



Feed Flow Hammer Patent Pending

Installation and Operation Manual

PNEG-1887

Date: 06-12-14

RECOGNIZED
COMPONENT



Intertek



PNEG-1887



BY THE

GSI GROUP



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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.



IMPORTANT SAFETY INSTRUCTIONS

When using electric appliances, basic precautions should always be followed, including the following:

- *Read all the instructions before using the appliance.*
- *To reduce the risk of injury, close supervision is necessary when an appliance is used near children.*
- *Do not contact moving parts.*
- *Only use attachments recommended or sold by the manufacturer.*
- *For a permanently connected appliance - Turn the power switch to the OFF position, when the appliance is not in use and before servicing or cleaning.*
- *For a grounded appliance - Proper grounding must be provided. See Grounding Instructions.*

SAVE THESE INSTRUCTIONS

Install and Operate Electrical Equipment Properly

Electrical controls should be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes.

Disconnect and lock out all power sources before installing wires/cables or servicing equipment.

Grounding Instructions

This appliance must be connected to a grounded, metal, permanent wiring system; or an equipment grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the appliance.

If there is any doubt as to whether an appliance is properly grounded, a qualified electrician should be consulted.



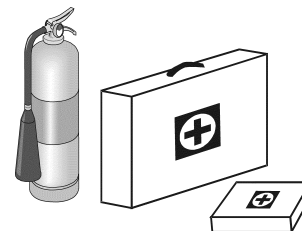
Electric Shock Hazard

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

1. Safety

Wear Protective Clothing

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

Remove all jewelry.

Tie long hair up and back.

Wear safety glasses at all times to protect eyes from debris.

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

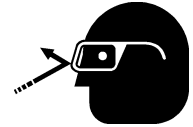
Wear steel-toed boots to help protect your feet from falling debris. Tuck in any loose or dangling shoestrings.

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

Wear a 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-Toed Boots



Respirator



Hard Hat



Fall Protection



This page shows where product safety decals should be placed on the Flow Hammer. If a decal is missing, damaged or unreadable, please contact your dealer or the GSI Group for a free replacement.

Contact:

GSI Group
 1004 E. Illinois St.
 Assumption, IL. 62510
 Phone: 1-217-226-4421

Model: FLX-5185 mm/dd/yyyy

HP: 1/8 **Phase:** 1 **Voltage:** 230 VAC

HZ: 60 / 50 **RPM:** 60 / 50 (output)


Serv Fact: 1.0 **FL Amps:** 0.7 / 0.58

GSI Group, Inc. 217-226-4421 DC-2301

DC-2301 C

Product / Model: Flow Hammer

RECOGNIZED COMPONENT



CONFORMS TO UL STD 73

CERTIFIED TO CSA STD C22.2 NO. 68

Intertek 4000801

GSI Group, Inc. 217-226-4421 DC-2268

DC-2268 D

CAUTION


AUTOMATIC EQUIPMENT
 May start at any time.
 Lockout power before servicing.

ATTENTION

Equipement Automatique
 Peut commencer à tout moment.
 Verrouiller l'alimentation avant l'entretien.

GSI Group 217-226-4421 DC-2302

DC-2302 is located on the Flow Hammer gear box cover. B

<p>DANGER</p> <p>HIGH VOLTAGE Will cause serious injury or death. Lockout power before servicing.</p> <p style="font-size: x-small;">GSI Group 217-226-4421</p>		<p>DANGER</p> <p>HAUTE TENSION Causera de sérieuses blessures ou la mort. Couper/verrouiller le courant avant l'entretien.</p> <p style="font-size: x-small;">DC-1948</p>
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DC-1948 is located on the Flow Hammer motor. (NOTE: Not shown.) E

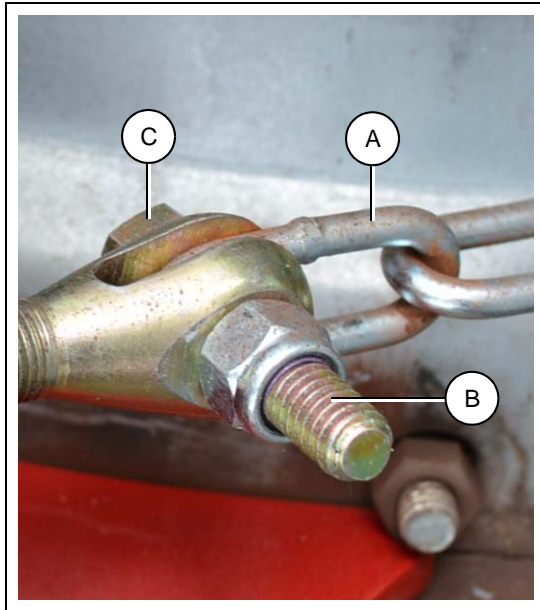
ELECTRICAL GUIDELINES	DIRECTIVES ÉLECTRIQUES
<ul style="list-style-type: none"> - Method for permanent wiring: RIGID OR FLEXIBLE CONDUIT - Suitable for outdoor use - For supply connection, use wires acceptable for at least 75 C (167 F) <p style="font-size: x-small;">GSI Group 217-226-4421</p>	<ul style="list-style-type: none"> - Méthode pour l'installation électrique permanente : CONDUIT RIGIDE OU FLEXIBLE - Convenable pour l'utilisation en plein air - Pour la connexion d'alimentation, utilisez des câbles acceptable pendant au moins 75 C (167 F) <p style="font-size: x-small;">DC-2291</p>

DC-2291 is located on the Flow Hammer gear box cover. A

3. Assembly

Installing the Mounting Bracket on 16" Collars

1. Connect the end links of the chain (FLX-5240) to the clevis using 3/8" x 1-1/2" bolts (S-7928) and nuts (S-7383). (See Figure 3A.)



Ref #	Part #	Description
A	FLX-5240	Chain
B	S-7928	Flange Bolt 3/8"-16 x 1-1/2"
C	S-7383	3/8" Nut

Figure 3A

2. Position the mounting bracket against the bin hopper with the bottom of the mounting bracket seated on the hopper collar lip. The top of the bracket is marked with a letter. (See Figure 3B.)
3. Wrap the chain around the hopper collar.
4. Attach each clevis to the mounting bracket using a fine thread nut (1FH0728) and torque to 15-20 ft. lbs.

NOTE: Do not overtighten. If there is any slack in the chain, reduce the chain length by one link.

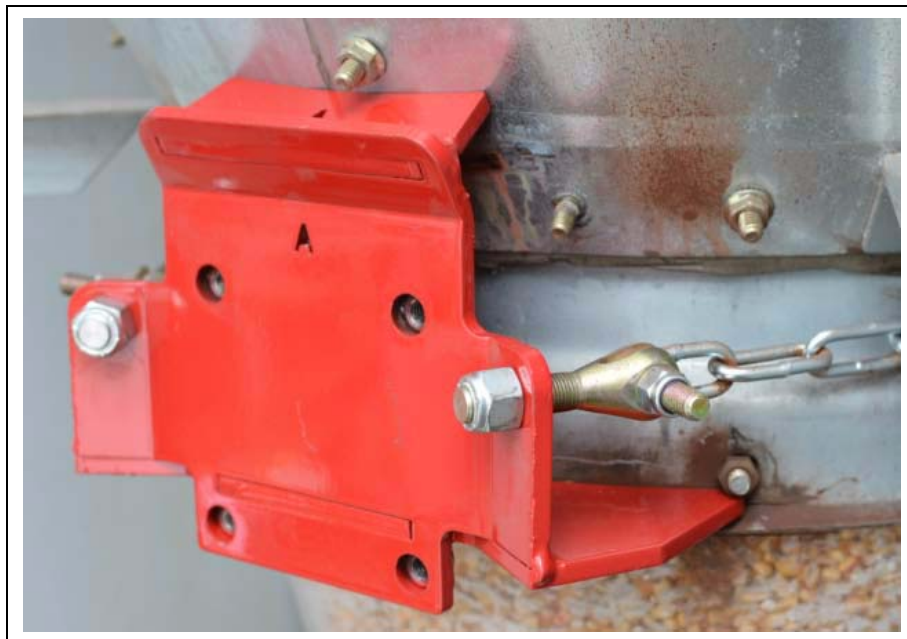


Figure 3B

Connecting the Power Unit to the Mounting Plate on 16" Collars

1. Align the holes on power unit with the holes in the mounting plate.
2. Fasten them together with bolts. *(See Figure 3C.)*



Figure 3C

Ref #	Part #	Description
A	FLX-5187	Chain Mount Assembly
B	S-7927	Flange Bolt
C	FLX-5185A	Power Unit Assembly



To avoid injury, two (2) persons should assist in lifting the power unit during installation.

3. Assembly

Installing the Mounting Bracket on 22" Collars

1. Remove and discard eight (8) existing bolts and nuts from the square collar as shown in [Figure 3D](#).
2. Slide mounting bracket (FLX-5199-RD) (A) into position over the edge of the square collar as shown in [Figure 3E](#).
3. Insert the eight (8) provided 5/16"-18 x 1-1/4" grade 8 hex bolts (S-9350) (B) and nylock nuts (S-7382) (C) in place of the eight (8) bolts and nuts removed in [Step 1](#). (See [Figure 3D](#).) Tighten these new bolts and nylock nuts securely.

Connecting the Power Unit to the Mounting Plate on 22" Collars

1. Align the four (4) holes on power unit (FLX-5185A) (D) with the holes in the mounting plate (FLX-5199-RD) (A). (See [Figure 3D](#).)
2. Fasten them together using the four (4) 3/8"-16 x 1-1/2" hex head flange bolt (S-7928) (E).

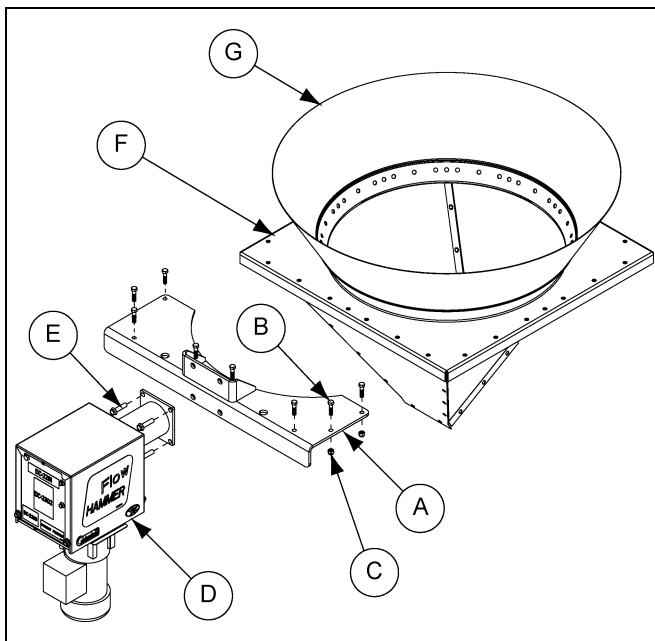


Figure 3D Exploded View

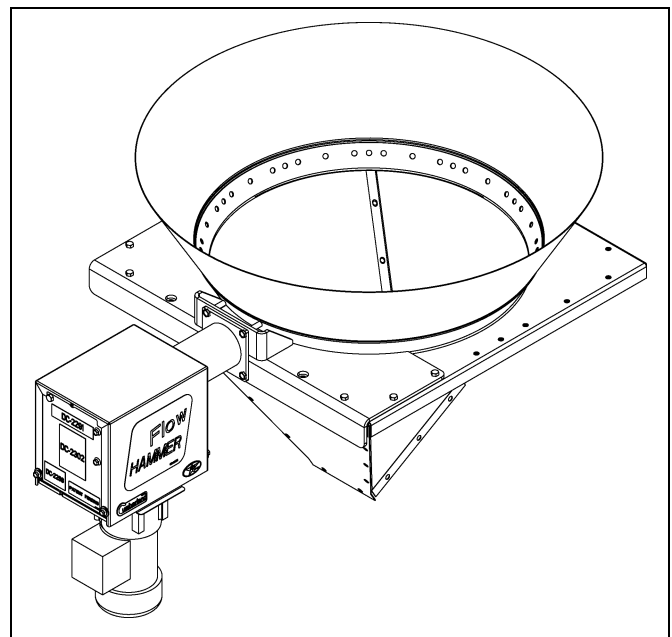


Figure 3E Assembled View

Ref #	Part #	Description
A	FLX-5199-RD	Mounting Bracket - 22" Collar
B	S-9350	Bolt, HHCS 5/16"-18 x 1-1/4"
C	S-7382	Nylock Nut 5/16"-18
D	FLX-5185A	Power Unit Assembly
E	S-7928	Flange Bolt 3/8"-16 x 1-1/2"
F		22" Collar
G		60° Hopper



To avoid injury, two (2) persons should assist in lifting the power unit during installation.

Mounting the Control Unit to the Bin Leg

1. Attach the control unit (FLX-5194) to the control unit mounting bracket (INT-4812) (not provided).
(See [Figure 3F.](#))

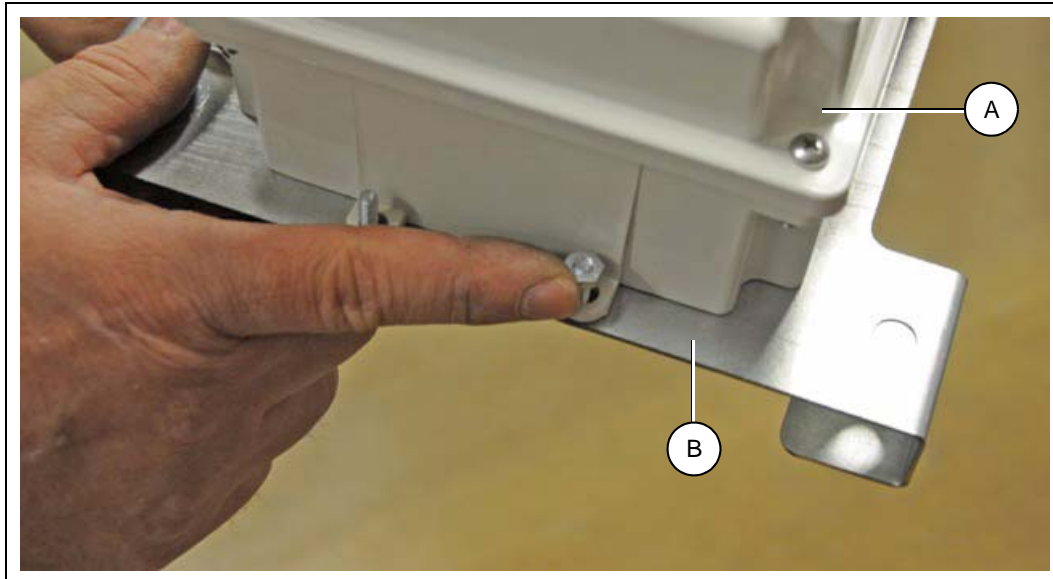


Figure 3F

Ref #	Part #	Description
A	FLX-5194	Control Unit
B	INT-4812	Control Unit Mounting Bracket

2. Mount the bracket to the bin leg using the provided bolts (S-7515) and nuts (S-7383). (See [Figure 3G.](#))



Figure 3G

Routing the Motor Cord to the Control Box



To avoid electric shock, disconnect and lock out power source when making electrical connections.

1. Connect four (4) conductor SJO motor cord (not provided) to motor according to wiring diagrams. Capacitor should be housed inside conduit box on side of motor.
2. Route the motor cord from the power unit assembly along the bin frame, up the bin leg to the control unit (FLX-5194).
3. Fasten the cord to bin structure with zip ties. *(See Figure 3H.)*
4. Connect motor cord to the control unit according to the wiring diagrams.



Figure 3H

Ref #	Part #	Description
A	FLX-5185A	Power Unit Assembly
B		Power Cord

Connecting Power to the Control Box

1. Study wiring diagrams and select which diagram best applies to the application.
2. Route high voltage cord (230 VAC) or individual conductors in a conduit from the power source to the control unit (FLX-5194) according to wiring diagrams [on Page 16](#) or [on Page 22](#).
3. For **Timer Mode**, connect low voltage two (2) conductor cord (22 AWG minimum) from dry contact relay (AP-3775), to control unit (FLX-5194) according to wiring diagram [on Page 16](#).
4. For **Proximity Switch Mode**, connect the proximity switch cords inside control unit (FLX-5194) according to the wiring diagram [on Page 22](#).

4. Operating in Timer Mode

Timer Mode

In **Timer Mode**, the Flow Hammer can only run when an auger turns ON. At that time, the “On/Off” cycle will start, beginning with a 4 minutes “Off” cycle followed by a 1 minute “On” cycle.

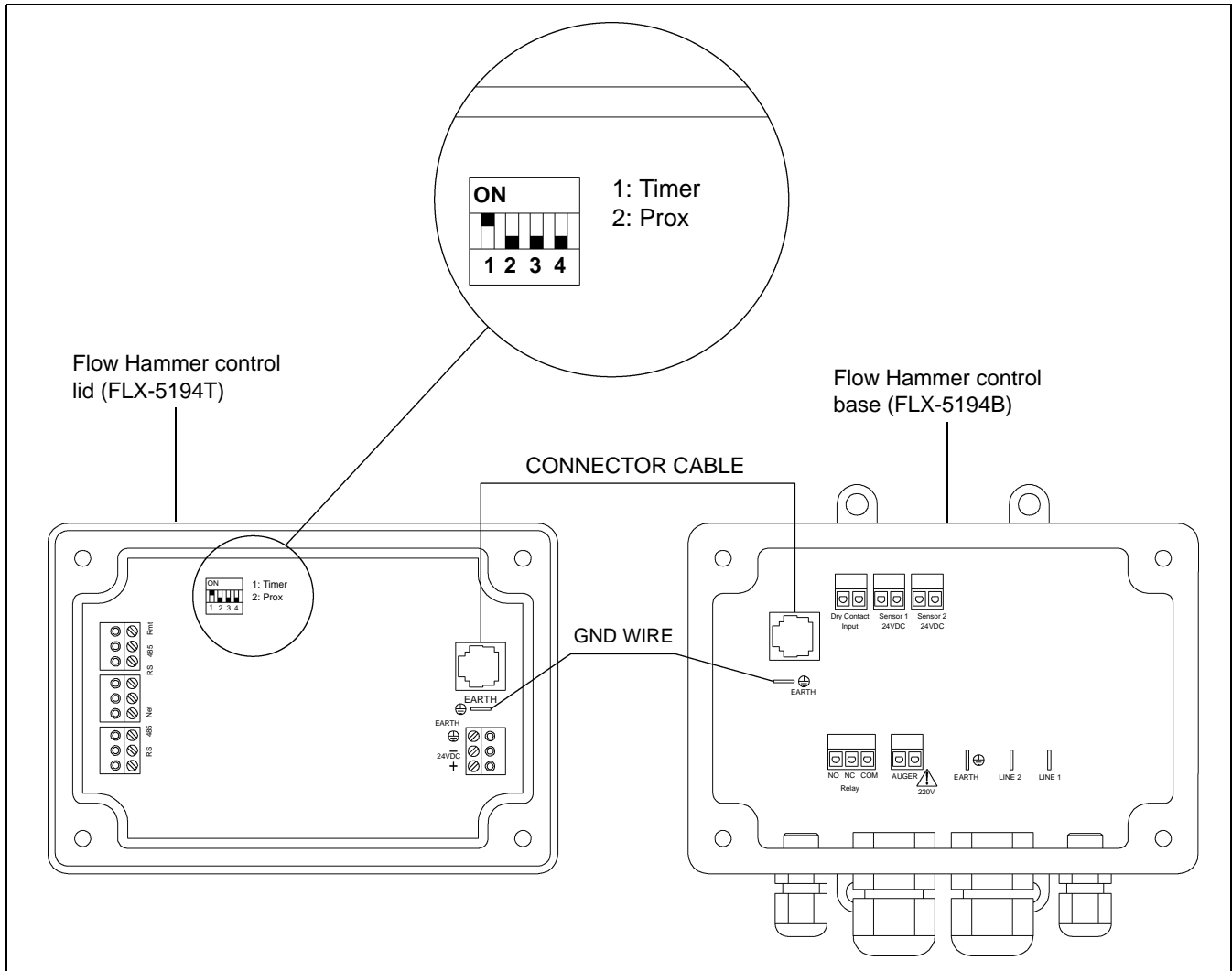


Figure 4A Dip Switch Settings for Timer Mode

To Change to Timer Mode

1. Remove the control unit lid.
2. Inside the lid, turn dip switch #1 to **ON** position according to [Figure 4A](#). Switch #2, #3 and #4 must be in **OFF** position.

To Program “Maximum Run” Time While in Timer Mode

In **Timer Mode**, “Maximum Run” Time refers to “Auger Run” Time.

1. Push the “Menu” button to get to “Maximum Run”.
2. Use the up and down arrow buttons to change the “Maximum Run” time setting. (Holding the arrow buttons down continuously speeds up the adjustment process.) The “Maximum Run” time can be set in 1 minute increments from 1 minute to 4 hours.
3. When the desired setting is achieved, push the “Enter” button to save this setting.

Alarms

The only alarm the Flow Hammer has is for “**Maximum Run**” Time. Any time the “**Maximum Run**” Time expires, the alarm indicator light will come ON and the Flow Hammer operation is disabled. Push the “**On/Off**” button to reset or clear alarm. This will return the Flow Hammer back to normal operation.

Disabling and Enabling the Flow Hammer

For tandem feed bin systems, the Flow Hammers for both bins are tied together, so that they will both run according to the “**On/Off**” cycle time. If the slide gates are closed for one of the bins or if one of the bins is empty, the Flow Hammer for this bin should be disabled to avoid needless use.

To Disable the Flow Hammer

1. Push the “**On/Off**” button for this control.
2. The display will show “**Disabled**”.

To Enable the Flow Hammer to Run

1. Push the “**On/Off**” button again.
2. The display will now show “**Ready**” and is set for normal operation.

4. Operating in Timer Mode

Flow Hammer Wiring Diagram Using Timer Mode and Dry Contact Input

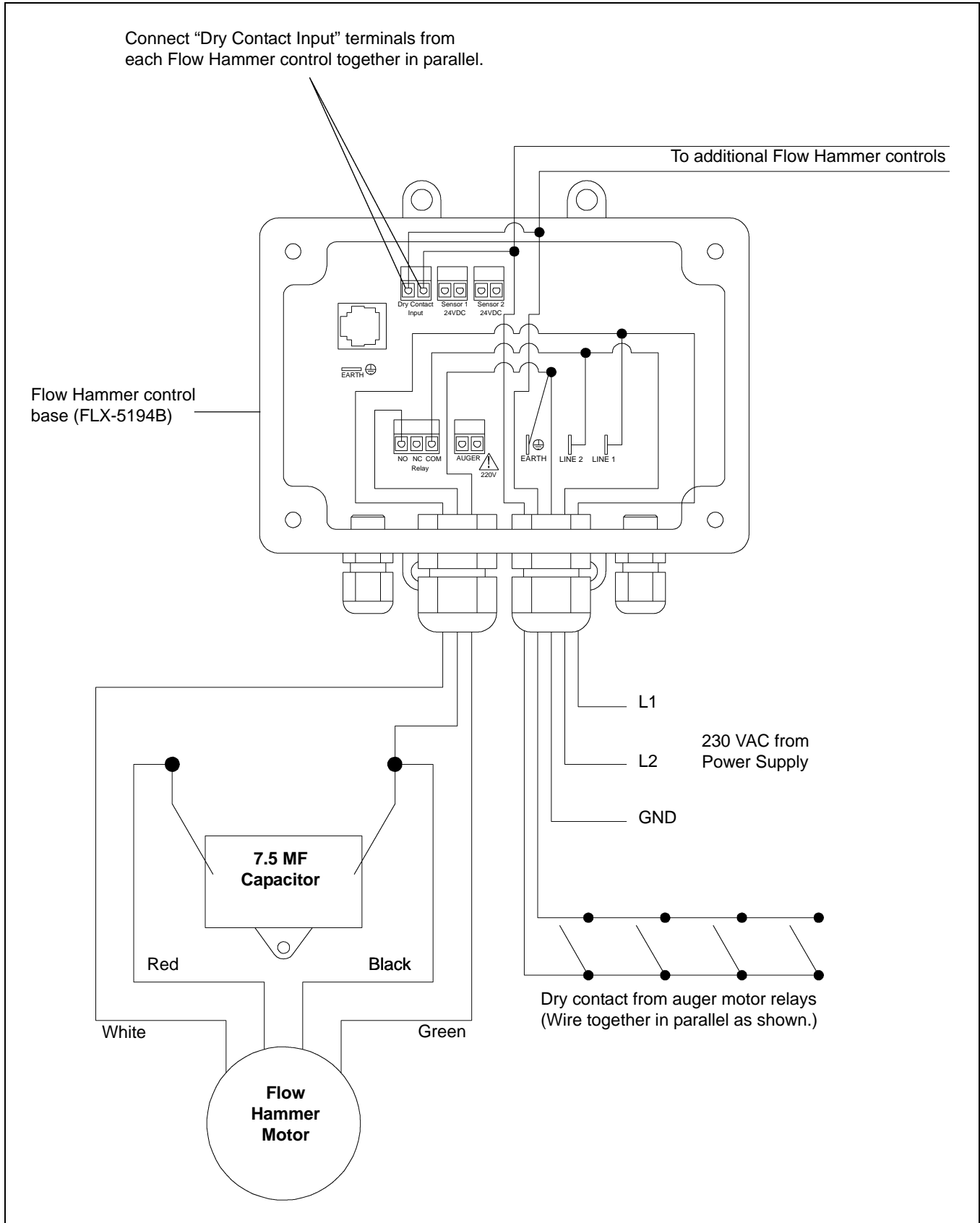


Figure 4B

Proximity Switch Mode

In **Proximity Switch Mode**, the Flow Hammer will run independent of the auger. The Flow Hammer can only run when either proximity switch detects a feed bridge.

Any time the Flow Hammer runs to clear a feed bridge, it will run for a minimum of **30 seconds** or until the bridge is cleared, whichever is longer.

In **Proximity Switch Mode**, the “**Maximum Run**” time is the maximum time the Flow Hammer will run during one cycle to clear a feed bridge. If the feed bridge is not cleared in that amount of time, the Flow Hammer will shut off and be disabled until the “**On/Off**” button is pushed to reset alarm. If the “**Maximum Run**” time expires due to an empty bin, when new feed is added to the bin and is detected again by the proximity switch, the Flow Hammer will automatically reset and will begin to operate normally again.

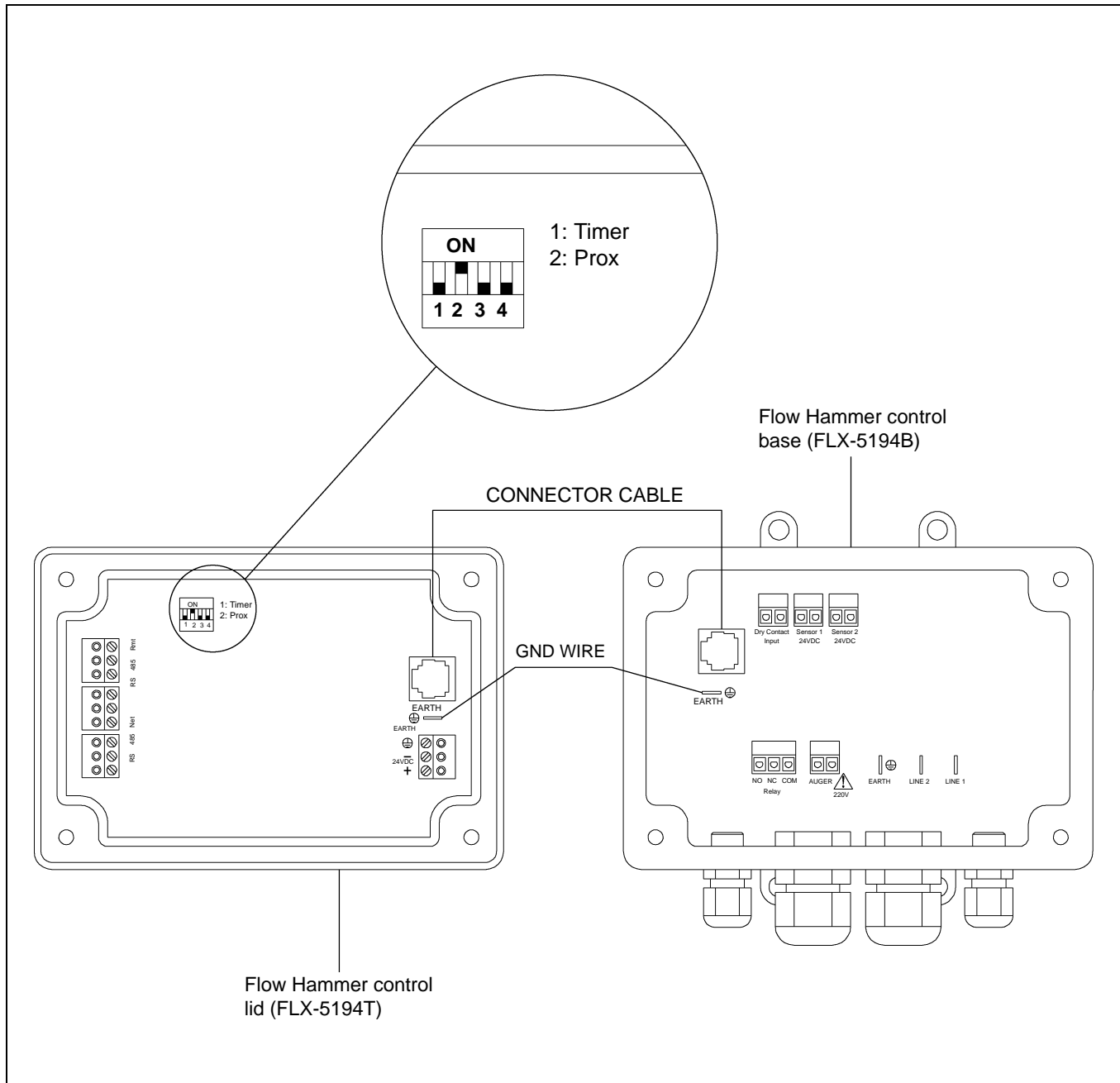


Figure 5A Dip Switch Settings for Proximity Mode

5. Operating in Proximity Switch Mode

To Change to Proximity Switch Mode

1. Remove the control unit lid.
2. Inside the lid, turn **ON** dip switch #2. Dip switches #1, #3 and #4 must be turned OFF.
(See Figure 5A on Page 17.)

To Program “Maximum Run” Time While in Proximity Switch Mode

In Proximity Switch Mode, **Maximum Run** time refers to Flow Hammer “Run” Time.

1. Push the “**Menu**” button to get to “**Maximum Run**”.
2. Use the up and down arrow buttons to change the “**Maximum Run**” time setting. (Holding the arrow buttons down continuously speeds up the adjustment process.) The “**Maximum Run**” time can be set in 1 minute increments from 1 minute to 1 hour.
3. When the desired setting is achieved, push the “**Enter**” button to save this setting.

Alarms

The only alarm the Flow Hammer has is for “**Maximum Run**” Time. Any time the “**Maximum Run**” Time expires, the alarm indicator light will come ON and the Flow Hammer operation is disabled. Push the “**On/Off**” button to reset or clear alarm. This will return the Flow Hammer back to normal operation.

Disabling and Enabling the Flow Hammer

If the slide gates are closed for one of the bins or if one of the bins is empty, the Flow Hammer for this bin should be disabled to avoid needless use.

To Disable the Flow Hammer

1. Push the “**On/Off**” button for this control.
2. The display will show “**Disabled**”.

To Enable the Flow Hammer to Run

1. Push the “**On/Off**” button again.
2. The display will now show “**Ready**” and is set for normal operation.

Proximity Switch Requirements

1. Normally closed (N.C.) proximity switches are required.
2. They must be of two (2) wire design capable of operating on 24 VDC.
3. The proximity switches must also be at least “IP67 rating” and compatible for outdoor use. We recommend using the following AP part number: **FLXDF-1172**

Installing the Proximity Switch in a Single Boot

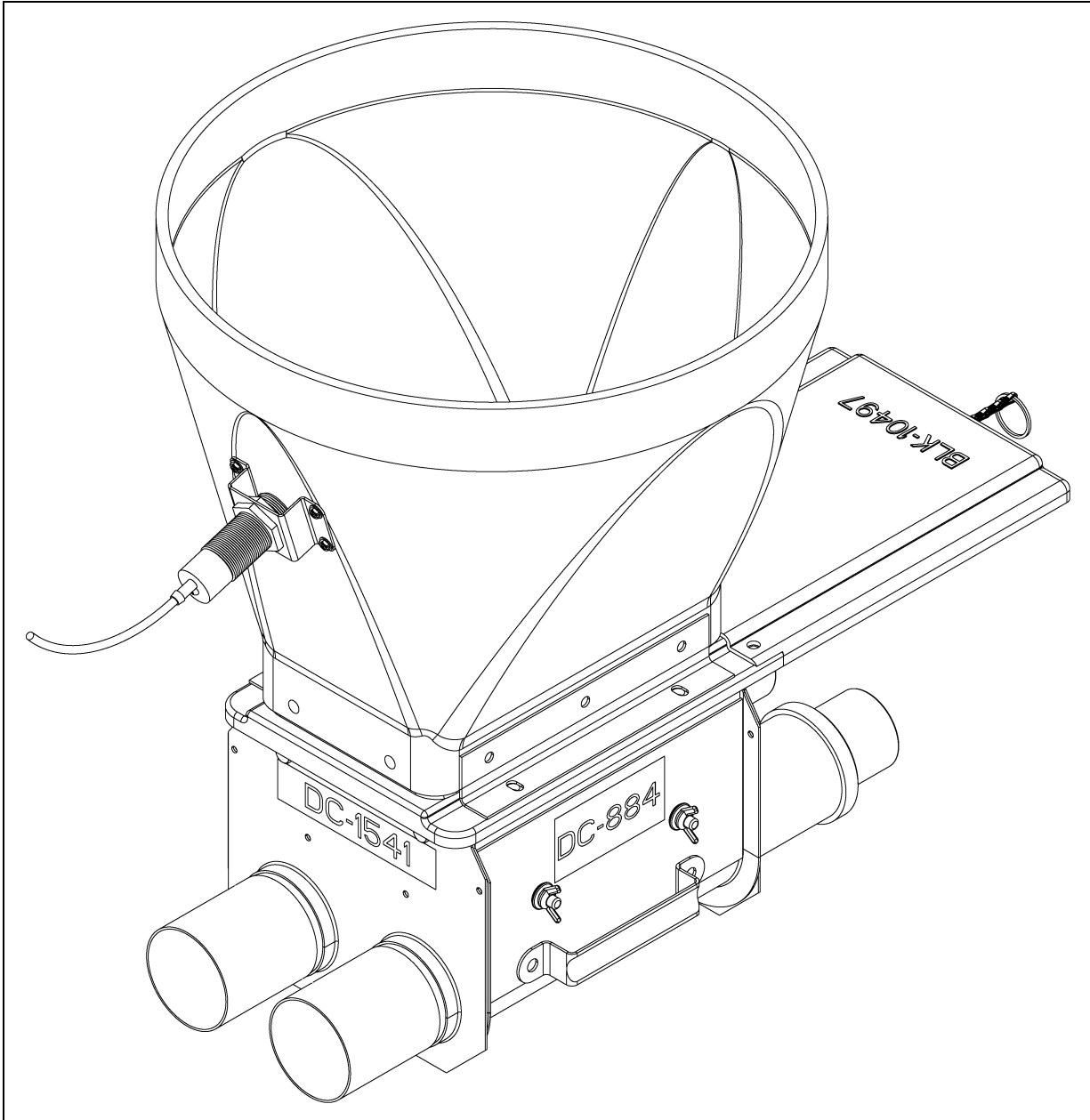


Figure 5B Location of Proximity Switch for Single Boot

1. Locate the proximity switch on the front side of the boot, approximate 7" above and to the **opposite** side of the slide gate.
2. Attach the Proximity Switch and Mounting Bracket Kit (FLX-5207) to the plastic boot as shown in [Figure 5B](#), using four (4) #10-16 HWH SDS screws provided in the kit.
3. Adjust the proximity switch until the end of the sensor is **touching** the outside surface of the plastic boot.
4. Place adjustment decal included with proximity switch kit close by in a convenient location for future reference.

Installing the Proximity Switch in a Double Boot

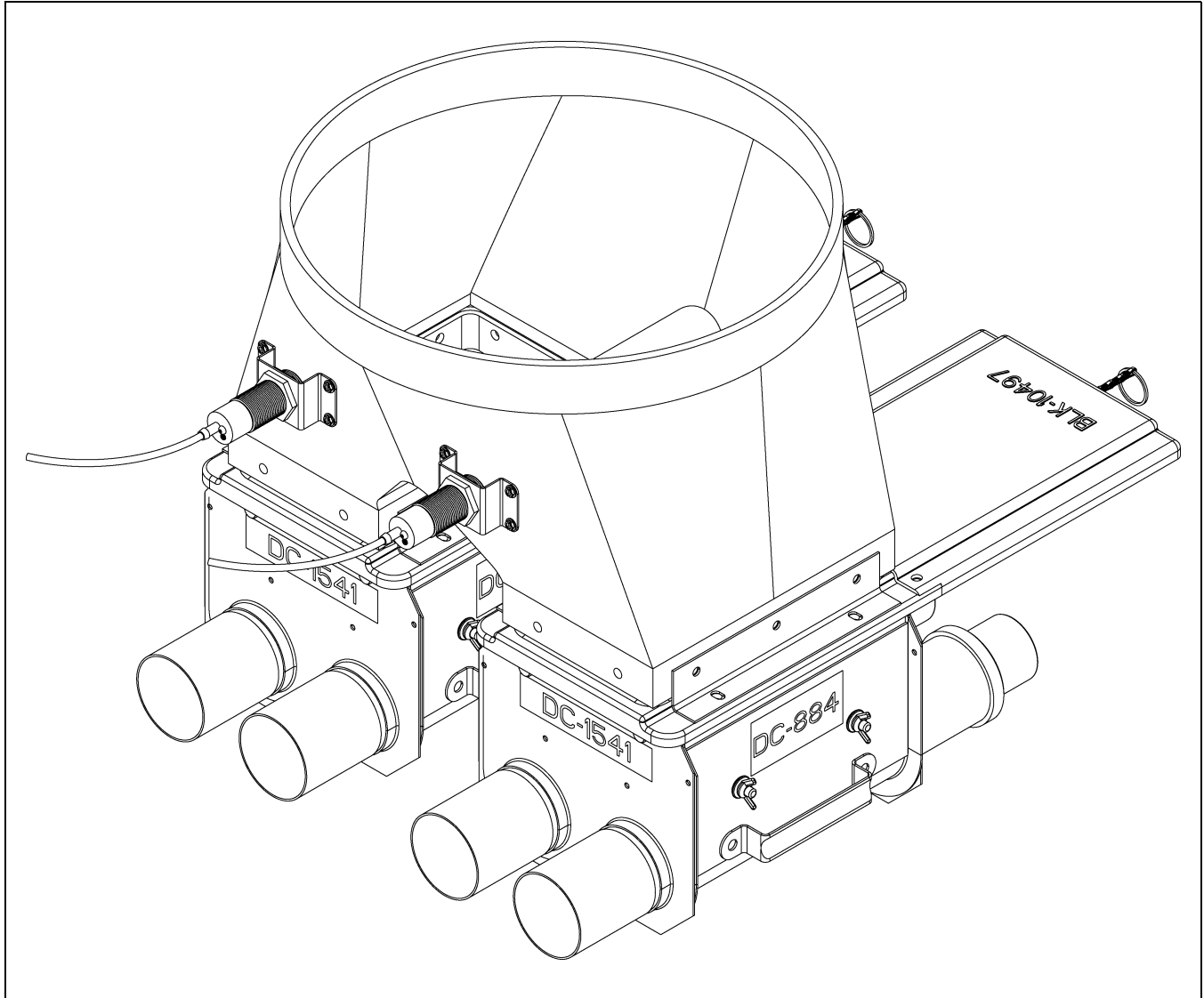


Figure 5C Location of Proximity Switches for Double Boot

1. Use two (2) proximity switches, one on each fork of the boot.
2. Locate the proximity switches on the front side of the boot, approximate 7" above and to the **opposite** side of the slide gates.
3. Attach the Proximity Switch and Mounting Bracket Kits (FLX-5207) to the plastic boot as shown in [Figure 5C](#), using four (4) #10-16 HWH SDS screws provided in the kits.
4. Adjust the proximity switches until the end of the sensors are **touching** the outside surface of the plastic boot.
5. Place adjustment decal included with proximity switch kit close by in a convenient location for future reference.

Proximity Switch Adjustment Instructions

Installation

Install mounting bracket and sensor 7" above transfer plate. Adjust plastic mounting nuts until end of sensor contacts boot. (See Figure 5D.)

Sensitivity Adjustment

Boot Full of Feed

1. Turn adjusting screw counterclockwise until indicator lights comes ON.
2. Slowly turn adjusting screw clockwise until indicator light just goes out.
3. Turn adjusting screw an additional 3/4 turn clockwise.

Boot Empty of Feed

1. Turn adjusting screw clockwise until indicator lights goes out.
2. Slowly turn adjusting screw counterclockwise until indicator light just comes ON.
3. Turn adjusting screw an additional 3/4 turn counterclockwise.

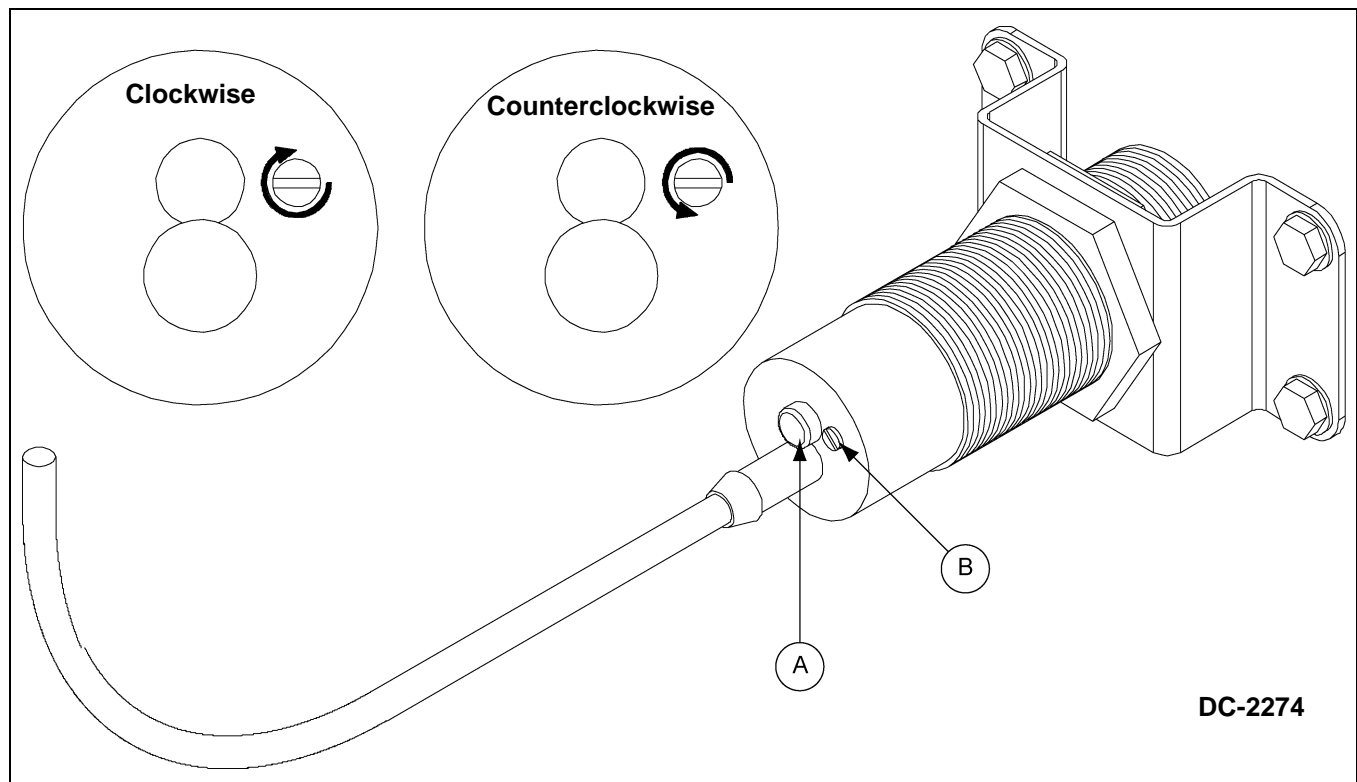


Figure 5D

Ref #	Description
A	Indicator Light
B	Adjusting Screw

5. Operating in Proximity Switch Mode

Flow Hammer Wiring Diagram Using Proximity Switch Mode

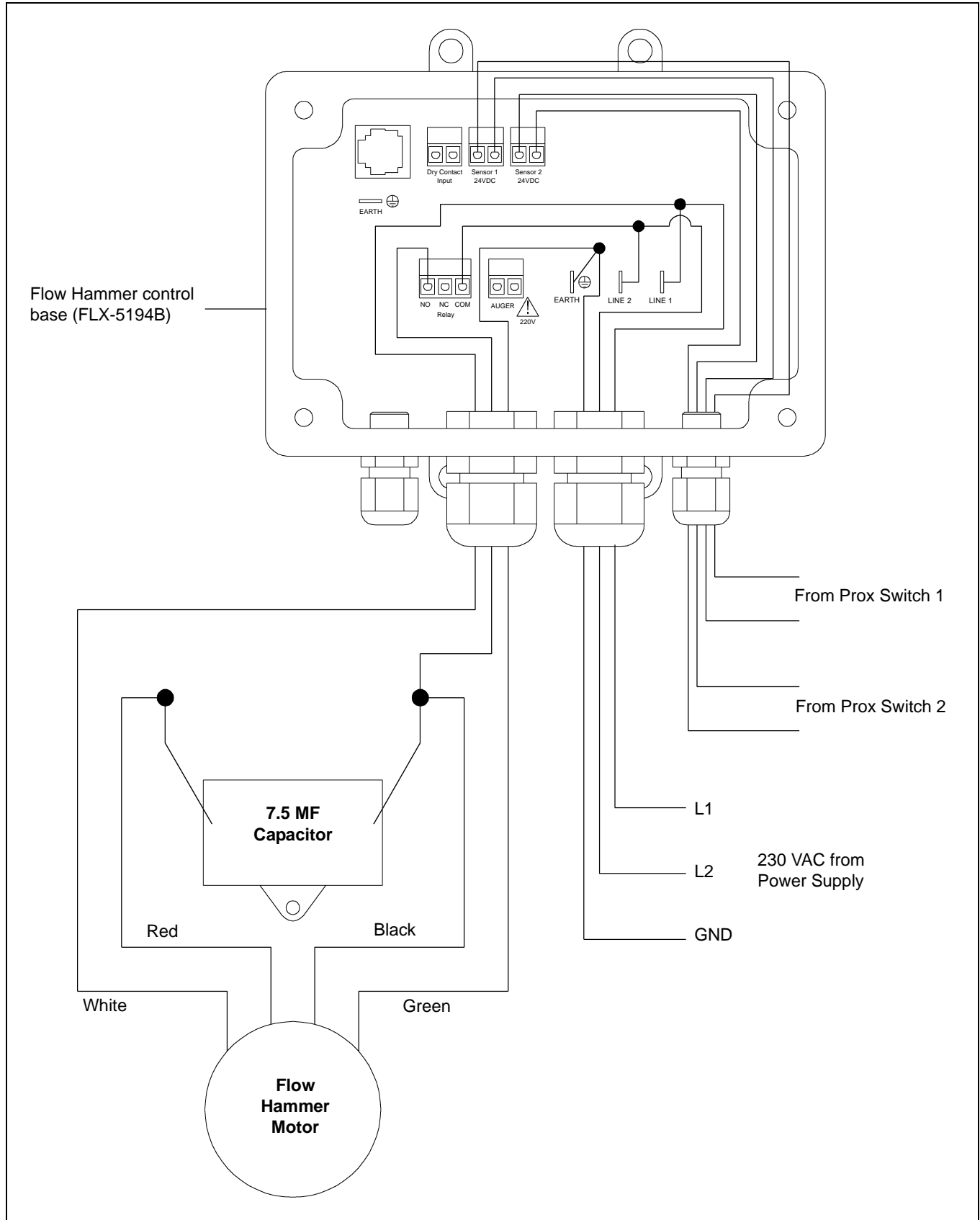


Figure 5E

Greasing the Bearings

Bearings should be greased every three (3) months of operation.

1. Remove hammer cover.
2. Use standard lithium based grease gun to grease the three (3) bearings. *(See Figure 6A and Figure 6B.)*

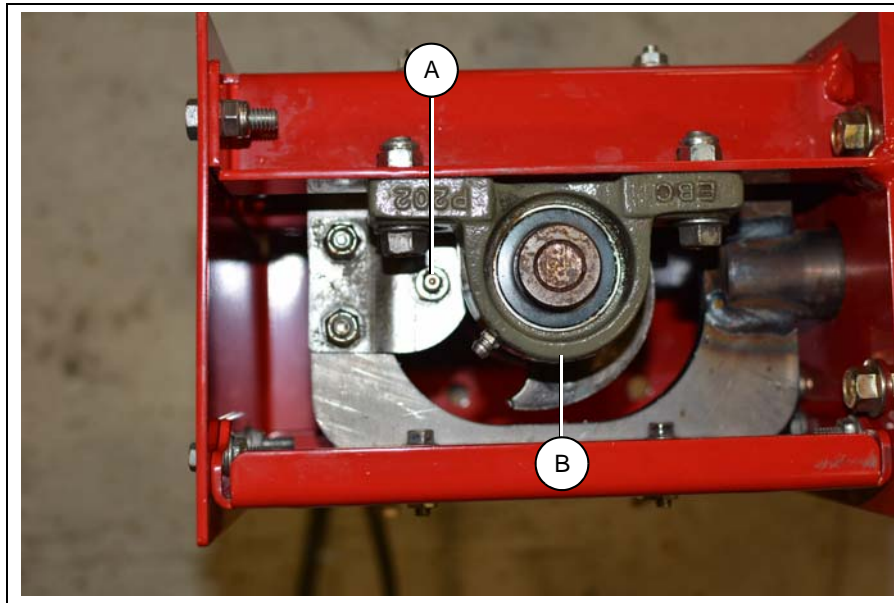


Figure 6A

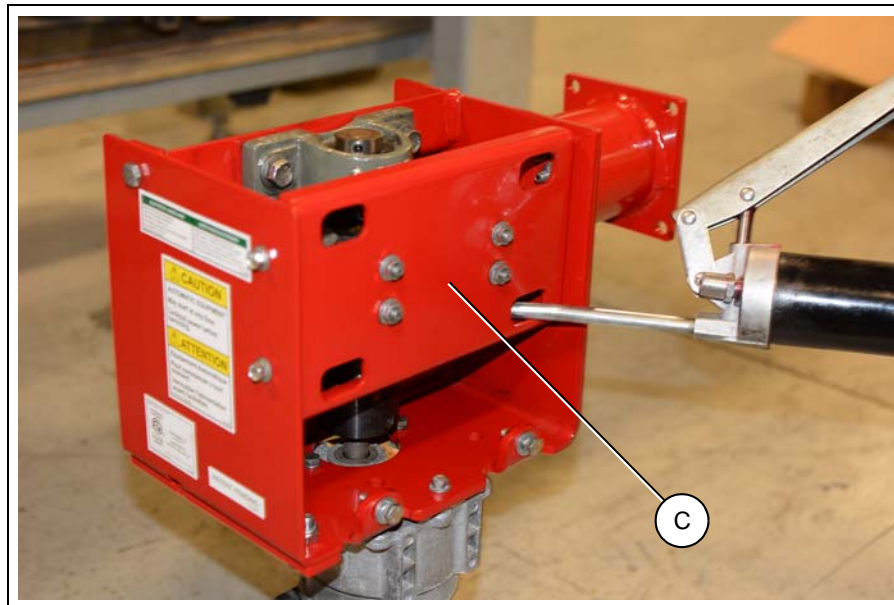


Figure 6B

Ref #	Description
A	Cam Roller Bearing
B	Upper Pillow Block Bearing
C	Lower Pillow Block Bearing (Inside)

Greasing the Bearings (Continued)

3. Replace cover and secure with washers and bolts. (See Figure 6C.)



Figure 6C

Ref #	Description
D	Cover
E	Bolt
F	Washer
G	Lock Washer

Replacing the Compression Spring

1. Remove tube (FLX-5160-RD) from power unit to expose hammer and spring (FLX-5136).
(See *Figure 6D* and *Figure 6E.*)

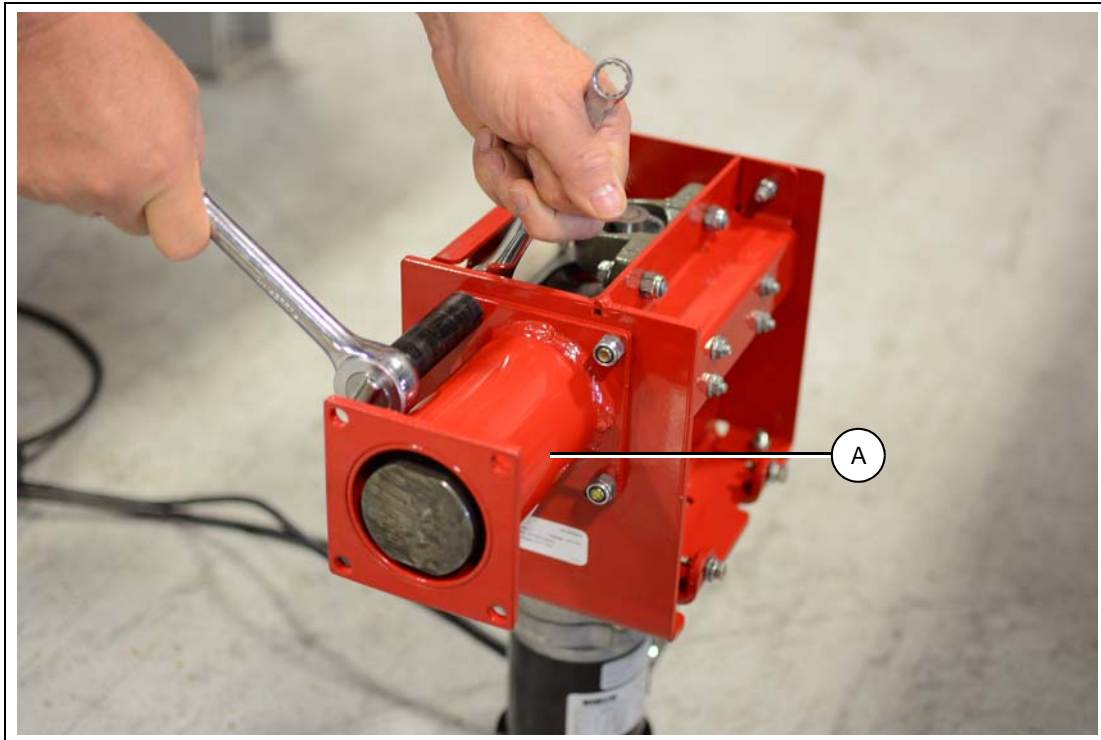


Figure 6D

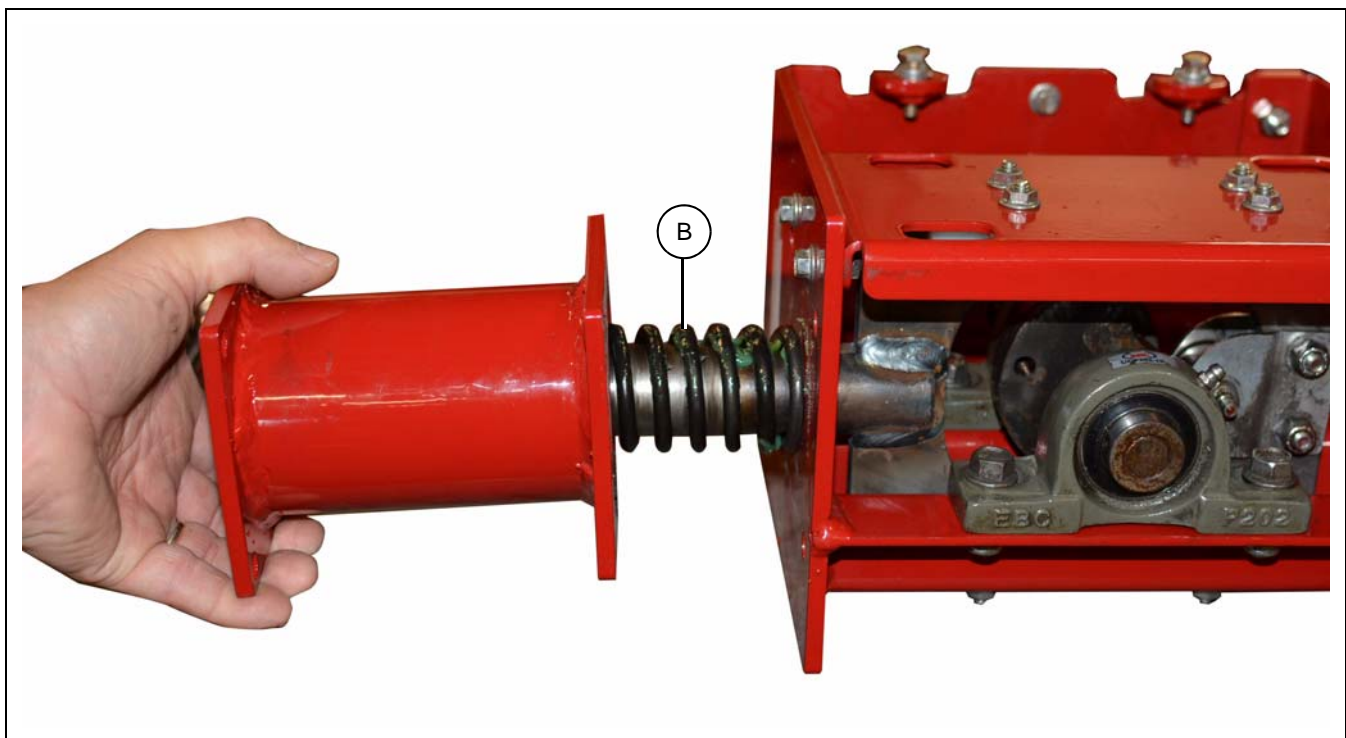


Figure 6E

Replacing the Compression Spring (Continued)

2. The hammer FLX-5163 must be disassembled from the cam follower (FLX-5189). (See Figure 6F.)
NOTE: The 7/8"-14 UNC threads have loctite applied to them. To break the loctite bond, heat the 2" long area at the end of the hammer shaft with a torch.

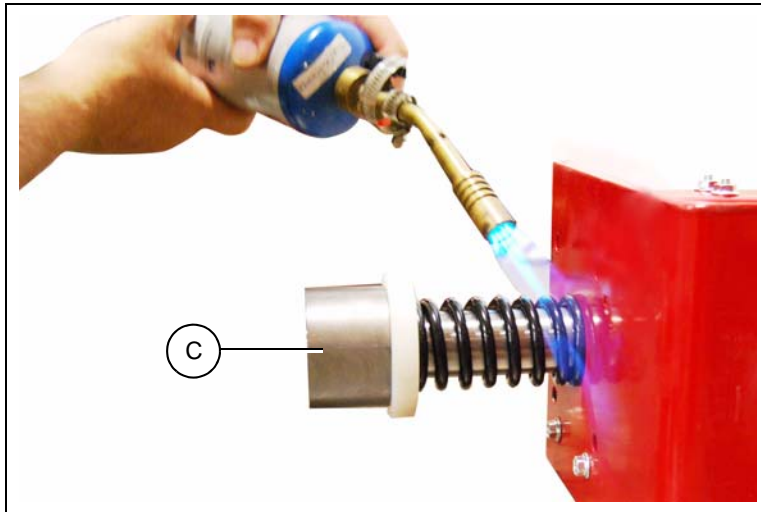


Figure 6F

3. While securely holding the power unit, use a pipe wrench to loosen and remove the hammer shaft from the cam follower. (See Figure 6G.)

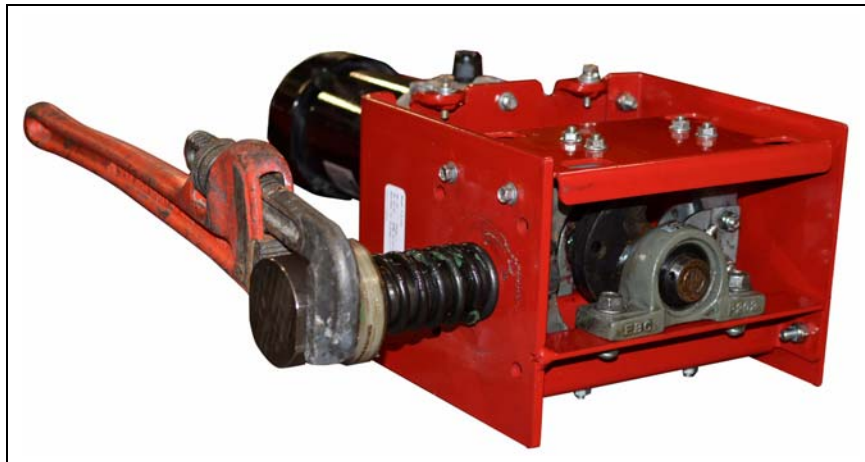


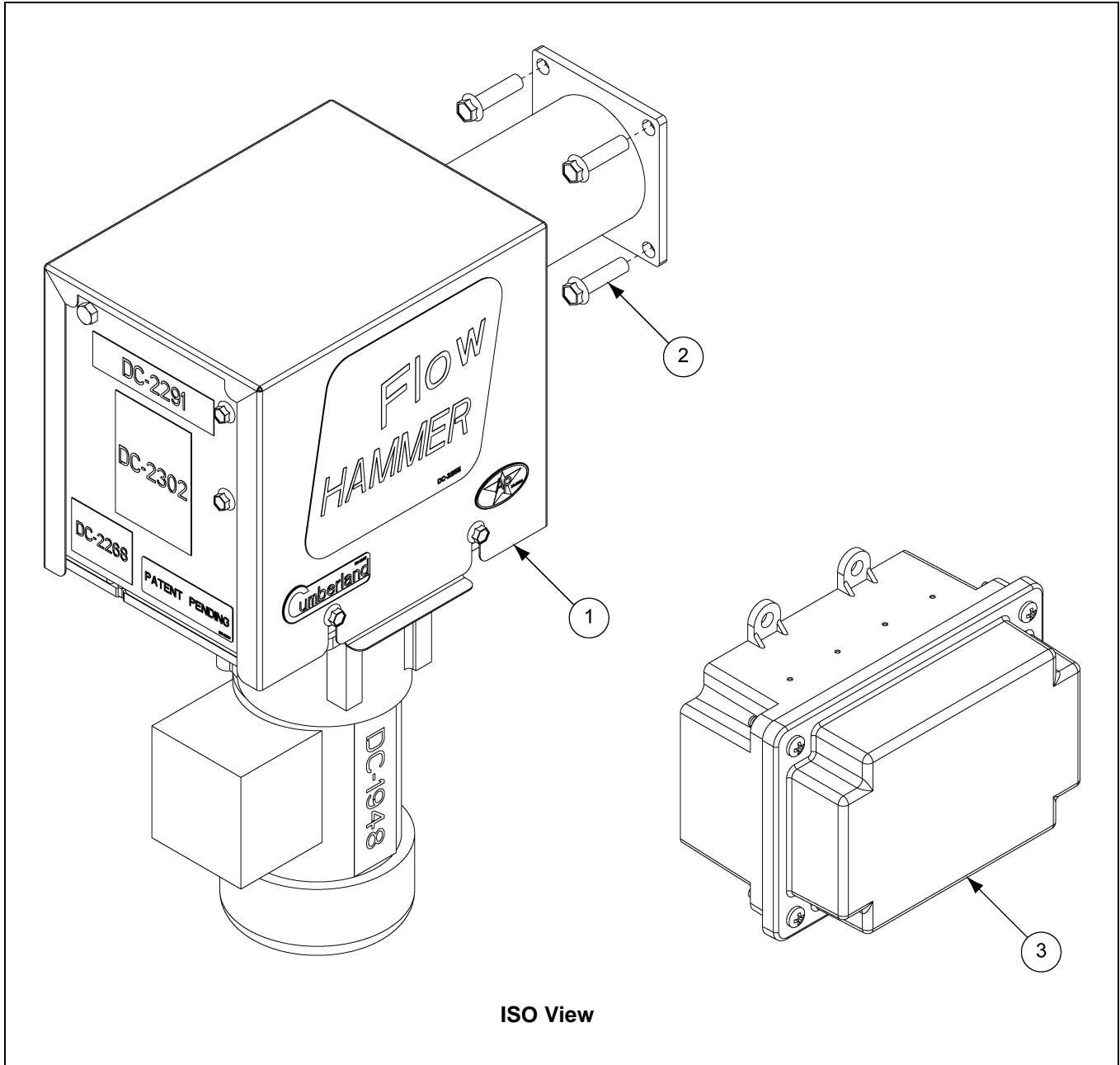
Figure 6G

Ref #	Part #	Description
A	FLX-5160-RD	Tube
B	FLX-5136	Spring
C	FLX-5163	Hammer Shaft

4. Remove the spring and replace with a new spring (FLX-5136).
5. Re-apply loctite 609 to the 7/8"-14 UNF threads.
6. Re-assemble parts in reverse order, making sure hammer is securely tightened to cam follower with 150 in-lbs. of torque.

1. Flow Hammer with Timer Control - Complete Assembly (FLX-5195A) - [\(See Page 28.\)](#)
2. Hammer Mounting Bracket Complete - 16" Collar AP/Choretime (FLX-5187A) - [\(See Page 29.\)](#)
3. Hammer Mounting Bracket Complete - 16" Collar Schuld/Bushnell (FLX-5187S) - [\(See Page 30.\)](#)
4. Hammer Mounting Bracket Complete - 16" Collar Valco/Pax (FLX-5187V) - [\(See Page 31.\)](#)
5. Hammer Mounting Bracket Complete - 22" Collar (FLX-5187-22) - [\(See Page 32.\)](#)
6. Control Unit Assembly for Feed Flow Hammer (FLX-5194) - [\(See Pages 34-35.\)](#)
7. Power Unit Assembly for Feed Flow Hammer (FLX-5185A) - [\(See Pages 36-37.\)](#)
8. Dry Contact Relay Box (AP-3775) - [\(See Pages 38-39.\)](#)
9. Proximity Switch and Mounting Bracket (FLX-5207) - [\(See Page 40.\)](#)

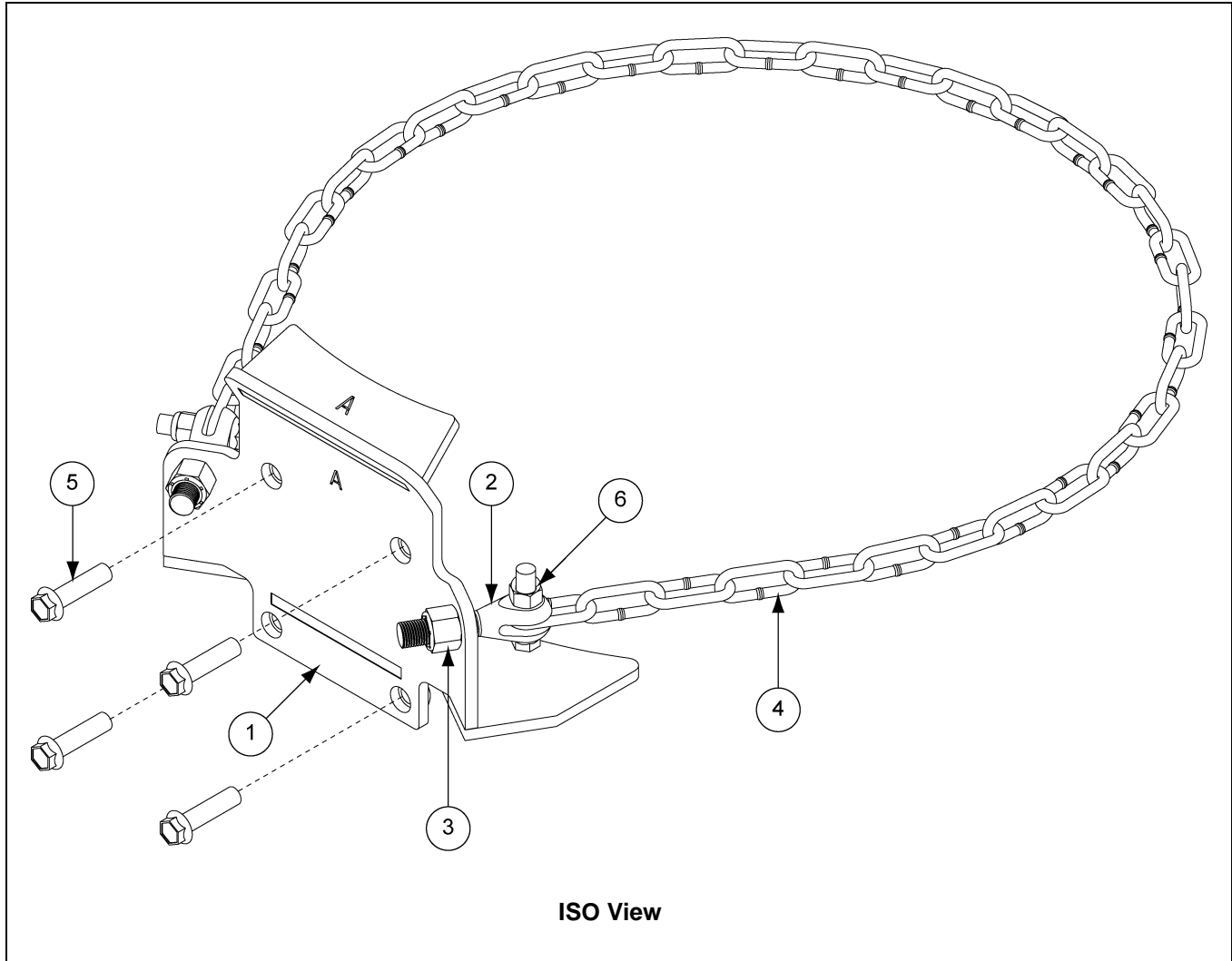
Flow Hammer with Timer Control - Complete Assembly (FLX-5195A)



Flow Hammer with Timer Control - Complete Assembly (FLX-5195A) Parts List

Ref #	Part #	Description	Qty
1	FLX-5185A	Power Unit Assembly for Flow Hammer	1
2	S-7928	Flange Bolt 3/8"-16 x 1-1/2" YDP Grade 8	4
3	FLX-5194	Flow Hammer Control Unit	1

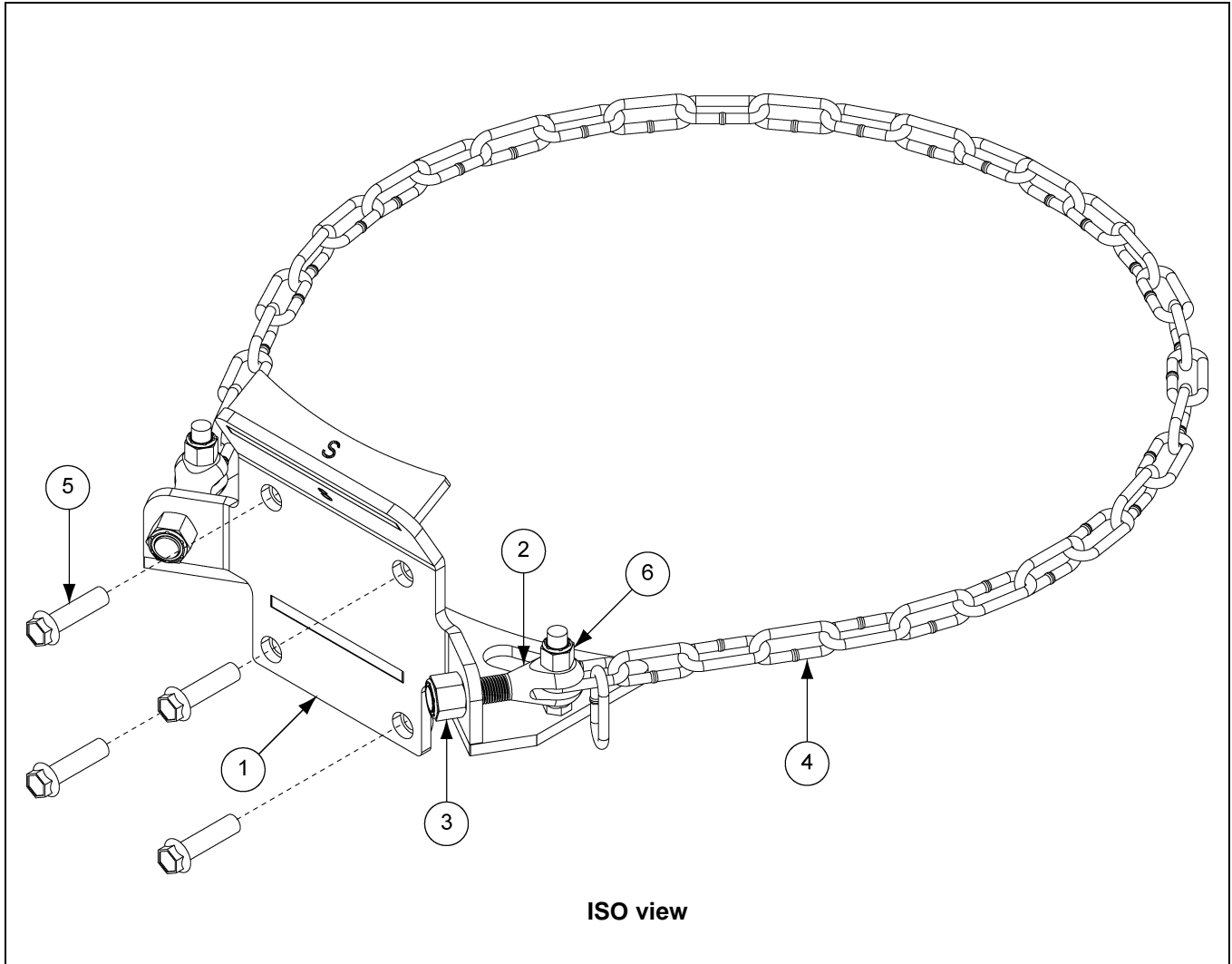
Hammer Mounting Bracket Complete - 16" Collar AP/Choretime (FLX-5187A)



Hammer Mounting Bracket Complete - 16" Collar AP/Choretime (FLX-5187A) Parts List

Ref #	Part #	Description	Qty
1	FLX-5219-RD	Mounting Assembly for Flow Hammer AP/Choretime - Painted Red	1
2	FLX-5231	Clevis Rod End, 1/2"-20 R.H. x 2-1/2" Shank with 3/8" I.D.	2
3	1FH0728	Nylock Nut 1/2"-20 Plated Grade 2	2
4	FLX-5240	Chain for Flow Hammer Mount	1
5	S-7928	Flange Bolt 3/8"-16 x 1-1/2" YDP Grade 8	6
6	S-7383	Nylock Nut 3/8"-16 ZN Grade 5	2

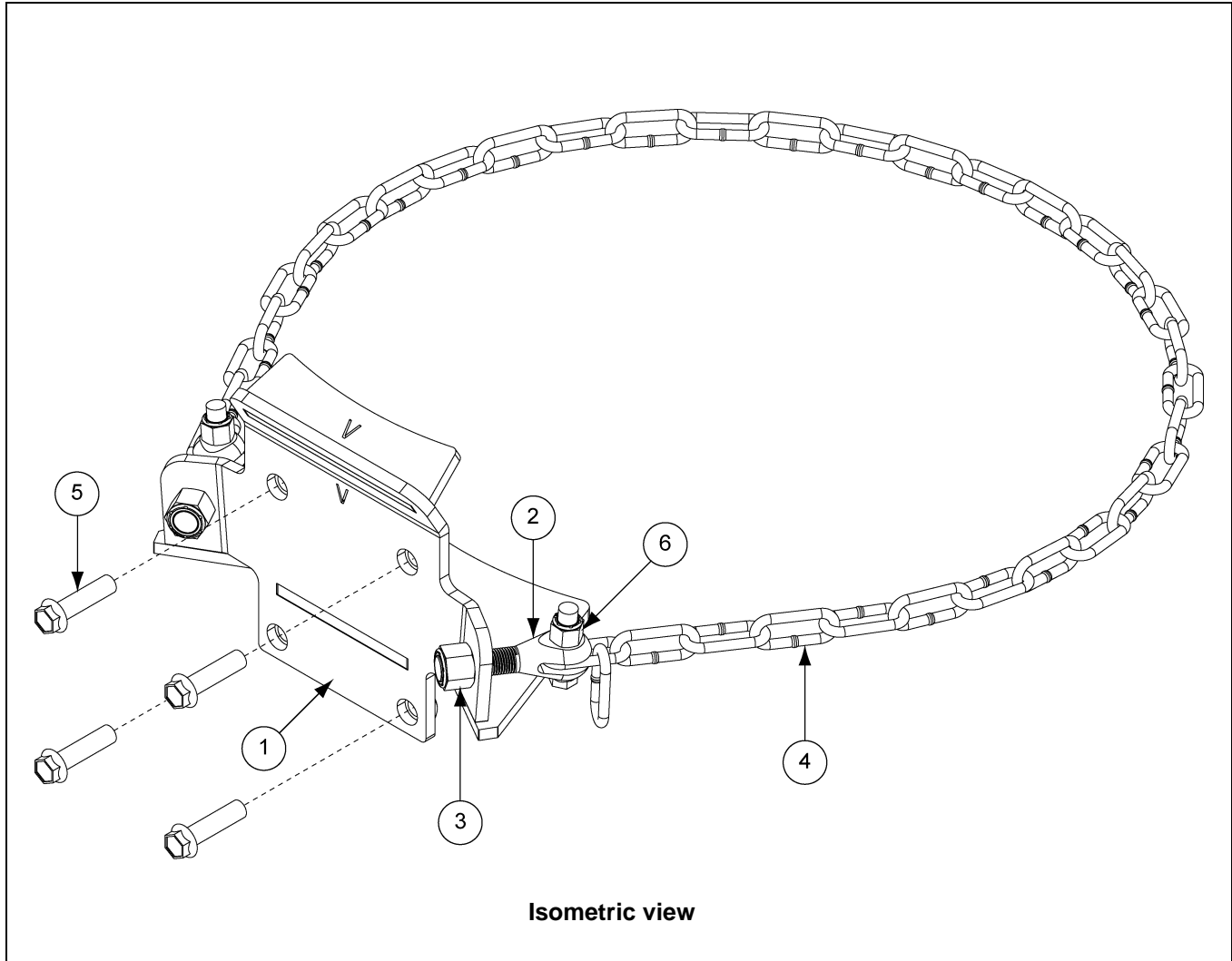
Hammer Mounting Bracket Complete - 16" Collar Schuld/Bushnell (FLX-5187S)



Hammer Mounting Bracket Complete - 16" Collar Schuld/Bushnell (FLX-5187S) Parts List

Ref #	Part #	Description	Qty
1	FLX-5244-RD	Mounting Assembly for Flow Hammer Schuld/Bushnell - Painted Red	1
2	FLX-5231	Clevis Rod End, 1/2"-20 R.H. x 2-1/2" Shank with 3/8" I.D.	2
3	1FH0728	Nylock Nut 1/2"-20 Plated Grade 2	2
4	FLX-5240	Chain for Flow Hammer Mount	1
5	S-7928	Flange Bolt 3/8"-16 x 1-1/2" YDP Grade 8	6
6	S-7383	Nylock Nut 3/8"-16 ZN Grade 5	2

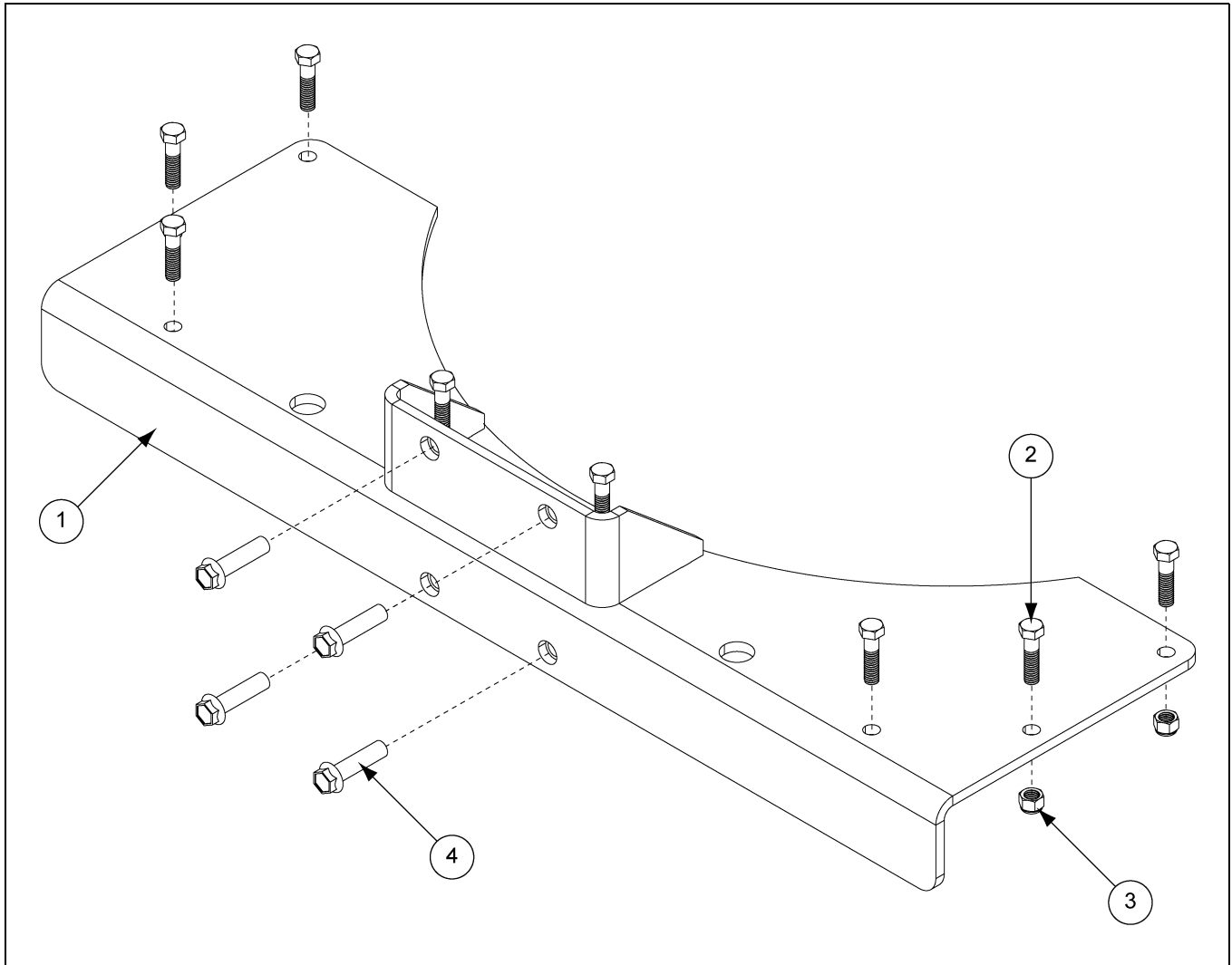
Hammer Mounting Bracket Complete - 16" Collar Valco/Pax (FLX-5187V)



Hammer Mounting Bracket Complete - 16" Collar Valco/Pax (FLX-5187V) Parts List

Ref #	Part #	Description	Qty
1	FLX-5234-RD	Mounting Assembly for Flow Hammer Valco/Pax - Painted Red	1
2	FLX-5231	Clevis Rod End, 1/2"-20 R.H. x 2-1/2" Shank with 3/8" I.D.	2
3	1FH0728	Nylock Nut 1/2"-20 Plated Grade 2	2
4	FLX-5240	Chain for Flow Hammer Mount	1
5	S-7928	Flange Bolt 3/8"-16 x 1-1/2" YDP Grade 8	6
6	S-7383	Nylock Nut 3/8"-16 ZN Grade 5	2

Hammer Mounting Bracket Complete - 22" Collar (FLX-5187-22)

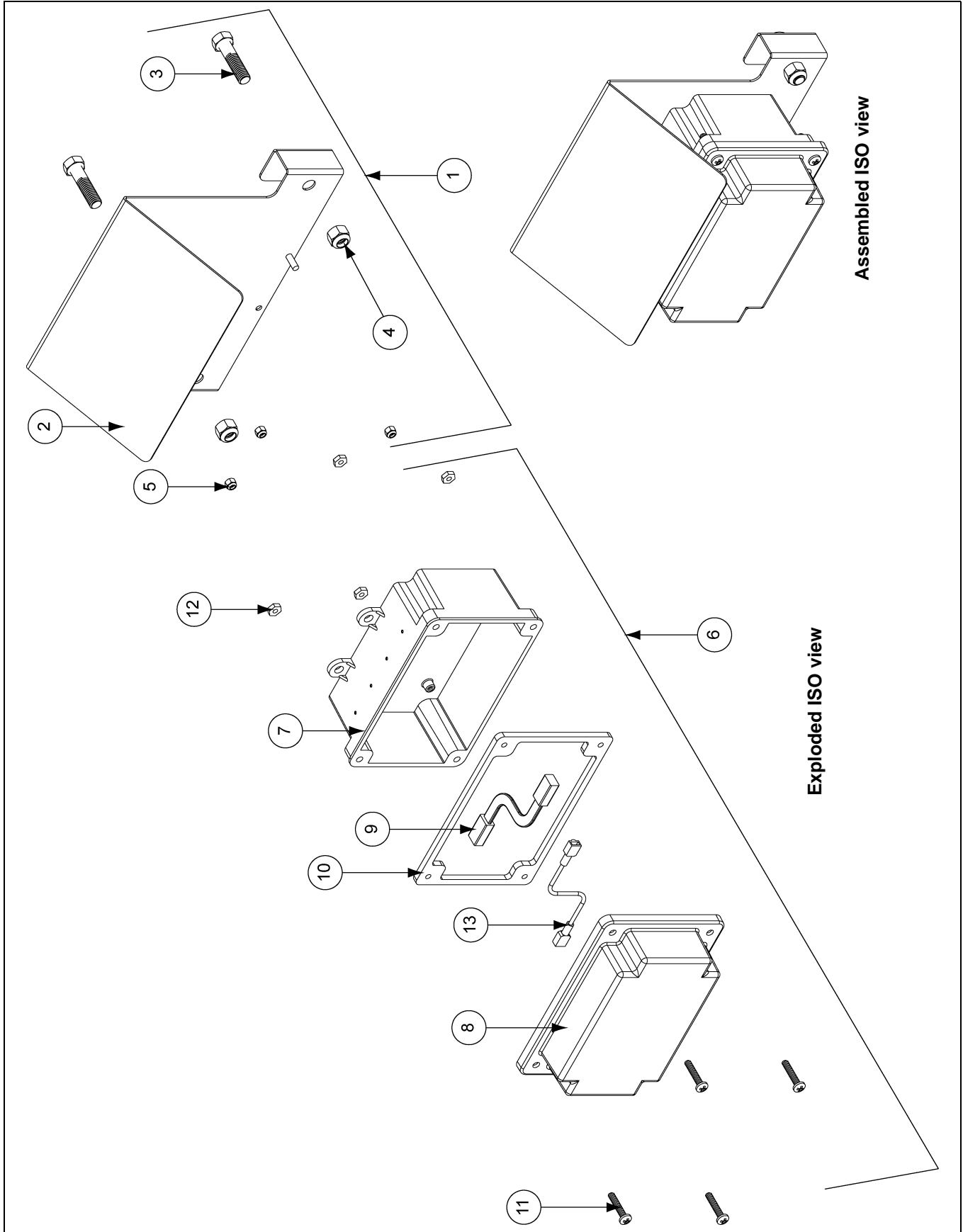


Hammer Mounting Bracket Complete - 22" Collar (FLX-5187-22) Parts List

Ref #	Part #	Description	Qty
1	FLX-5199-RD	Mounting Bracket Assembly, 22" Collar - Painted Red	1
2	S-9350	Bolt HHCS 5/16"-18 x 1-1/4" YDP Grade 8	8
3	S-7382	Nylock Nut 5/16"-18 ZN Grade 5	8
4	S-7928	Flange Bolt 3/8"-16 x 1-1/2" YDP Grade 8	4

NOTES

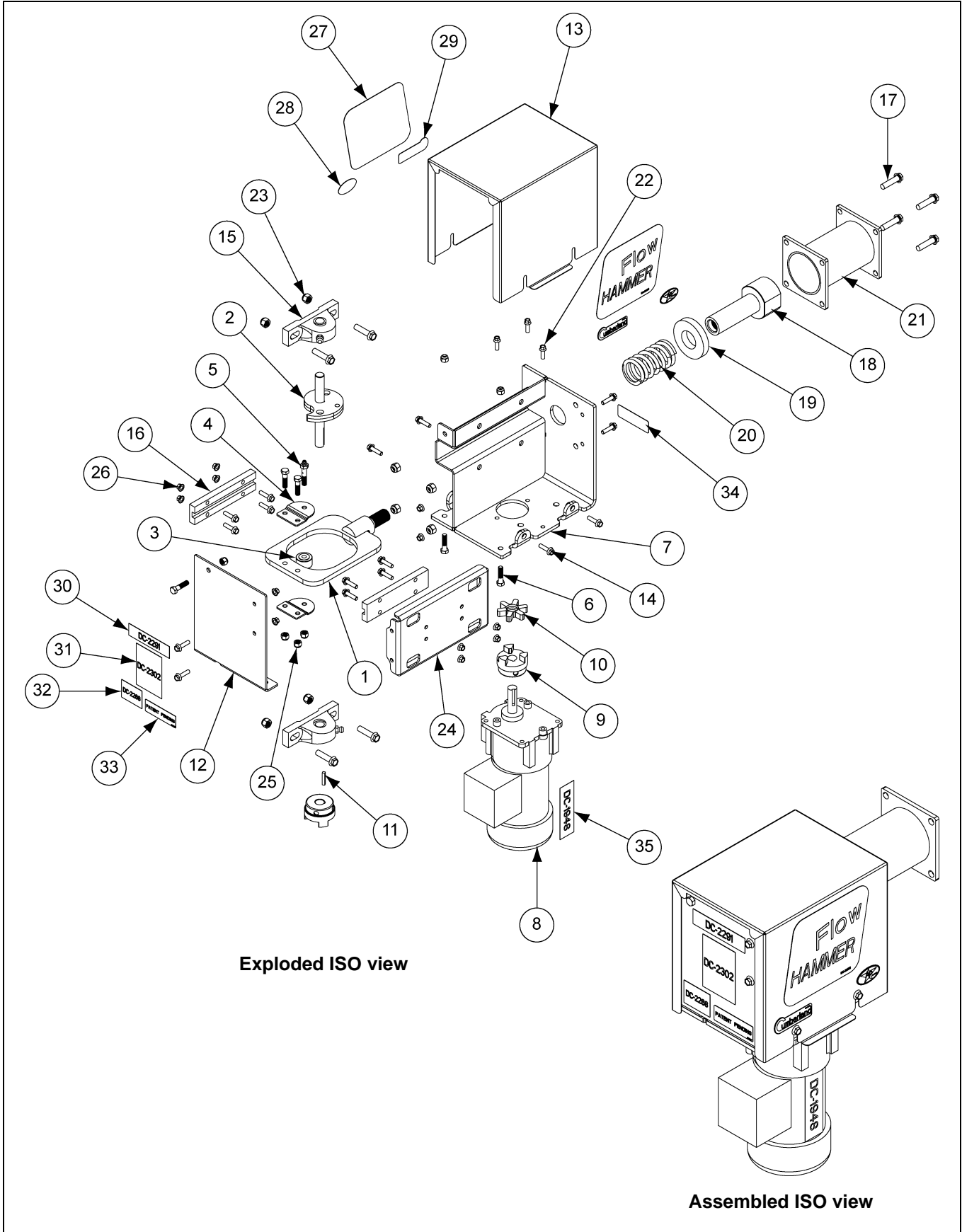
Control Unit Assembly for Feed Flow Hammer (FLX-5194)



Control Unit Assembly for Feed Flow Hammer (FLX-5194) Parts List

Ref #	Part #	Description	Qty
1	INT-4812	Display Mounting Bracket for Bin Leg	1
2	AP-3645	Rain Guard Assembly Display Load Cell Display	1
3	S-7515	Bolt, HHCS 3/8"-16 x 1-1/2" Grade 5	2
4	S-7383	Nylock Nut 3/8"-16 ZN Grade 5	2
5	S-2010	Nylock Nut #10-24 ZN Grade 2	4
6	FLX-5194	Flow Hammer Control Unit	1
7	FLX-5194B	Flow Hammer Control Base with PC	1
8	FLX-5194T	Flow Hammer Control Lid with PC	1
9	FLX-5001	Cable, IR Sensor Connector	1
10	FLX-4561	Gasket, Electrical Box 4 x 6	1
11	S-995	Screw, MS #10-24 x 1" PHP SS	4
12	S-7931	Hex Nut #10-24 SS	4
13	E105-1024	Ground Wire, 18 Gauge Black x 5" Long	1

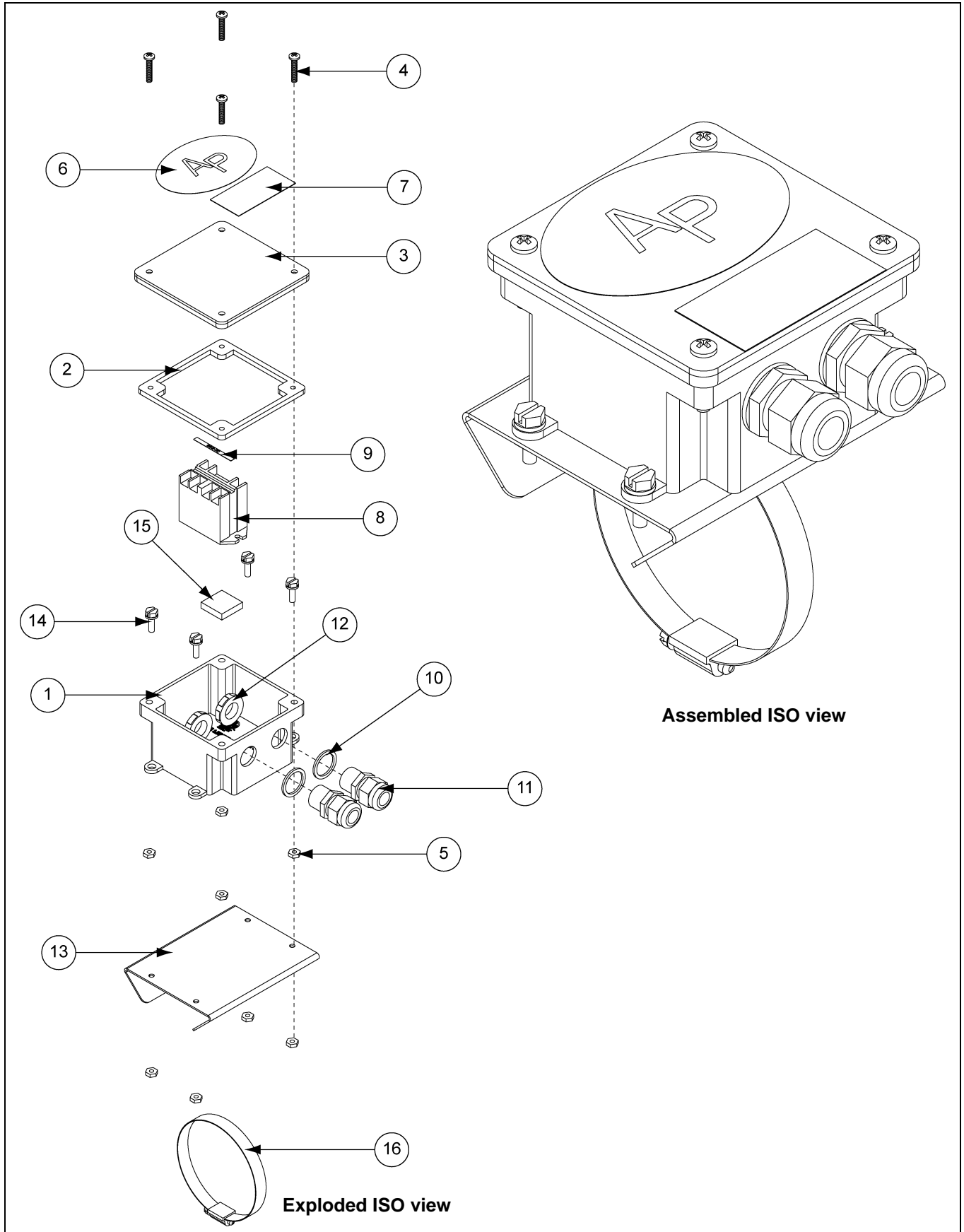
Power Unit Assembly for Feed Flow Hammer (FLX-5185A)



Power Unit Assembly for Feed Flow Hammer (FLX-5185A) Parts List

Ref #	Part #	Description	Qty
1	FLX-5189	Cam Follower and Bushing Assembly	1
2	FLX-5179	Cam and Shaft Assembly	1
3	FLX-5177	Flat Sealed Track Roller	1
4	FLX-5174	Bearing Holder Bracket	2
5	S-10194	Lube Bolt, HHCS 5/16"-18 x 1-1/2" ZN Grade 5	1
6	S-9350	Bolt, HHCS 5/16"-18 x 1-1/4" YDP Grade 8	5
7	FLX-5190A-RD	Hammer Frame - Painted	1
8	FLX-5193	Feed Flow Hammer Motor	1
9	50-0009	Coupler, LO95 x 5/8" Lovejoy	2
10	52-0012	Coupler, Spider Hytrel 7/8" F/LO95 Lovejoy	1
11	S-8426	Square Key 3/16" x 1" Long	1
12	FLX-5182A-RD	End Plate Bracket - Painted	1
13	FLX-5184A-RD	Cover - Painted	1
14	S-9063	Flange Bolt 1/4"-20 x 1" ZN Grade 5	16
15	FLX-5178	5/8" Pillow Block Bearing (UCP202-10)	2
16	FLX-5180	Nylon Wear Guide for Cam Follower	2
17	S-7928	Flange Bolt 3/8"-16 x 1-1/2" YDP Grade 8	8
18	FLX-5163	Hammer Shaft	1
19	FLX-5164	Wear Ring for Feed Flow Hammer	1
20	FLX-5136	Spring, Compression	1
21	FLX-5160-RD	Tube Assembly - Painted	1
22	S-8680	Flange Bolt 1/4"-20 x 3/4" ZN Grade 5	3
23	S-7383	Nylock Nut 3/8"-16 ZN Grade 5	8
24	FLX-5181A	Wear Guide Support Bracket	1
25	S-7382	Nylock Nut 5/16-18 ZN Grade 5	6
26	S-7215	Flange Nut 1/4"-20 ZN	12
27	DC-2255	Decal, Flow Hammer	2
28	DC-2256	Decal, AP Logo 1-3/4" x 1-1/32"	2
29	DC-2257	Decal, Cumberland Logo 2-7/8" x 31/32"	2
30	DC-2291	Decal, Ansi, Electrical Guidelines, Hammer	1
31	DC-2302	Decal, Automatic Equip, English and French	1
32	DC-2268	Decal, Intertek ETL Label, Flow Hammer	1
33	DC-2267	Decal, Patent Pending	1
34	DC-2301	Decal, Rating Label, Flow Hammer	1
35	DC-1948	Decal, Danger High-Voltage (LG), CE, CSA Harmonized	1

Dry Contact Relay Box (AP-3775)



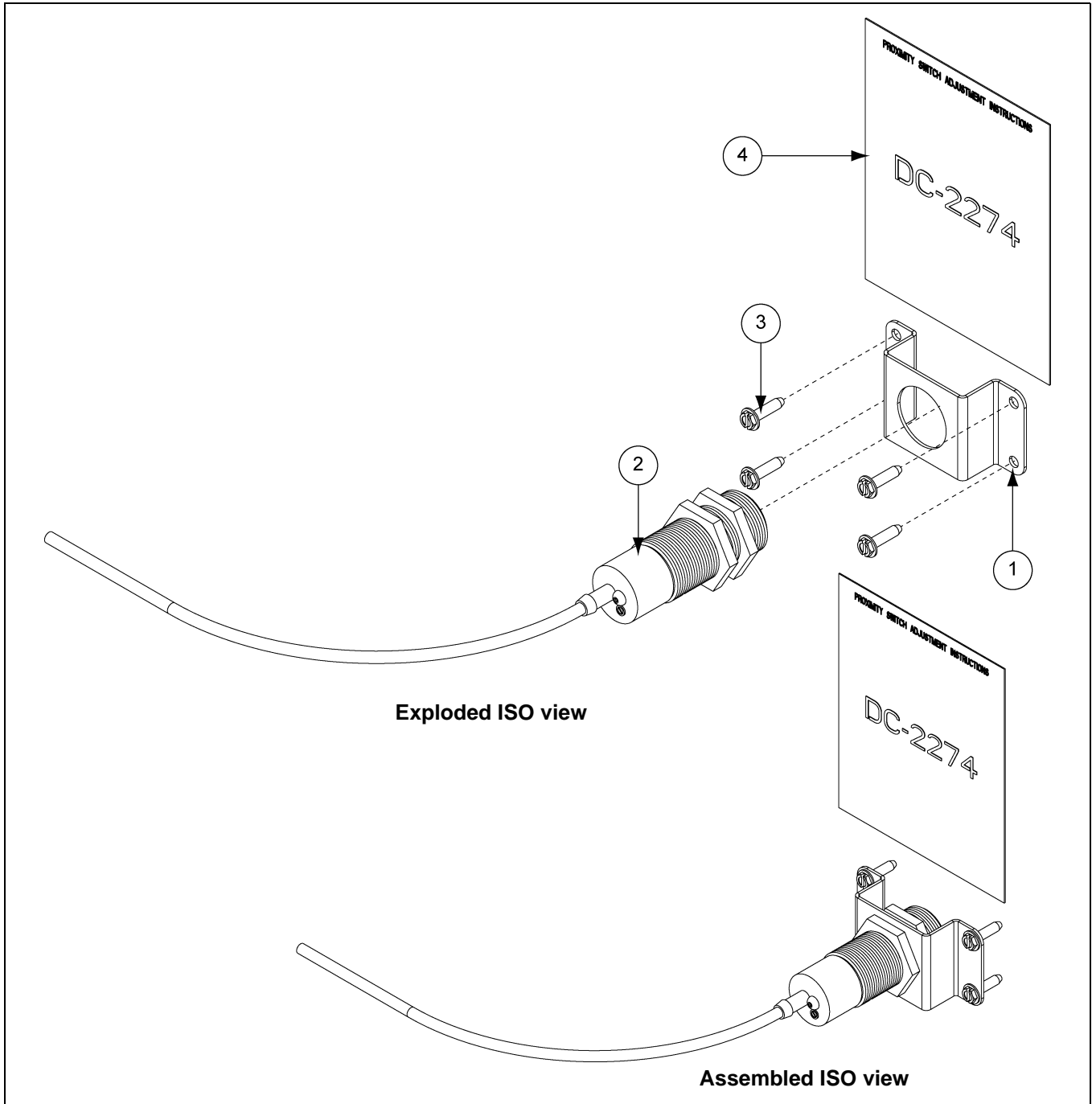
Assembled ISO view

Exploded ISO view

Dry Contact Relay Box (AP-3775) Parts List

Ref #	Part #	Description	Qty
1	FLX-2688	Electrical Box (Bottom)	1
2	FLX-2690	Gasket, Electrical Box 4 x 4	1
3	FLX-2689	Electrical Box Cover	1
4	S-995	Screw, MS #10-24 x 1" PHP SS	4
5	S-7931	Hex Nut #10-24 SS	8
6	DC-490	Decal, 3" Automated Production	1
7	DC-889	Decal, Danger High Voltage	1
8	E260-1021	Relay, 0.2 PST 25 Amp, 220V	1
9	DC-1098	Decal, 240V Relay Wire Label	1
10	FH-7400	Washer, 1/2" PVC Connector Yellow	2
11	FH-1310	Connector, Cord Heyco #3231	2
12	006-1236-6	Lock Nut 1/2" NPT Nylon	2
13	AP-3841	Electrical Box Mount Plate Flex Tube	1
14	S-8174	Screw, MS #10-24 x 5/8" HWHS SS	4
15	E160-1075	Tape, Foam Pads, 1 x 1, Double Side Panduit	1
16	AP-0584	Clamp, Hose Stainless Steel 2-1/4" to 4-1/4"	1
16	AP-0583	Clamp, Hose Stainless Steel 1-13/16" - 2-3/4"	1

Proximity Switch and Mounting Bracket (FLX-5207)



Proximity Switch and Mounting Bracket (FLX-5207) Parts List

Ref #	Part #	Description	Qty
1	FLX-5206	Proximity Switch Hold-Down Bracket	1
2	FLXDF-1172	Cap, Proximity Switch N.C. 20 VAC-250 VAC	1
3	S-7466	Screw, SDS #10-16 x 3/4" HWH ZN Grade 2	4
4	DC-2274	Decal, Proximity Adjustment Instructions	1

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	
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 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%
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
AP and Cumberland	Flex-Flo/Pan Feeding System Motors	2 Years	** Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 50%
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **	
	Feed Tubes (1-3/4" and 2.00")	10 Years *	
	Centerless Augers	10 Years *	
	Watering Nipples	10 Years *	
Grain Systems	Grain Bin Structural Design	5 Years	† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.
Grain Systems Farm Fans Zimmerman	Portable and Tower Dryers	2 Years	
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years	

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 (12th) month from the date of purchase and continuing until the sixtieth (60th) 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.



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