

Curtain Controller

Featuring the Enclosed Limit Switch and Pulley Covers

Installation and Operation Manual

PNEG-620-2

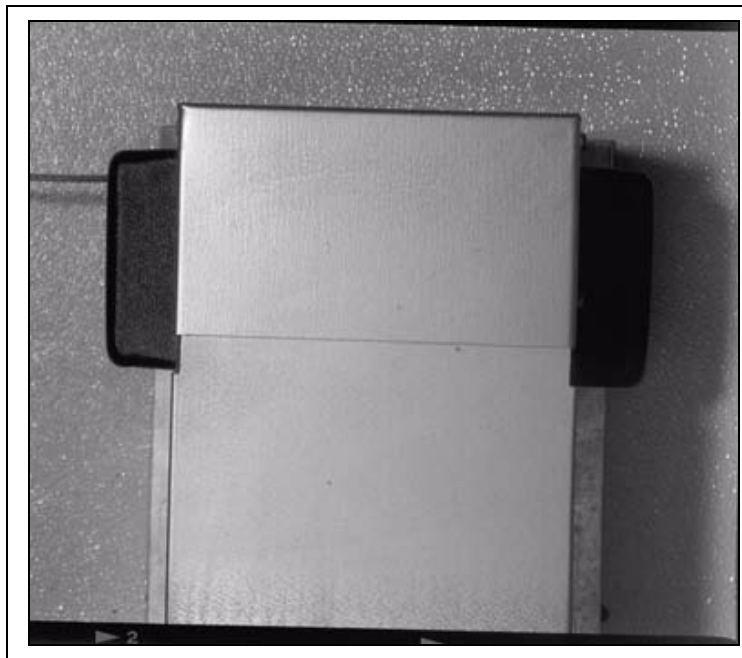
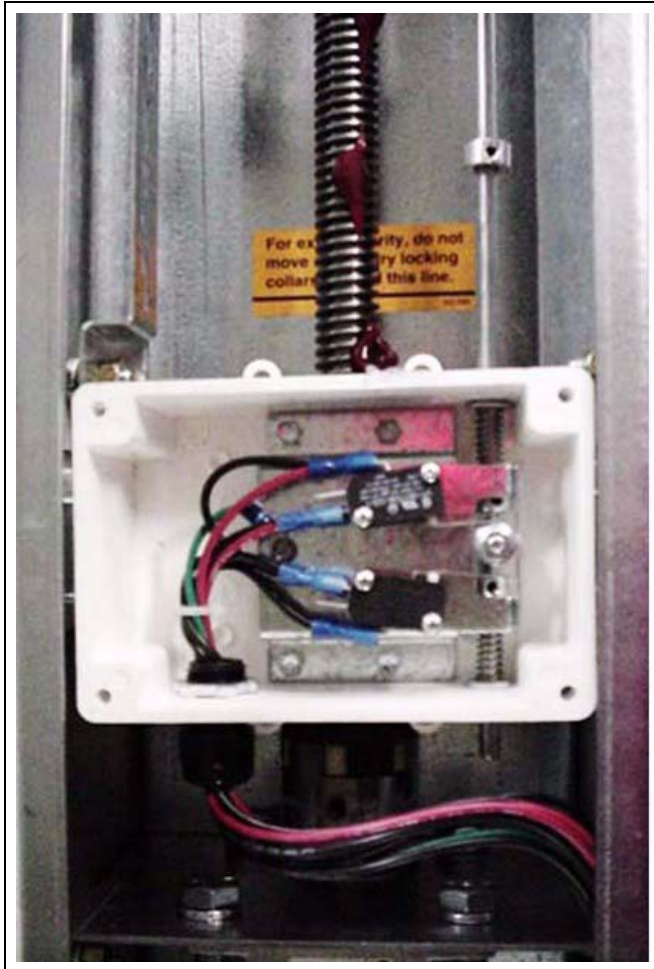
Version: 7.0

Date: 08-28-20



Intertek





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 installation occurs.

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Safety Guidelines

Safety guidelines are general-to-specific safety rules that must be followed at all times. This manual is written to help you understand safe operating procedures and problems that can be encountered by the operator and other personnel when using this equipment. Read and save these instructions.

As owner or operator, you are responsible for understanding the requirements, hazards, and precautions that exist and to inform others as required. Unqualified persons must stay out of the work area at all times.

Alterations must not be made to the equipment. Alterations can produce dangerous situations resulting in **SERIOUS INJURY** or **DEATH**.

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

When necessary, you must consider the installation location relative to electrical, fuel and water utilities.

Personnel operating or working around equipment must read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

ST-0001-4

Cautionary Symbols Definitions

Cautionary symbols appear in this manual and on product decals. The symbols alert the user of potential safety hazards, prohibited activities and mandatory actions. To help you recognize this information, we use the symbols that are defined below.



This symbol indicates an imminently hazardous situation which, if not avoided, **will result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in minor or moderate injury.**



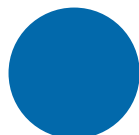
This symbol is used to address practices not related to personal injury.



This symbol indicates a general hazard.



This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005-2

Safety Cautions

Use Personal Protective Equipment

- Use appropriate personal protective equipment:

Eye Protection



Respiratory Protection



Foot Protection



Hearing Protection



Head Protection



Fall Protection



Hand Protection



- Wear clothing appropriate to the job.
- Remove all jewelry.
- Tie long hair up and back.

ST-0004-1

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



ST-0002-1

Maintain Equipment and Work Area

- Understand service procedures before doing work. Keep area clean and dry.
- Never service equipment while it is operating. Keep hands, feet, and clothing away from moving parts.
- Keep your equipment in proper working condition. Replace worn or broken parts immediately.



ST-0003-1

Lifting Hazard

- Single person lift can cause injury.
- Use a mechanical lifting device to lift or move the equipment during installation.



ST-0021-2

Install and Operate Electrical Equipment Properly

- Electrical controls must be installed by a qualified electrician and must meet the standards set by applicable local codes (National Electrical Code for the US, Canadian Electric Code, or EN60204 along with applicable European Directives for Europe).
- Lock-out power source before making adjustments, cleaning, or maintaining equipment.
- Make sure all equipment is properly grounded.



ST-0027-4

Sharp Edge Hazard

- This product has sharp edges, which can cause serious injury.
- To avoid injury, handle sharp edges with caution and always use proper protective clothing and equipment.



ST-0036-2

General Safety Statement

Electrical Safety

An adequate and safe power supply to the Curtain Controller unit is essential for safety. A competent and qualified electrician must undertake all electrical wiring. All wiring is to be installed according to the National Standards and Regulations relevant to your Country and Region.

Be sure to properly ground all motors and electrical equipment employed if required by local codes. Permanent wiring must be installed according to applicable local codes.

Correct Uses of Your Curtain Controller

The Curtain Controller System is designed solely for the purpose of controlling temperature curtains in livestock (swine and chicken) houses. Use of the system in any other way is a misuse of the system and may endanger safety and health.

Only genuine AP/Cumberland parts are to be used in the installation and use of the Curtain Controller System. Use of other non-genuine parts is a misuse of the system and may lead to dangerous situations imperilling the safety and health of you and others.

Controls

The Curtain Controller is designed for use with manual or automatic temperature control. GSI recommends the use of genuine GSI controls. Use of any controllers that do not meet this specification can pose a risk to health and safety and will lead to malfunction and failure of the Curtain Controller.

This machine is not designed for use in atmospheres where there is a risk of explosion. Use of the Curtain Controller System in such an environment is prohibited. If in doubt, contact your dealer or GSI.

Safety Guards

The Curtain Controller System contains many moving and electrical parts, which will cause serious injury or death if touched. Guards are placed on the machine for your protection. Operating the machine at any time with guards removed or incorrectly fitted is a serious misuse of the machine and endangers safety.

Safety in Handling the Curtain Controller System

The Curtain Controller unit weights:

Model #	Weight
CC2415	104 lbs./47 kg
CC2430	
CC2460	
I2430-50	
CC3615	119 lbs./54 kg
CC3630	
CC3660	
I3630-50	
CC4815	135 lbs./61 kg
CC4830	
CC4860	
I4830-50	
CC6015	151 lbs./69 kg
CC6030	
CC6060	
I6030-50	

All precautions should be taken when lifting and/or moving the unit, to prevent the risk of physical injury.

Safety in Maintenance

While the Curtain Controller is designed to keep maintenance to a minimum, some maintenance will be necessary in the course of the life of the machine. Do not attempt any repairs on the machine unless you are competent to do so. Remember that the Curtain Controller may operate under automatic control and start without warning. Never attempt any work on the Curtain Controller without first isolating the machine from the main power and locking the isolator so that only you can turn the power back ON.

Follow all guidelines given in the maintenance section on [Page 22](#) of this manual.

Before restarting the Curtain Controller, ensure that all electrical enclosures are locked closed and all guards and other safety measures are correctly fitted.

If in any doubt, contact your dealer or GSI for assistance.

Noise

Tests on this machine indicate noise levels at a position one meter from the drive unit, and 1.6 meters above the ground do not exceed 70 dBA, continuous "A" weighted sound pressure or 63 Pa, instantaneous "C" weighted sound pressure.

Maximum Loads

The Curtain Controllers with 15 RPM and 30 RPM gear motors can lift a maximum of 4000 lbs./1814 kg at a 1:1 pulley ratio. 60 RPM Gear motors can lift a maximum of 2000 lbs./909.1 kg at a 1:1 pulley ratio. Refer to ratio chart on [Page 10](#) for other configurations. If weight limit to be verified without scales, measure amperage of motor to ensure it is below maximum amperage threshold.

1. Safety

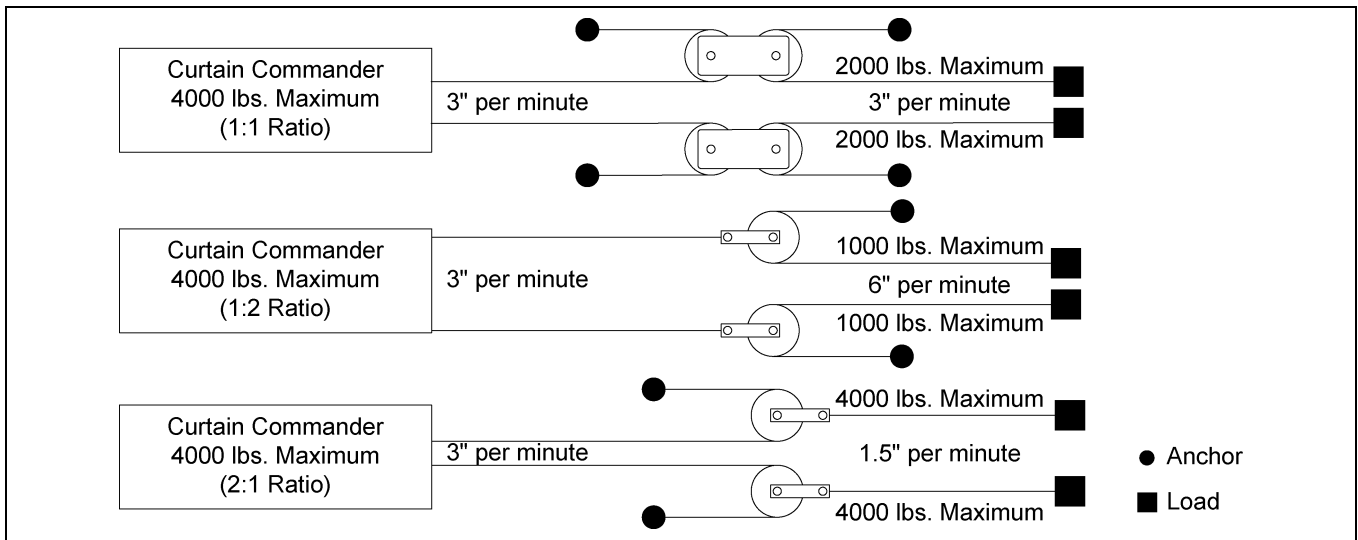


Figure 1A 15 RPM

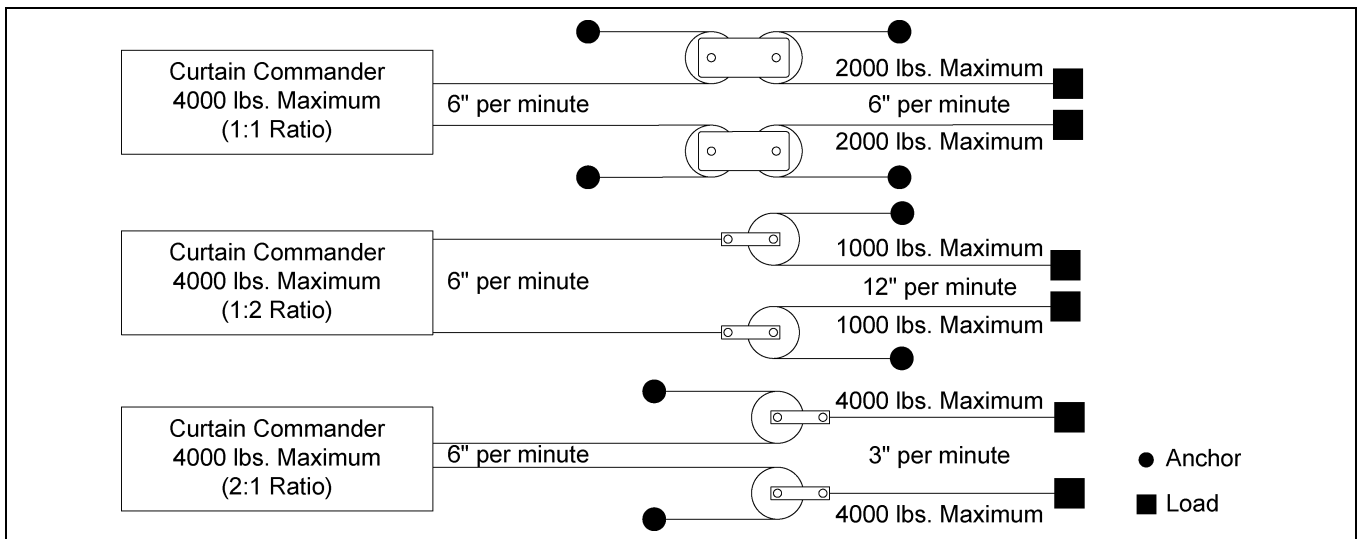


Figure 1B 30 RPM

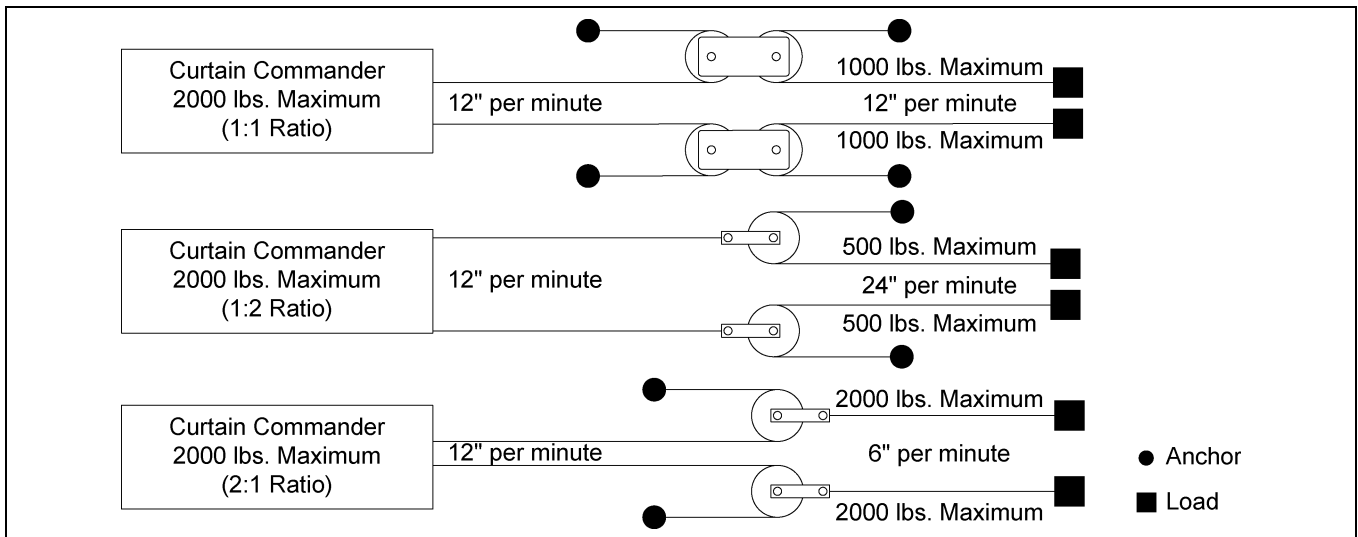


Figure 1C 60 RPM

2. Safety Decals

This page shows you exactly where the safety signs should be placed on your Curtain Controller. If a decal is missing, damaged or unreadable, please contact your dealer or the GSI group, for a free replacement.

For guidance or assistance on any issues relating to the safe use of the Curtain Controller System,

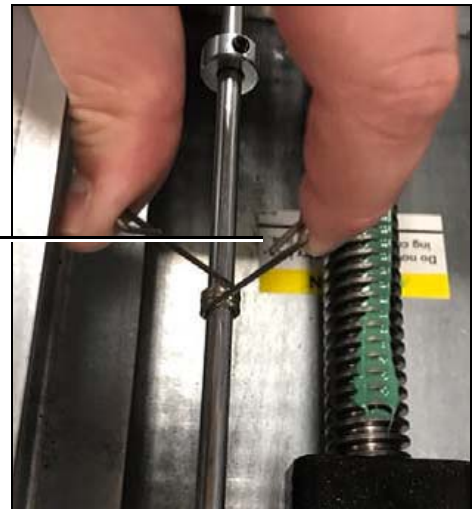
Contact:

GSI Group

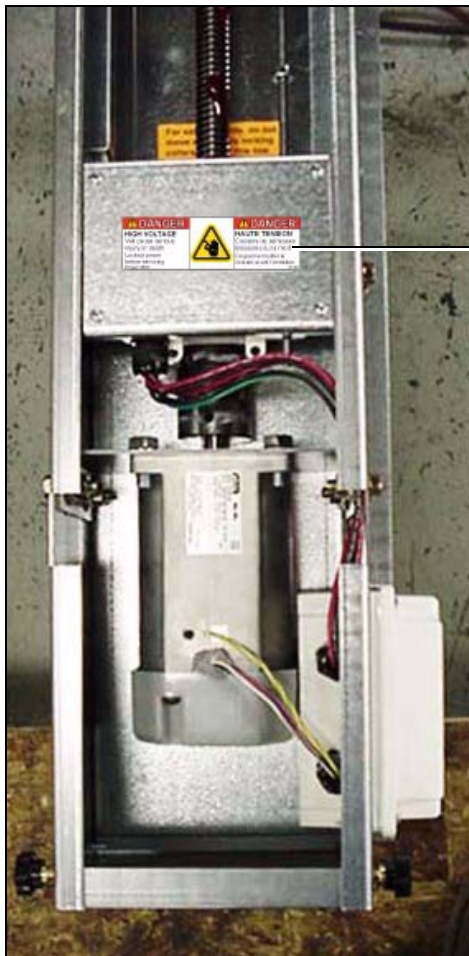
1004 E. Illinois St.
Assumption, IL. 62510
Phone: 1-217-226-4421



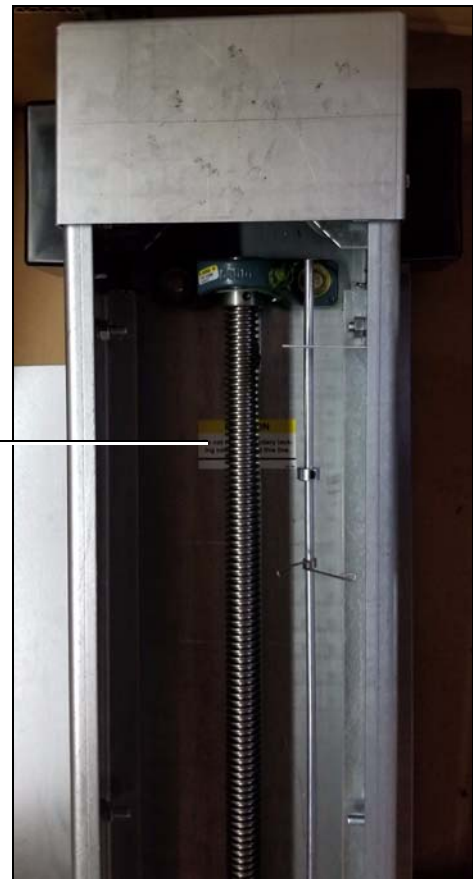
1



2



1



2

Ref #	Location	Decal #	Decals	Description
1	<p>Located above the electrical box on the outside of the Curtain Controller</p> <p>Located on the electrical unit within the Curtain Controller</p>	DC-1948		Decal, Danger High Voltage
2	Located below pulley cover on Curtain Controller	DC-789		Decal, Adjustment Line

3. Installation

This manual outlines the recommended sequence for the installation of the Curtain Controller system. The curtain controller may be installed either inside or outside. Following the sequence will prove the safest and easiest method of installation. Above all, connection of the system to the electrical mains should be the final stage of installation. Failure to observe this could lead to a fatal accident.

1. Unpack the Curtain Controller, remove the front cover and inspect the machine for visible defects.
2. Select mounting configuration. (See examples of: wall mount on [Pages 43-45](#).)
3. Screw one 3/8" x 3" lag bolt 6-1/2" below the desired height of the Curtain Controller.
NOTE: Leave 1-1/2" between the bolt head and the wall. (See [Figure 3A](#).)

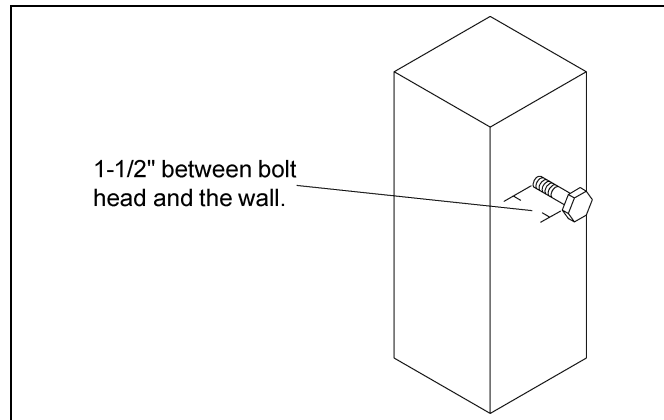


Figure 3A

4. Using the "keyhole" slot in the back of the Curtain Controller, hang the machine on the 3" lag bolt. (See [Figure 3B](#).) **NOTE:** The 3" lag bolt should only be used to hang the machine to the wall. Do not attempt to operate the machine until it is fully secured.

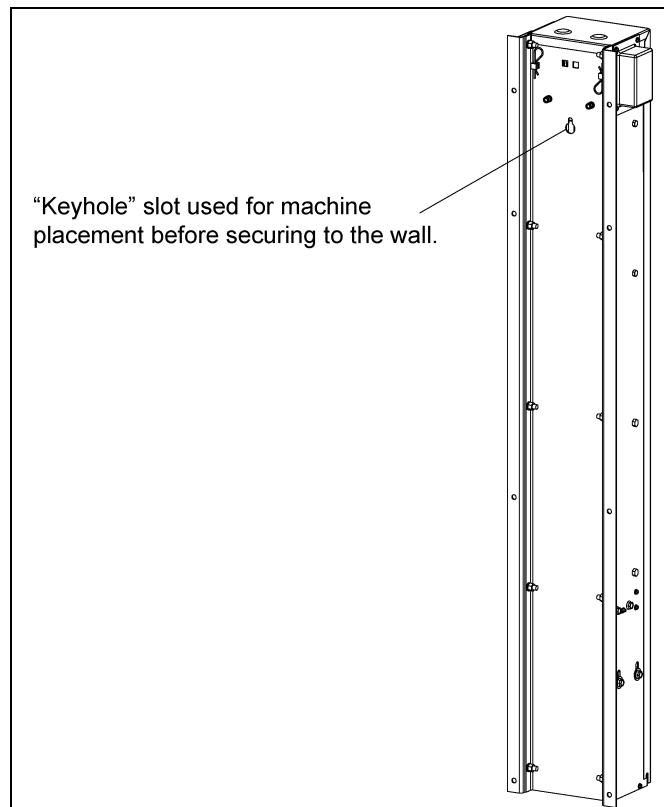


Figure 3B

5. Secure the machine to the wall by using the six (6) 3/8" x 2" lag bolts provided. (See Figure 3C.)

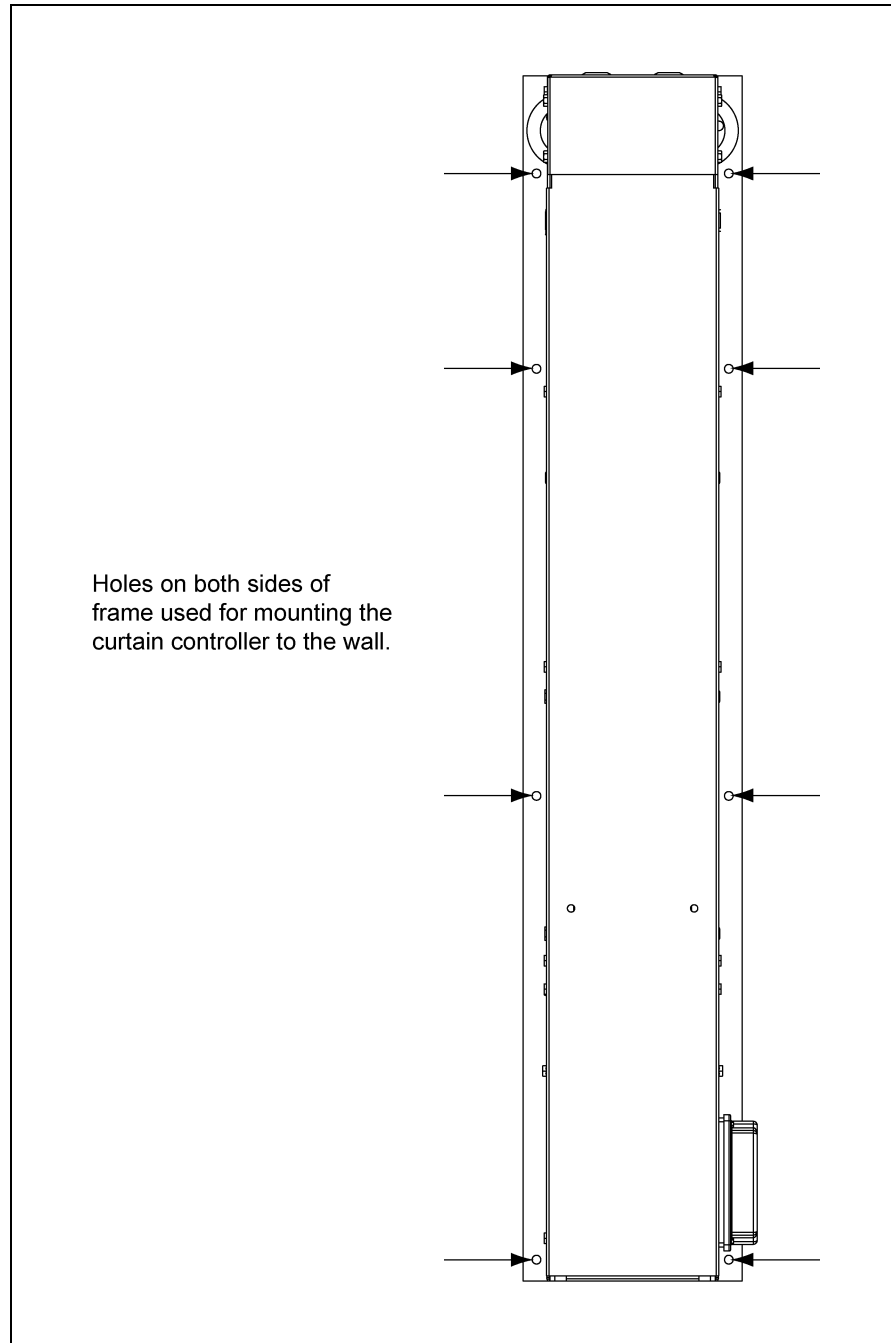


Figure 3C

6. Install pulleys, brackets, hand winches etc., according to the appropriate mounting configuration.
7. Install the cabling through the pulleys, brackets, hand winches etc., according to appropriate mounting configuration. Recommended cable size is 3/16".
8. Install the cable into the Curtain Controller pulley cover and loop the cable around the pulley.

3. Installation

9. While the drive block is near the closed position (bottom of the drive screw), loop the incoming cable through the two (2) holes in the drive block as shown in [Figure 3D](#) and fasten the cable to itself using three (3) 3/16" cable clamps per cable.

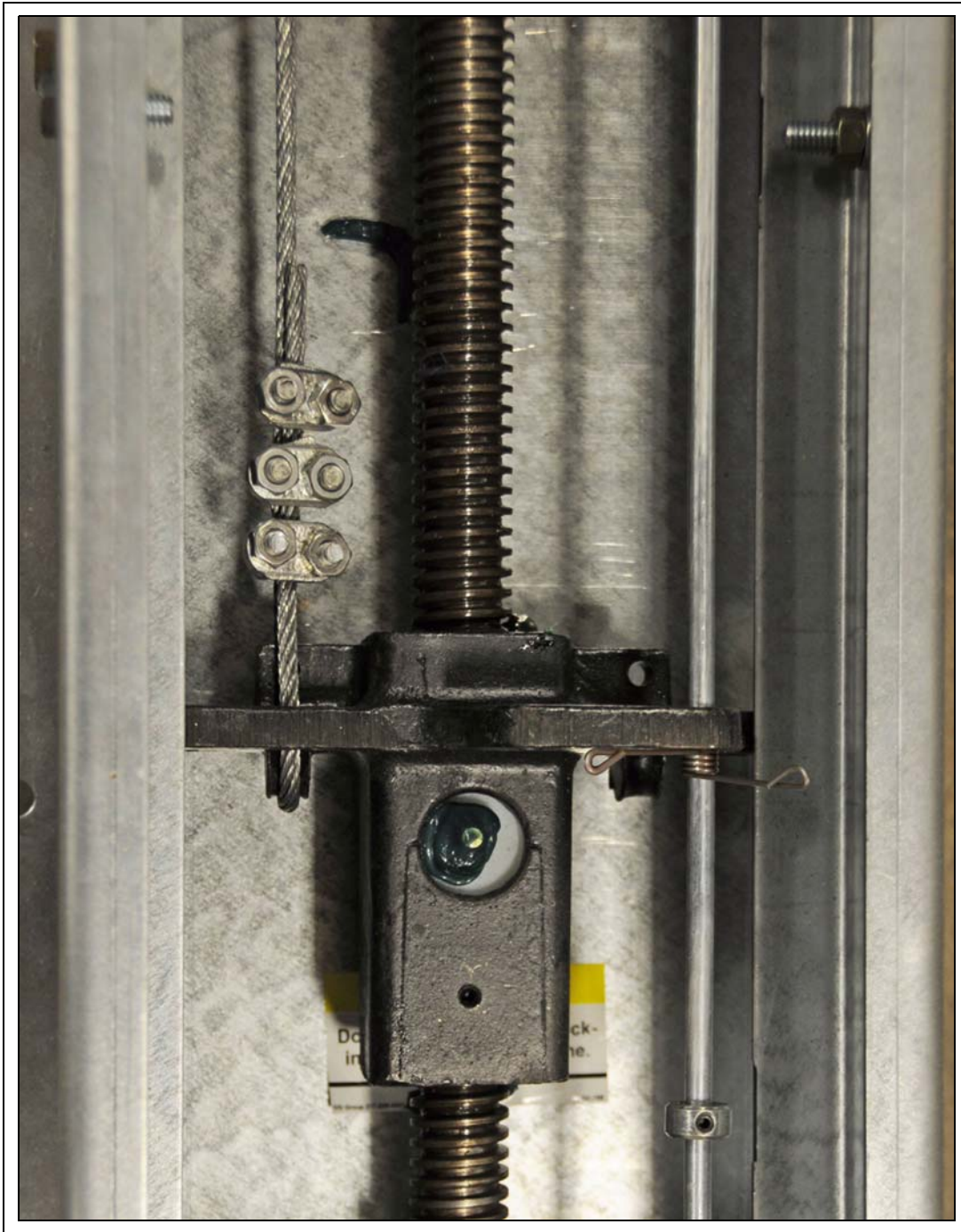


Figure 3D

10. Wire the Curtain Controller to the appropriate control. (See wiring diagrams on [Pages 46-51](#).)



Be sure to properly ground all motors and electrical equipment.

11. Close the curtains/vents fully using the manual mode of the controls. Set the lower limit by pinching the spring clamp together and sliding it up or down the rod. To prevent damage, do not set travel limits outside of the travel range indicated by the decals. The locking collar on the rod is factory set as a redundant fail safe. (See Figure 3E.) **NOTE:** Take up excess slack in the cable using the manual winch while paying close attention not to overtighten.
12. Open the curtains/vents to the desired height using the manual mode of the controls. Set the upper limit by pinching the spring clamp together and sliding it up or down the rod. To prevent damage, do not set travel limits outside of the travel range indicated by the decals. The locking collar on the rod is factory set as a redundant fail safe. (See Figure 3E.)
13. Re-install the front cover. This will protect the integrity of the machine and ensure the safety of those working on or near the machine. (See Figure 3E.)

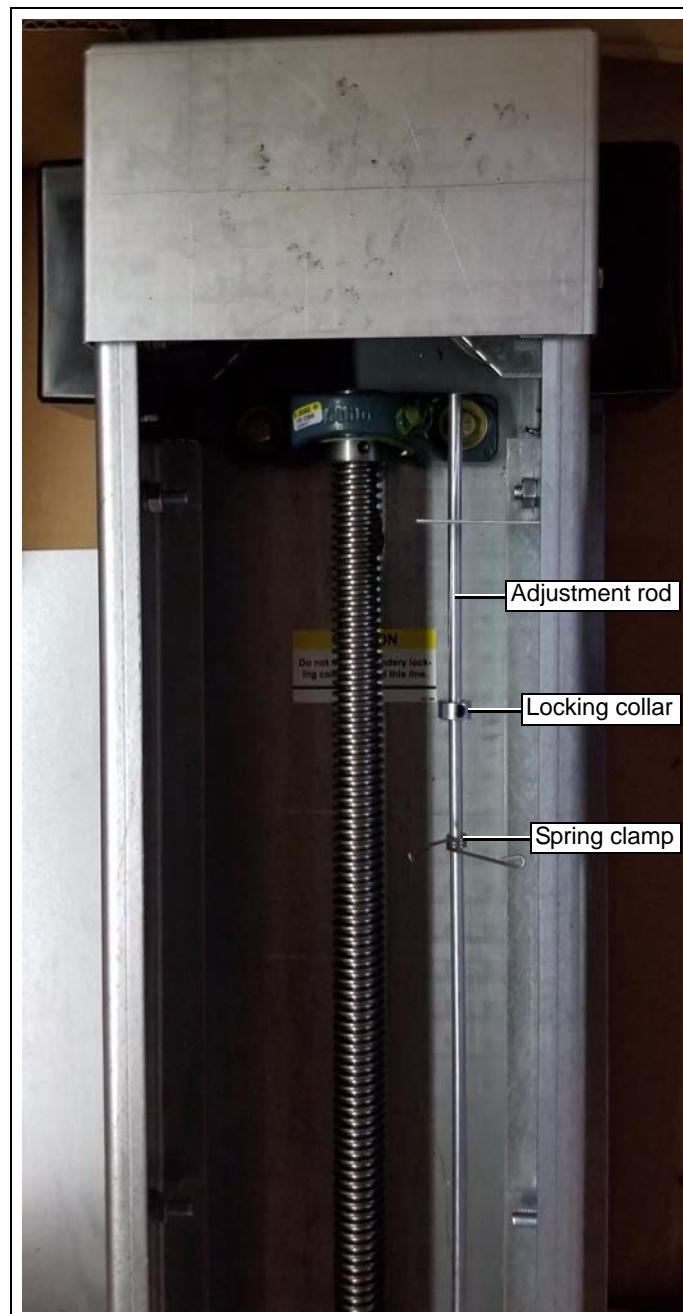


Figure 3E

3. Installation

Latchout Switch

To ensure proper operation of and prevent damage to the latchout switch, please follow the instructions carefully. The switch is factory wired as N.C. (Normally Closed), and operates in two (2) positions, 90° apart as shown below. Any other orientation is incorrect and may prevent normal operation and damage to the switch.

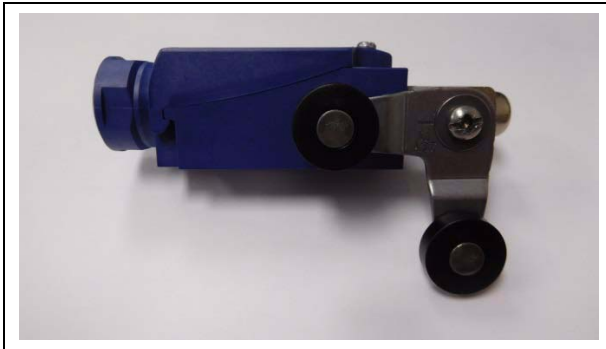


Figure 3F *Open Circuit*



Figure 3G *Closed Circuit*

If the switch is being field installed, disassemble the switch and wire in the closed circuit position to ensure proper operation. Notice below that the black switch plunger is fully extended in the open circuit position (See [Figure 3H](#)) and can become stuck in this position even after rotating the arm to the closed circuit position. The switch wired in this position in some cases prevent the switch from becoming fully seated back into the switch housing as shown in [Figure 3J](#) resulting in misalignment and improper operation. [Figure 3K on Page 19](#) shows the correct position with the plunger recessed into the switch housing.

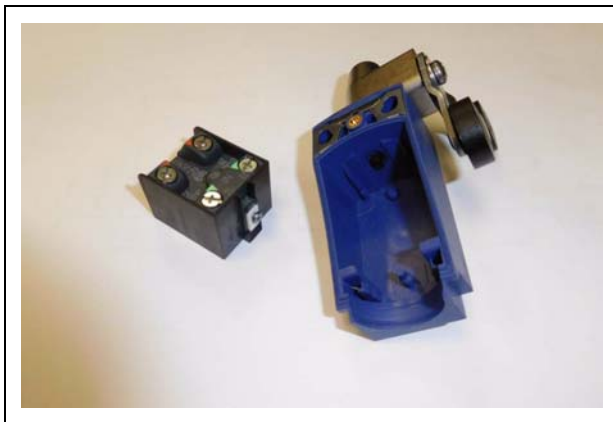


Figure 3H *Incorrect (Open Circuit Position)*

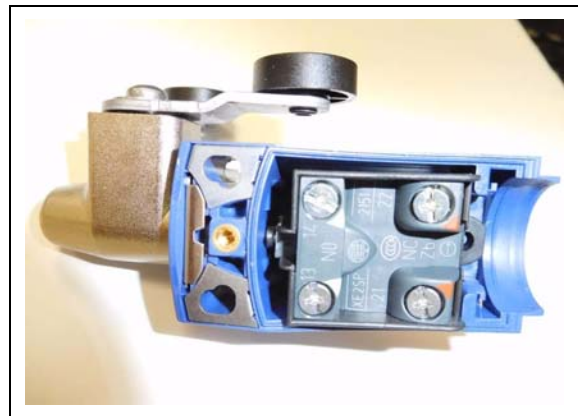


Figure 3I *Incorrect (Open Circuit Position)*

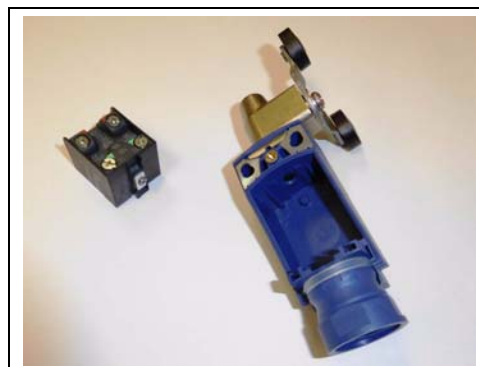


Figure 3J *Correct (Closed Circuit Position)*

Refer to [Figure 3K](#) and the wiring diagram [on Page 51](#) for correct wiring of the switch between the N.C. (Normally Closed) terminals.



Figure 3K N.C. (Normally Closed)

Reassemble switch cover and perform continuity test between terminals 7 and 8 to verify correct operations of switch when actuated between the open and closed circuit positions.

IMPORTANT: After switch installation and prior to curtain machine operation, ensure that the relationship between the switch and drive block is correct. Failure to do so will damage switch, switch bracket and possibly other surrounding components.

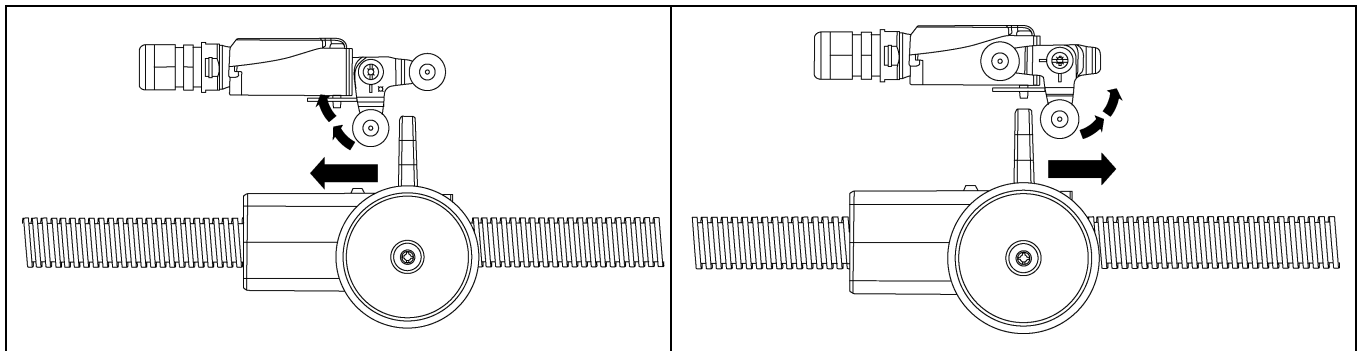


Figure 3L Correct Orientation

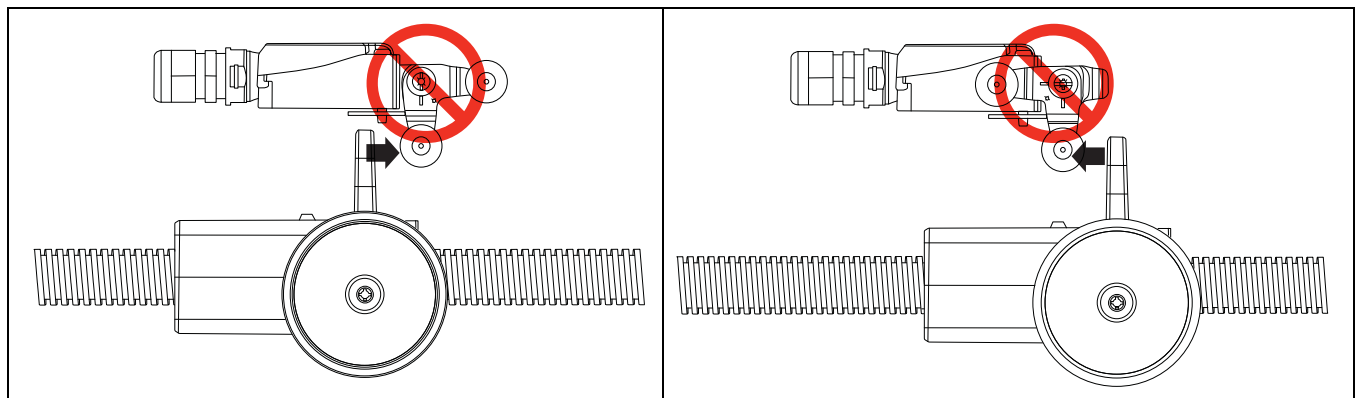
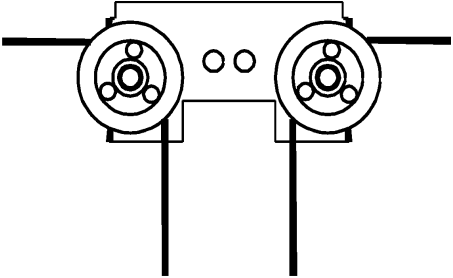
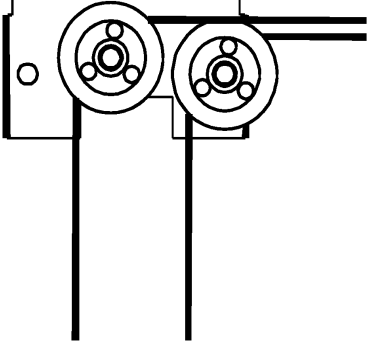
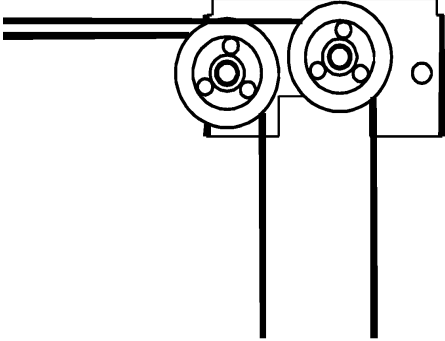
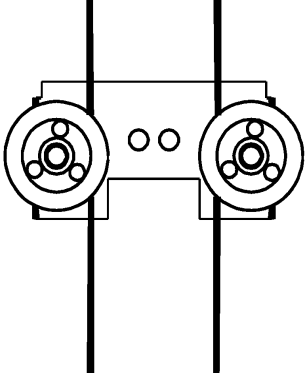


Figure 3M Incorrect Orientation

4. Header Pulley

Cable Configurations

Pulley Configuration(s)	Used when
	<p>Pulling two (2) curtains with the Curtain Controller.</p>
	<p>Pulling one curtain to the right of the Curtain Controller.</p>
	<p>Pulling one curtain to the left of the Curtain Controller.</p>
	<p>Curtain Controller is mounted horizontally. Remove the cap plugs in the top of the machine and run cables through the top holes.</p>

Pulley Cover Mounting Instructions

Attaching Pulley Covers to Pre-Existing Cable

NOTE: If you do not have pre-existing cable, drill a 1/4" hole in the appropriate dimple and proceed to [Step 4](#).

Step 1: Determine on which side of the machine the pulley cover will be mounted. This will affect where the slot will be cut in [Step 2](#).

Step 2: Using a saw, cut a slot from the bottom of the pulley cover lip to the dimple on the cover's face. When slotting the right pulley cover, use the right dimple for placement. When slotting the left pulley cover, use the left dimple for placement. (See [Figure 5A](#) for slot placement.)

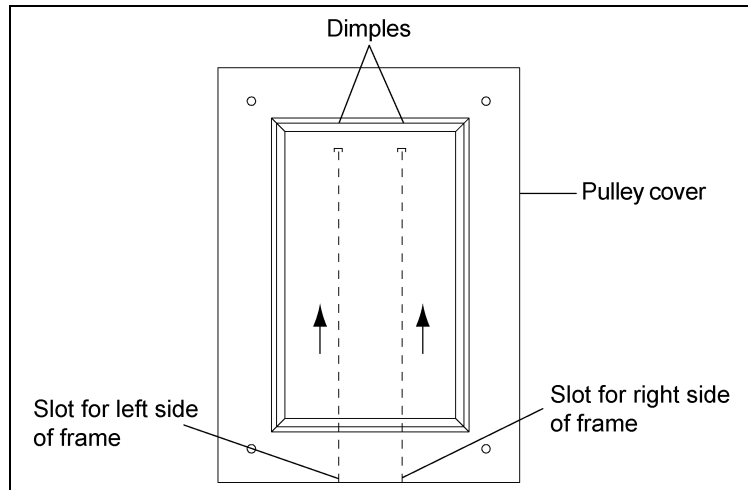


Figure 5A

Step 3: Slide the existing cable into the slot until it reaches the dimple.

Step 4: Remove existing sheet metal screw. (See [Figure 5B](#) for pulley cover fastening.)

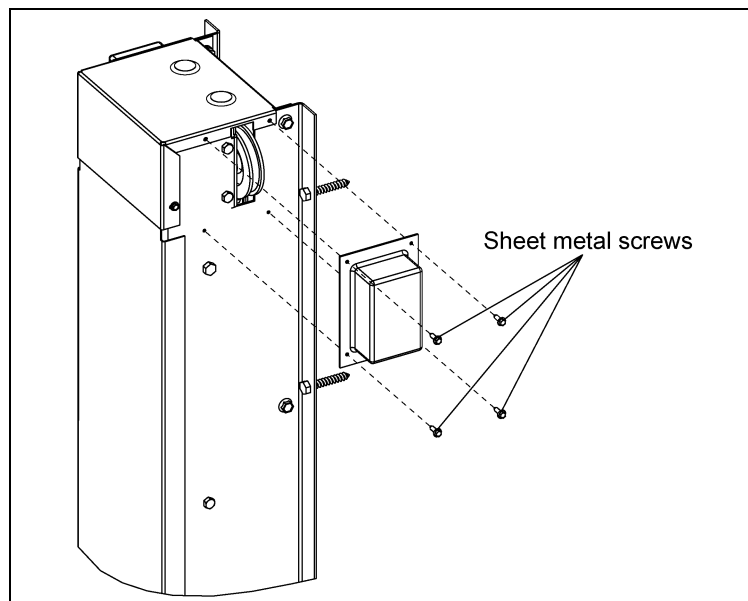


Figure 5B

Step 5: Fasten the pulley cover to the machine using four (4) #10-16 x 5/8" sheet metal screws. The top of the pulley cover should be flush with the top of the machine.

6. Maintenance

Safety in Maintenance and Repairs

Before starting any repairs or maintenance on the Curtain Controller System or control units, observe the following safety steps:

1. Isolate the system from the electricity supply by switching OFF the power isolator and lock it in the OFF position.
2. Keep the key in your possession.
3. Do not reconnect the power supply until all work is completed and all guards are correctly refitted.

It is recommended that the end user practices a monthly inspection of the Curtain Controller and all items used in conjunction (cables, pulleys, brackets, hand winches etc.) with the machine.

1. Inspect the drive screw. Lubricate liberally with a lithium grease of an NLGI No. 2 consistency (extreme pressure properties).
2. Inspect spring clamps and locking collars on the adjustment rod to ensure activation of limit switches.
3. Inspect cable, pulleys, brackets, hand winches etc., for alignment and premature wear. Realign and/or replace as needed.
4. Inspect bearings checking for smooth rotation and listening for squeaks.
5. Inspect set screws in couplers and in pillow block bearing.
6. Manually run machine in both directions to ensure positive shut off and unrestricted cable movement.
7. Inspect drive screw for debris in the threads. Debris in threads may cause premature failure of drive block.
8. Inspect the thrust bearing. Lubricate as needed.

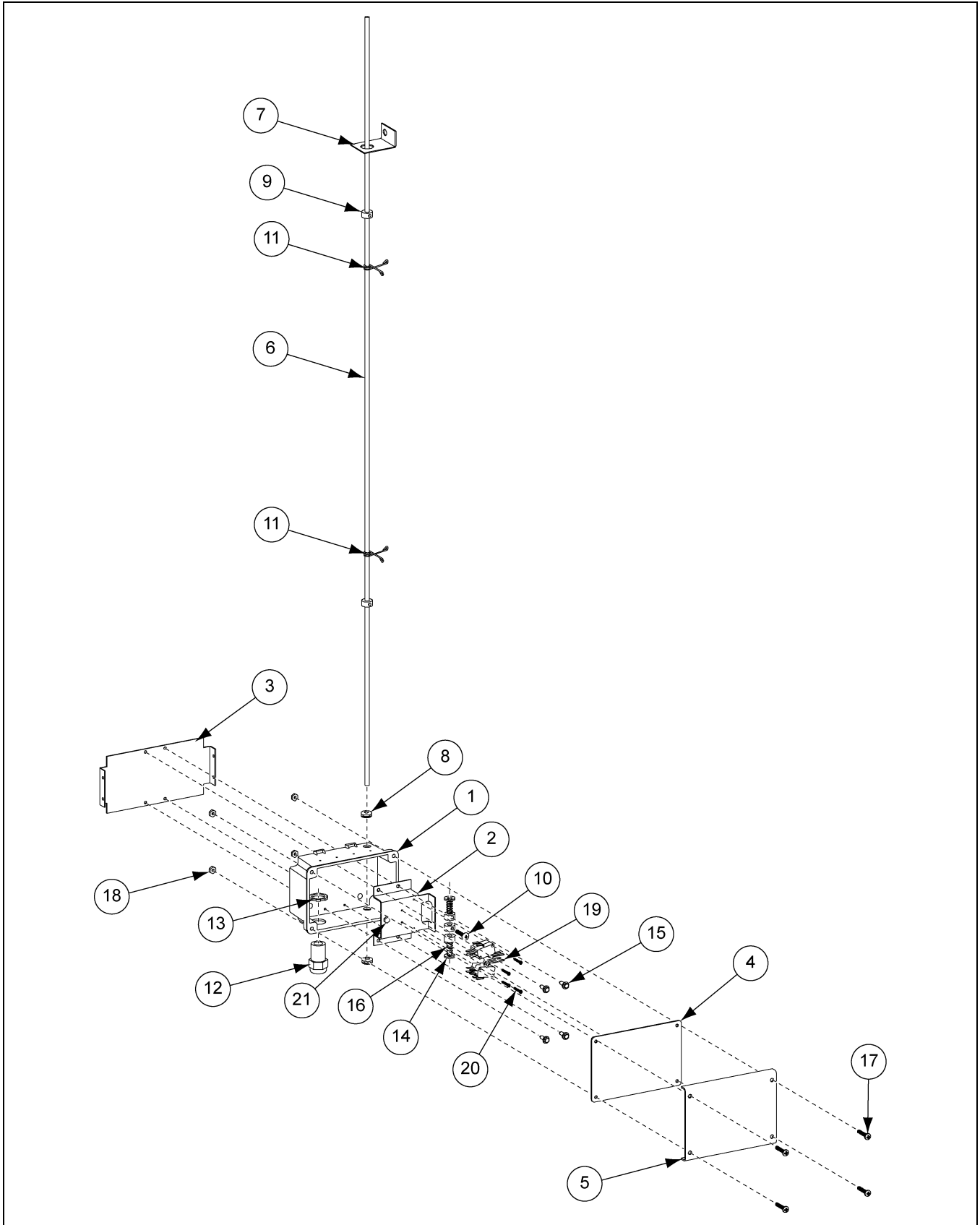
7. Troubleshooting Guide

Problem	Possible Cause	Corrective Action
1. Will not run in manual mode.	<ol style="list-style-type: none"> Control not in manual mode. Toggle switch failure. 	<ol style="list-style-type: none"> Move switch to manual setting. Check for loose wire connection. Replace toggle switch.
1. Machine operates in opposite direction in response to temperature change.	<ol style="list-style-type: none"> Control wired incorrectly. 	<ol style="list-style-type: none"> Re-wire to wiring schematic instruction.
<ol style="list-style-type: none"> Runs in both directions (automatic mode), but only one direction (manual mode). Will not run in either direction (manual or automatic modes). 	<ol style="list-style-type: none"> Control failure. No power (circuit breaker or fuse). Tripping may indicate machine overload or electrical wire short. Repair or replace before reenergizing circuit. Motor failure. Primary switch failure. 	<ol style="list-style-type: none"> 1a. Check for loose wire connection. 1b. Replace control. 2. Check main panel circuit breaker or fuse. 3. Check control circuit breaker and/or fuse. 4. Motor designed with internal thermal protection. Before replacing, allow motor to cool down and reset. May indicate machine overload. Contact factory for machine restrictions. 5a. Replace primary switch. 5b. Check to see if secondary switch is not depressed.
1. Will not run in automatic but does operate in manual.	<ol style="list-style-type: none"> Control not in automatic mode. Control failure 	<ol style="list-style-type: none"> Move switch to automatic setting. Replace control.
1. Runs in one direction only, both automatic and manual.	<ol style="list-style-type: none"> Broken or loose wire. Limit switch catching on adjustment rod mechanism. Limit switch failure. Control failure. 	<ol style="list-style-type: none"> Repair broken or loose wire. Free switch and adjust as needed. Replace switch. Replace control.

NOTES

1. Enclosed Limit Switch Assembly (52-0432, 52-0433, 52-0434 and 52-0435) - *(See Pages 26 and 27.)*
2. Motor Components - *(See Pages 28-31.)*
3. 24" 15 RPM Drop Feeder Controller (DF2415) - *(See Pages 32-35.)*
4. 36" 30 RPM AVS Curtain Control with Latchout Switch (CC3630-W) - *(See Pages 36-39.)*

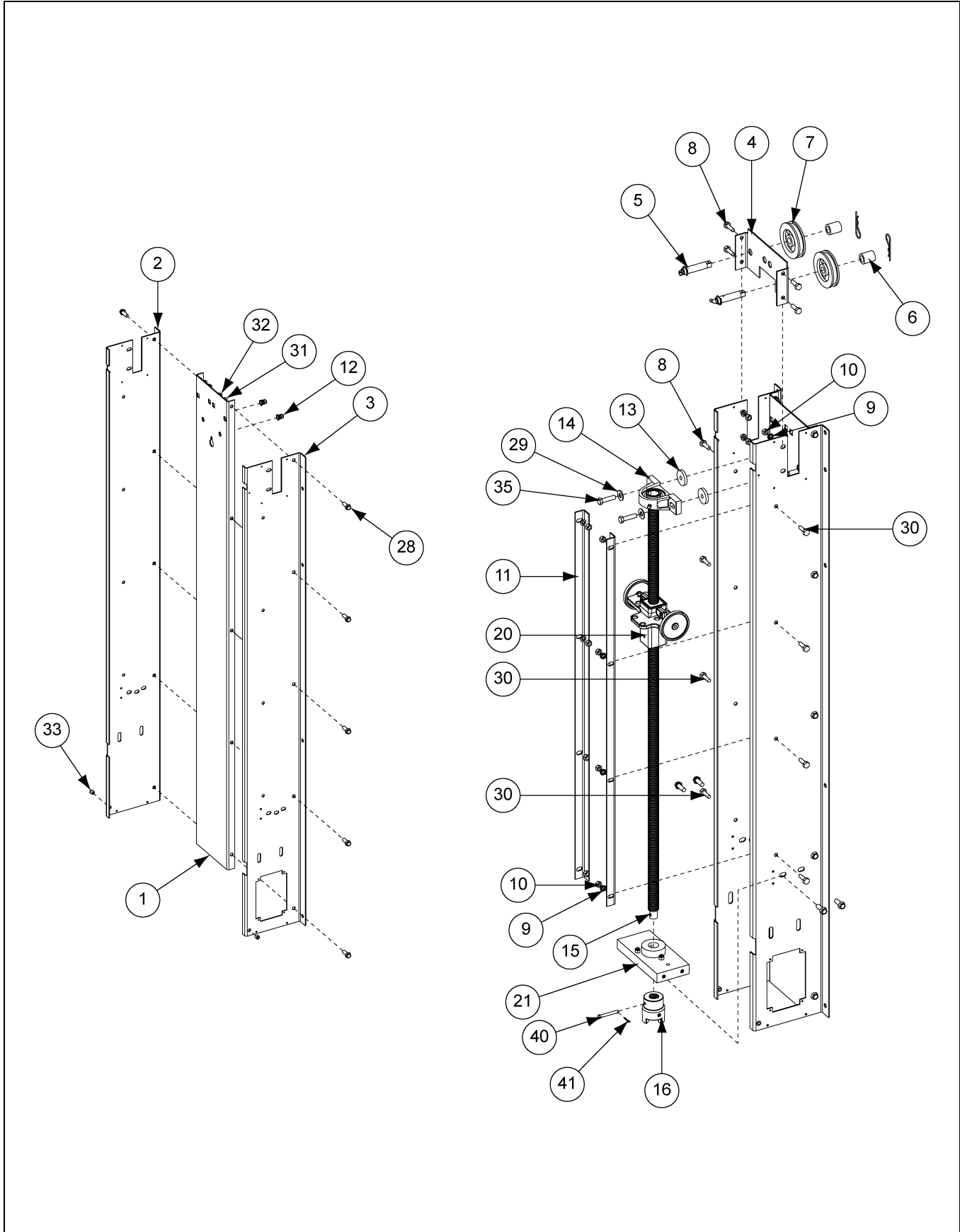
Enclosed Limit Switch Assembly (52-0432, 52-0433, 52-0434 and 52-0435)



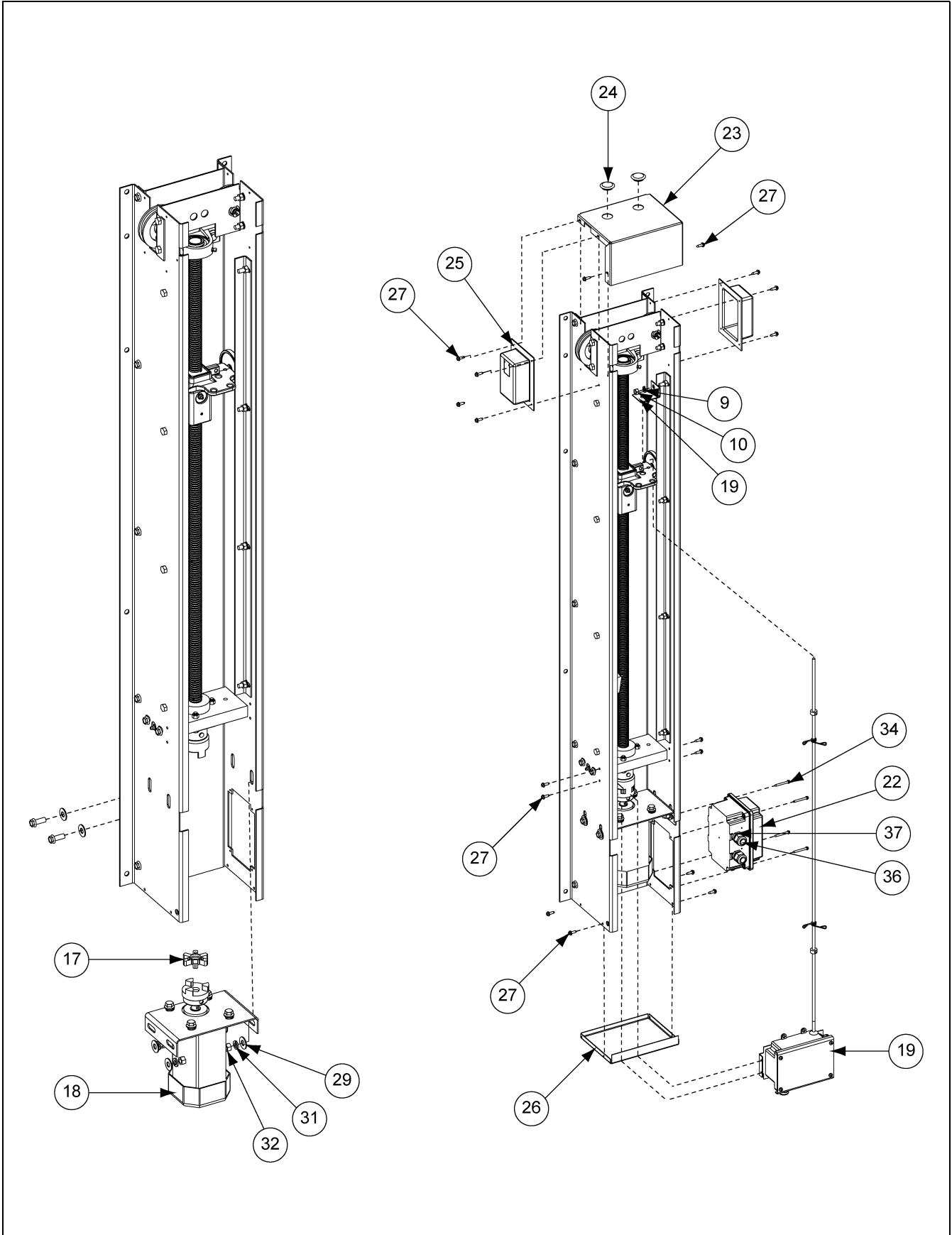
Enclosed Limit Switch Assembly Parts List (52-0432, 52-0433, 52-0434 and 52-0435)

Ref #	Part #	Description	Qty
1	52-0431	Limit Switch Electrical Box (4" x 6")	1
2	52-0319	Limit Switch Bracket (4" x 6")	1
3	52-0320	Electrical Box Mounting Plate (4" x 6")	1
4	52-0322	Seal, Flat 4" x 6" Box	1
5	52-0318	Lid 4" x 6" Flat	1
6	50-0144	24" Travel Adjustment Rod (52-0435)	1
	50-0145	36" Travel Adjustment Rod (52-0434)	1
	50-0146	48" Travel Adjustment Rod (52-0433)	1
	50-0147	60" Travel Adjustment Rod (52-0432)	1
7	52-0321	Adjustment Rod Retainer 4" x 6"	1
8	S-10731	Grommet, 1/4" x 7/16" I.D. x 1/8" Thick	2
9	50-0159	Collar, 17/64" I.D. x 0.62" with Set Screw, Plated	5
10	S-10771	Screw, 10-32 x 1" Extra Wide THP	1
11	30-0519	0.235" I.D. Spring Clamp	2
12	FH-1310	Cord Connector, Heyco	1
13	FH-1309	Nut, Lock 1/2" with Pipe Threads	1
14	S-2126	Washer, Flat 1/2" x 2-5/8" SAE ZN Grade 2	2
15	S-280	Screw, SDS #10-16 x 5/8" HWH ZN	4
16	52-0436	Spring, Actuator Controller	2
17	S-995	Screw, MS #10-24 x 1" PHP SS	4
18	S-7931	Nut, Hex #10-24 SS - 304 or 316	4
19	S-7974	Curtain Controller Limit Switch	4
20	S-8810	Screw, SMSAB #4 x 1" PHP ZN	4
21	S-8185	Screw, SDS #8-18 x 1/2" HWH SS	1
N/S	52-0234	Curtain Control Limit Wires 28" Red	2
N/S	52-0235	Wire-16 Black/White 28", E106-1011, None	2
N/S	52-0236	Wire-16 Black, 28", E106-1011, 0.375	2
N/S	52-0237	Wire-16 Black, 4", 2 E106-1011	1
N/S	52-0238	Wire-16 Green/Yellow, 28", E106-1006, 0.375	1
N/S	DC-889	Decal, Danger High Voltage	1
N/S	S-6554	Tie, Wire 8" Plastic	1
N/S	S-9148	Wrench, Allen 3/32" Short	1

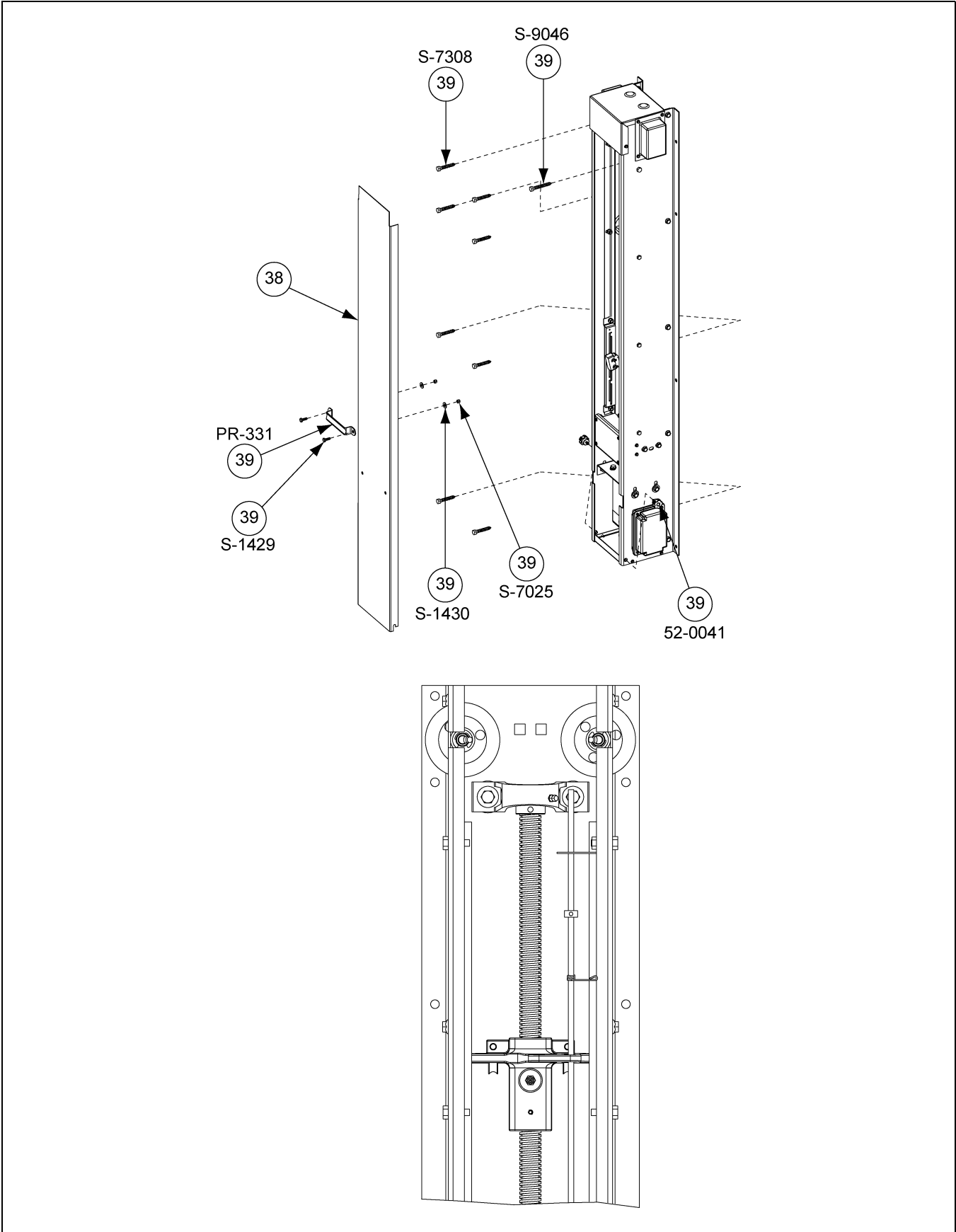
Motor Components



Motor Components (Continued)



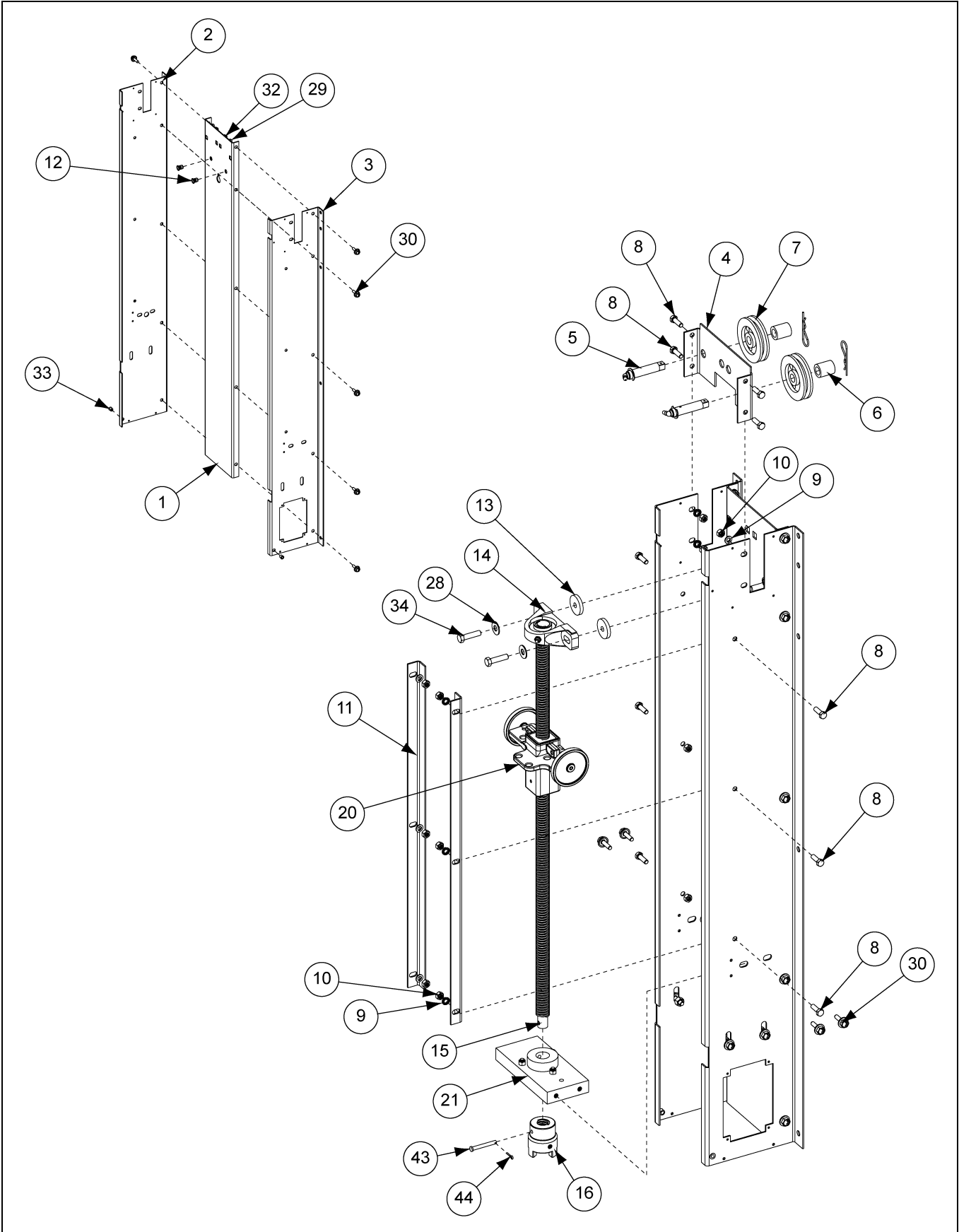
Motor Components (Continued)



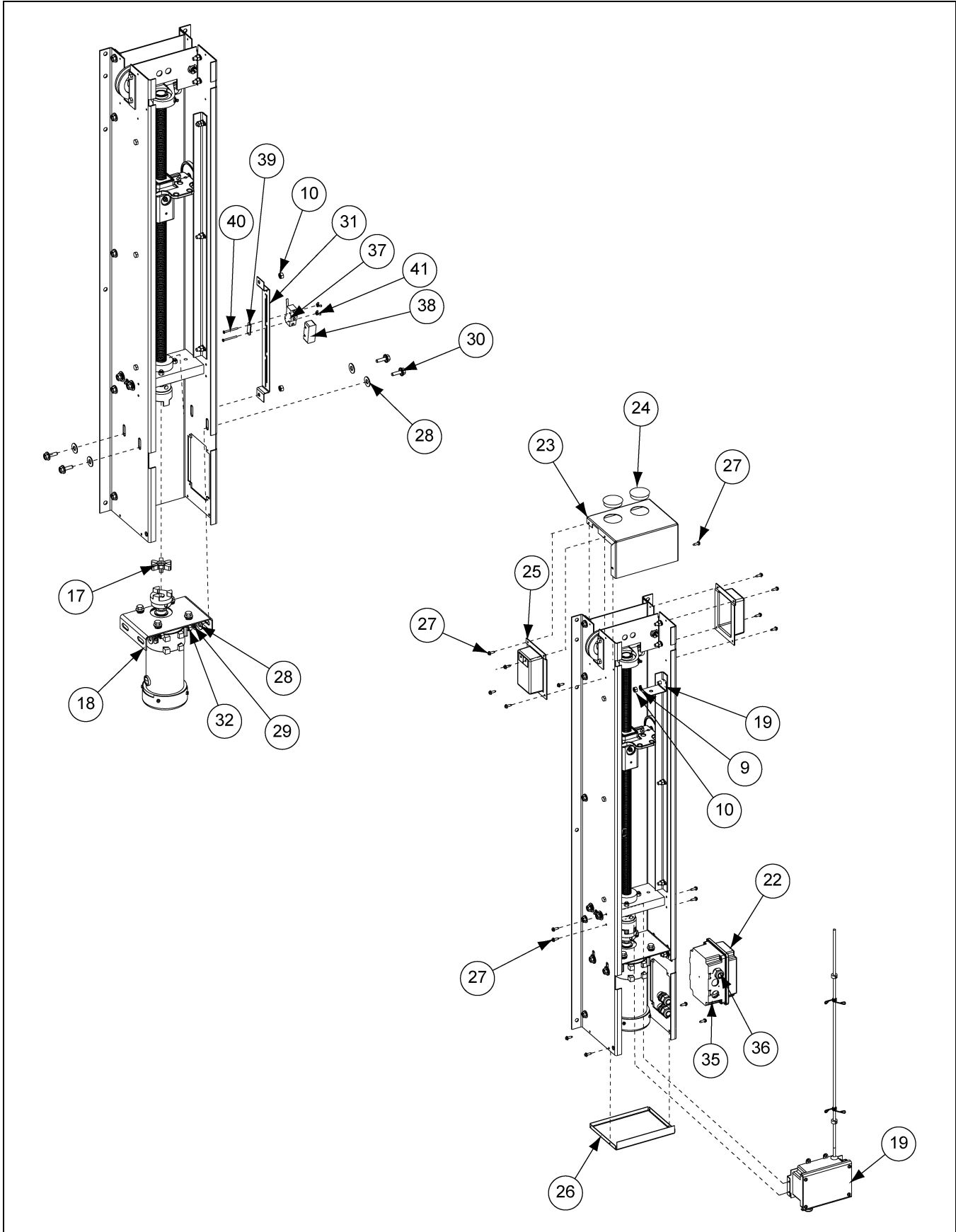
Motor Components Parts List

Ref #	Part #	Description	Qty
1	52-0004	Base Plate 3'	1
2	52-0001	Frame Side Left 3'	1
3	52-0002	Frame Side Right 3'	1
4	52-0006	Pulley Support Plate	1
5	52-0188M	Sprocket/Pulley Shoulder Bolt	2
6	52-0010	Pulley Spacer	2
7	50-0089	Pulley with Needle Bearing	2
8	S-8072	Bolt, HHCS 5/16"-18 x 3/4" ZN	9
9	S-1147	Split Lock Washer 5/16" ZN	12
10	S-396	Hex Nut 5/16"-18 JS500 Grade 5	15
11	52-0007	Angle (Drive Block) 3	2
12	50-0043	Insert, Threaded 3/8"-16 ALS7-616-150	2
13	S-8739	Flat Washer 3/8" x 1-1/2" x 1/4" TH	2
14	52-0348	Bearing, 1" Pillow Block with Set Screws	1
15	50-0056	Drive Screw, 36" Travel	1
16	52-0330	Coupler, Drive One Piece Machined	1
17	52-0012	Coupler, Spider Hytrel 7/8" F/LO95 Love Joy	1
18	52-0051	Motor Assembly, 30 RPM CC	1
19	52-0435	Enclosed Limit Switch Assembly for 24" CC	1
	52-0434	Enclosed Limit Switch Assembly for 36" CC	1
	52-0433	Enclosed Limit Switch Assembly for 48" CC	1
	52-0432	Enclosed Limit Switch Assembly for 60" CC	1
20	52-0276	Drive Block Assembly with Nylon Insert	1
21	AC52-0174M	Bearing Kit with Bearing Cover Nut (for Manufacturing Only)	1
22	52-0195	4" x 6" Electrical Box Assembly CC MAC	1
23	52-0021	Top Cover	1
24	52-0044	Caplug, BPF-1	2
25	53-0007	Pulley Cover	2
26	52-0022	End Cap	1
27	S-280	Screw, SDS #10-16 x 5/8" HWH ZN	19
28	S-7927	Flange Bolt, 3/8"-16 x 1 ZN Grade 8	18
29	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	10
30	S-1146	Bolt, HHCS 5/16"-18 x 1" ZN Grade 2	3
31	S-1054	Split Lock Washer, 3/8" ZN Clear	18
32	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	14
33	S-8979	Nutsert 1/4"-20 Yellow Dichromate	2
34	S-8798	Screw, SDS #10-16 x 5/8" HWH ZN	4
35	S-2086	Bolt, HHCS 3/8"-16 x 1-1/2" ZN Grade 8	2
36	FH-1310	Cord Connector, Heyco	2
37	FH-1309	Nut, Lock 1/2" with Pipe Threads	2
38	52-0025	Front Cover 3' AVS Curtain Control	1
39	52-0211	CC Hardware Package	1
40	S-9319	Clevis Pin 1/4" x 2" ZN Heat Treated	1
41	S-6626	Cotter Pin 3/32" x 1/2" ZN Grade 2	1
N/S	DC-889	Decal, Danger High Voltage	1
N/S	DC-1516	Decal, Caution Automatic Equipment	1
N/S	DC-818	Decal, New CC Front Panel	1
N/S	DC-1345	Decal, Danger Sprocket/Chain	1
N/S	DC-1538	Decal, CC-Grease Zerk Locations	1
N/S	DC-789	Decal, Orange Adjustment Line	2
N/S	7098659	Trim Sof-Tone Red Double Lip 1/16"	1

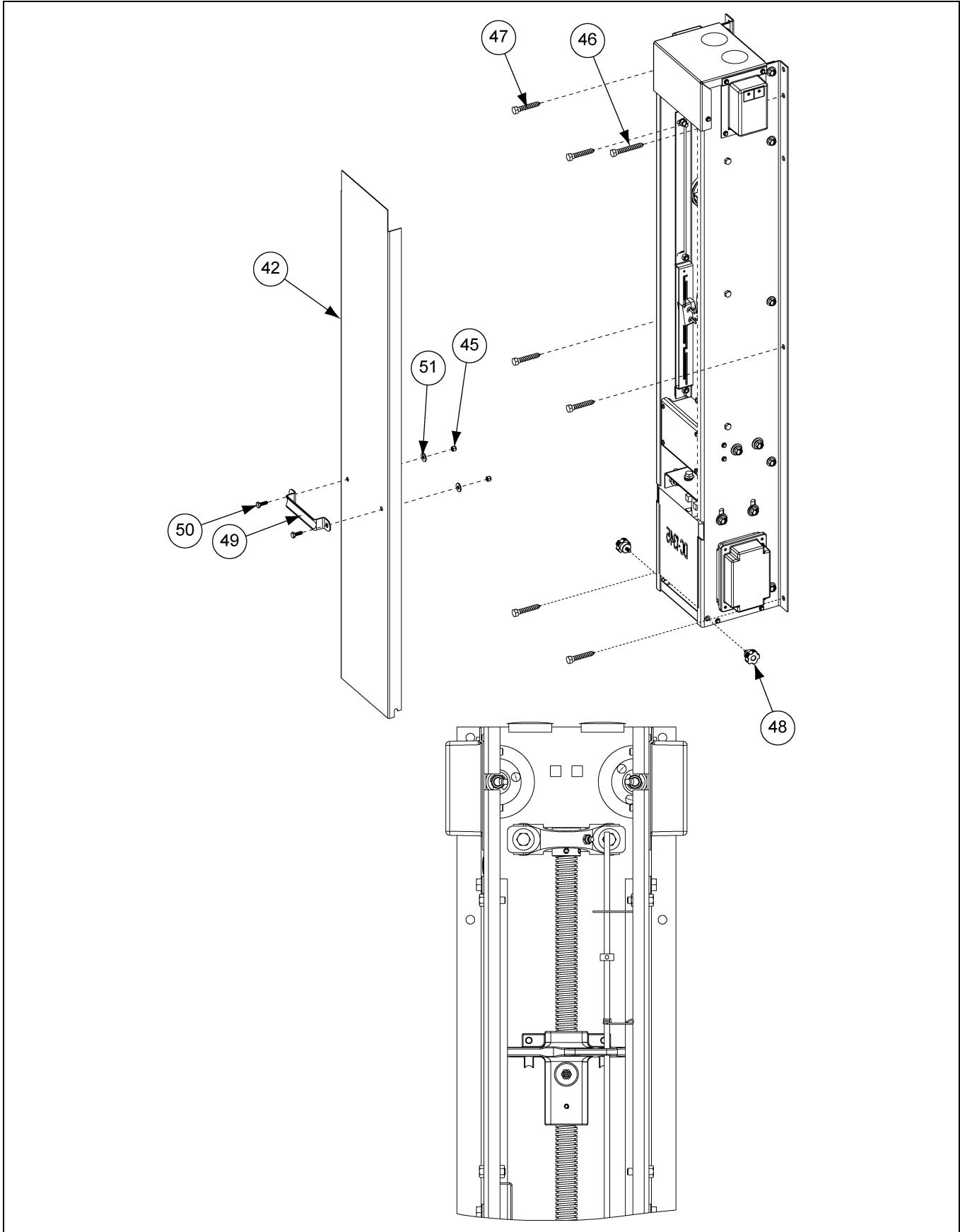
24" 15 RPM Drop Feeder Controller (DF2415)



24" 15 RPM Drop Feeder Controller (DF2415) (Continued)



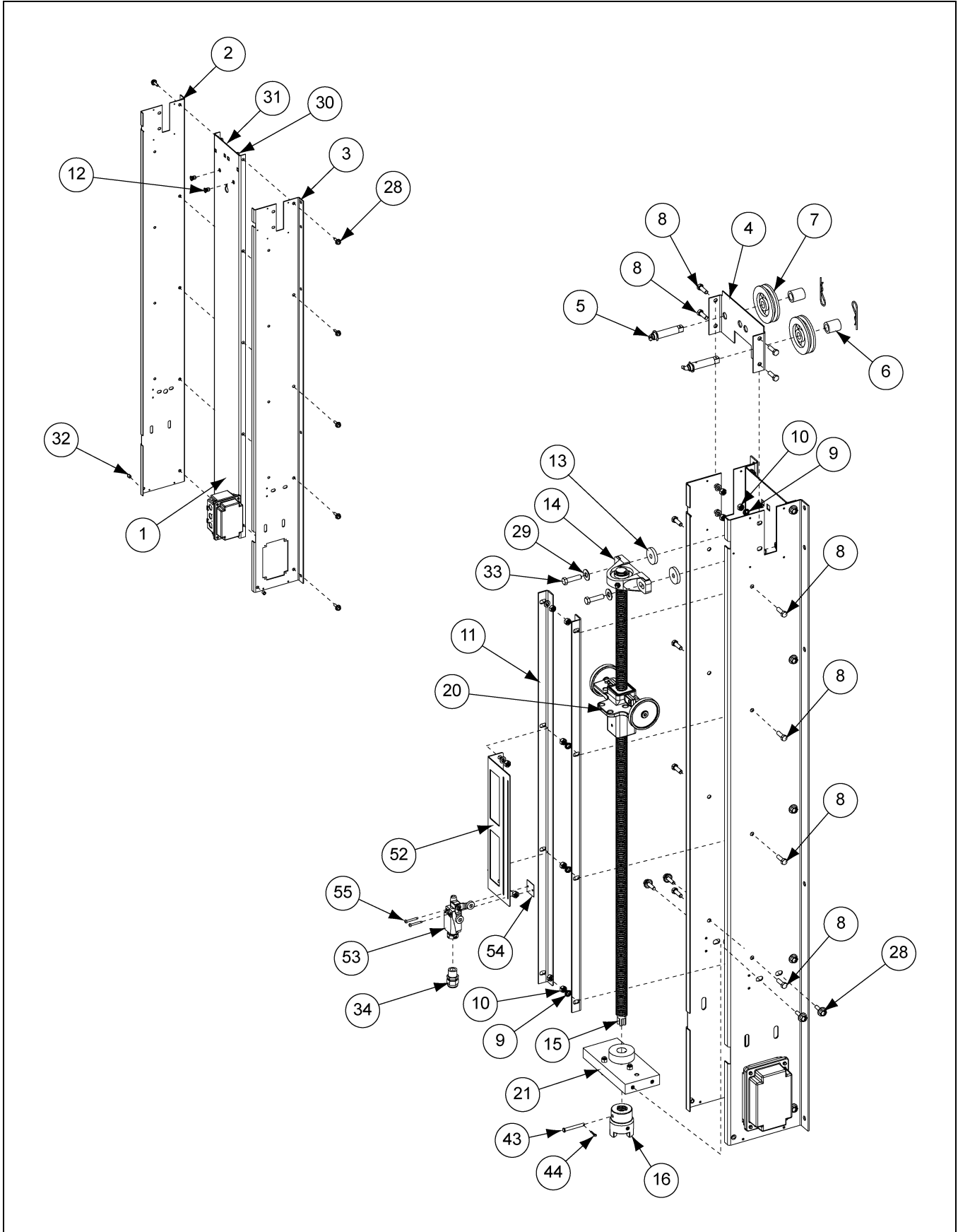
24" 15 RPM Drop Feeder Controller (DF2415) (Continued)



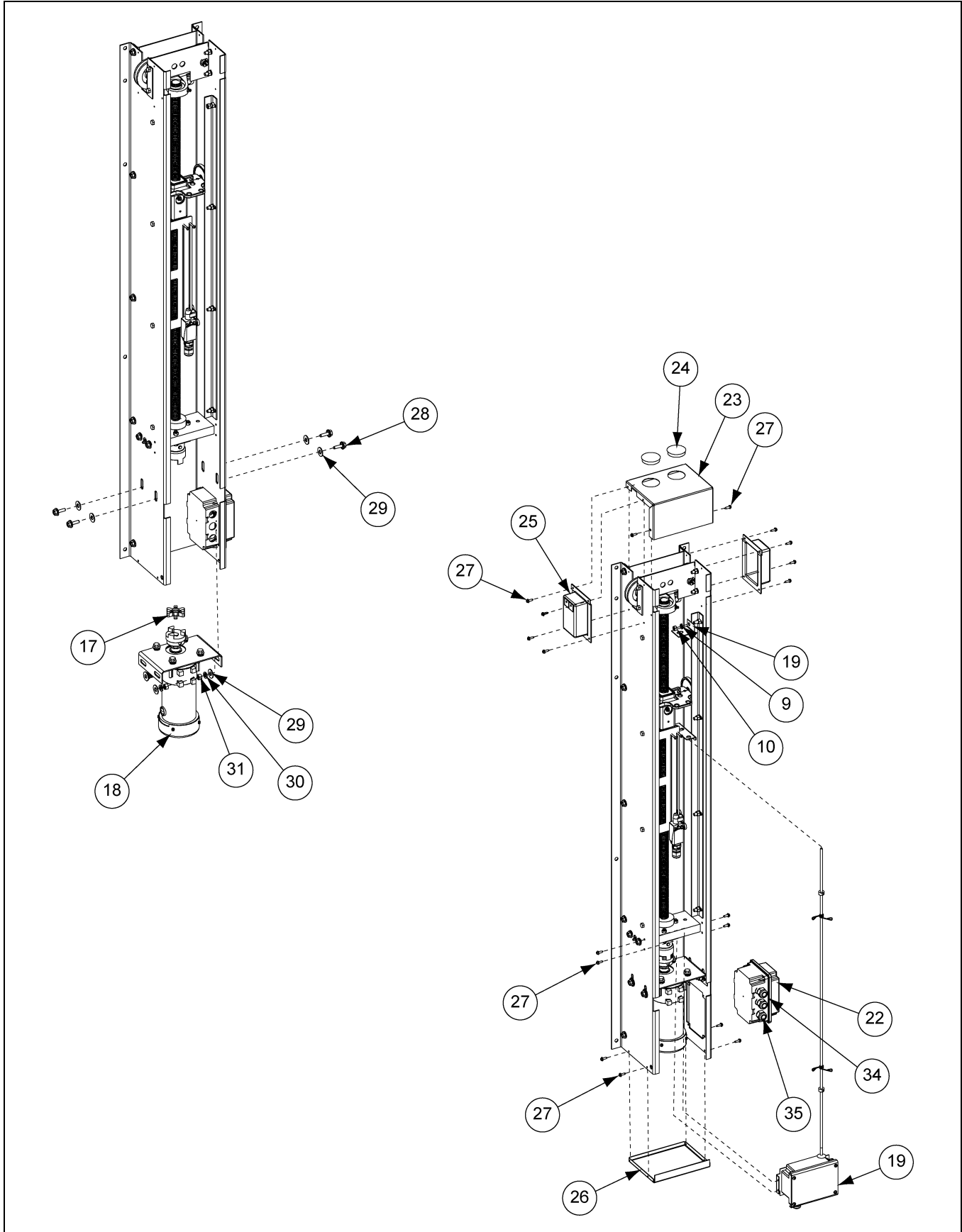
24" 15 RPM Drop Feeder Controller (DF2415) Parts List

Ref #	Part #	Description	Qty
1	52-0028	Base Plate 2' AVS Curtain Control	1
2	52-0026	Frame Side Left 2' Curtain Control	1
3	52-0027	Frame Side Right 2' Curtain Control	1
4	52-0006	Pulley Support Plate	1
5	52-0188M	Sprocket/Pulley Shoulder Bolt	2
6	52-0010	Pulley Spacer	2
7	50-0089	Pulley with Needle Bearing	2
8	S-1146	Bolt, HHTB 5/16"-18 x 1" ZN Grade 2	10
9	S-1147	Split Lock Washer 5/16" ZN	10
10	S-7484	Hex Nut 5/16"-18 JS500 Grade 5	11
11	52-0029	Angle Drive Block 2' Curtain Control	2
12	50-0043	Insert, Threaded 3/8"-16 ALS7-616-150	2
13	S-8739	Flat Washer 3/8" x 1-1/2" x 1/4" TH	2
14	13-0226	Bearing, Cast Pillow Block Assembly (1" Bore)	1
15	50-0055	Drive Screw, 24" Travel	1
16	52-0330	Coupler, Drive One Piece Machined	1
17	52-0012	Coupler, Spider Hytrel 7/8" F/LO95 Love Joy	1
18	52-0050	Motor Assembly 15 RPM CC	1
19	52-0435	Enclosed Limit Switch Assembly for 24" CC	1
20	52-0276	Drive Block Assembly with Nylon Insert	1
21	AC52-0174M	Bearing Kit with Bearing Cover Nut (for Manufacturing Only)	1
22	52-0195DF	4 x 6 Electric Box Assembly Drop Feeder	1
23	52-0021	Top Cover	1
24	HH-7041	Plug 2" Plastic Hole	2
25	52-0402	Cover, Pulley on Curtain Controller	2
26	52-0022	End Cap	1
27	S-280	Screw, SDS #10-16 x 5/8" HWH ZN	18
28	S-248	Flat Washer 3/8" 7/16" I.D. 1" O.D. YDP	14
29	S-1054	Split Lock Washer, 3/8" ZN Clear	18
30	S-7485	Flange Bolt 3/8"-16 x 1" JS500 Grade 8 or 8.2	18
31	52-0036	Latchout Switch Bracket, Curtain Controller	1
32	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	14
33	S-8979	Insert, Threaded 1/4"-20 Steel/Zinc-Yellow Dichromate	2
34	S-2086	Bolt, HHCS 3/8"-16 x 1-1/2" ZN Grade 8	2
35	FH-1310	Cord Connector, Heyco	3
36	FH-1309	Nut, Lock 1/2" with Pipe Threads	3
37	S-8297	Micro Switch	1
38	1573	Switch, Limit Cover, Micro switch 5PA1	1
39	S-7148	Nut, Weld 6-32 TAP 1" Centers	1
40	S-7181	Screw, MS #6-32 x 1-1/2" RHS ZN Grade 2	2
41	S-8940	Wing Nut #6-32 ZN Grade 2	2
42	52-0030	Front Cover 2' AVS Curtain Control	1
43	S-9319	Clevis Pin 1/4" x 2" ZN Heat Treated	1
44	S-6626	Cotter Pin 3/32" x 1/2" ZN Grade 2	1
45	S-7025	Nylock Nut 1/4"-20 ZN Grade 5	2
46	S-9046	Screw, Lag 3/8" x 3" HH ZN Grade 2	1
47	S-7308	Screw, Lag 3/8" x 2" HH ZN	6
48	S-10529	Knob, 1/4"-20 x 1" SS, 1-3/8" Star Head	2
49	PR-331	Peak Cap Handle	1
50	S-1429	Bolt, HHCS 1/4"-20 x 3/4" Grade 2	2
51	S-1430	Flat Washer 1/4" USS ZN Grade 2	2
N/S	DC-889	Decal, Danger High Voltage	2
N/S	DC-1516	Decal, Caution Automatic Equipment	1
N/S	DC-818	Decal, New CC Front Panel	1
N/S	DC-1538	Decal, CC Grease Zerk Locations	1
N/S	DC-789	Decal, Orange Adjustment Line	2
N/S	DC-2403	Decal, CC Wiring Diagram, DF Series	1
N/S	DC-2226	Decal, ETL/Intertek Mark for Curtain Controller	1

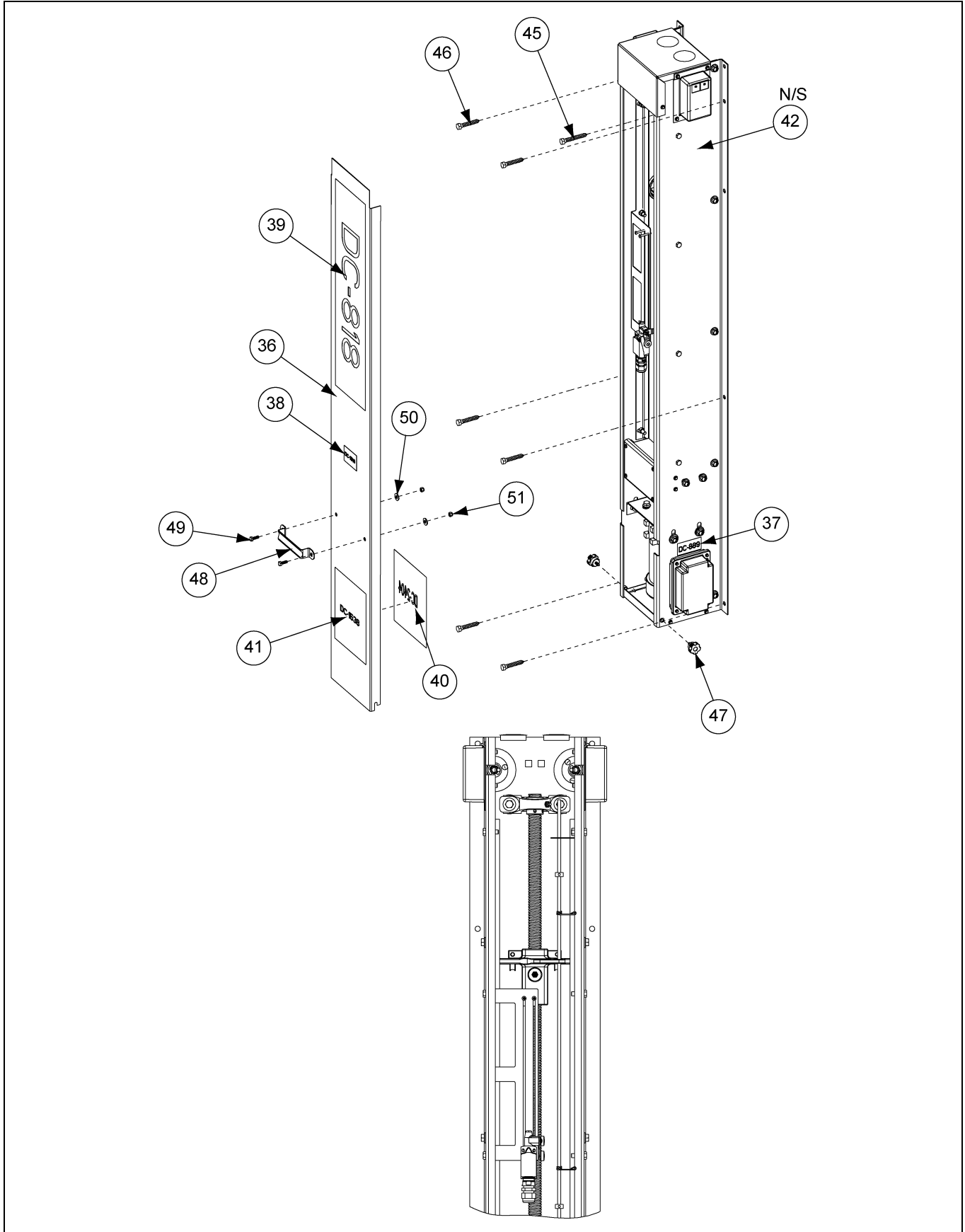
36" 30 RPM AVS Curtain Control with Latchout Switch (CC3630-W)



36" 30 RPM AVS Curtain Control with Latchout Switch (Continued)



36" 30 RPM AVS Curtain Control with Latchout Switch (Continued)



36" 30 RPM AVS Curtain Control with Latchout Switch (CC3630-W) Parts List

Ref #	Part #	Description	Qty
1	52-0004	Base Plate 3'	1
2	52-0001	Frame Side Left 3'	1
3	52-0002	Frame Side Right 3'	1
4	52-0006	Pulley Support Plate	1
5	52-0188M	Sprocket/Pulley Shoulder Bolt	2
6	52-0010	Pulley Spacer	2
7	50-0089/6450-2882-HH	Pulley with Needle Bearing	2
8	S-1146	Bolt, HHCS 5/16"-18 x 1" ZN Grade 2	12
9	S-1147	Split Lock Washer 5/16" ZN	12
10	S-7484	Hex Nut 5/16"-18 JS500 Grade 5	13
11	52-0007	Angle (Drive Block) 3	2
12	50-0043	Insert, Threaded 3/8"-16 ALS7-616-150	2
13	S-8739	Flat Washer 3/8" x 1-1/2" x 1/4" TH	2
14	13-0226	Bearing, Cast Pillow Block Assembly (1" Bore)	1
15	50-0056	Drive Screw, 36" Travel	1
16	52-0330	Coupler, Drive One Piece Machined	1
17	52-0012	Coupler, Spider Hytrell 7/8" F/LO95 Love Joy	1
18	52-0051	Motor Assembly, 30 RPM CC	1
19	52-0434	Enclosed Limit Switch Assembly for 36" CC	1
20	52-0276	Drive Block Assembly with Nylon Insert	1
21	AC52-0174M	Bearing Kit with Bearing Cover Nut (for Manufacturing Only)	1
22	52-0195W	4" x 6" Electrical Box Assembly, CC3630-W Curtain Machine	1
23	52-0021	Top Cover	1
24	HH-7041	Plug 2" Plastic Hole	2
25	52-0402	Cover, Pulley on Curtain Controller	2
26	52-0022	End Cap	1
27	S-280	Screw, SDS #10 - 16 x 5/8" HWH ZN	19
28	S-7485	Flange Bolt 3/8"-16 x 1" JS500 Grade 8 or 8.2	18
29	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	14
30	S-1054	Split Lock Washer, 3/8" ZN Clear	18
31	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	14
32	S-8979	Nutsert 1/4"-20 Yellow Dichromate	2
33	S-2086	Bolt, HHCS 3/8"-16 x 1-1/2" ZN Grade 8	2
34	FH-1310	Cord Connector, Heyco	3
35	FH-1309	Nut, Lock 1/2" with Pipe Threads	3
36	52-0025	Front Cover 3' AVS Curtain Control	1
37	DC-889	Decal, Danger High Voltage	1
38	DC-1516	Decal, Caution Automatic Equipment	1
39	DC-818	Decal, New CC Front Panel	1
40	DC-2404	Decal, Danger Sprocket/Chain	1
41	DC-1538	Decal, CC-Grease Zerk Locations	1
42	DC-789	Decal, Orange Adjustment Line	2
43	S-9319	Clevis Pin 1/4" x 2" ZN Heat Treated	1
44	S-6626	Cotter Pin 3/32" x 1/2" ZN Grade 2	1
45	S-9046	Screw, Lag 3/8" x 3" HH ZN Grade 2	1
46	S-7308	Screw, Lag 3/8" x 2" HH ZN	6
47	S-10529	Knob, 1/4"-20 x 1" SS, 1-3/8" Star Head	2
48	PR-331	Peak Cap Handle	1
49	S-1429	Bolt, HHCS 1/4"-20 x 3/4" Grade 2	2
50	S-1430	Flat Washer 1/4" USS ZN Grade 2	2
51	S-7025	Nylock Nut 1/4"-20 ZN Grade 5	2
52	52-0412	Latchout Switch Bracket, Cast Drive Block	1
53	52-0421	Limit Switch Assembly, Latchout XCKP217N12	1
54	52-0414	Latchout Switch Screw Plate	1
55	S-7331	Screw, TCSF #8-32 x 1-1/4" PHP ZN	2
N/S	WR-142BK	Wire, 14-2 SJ Black Wire Cord	5

AC180-A Installation Kit (Purchased Separately)

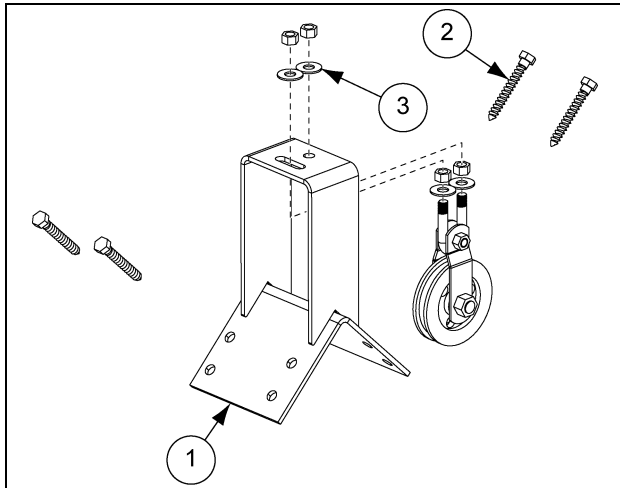


Figure 9A AC1820 Assembly

AC1820 Bracket - Outside Corner Assembly			
Ref #	Part #	Description	Qty
1	BAC1820	Corner Bracket Assembly	1
2	S-9046	Screw, Lag 3/8" x 3" HH ZN Grade 2	4
3	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	4
4	S-6554	Tie, Wire 8" Plastic	1

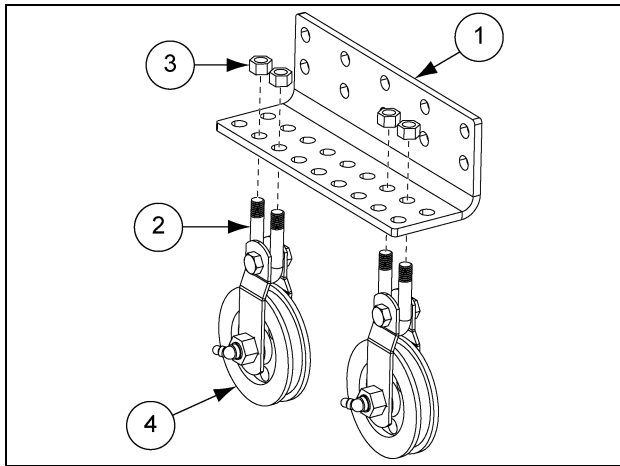


Figure 9B AC1821 Assembly

AC1821 Bracket - 3" x 3" x 9" 2 Pulleys Assembly			
Ref #	Part #	Description	Qty
1	1821	Bracket - 3" x 3" x 9" for 2 Pulleys	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	2
3	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	4
4	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	2

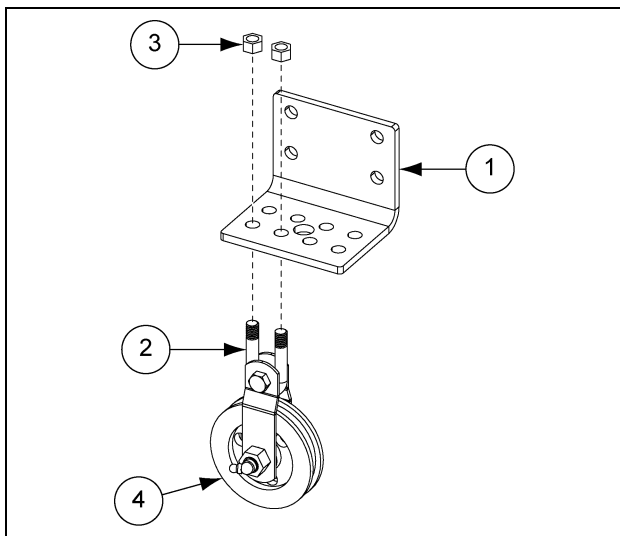
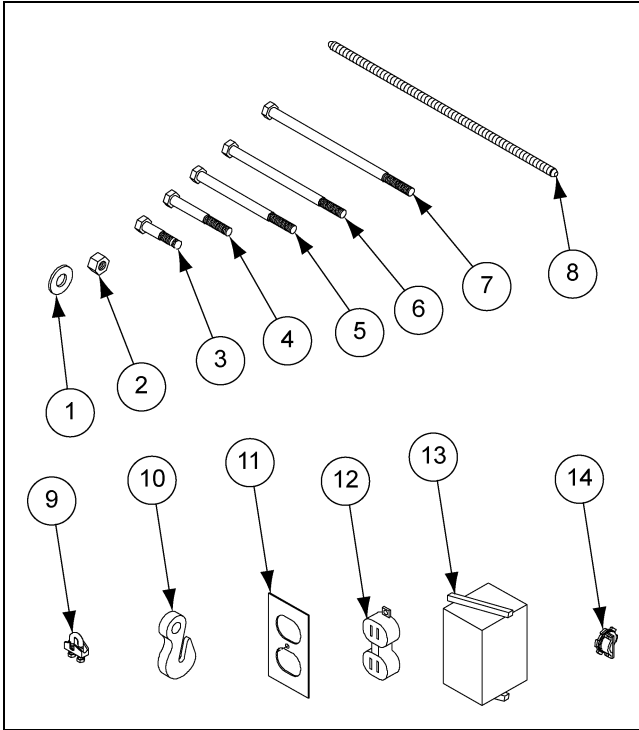


Figure 9C AC1822 Assembly

AC1822 Bracket - 3" x 3" x 3" 1 Pulley Assembly			
Ref #	Part #	Description	Qty
1	1822	Bracket - 3" x 3" x 3" for 1 Pulley	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	1
3	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	2
4	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	1

AC180-A Installation Kit (Purchased Separately) (Continued)

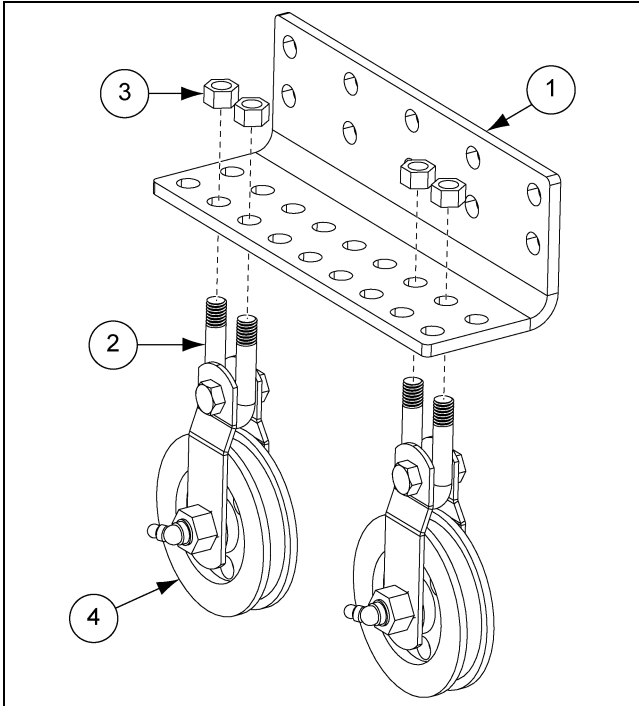


Ref #	Part #	Description	Qty
1	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	50
2	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	20
3	S-7522	Bolt HHCS 3/8"-16 x 2" ZN Grade 2	5
4	S-7249	Bolt HHCS 3/8"-16 x 3" ZN Grade 5	6
5	S-7373	Bolt HHCS 3/8"-16 x 5" ZN Grade 2	2
6	S-7248	Bolt HHCS 3/8"-16 x 6" ZN Grade 2	2
7	S-8395	Bolt HHCS 3/8"-16 x 7" ZN Grade 2	4
8	8195	Rod Threaded 3/8"-16 x 12" Grade 2	4
9	S-8762	3/16" Cable Clamp, ZN Plated	11
10	1926	Hook Grab 1/4" Chain	2
11	1780	Handy Box Cover-Galvanized	1
12	1781	Duplex Receptacle-115V with Ground	1
13	1785	Handy Box-Surface Mount Nail On	1
14	1782	Connector, 3/8" Romex, 1/2" Thread	1

Figure 9D

NOTE: Assembly parts can be purchased separately.

AC180-B Installation Kit (Purchased Separately)

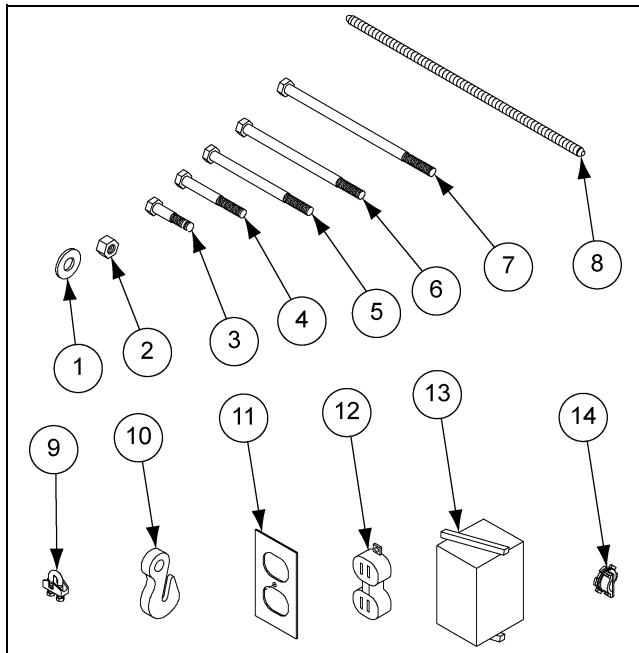


AC1821 Bracket - 3" x 3" x 9" 2 Pulleys Assembly			
Ref #	Part #	Description	Qty
1	1821	Bracket - 3" x 3" x 9" for 2 Pulleys	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	2
3	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	4
4	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	2

Figure 9E AC1821 Assembly

9. Installation Kit

AC180-B Installation Kit (Purchased Separately) (Continued)



Ref #	Part #	Description	Qty
1	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	50
2	S-7489	Hex Nut 3/8"-16 JS500 Grade 5	21
3	S-7522	Bolt, HHCS 3/8"-16 x 2" ZN Grade 2	3
4	S-7249	Bolt, HHCS 3/8"-16 x 3" ZN Grade 5	3
5	S-7373	Bolt, HHCS 3/8"-16 x 5" ZN Grade 2	2
6	S-7248	Bolt, HHCS 3/8"-16 x 6" ZN Grade 2	2
7	S-8395	Bolt, HHCS 3/8"-16 x 7" ZN Grade 2	2
8	8195	Rod Threaded 3/8"-16 x 12" Grade 2	4
9	S-8762	3/16" Cable Clamp, ZN Plated	8
10	1926	Hook Grab 1/4" Chain	2
11	1780	Handy Box Cover-Galvanized	1
12	1781	Duplex Receptacle-115V with Ground	1
13	1785	Handy Box-Surface Mount Nail On	1
14	1782	Connector, 3/8" Romex, 1/2" Thread	1

Figure 9F

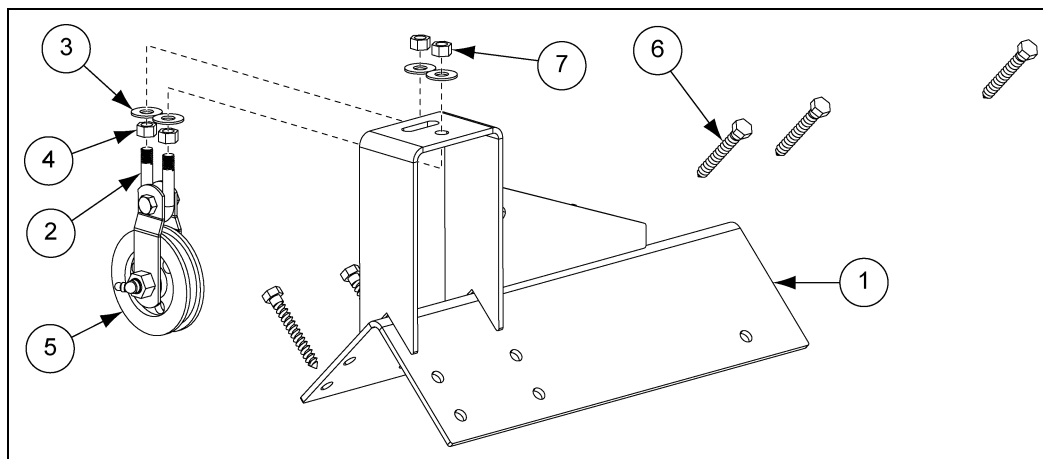


Figure 9G AC1820C Assembly

AC1820C Heavy Duty Outside Corner Bracket			
Ref #	Part #	Description	Qty
1	1820C1	Bracket - Outside Corner	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	1
3	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	4
4	S-456	Hex Nut 3/8"-16 YDP Grade 5	4
5	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	1
6	S-9046	Screw, Lag 3/8" x 3" HH ZN Grade 2	6
7	S-8032	Flange Nut 3/8"-16 SS	2

NOTE: Assembly parts can be purchased separately.

Outside Endwall Mount

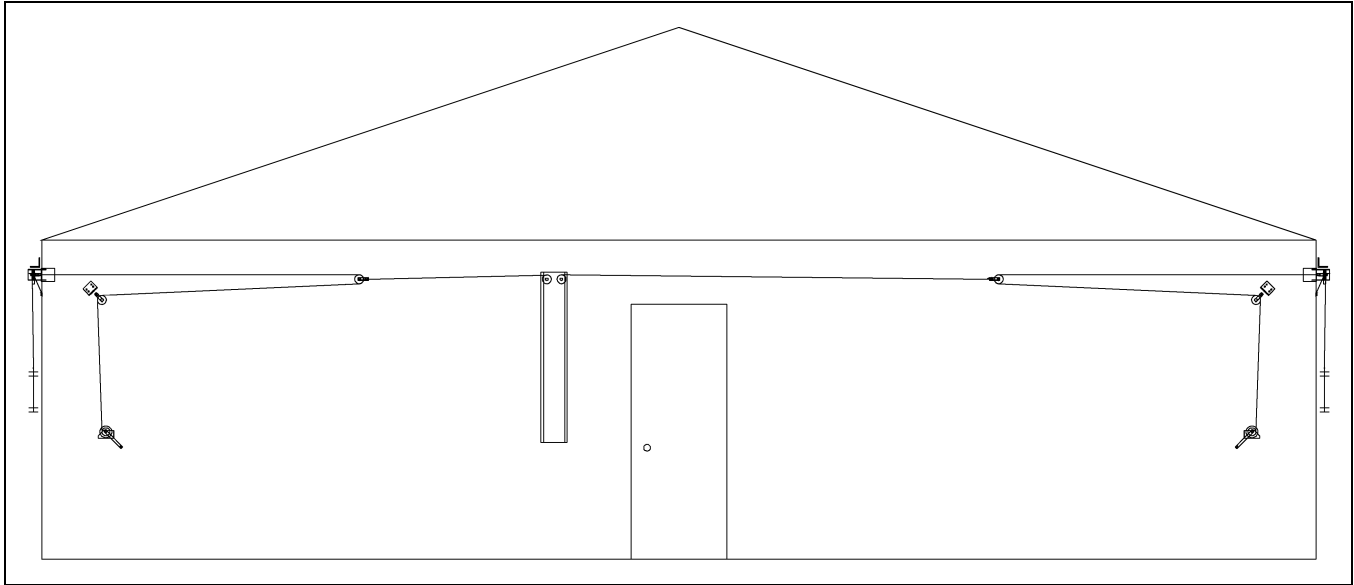


Figure 10A

The [Figure 10A](#) shows 1:2 cable configuration. This means: 1 foot (1') of cable movement at the machine equals 2 feet (2') of cable movement at the curtain.

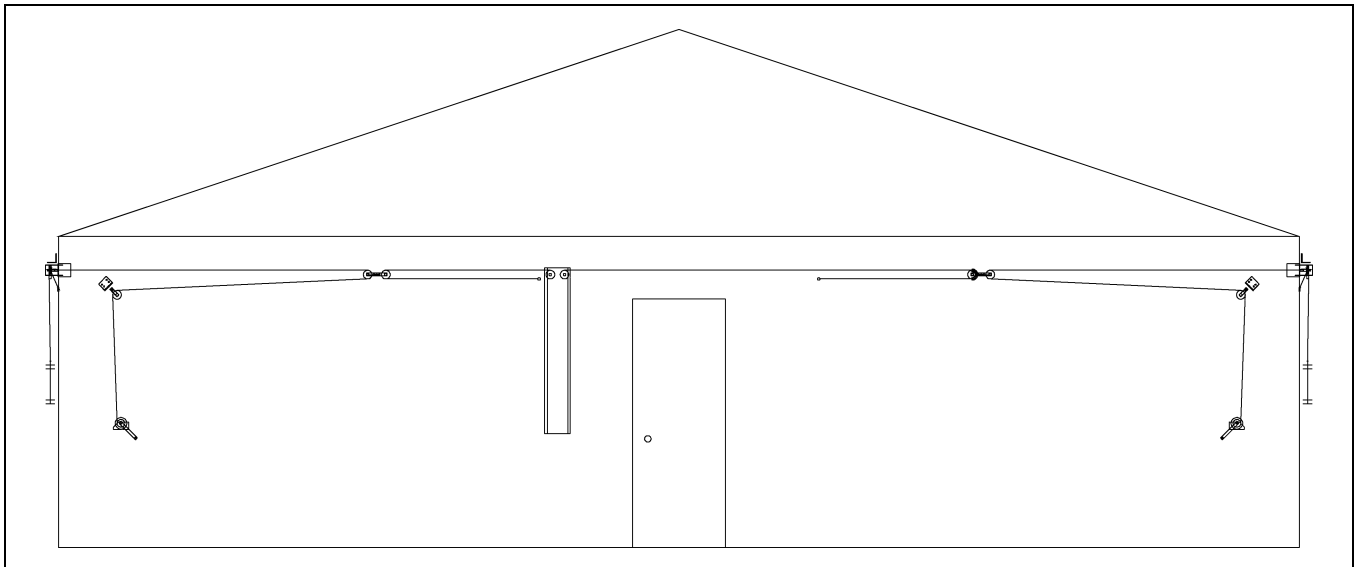


Figure 10B

The [Figure 10B](#) shows 1:1 cable configuration. This means: 1 foot (1') of cable movement at the machine equals 1 foot (1') of cable movement at the curtain.

Outside Endwall Mount (Continued)

Illustration shows cable configuration of the sidewall.

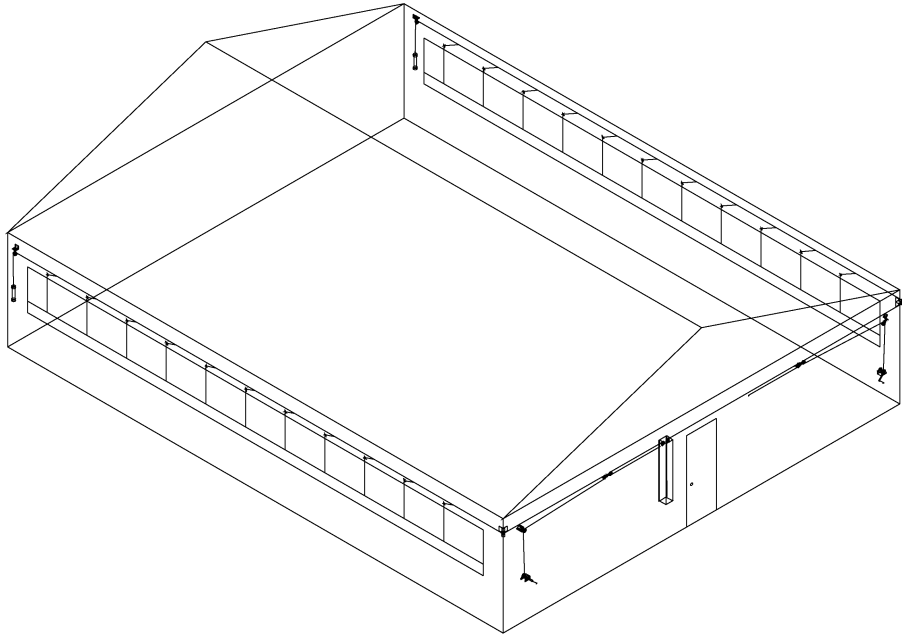


Figure 10C

The [Figure 10C](#) shows 1:1 cable configuration. This means: 1 foot (1') of cable movement at the machine equals 1 foot (1') of cable movement at the curtain.

Outside Sidewall Mount

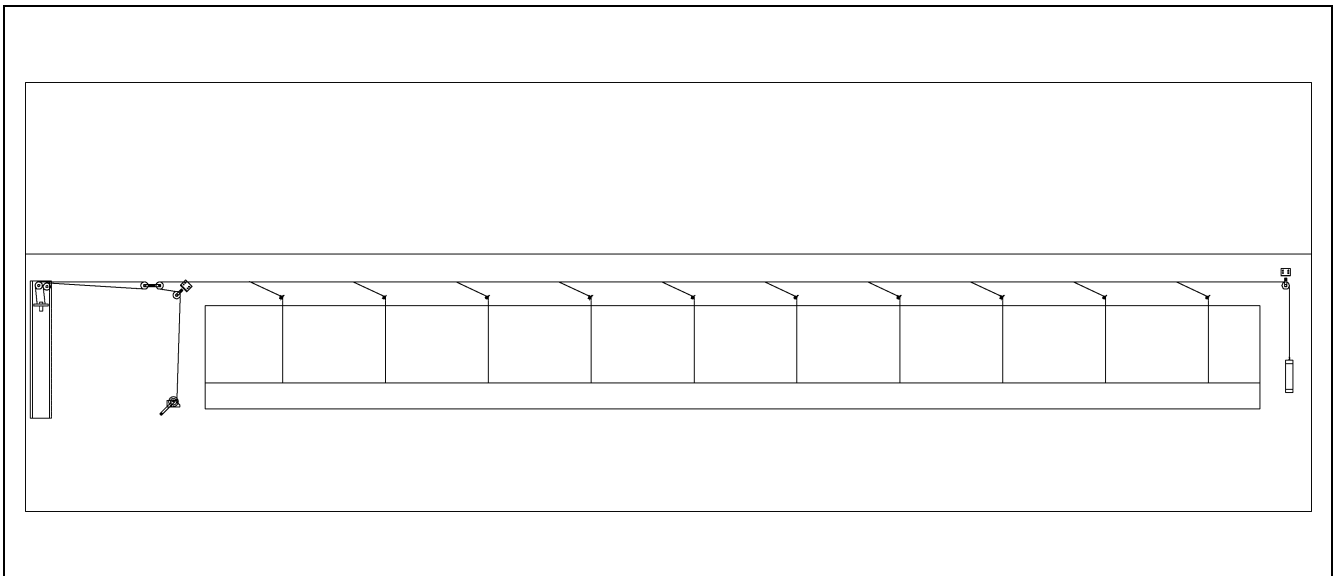


Figure 10D

The [Figure 10D](#) shows 1:2 cable configuration. This means: 1 foot (1') of cable movement at the machine equals 2 feet (2') of cable movement at the curtain.

Inside Endwall Mount

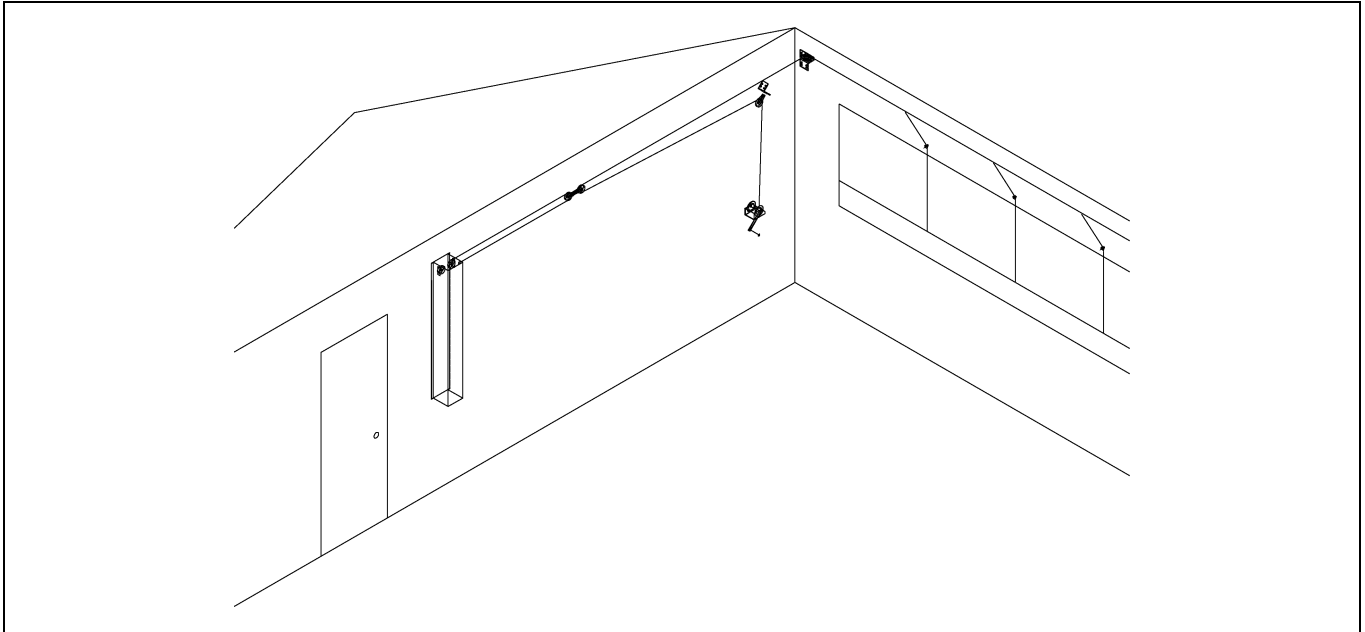
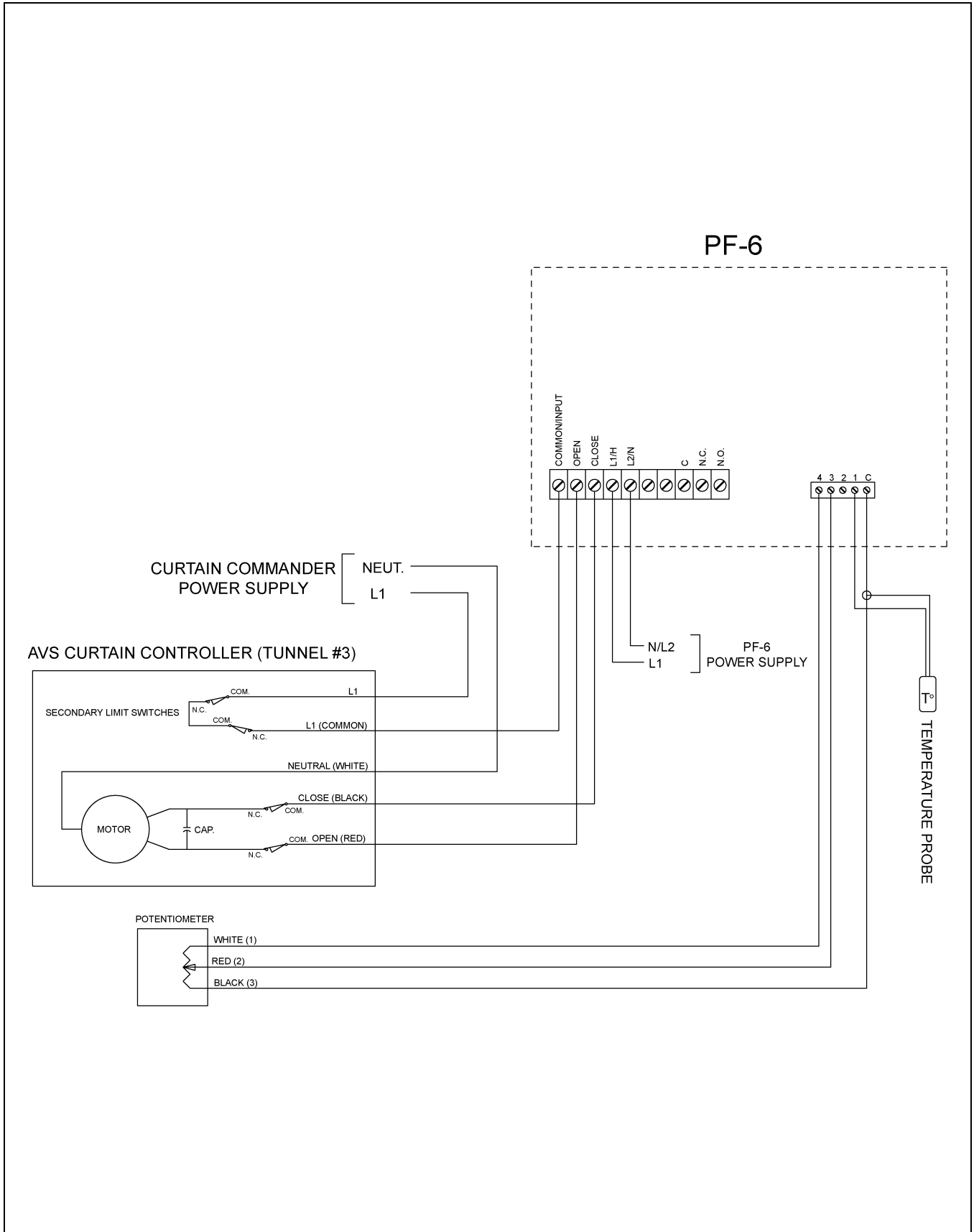


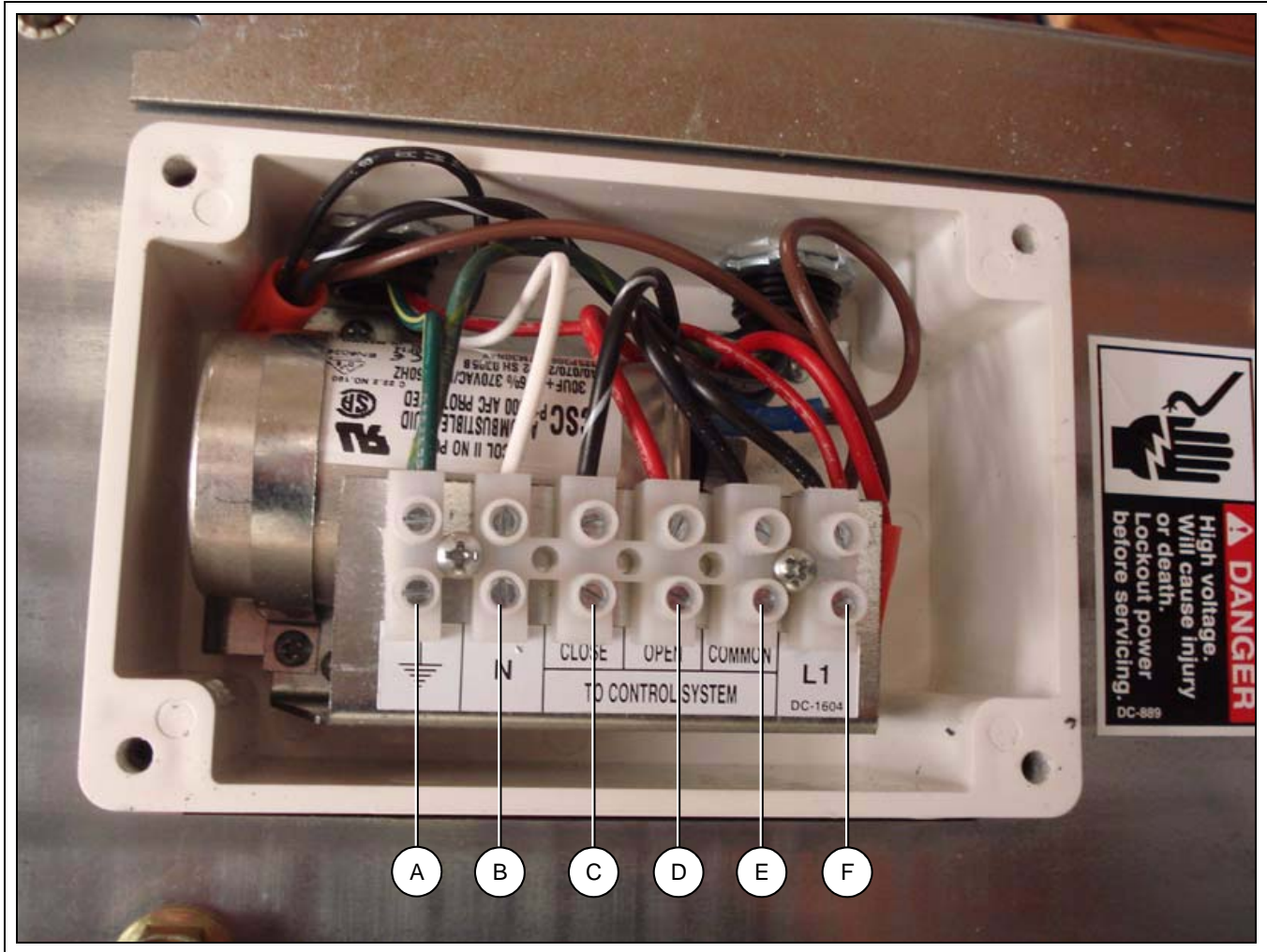
Figure 10E

The [Figure 10E](#) shows 1:1 cable configuration. This means: 1 foot (1') of cable movement at the machine equals 1 foot (1') of cable movement at the curtain.

Potentiometer Wiring Diagram



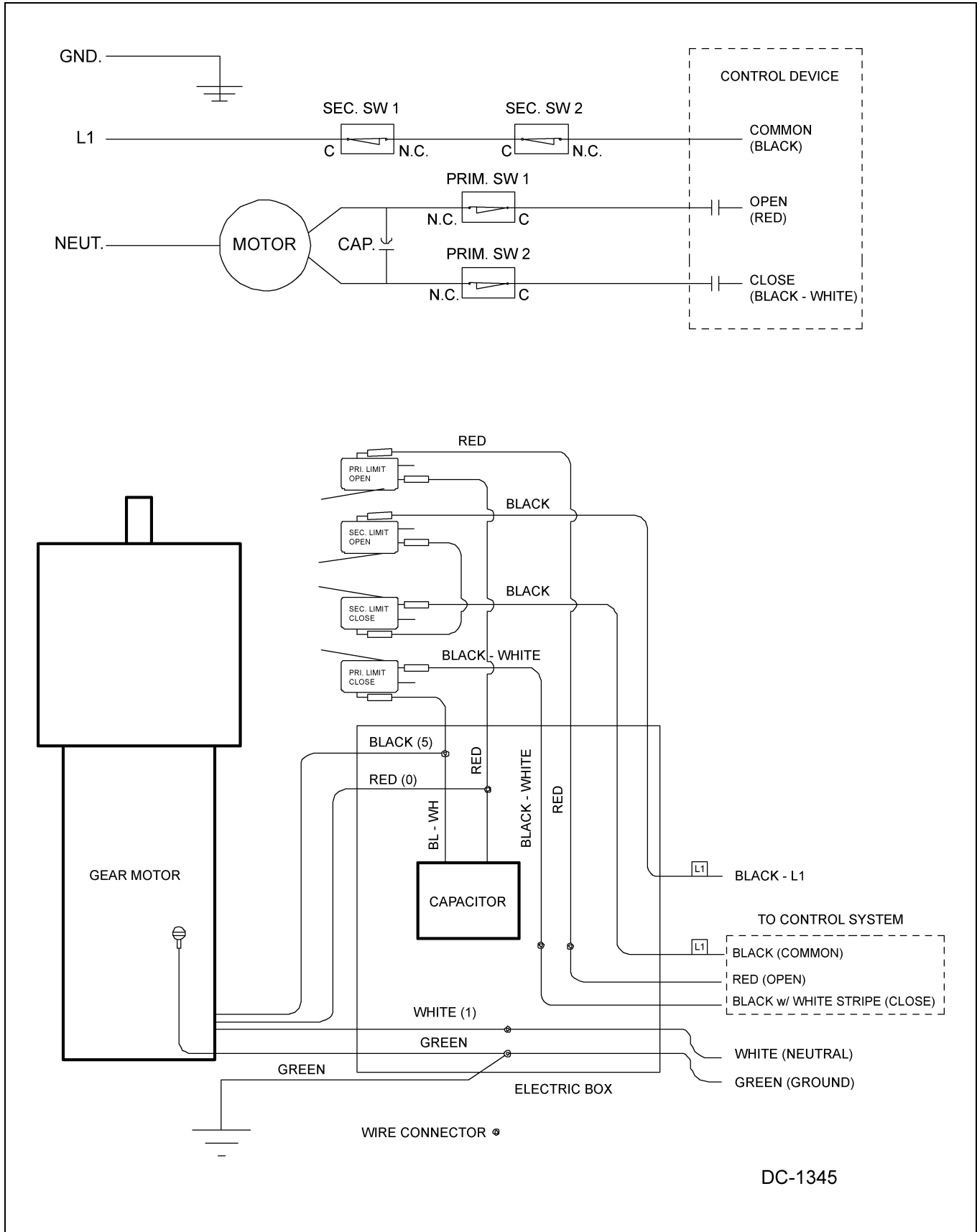
Control Box Wiring



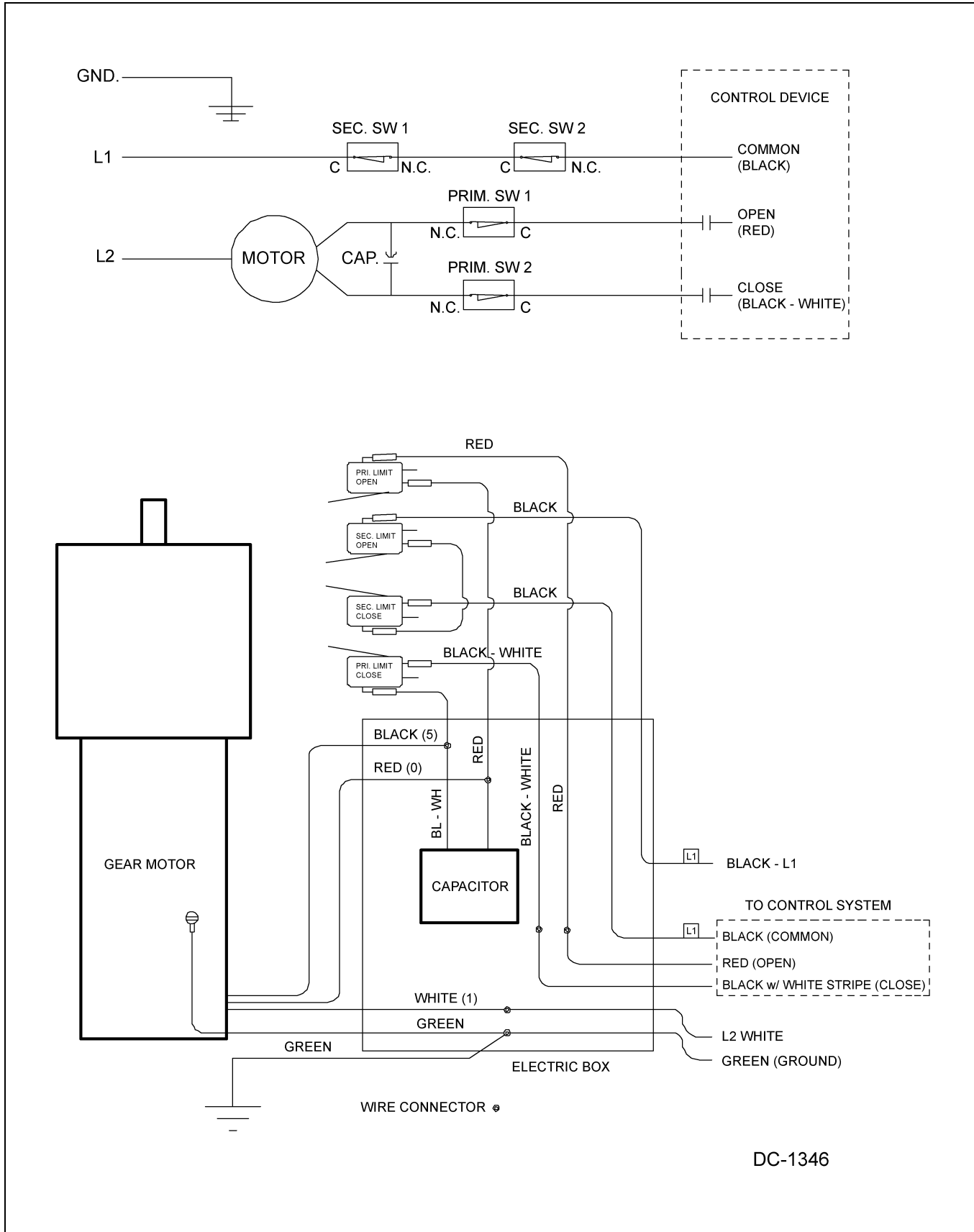
Ref #	Description
A	Ground
B	Neutral or L2
C	Close Signal from Controller
D	Open Signal from Controller
E	Common to Controller
F	L1 Power

11. Wiring Diagrams

Wiring Diagram for 110V 60 Hz

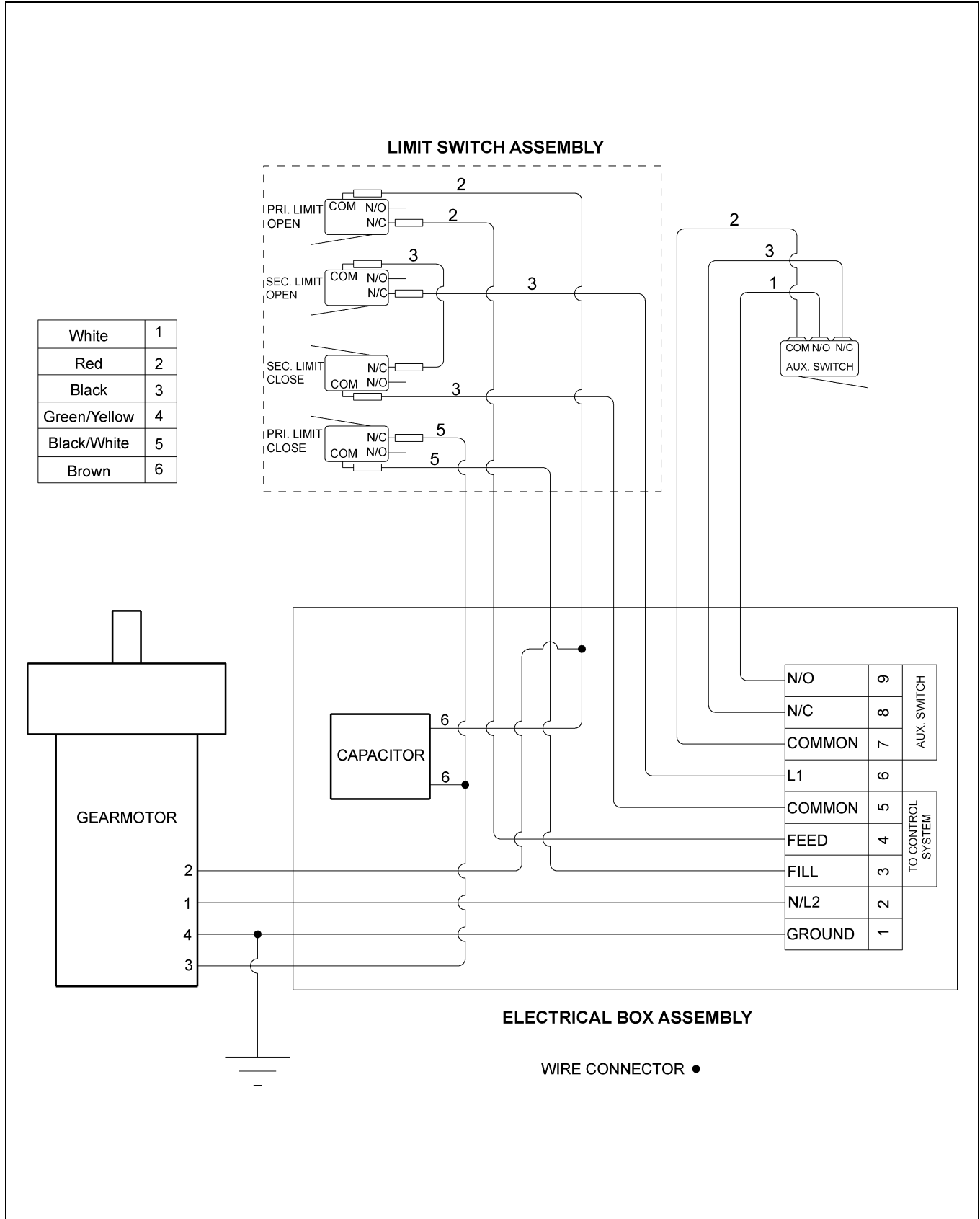


Wiring Diagram for 220V 50/60 Hz

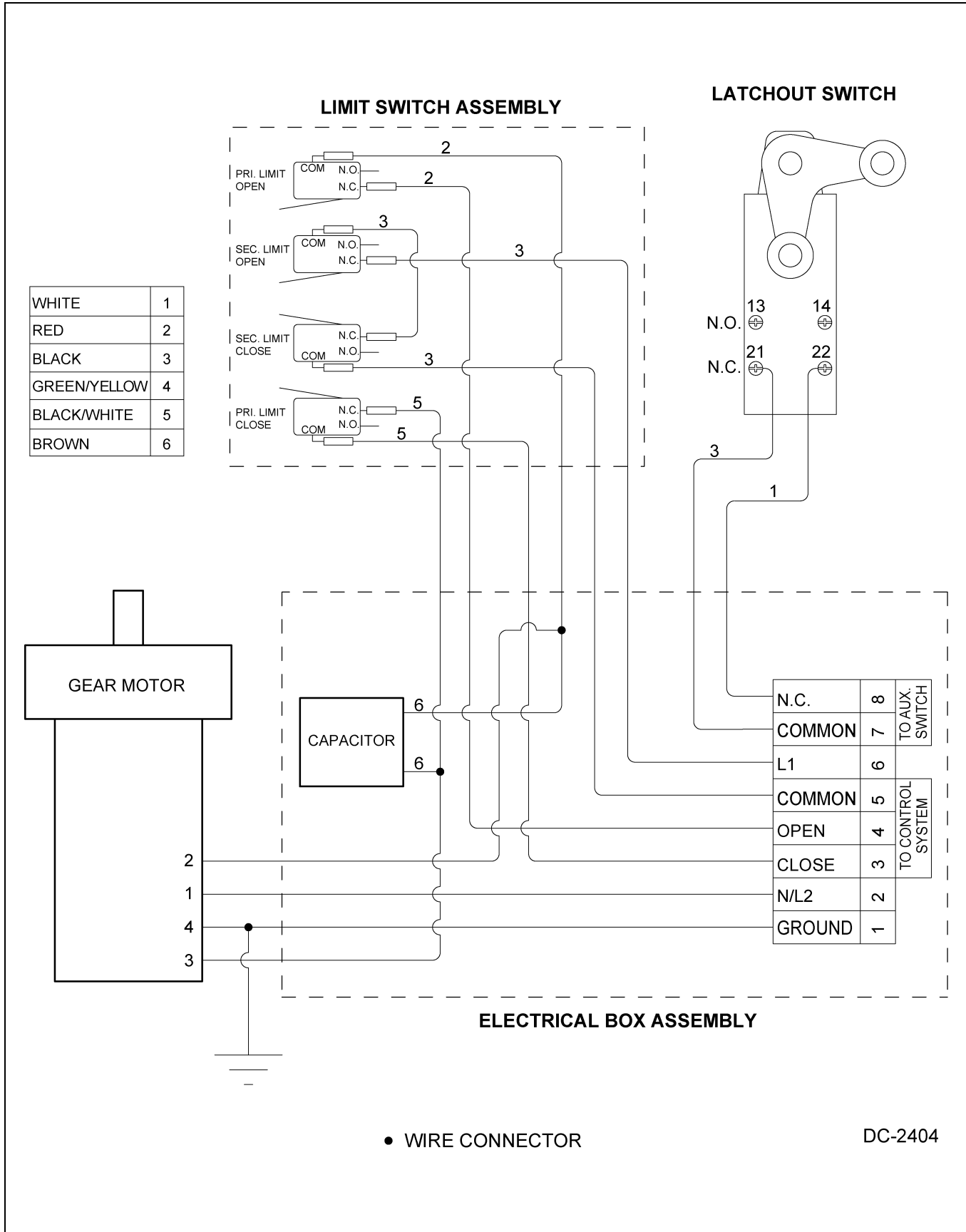


11. Wiring Diagrams

Drop Feeder Wiring Diagram (DF2415, DF2415S, DF2460 and DF2460S)



Curtain Controller Wiring Diagram for Latchout Switch (CC3630-W)



NOTES

Limited Warranty - Protein Products

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 from the date of purchase (or, if shipped by vessel, 14 months from the date of arrival at the port of discharge). If, in GSI's sole judgment, a product is found to have a defect in materials and/or workmanship, GSI will, at its own option and expense, repair or replace the product or refund the purchase price. This Limited Warranty is subject to extension and other terms as set forth below.

Warranty Enhancements:

The warranty period for the following products is enhanced as shown below and is in lieu of (and not in addition to) the above stated warranty period.

	Product	Warranty Period
AP® Fans	Performer Series Direct Drive Fan Motor	3 Years
AP® and Cumberland®	Flex-Flo/Pan Feeding System Motors	2 Years
Electronic Controls	All Protein controls manufactured by GSI	24 Months from date code on part
Cumberland® Feeding and Watering Systems	Feeder System Pan Assemblies	5 Years, Prorated **
	Feed Tubes (1.75" and 2.00")	10 Years, Prorated *
	Centerless Augers	10 Years, Prorated *
	Watering Nipples	10 Years, Prorated *

* Warranty prorated from material list price:
0 to 3 years - no material 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 material list price:
0 to 3 years - no material cost to end user
3 to 5 years - end user pays 75%

Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH HEREIN; SPECIFICALLY, GSI DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) ANY 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.

The sole and exclusive remedy for any claimant is set forth in this Limited Warranty and shall not exceed the amount paid for the product purchased. This Warranty only covers the value of the warranted parts and equipment, and does not cover labor charges for removing or installing defective parts, shipping charges with respect to such parts, any applicable sales or other taxes, or any other charges or expenses not specified in this Warranty. GSI shall not be liable for any other direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. Expenses incurred by or on behalf of a claimant without prior written authorization from the GSI warranty department shall not be reimbursed. 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. Prior to installation, the end user bears all responsibility to comply with federal, state and local codes which apply to the location and installation of the products.

This Limited Warranty extends solely to products sold by GSI and does not cover any parts, components or materials used in conjunction with the product, that are not sold by GSI. GSI assumes no responsibility for claims resulting from construction defects, unauthorized modifications, corrosion or other cosmetic issues caused by storage, application or environmental conditions. Modifications to products not specifically delineated in the manual accompanying the product at initial sale will void all warranties. 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.

Service Parts:

GSI warrants, subject to all other conditions described in this Warranty, Service Parts which it manufactures for a period of 12 months from the date of purchase, unless specified in Enhancements above. Parts not manufactured by GSI will carry the Manufacturer's Warranty.

(Protein Limited Warranty_REV01_06 November 2018)

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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