRABLEY		750-10024
10	5.1M 1/2W 5% RES		ALLEN-BRABLEY		750-10024
9	1 4X TERMINAL JUNCTION BOX		ALLEN-BRABLEY		590-30723
8	1 4X TERMINAL JUNCTION BOX		ALLEN-BRABLEY		590-30723
7	MINI TERMINAL END BRASSER		ALLEN-BRABLEY		1492-TM3
6	MINI TERMINAL END BRASSER		ALLEN-BRABLEY		1492-TM3
5	MINI TERMINAL BLUE		ALLEN-BRABLEY		1492-MD-Y
4	MINI TERMINAL BLUE		ALLEN-BRABLEY		1492-MD-Y
3	MINI TERMINAL GREY		ALLEN-BRABLEY		1492-MD-B
2	MINI TERMINAL GREY		ALLEN-BRABLEY		1492-MD-B
1	MINI RAIL END ANCHOR		ALLEN-BRABLEY		1492-SL15
1	MINI RAIL END ANCHOR		ALLEN-BRABLEY		1492-SL15

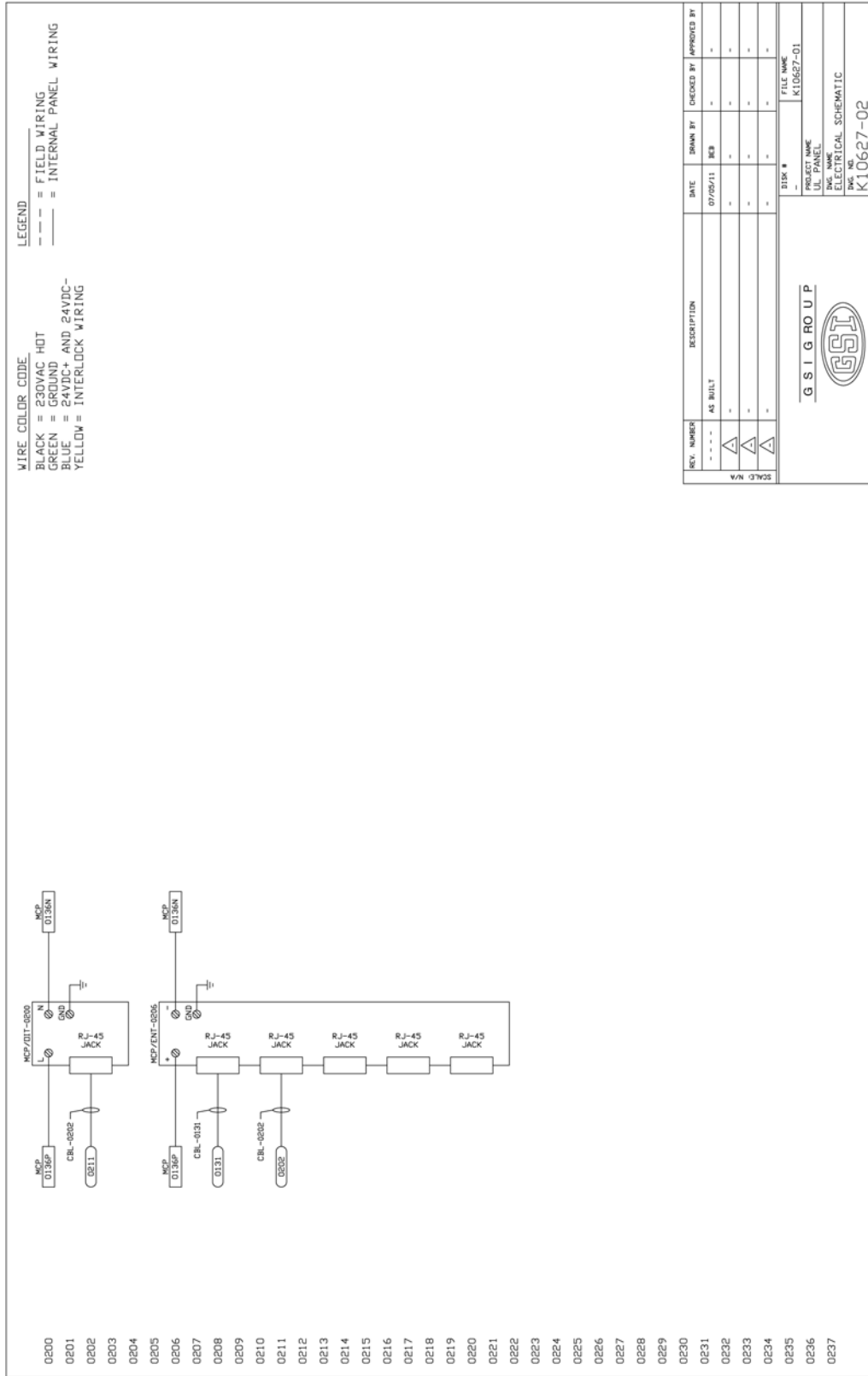
  

NOTE 1: PANEL PART NUMBER DEC-0019  
 NOTE 2: PANEL PART NUMBER DEC-0020





# White Panel Electrical Schematic (Continued)



# NOTES

## GSI Group, LLC Limited Warranty

The GSI Group, LLC ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

### Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period
<b>AP Fans and Flooring</b>	Performer Series Direct Drive Fan Motor	3 Years
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
<b>Cumberland Feeding/Watering Systems</b>	Feeder System Pan Assemblies	5 Years **
	Feed Tubes (1-3/4" and 2.00")	10 Years *
	Centerless Augers	10 Years *
	Watering Nipples	10 Years *
<b>Grain Systems</b>	Grain Bin Structural Design	5 Years
<b>Grain Systems Farm Fans Zimmerman</b>	Portable and Tower Dryers	2 Years
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years

\* Warranty prorated from list price:  
 0 to 3 years - no cost to end-user  
 3 to 5 years - end-user pays 25%  
 5 to 7 years - end-user pays 50%  
 7 to 10 years - end-user pays 75%

\*\* Warranty prorated from list price:  
 0 to 3 years - no cost to end-user  
 3 to 5 years - end-user pays 50%

† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12<sup>th</sup>) month from the date of purchase and continuing until the sixtieth (60<sup>th</sup>) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

### Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) PRODUCT MANUFACTURED OR SOLD BY GSI OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

G S I G R O U P



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