

Simply Smart

Dayton, Virginia 22821
1-540-879-9864

BALL SCREW POWER DRIVE

VENTILATION SYSTEM OPERATORS MANUAL

Read This Entire Manual Prior To Installation. This Manual Must Be Given To And Reviewed By The Grower After The Unit Has Been Installed. This Manual Should Be Kept In A Safe, Readily Accessible Place For Quick Reference.

August 2008

GENERAL INFORMATION

Specifications

Power Requirements

All Ball Screw Power Units require either 110-120 VAC or 230-240 VAC depending on the electric motor (installed at the factory) powering the drive. Be sure to check the motor voltage ratings when making electrical connections. The Control Circuit connections in the Motor Compartment enable an external Control Unit to control the opening and closing of the Power Unit. The relays in the Motor Compartment can be matched to a different Control Unit voltage to operate the Power Unit motor. The Electric Motor and Relays are installed at the factory based on the customer's requirements.

The Ball Screw Power Unit is manufactured with an optional Power Fail feature. This feature enables curtains/inlets to drop automatically when electrical power is disabled. An external thermostat option provides a high-heat override also allowing curtains/inlets to drop automatically in high heat conditions.

Designation

- BL** Ball Screw Power Unit with Lovejoy Coupling.
- BP** Ball Screw Power Unit with Power Fail Clutch Coupling.
 - A 115 VAC Control Voltage
 - D 230 VAC Control Voltage
 - C 24 VAC Control Voltage

Motor Voltage and Speed:

- N** 115 VAC, 107 or 88 RPM
- O** 115 VAC, 40 RPM
- P** 115 VAC, 23 or 20 RPM
- S** 230 VAC, 107 or 88 RPM
- R** 230 VAC, 40 RPM

Rate of Travel:

- 53 or 44 inches per minute
- 20 inches per minute
- 11 or 10 inches per minute
- 53 or 44 inches per minute
- 20 inches per minute

<u>Model</u>	<u>Unit Description</u>	<u>Total Travel</u>
1800	18 Inch	15 inches
3000	3 Foot	32 inches
4000	4 Foot	45 inches
5000	5 Foot	57 inches
6000	6 Foot	68 inches

Dimensions:

<u>Model</u>	<u>Length</u>		<u>Width</u>	<u>Depth</u>
	<u>Without Pulleys</u>	<u>With Pulleys</u>		
1800	39"	48"	9"	6"
3000	57"	63"	9"	6"
4000	69"	75"	9"	6"
5000	81"	87"	9"	6"
6000	93"	99"	9"	6"

INSTALLATION

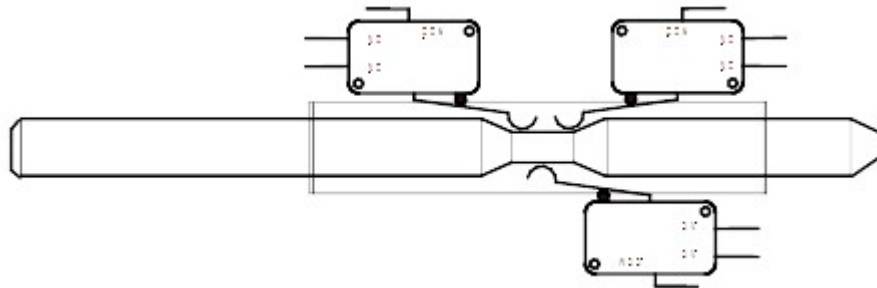
The Ball Screw Power Drive is capable of handling one or both sides of a curtain house, or all inlets of a static pressure house. All Ball Screw units are designed for ALL POSITION mounting. Units are to be installed by qualified personnel, and **standard safety practices** must be employed at all times.

There are various ways of installing power drive equipment: inside or outside the building, end wall, sidewall, ceiling, etc. The installer must evaluate the installation to suit the application. Other criteria to consider include: size and structure of building, weight of curtains and/or inlets, cabling and connections to the Power Drive, Power Drive placement and orientation, and so on.

Inlet boards have other considerations in addition to the above. Inlets come in various weights and sizes, may be installed with weights and/or springs, etc. The installer must determine what is necessary to enable the inlets to open when the optional **Power Failure Ball Screw Power Drive** is being used. Additional weights or springs may be necessary for the inlets, or a counter weight may be necessary to offset heavy inlet boards.

LIMIT SWITCH LEVER ARMS

Check the operation of the limit switches when installing. The limit switches are located in the motor compartment of the Ball Screw case, on the Electrical Plate. Changes in adjustment may have occurred due to shipping and handling. All limit switch arms should contact the lower portion of the plastic cam rod (see the illustration below) when the drive unit is between its end stops. The plastic cam may be adjusted by rotating it “up” or “down” the ¼ inch steel Control Rod using pliers. Check limit switch activation (“clicking” of the switch) by moving the Control Rod back and forth by hand. The limit switches should click when each switch lever arm is approximately halfway up or down the transition between the upper and lower portions of the plastic cam rod. It may be necessary to bend the limit switch lever arm to make adequate contact on the cam rod.



The two limit switches on the far side of the cam rod are the Primary switches. They should be at the edges of the lower portion of the cam rod. The third switch on the near side is the Fail-Safe switch. It should be midway between the higher portions of the cam rod. This switch will not activate when the Power Drive is functioning normally. It will function when a Primary limit switch fails, or if the Motor Brake does not stop the motor when the Pull Bar reaches the set collar limit stops. Both of these conditions will require servicing to restore proper operation.

POWER FAILURE CLUTCH

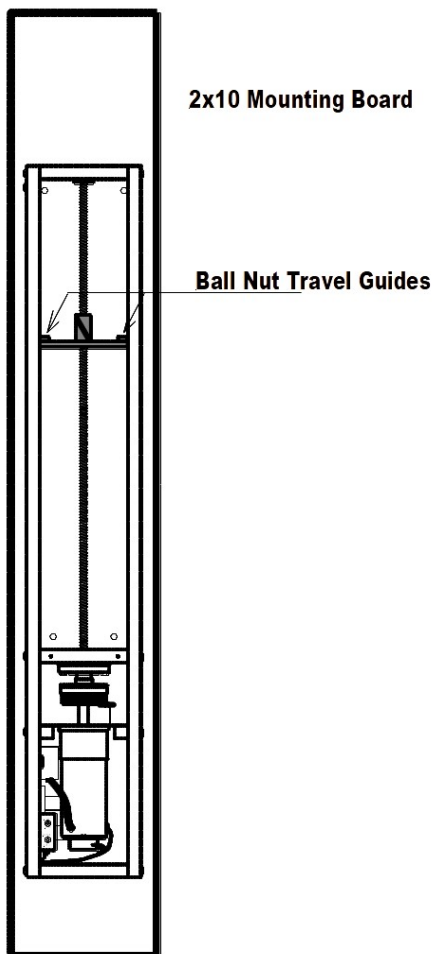
Upon installation, check the gap between the clutch and clutch disk on those units so equipped. Some shifting may have occurred in shipping. When the power is off, turn the screw shaft by hand using a cloth or paper towel. There should be a minimal distance of 0.003" between the clutch and disk that will allow the disk to turn freely, with slight or no rubbing between the two. There are 2 Allen/set screws on the clutch collar that must be loosened to adjust the clutch. See Diagram on P.18.

WINCHING PRECAUTIONS

DO NOT USE double back winching with the Ball Screw Power Drive unless approval is granted by the manufacturer. The performance and speed of the Ball Screw Power Drive eliminates the need for double back winching in most cases.

When integrating the Ball Screw Power Drive with an existing installation, all cables and pulleys should be examined to ensure ease of operation and adjustments made where necessary.

MOUNTING



The recommended mounting method is to fasten the unit to a 2"x10"x12' (or larger) pressure treated board. The Ball Screw Case has predrilled holes to simplify mounting. The unit may be mounted directly to the 2"x10" mounting board using 3/8"x2" hex head lag screws.

The drive unit may be directly mounted to the ceiling joists or wall studs. Measure center to center of the joists and transfer the measurements to the back side of the Ball Screw unit housing. Drill 1/2" holes for mounting.

Caution!!! When drilling any mounting holes **Do Not** drill holes in the Ball Nut Guide Travel Path. Such holes and mounting screws will interfere with the travel path of the Ball Nut Guides and adversely effect the Ball Screw operation.

REGULAR SERVICE

LUBRICATION

The Ball Screw shaft requires periodic attention: Apply a small bead of white lithium grease (included with Power Unit) on the length of the screw shaft about every three months.

The Pull Bar Guides may rub along some of its travel along the Ball Screw Case when load is applied to the unit. Apply a small amount of grease with a cloth or a finger to the case where rubbing occurs.

The Ball Screw Power Drive is equipped with a heavy duty thrust bearing, located in the coupling portion of the Ball Screw case. This bearing has been pre-greased at the factory, and will not require further greasing for approximately 24 months. To prevent over greasing, the grease fitting on the thrust bearing has been turned away from the opening of the Ball Screw case. Over greasing may lead to grease contamination on the clutch coupling (for those units so equipped), resulting in clutch slippage.

ADJUSTMENTS

Periodically check the set collar positions on the limit switch rod and tighten thumb screws and set screws.

Check the gap between the clutch and clutch disk on those units so equipped. When the power is off, turn the screw shaft by hand using a cloth or paper towel. There should be a minimal distance, less than 0.003", between the clutch and disk that will allow the disk to turn freely, with minimal or no rubbing between the two. There are 2 Allen/set screws on the collar of the clutch that can be loosened so that the clutch may be adjusted.

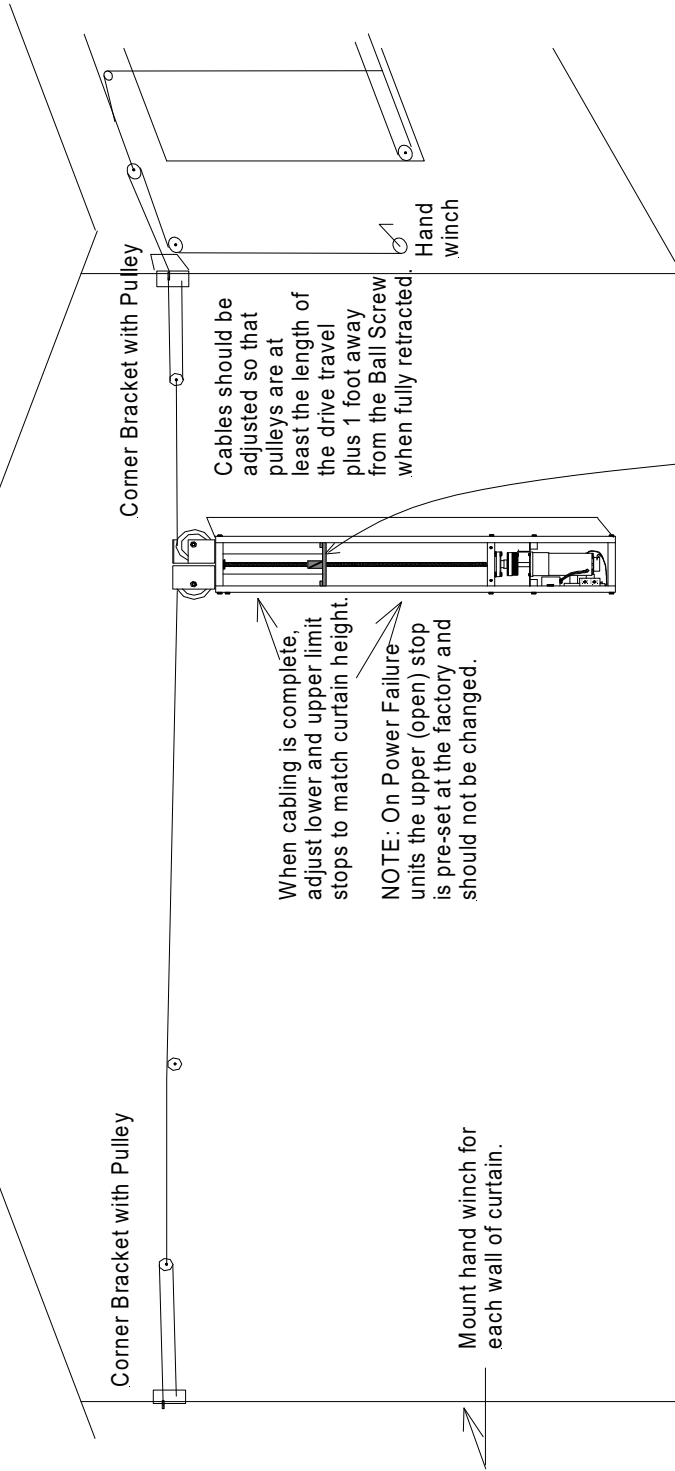
There are 2 basic types of motor brakes that are mounted on the end of the motor of the Ball Screw Drive. The Power On Brake has a Disk Collar fastened on the end of the motor shaft. With power off, the disk collar can be turned by hand: check that the two set screws are tight, and that the gap between the disk and the electromagnet is not greater than 0.005 inches. The Power Off Brake has a Nut that is hidden by the electromagnet.

<p>NOTE: Electrical components, clutches and brakes are energized at all times when the Drive Unit is powered. These become warm, even hot, to the touch under normal operation. Power must be disconnected and components allowed to cool prior to servicing in the electrical compartments.</p>
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BALL SCREW ILLUSTRATIONS AND ASSEMBLIES

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Mounting Illustration #1
End Mount to Raise Curtains
on Both Sides of Building.

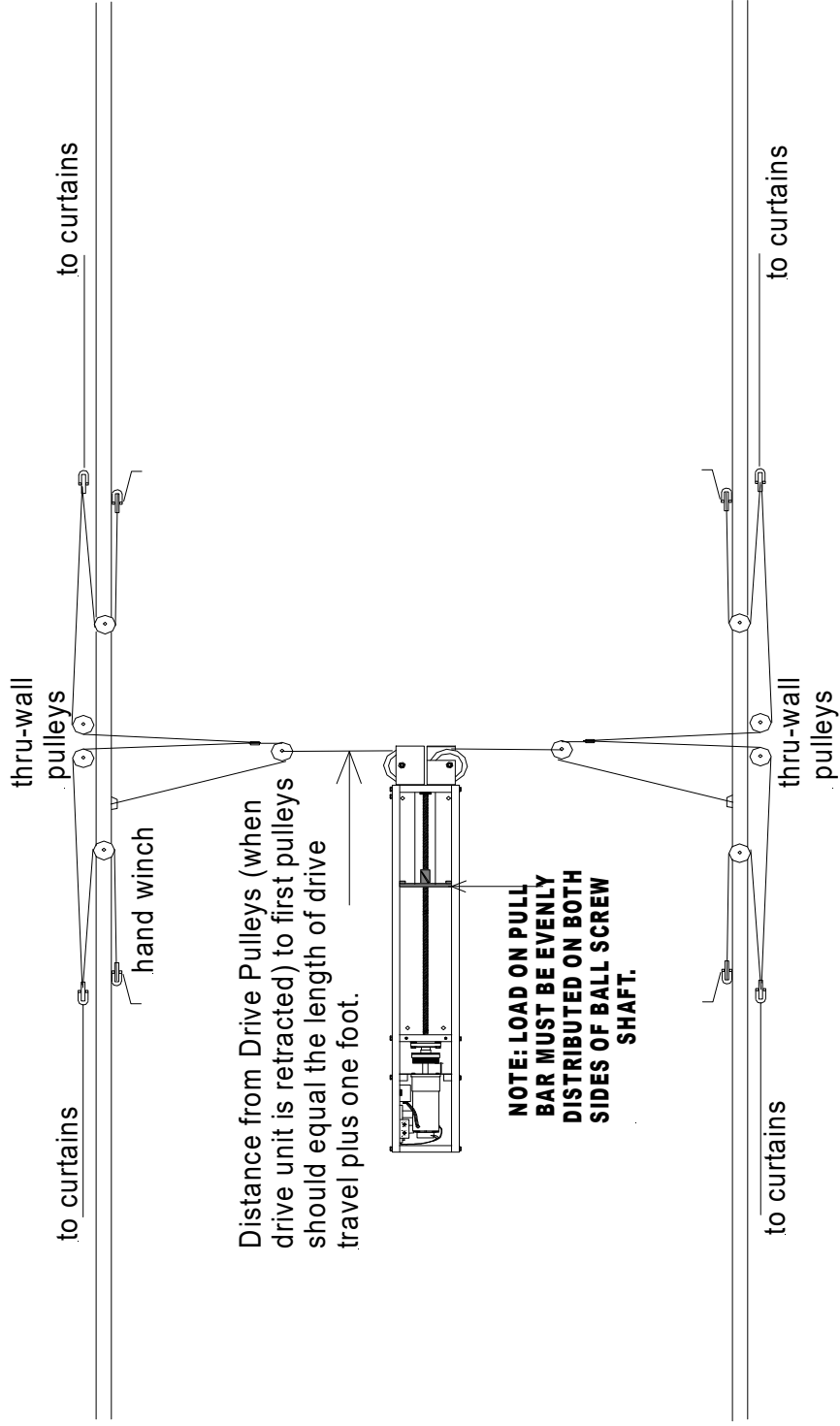


One-to-one pulley and cable arrangement

NOTE: LOAD ON PULL BAR MUST BE EVENLY DISTRIBUTED ON BOTH SIDES OF BALL SCREW SHAFT.

Mounting Illustration #2

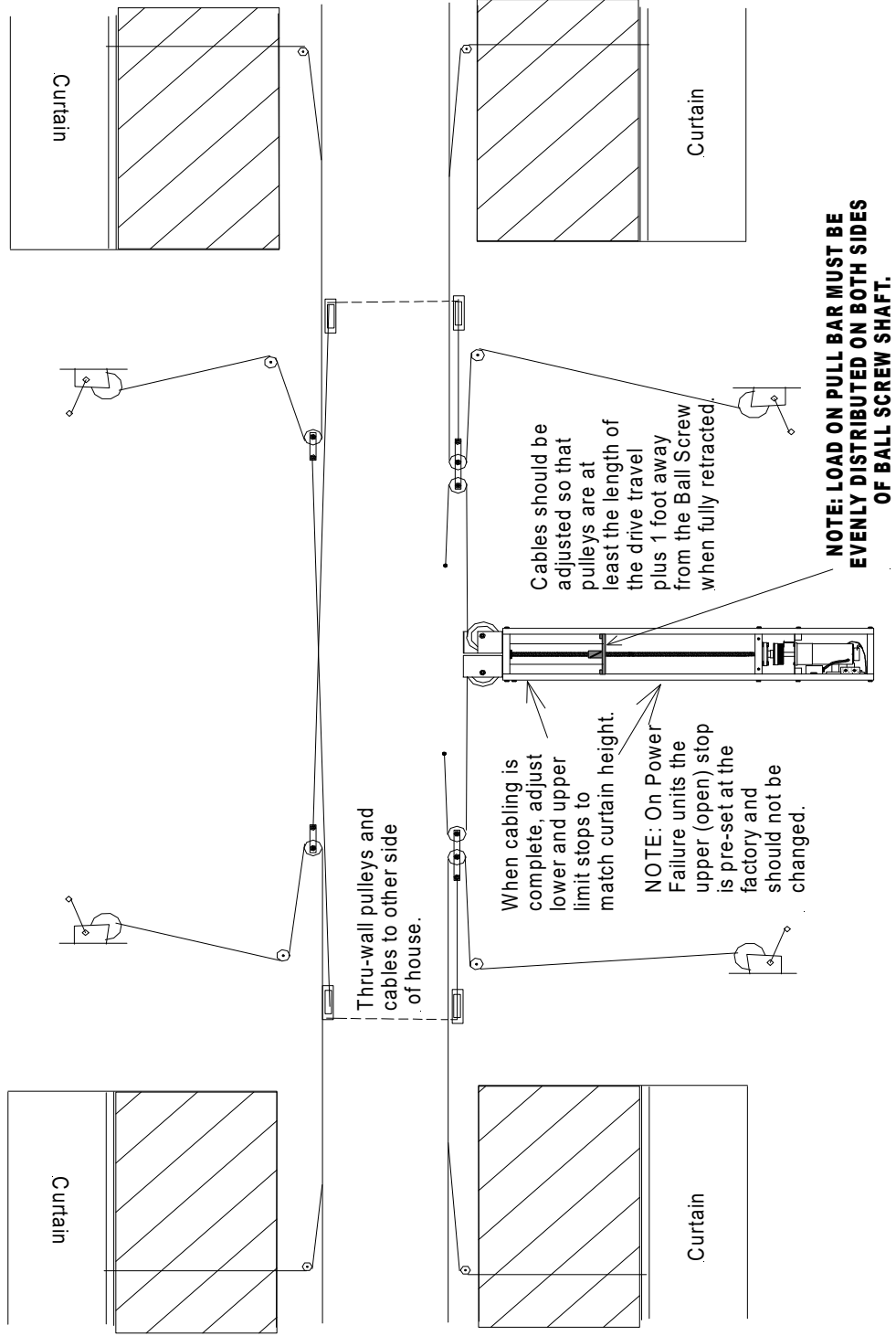
Ceiling Mount in Center of Building to Raise Curtains on Both Sides of Building.



One-to-one pulley and cable arrangement

Mounting Illustration #3

Exterior Mount, Middle of Side to Raise Curtains on Both Sides of Building.



One-to-one pulley and cable arrangement

Illustration #4

Sample One-to-Two Pulley and Cable Arrangement

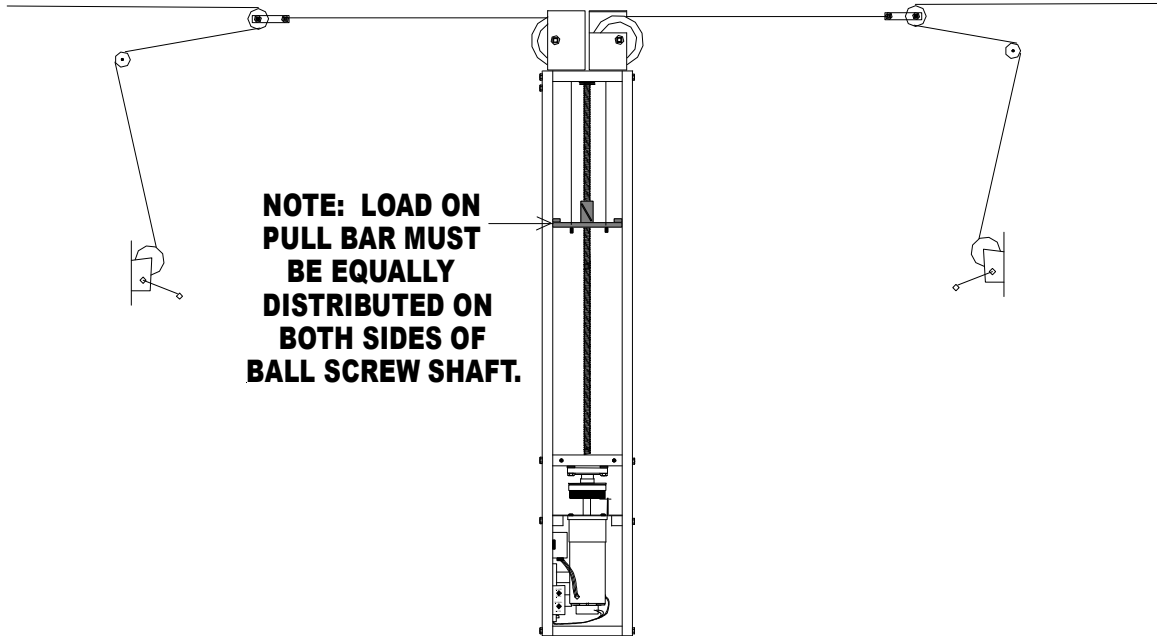
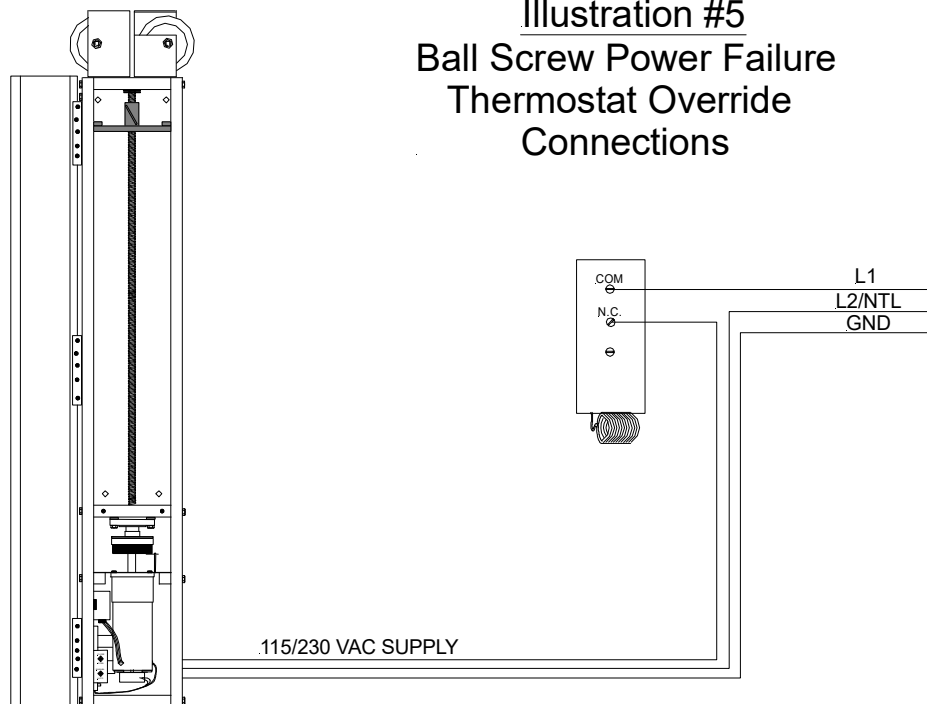
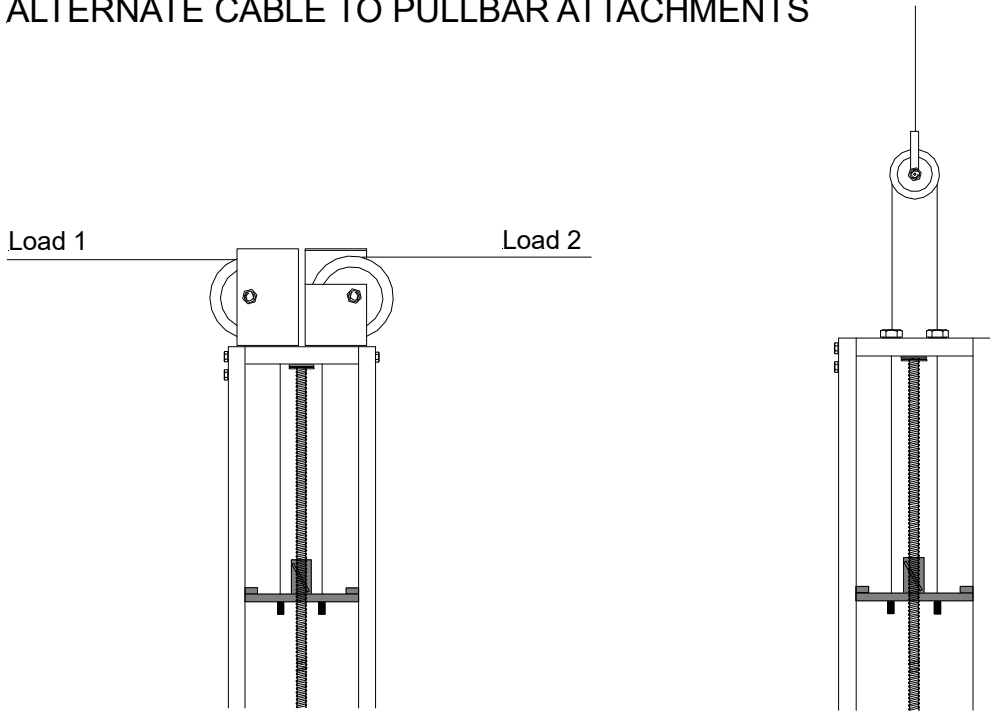


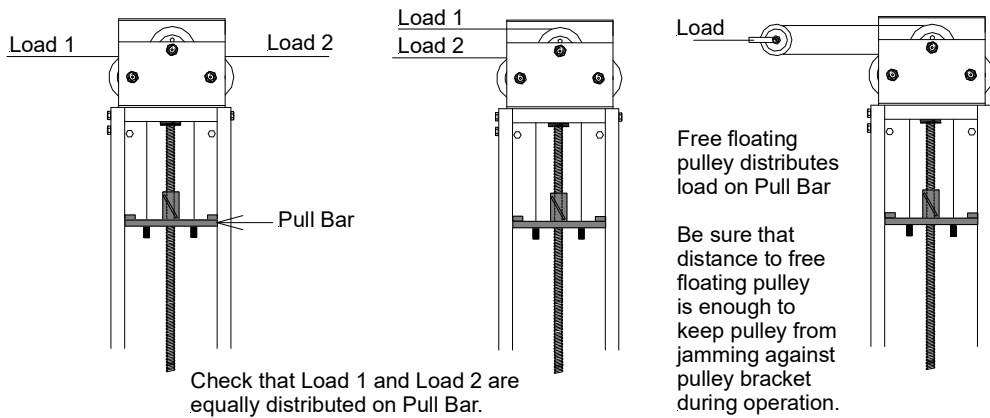
Illustration #5
Ball Screw Power Failure
Thermostat Override
Connections

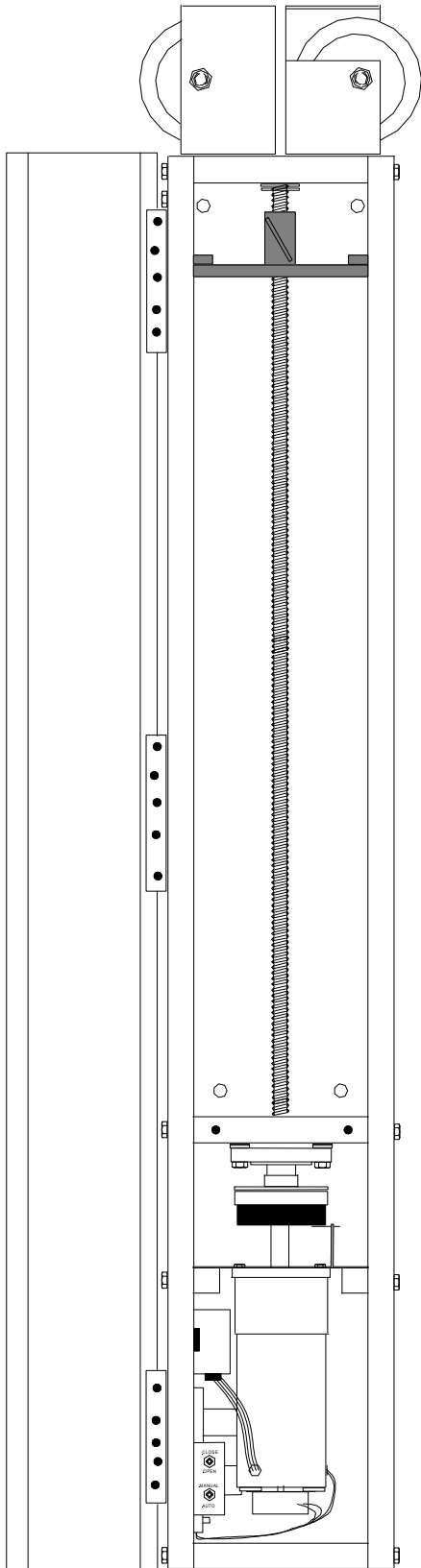


ALTERNATE CABLE TO PULLBAR ATTACHMENTS



ALTERNATE TRI PULLEY BRACKET CABLE ATTACHMENTS





SECTION 1: PULLEY ASSEMBLIES

SECTION 2: BALLNUT AND
THRUST ASSEMBLIES

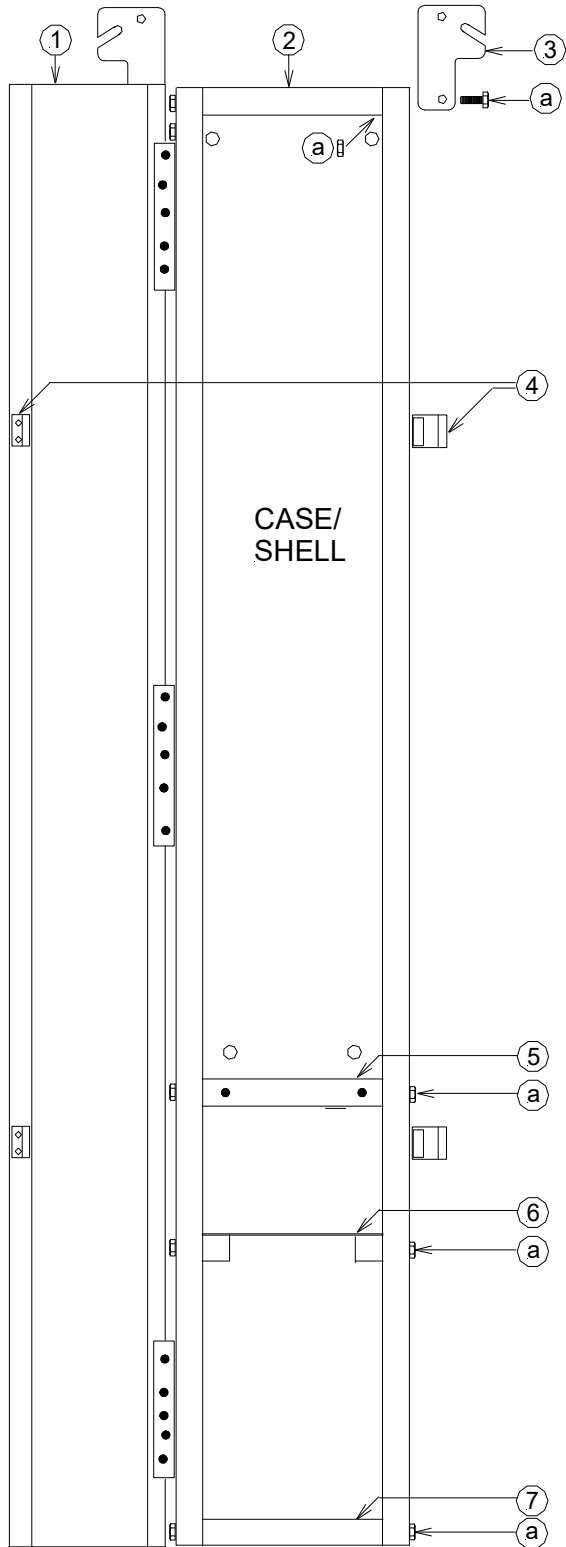
SECTION 3: ROD ASSEMBLIES

SECTION 4: CLUTCH AND
COUPLING ASSEMBLIES

SECTION 5: MOTOR ASSEMBLIES

SECTION 6: ELECTRICAL ASSEMBLIES

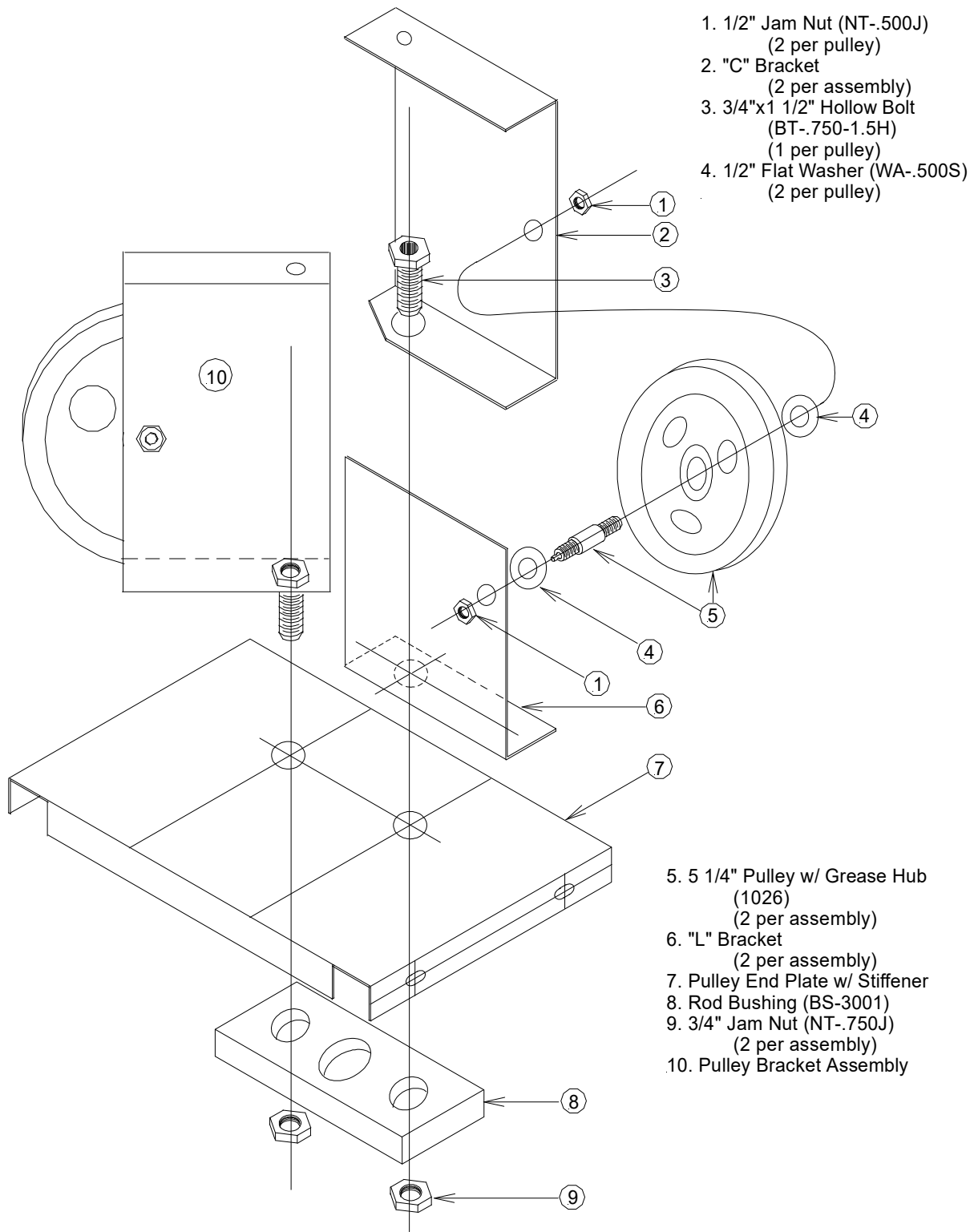
BALL SCREW SHELL ASSEMBLY



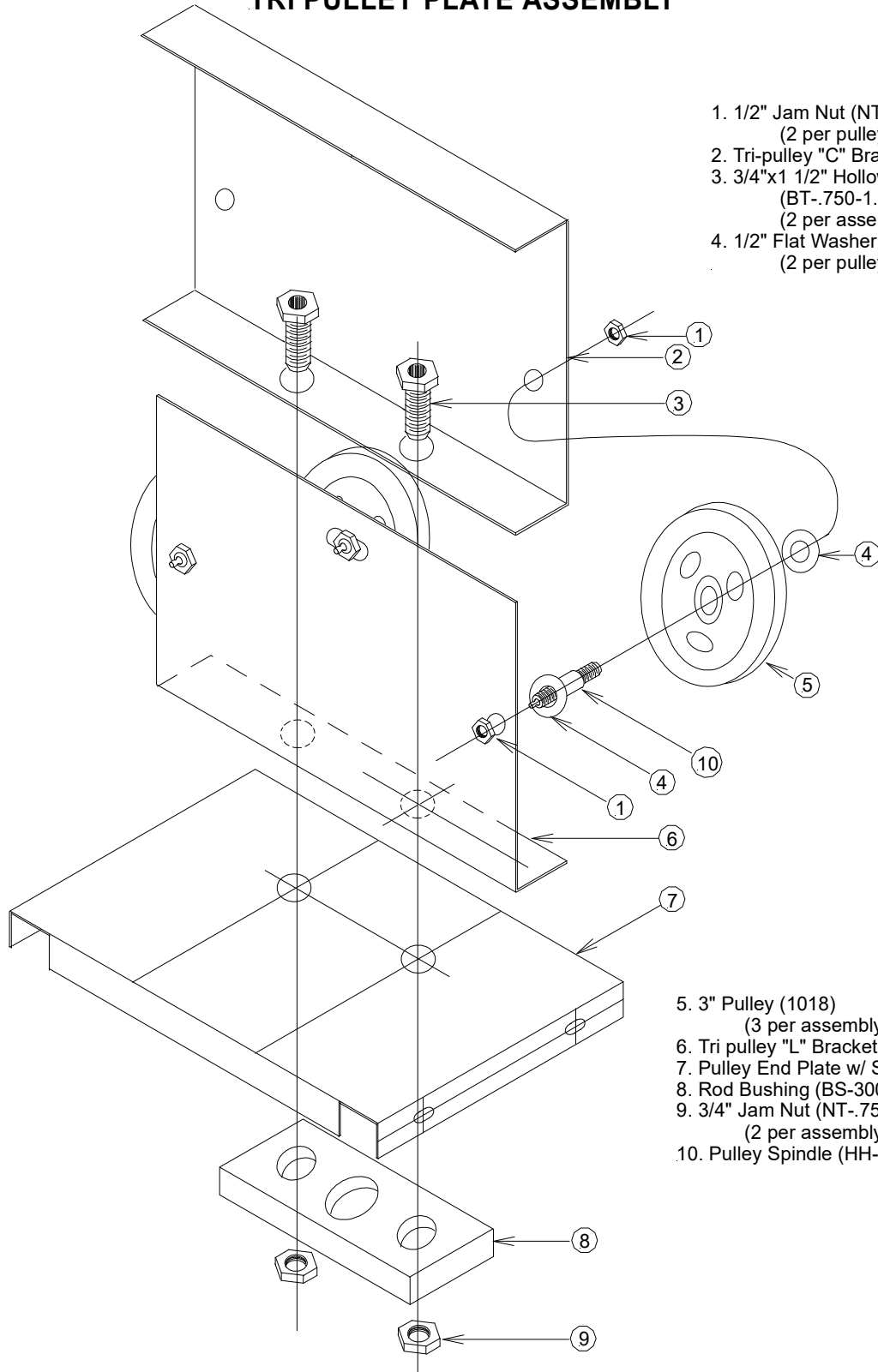
1. Lid (length or unit size- 3',4',5',or 6')
HexHead Tek Screw SM-8-.5HHT (9 per lid)
2. Pulley End Plate w/ stiffener (double plated)
a. 5/16"x3/4" Bolt (BT-.312-.75G) (6 per plate)
5/16" Nut (NT-.312) (6 per plate)
3. Chain Bracket (BS-CB-1000) (2 per unit)
Power Failure models only
4. Door Clasp-Latch & Hook (BS-LT-903B) (2 per unit)
Pop Rivet (BSS42) (4 per clasp)

5. Bearing Thrust Plate w/ stiffener (Double plated)
a. 5/16"x3/4" Bolt (BT-.312-.75G) (6 per plate)
5/16" Nut (NT-.312) (6 per plate)
6. Motor Plate
a. 5/16"x3/4" Bolt (BT-.312-.75G) (4 per plate)
5/16" Nut (NT-.312) (4 per plate)
7. End Plate
a. 5/16"x3/4" Bolt (BT-.312-.75G) (4 per plate)
5/16" Nut (NT-.312) (4 per plate)

5 1/2' PULLEY PLATE ASSEMBLY



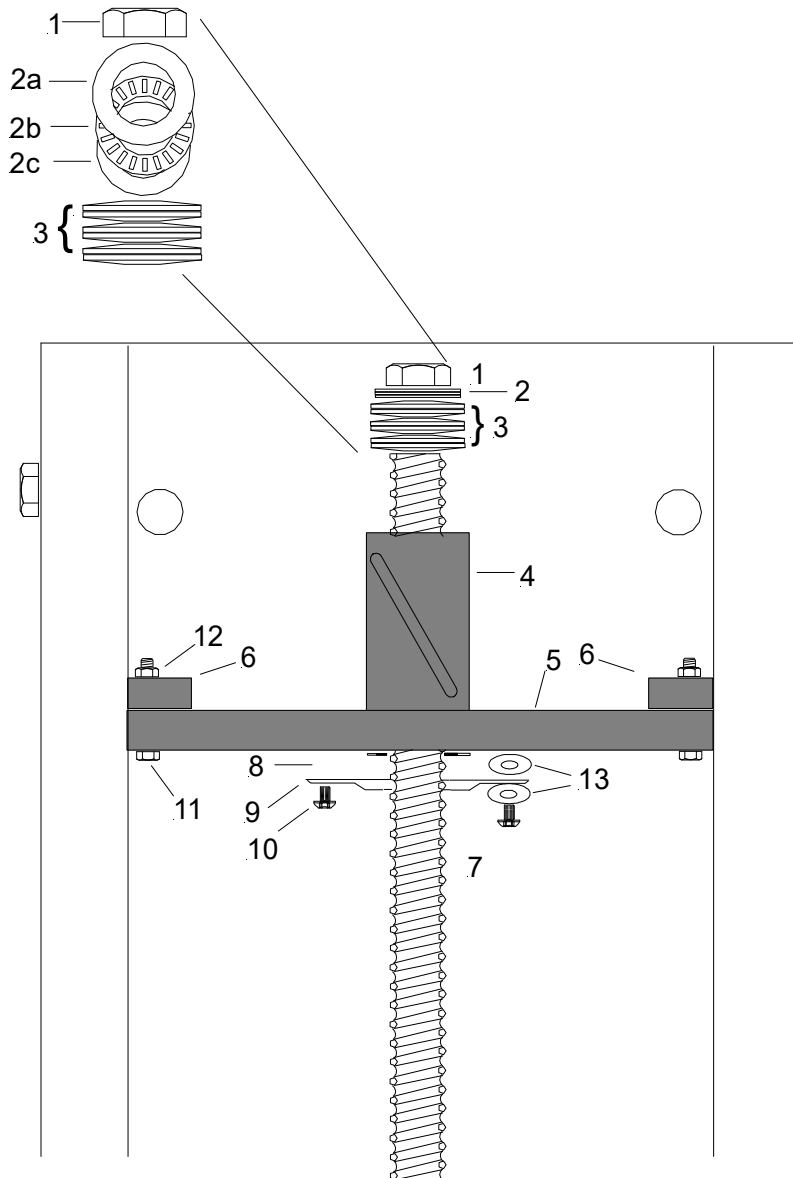
TRI PULLEY PLATE ASSEMBLY



1. 1/2" Jam Nut (NT-.500J)
(2 per pulley)
2. Tri-pulley "C" Bracket
3. 3/4"x1 1/2" Hollow Bolt
(BT-.750-1.5H)
(2 per assembly)
4. 1/2" Flat Washer (WA-.500S)
(2 per pulley)

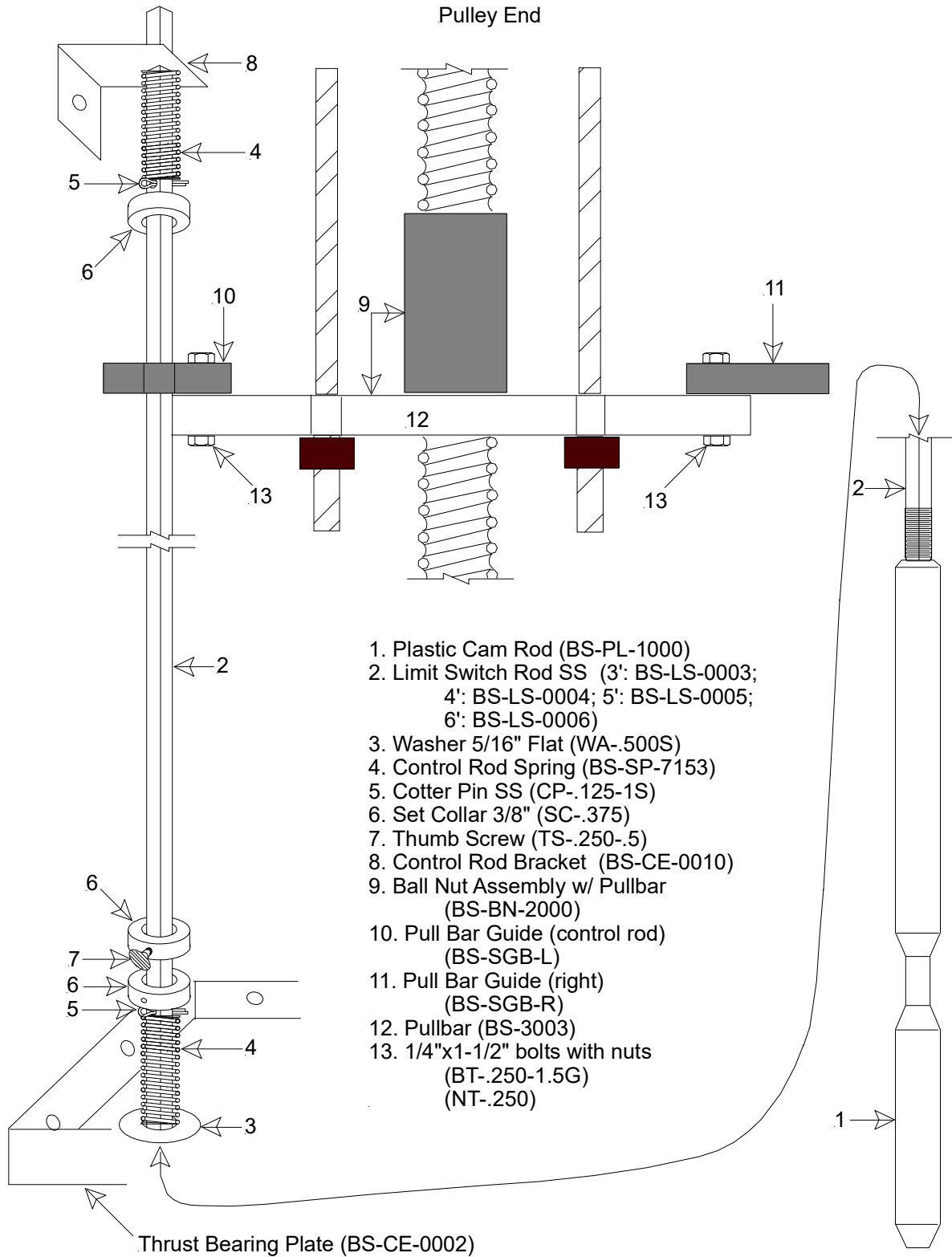
5. 3" Pulley (1018)
(3 per assembly)
6. Tri pulley "L" Bracket
7. Pulley End Plate w/ Stiffener
8. Rod Bushing (BS-3001)
9. 3/4" Jam Nut (NT-.750J)
(2 per assembly)
10. Pulley Spindle (HH-1004)

BALLNUT AND THRUST ASSEMBLY

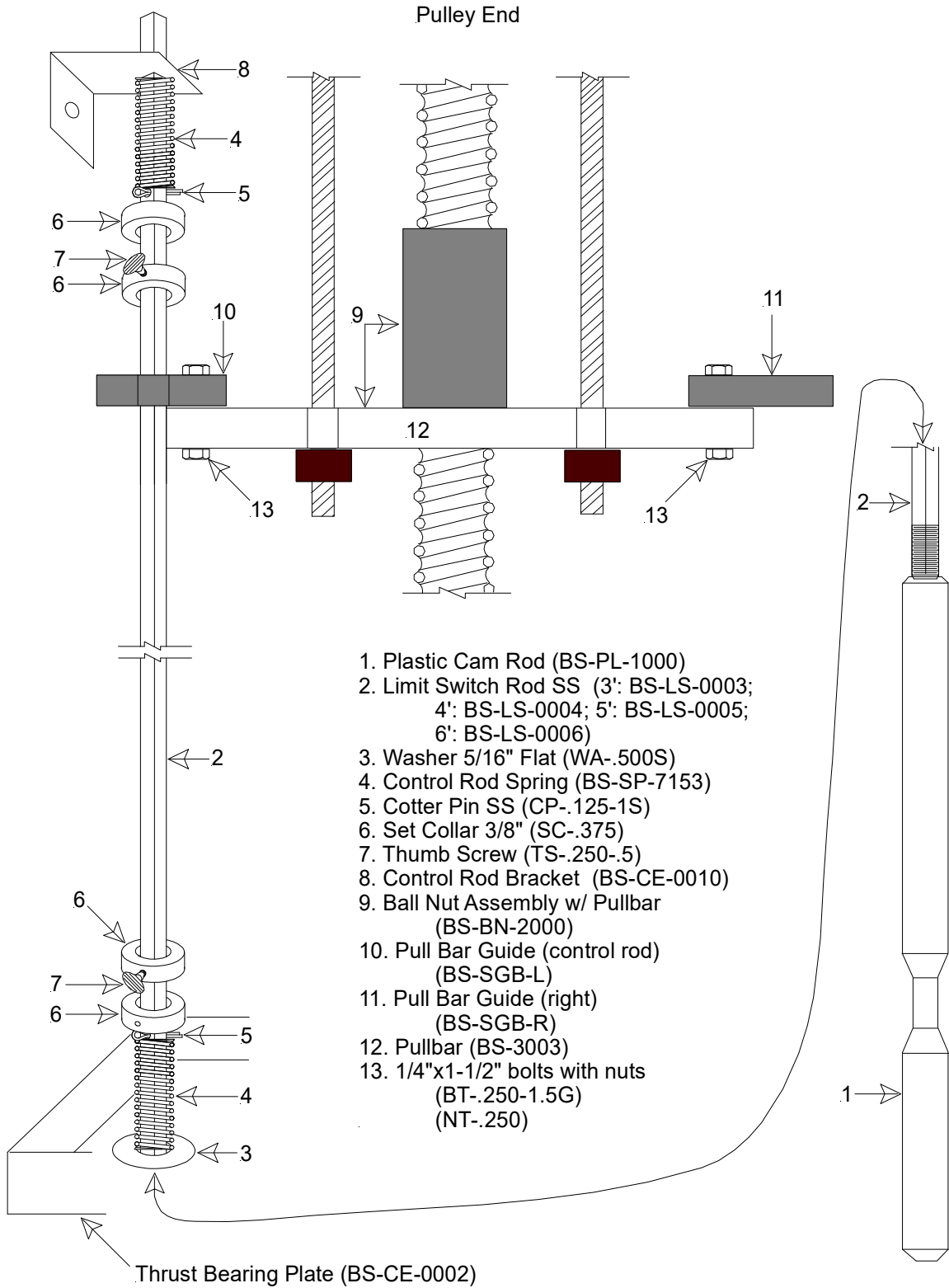


- 1 - 5/8" Stover Nut
(LN-.625FS)
- 2a - Bearing Washer
(BS-TRB-1018)
- 2b - Disc Bearing
(BS-NTA-1018)
- 2c - Bearing Washer
(BS-TRC-1018)
- 3 - Spring washers (6)
(BS-Z-15)
- 4 - Ballnut (BS-RF-0372)
- 5 - Pullbar (Center Guide)
(BS-3003)
- 6 - Pullbar Guides (2)
(BS-SGB-L &
BS-SGB-R)
- 7 - Ballscrew Rod
(BS-3004)
- 8 - Brush
- 9 - Reducing Washer
(HW-RW-0012)
- 10 - 10/24" x 1/2" PHM screw
(MS-1024-.5PHP)
- 11 - 1/4 x 1-1/2 hexhead bolt
(BT-.250-1.5G2)
- 12 - 1/4" nut (NT-.250)
- 13 - #8 Washer (WA-8)

CONTROL ROD ASSEMBLY FOR BALL SCREW WITH POWER FAILURE

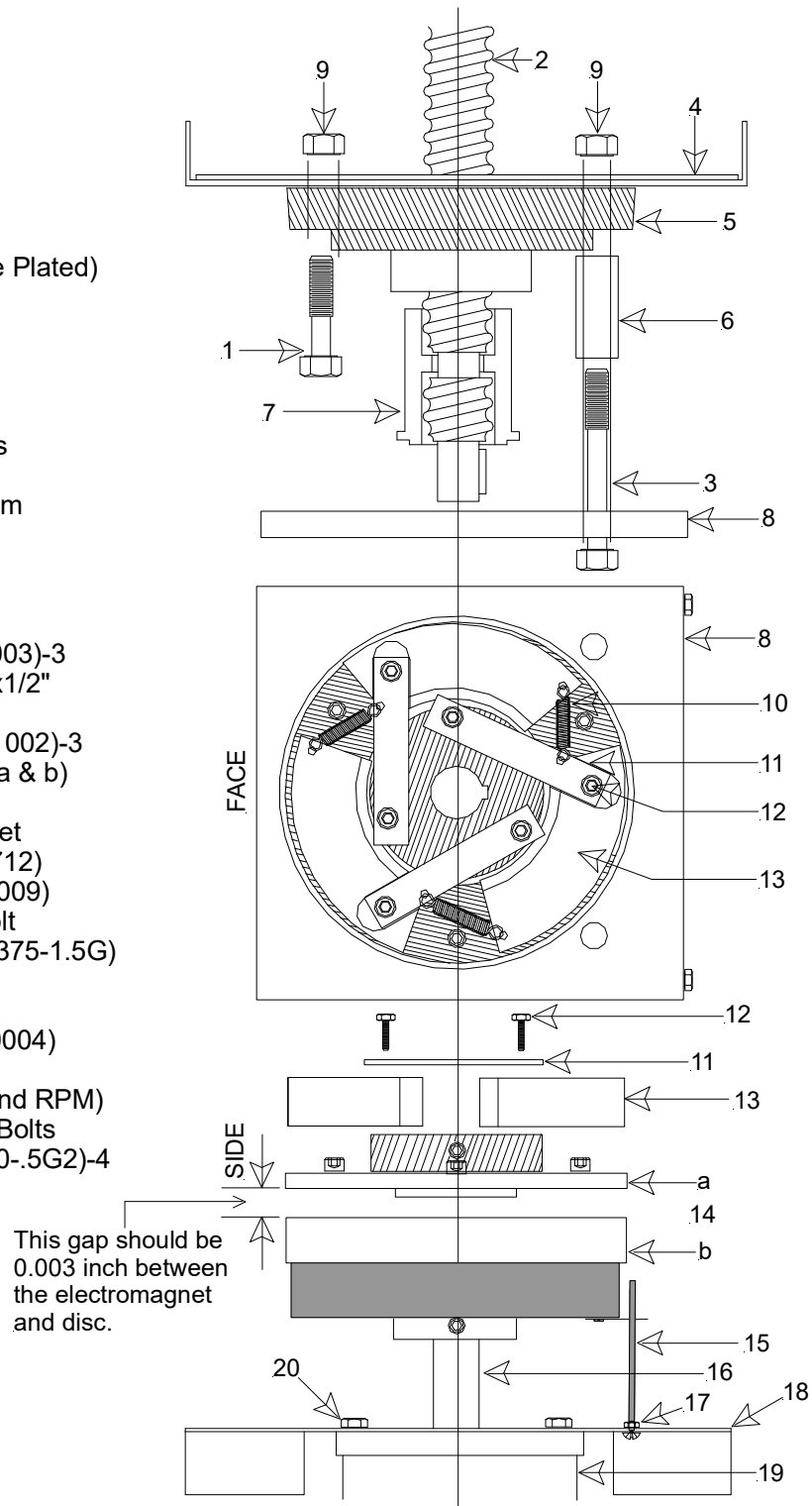


CONTROL ROD ASSEMBLY FOR BALLSCREW WITH LOVEJOY

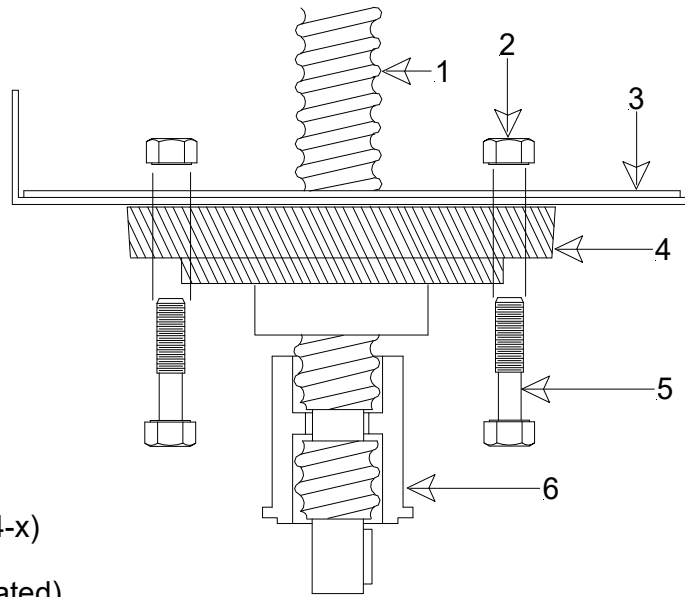


BALLSCREW POWER FAIL MODEL CLUTCH AND CENTRIFUGAL BRAKE ASSEMBLY

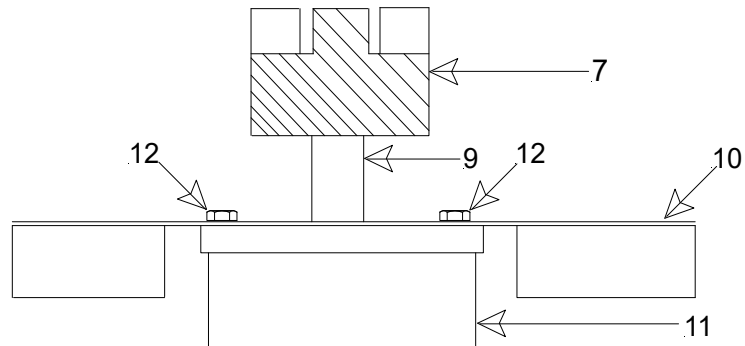
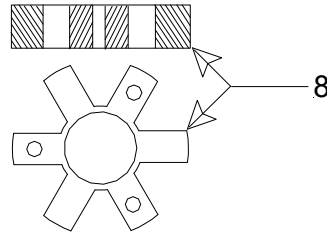
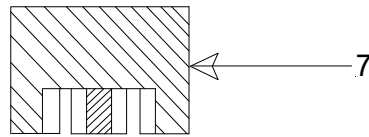
1. Bolt 3/8x1-1/2"
(BT-.375-1.5G)-2
2. Ball Screw Rod
(BS-3004-x)
3. Bolt 3/8x3"
(BT-.375-3.0G)-2
4. Bearing Plate (Double Plated)
(BS-CE-0002)
5. Thrust Bearing 1-1/4"
(BS-SCJ-114)
6. Brake Drum Spacer
(BS-BR-1005)-2
7. Split Bushing-2 halves
(BS-3002)
8. Centrifugal Brake Drum
(BS-BR-1001)
9. Nut 3/8" (NT-.375)-4
10. Brake Shoe Spring
(BS-36-0926)-3
11. Brake Arm (BS-BR-1003)-3
12. Hex Head Bolt 10/32x1/2"
(HW-HX-1032)-6
13. Brake Shoe (BS-BR-1002)-3
14. Clutch Unit (includes a & b)
a. Clutch Disk
b. Clutch Electromagnet
90 VDC (BS-0717-1712)
190 VDC (BS-0717-0009)
15. Clutch Restraining Bolt
8/32x1-1/2" (BT-.375-1.5G)
16. Gearmotor Shaft
17. 8/32 Nut (NT-832)
18. Motor Plate (BS-CE-0004)
19. Gearmotor
(Check Voltage and RPM)
20. Gearmotor Mounting Bolts
1/4"x1/2" (BT-.250-.5G2)-4



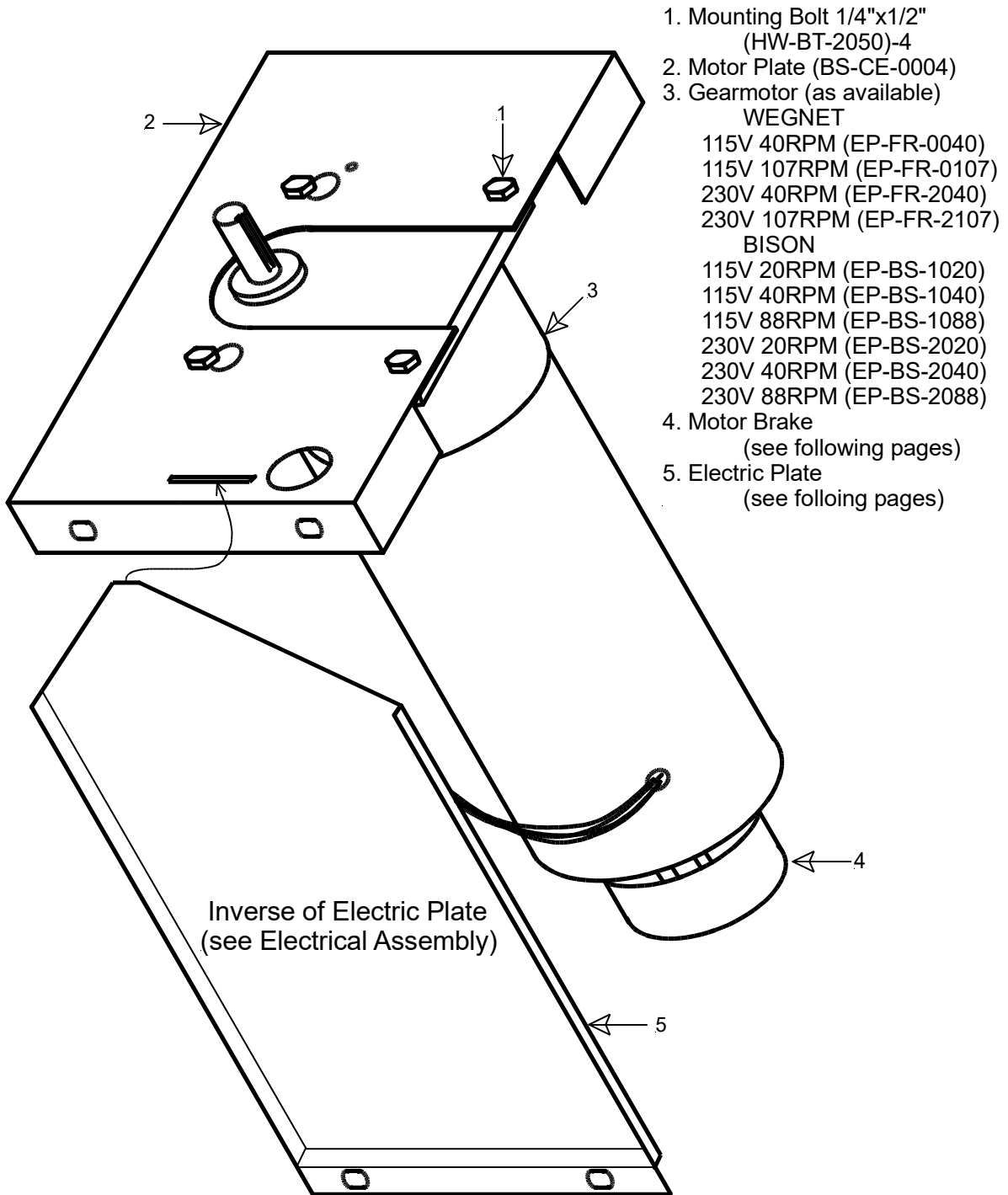
BALLSCREW LOVEJOY MODEL LOVEJOY ASSEMBLY



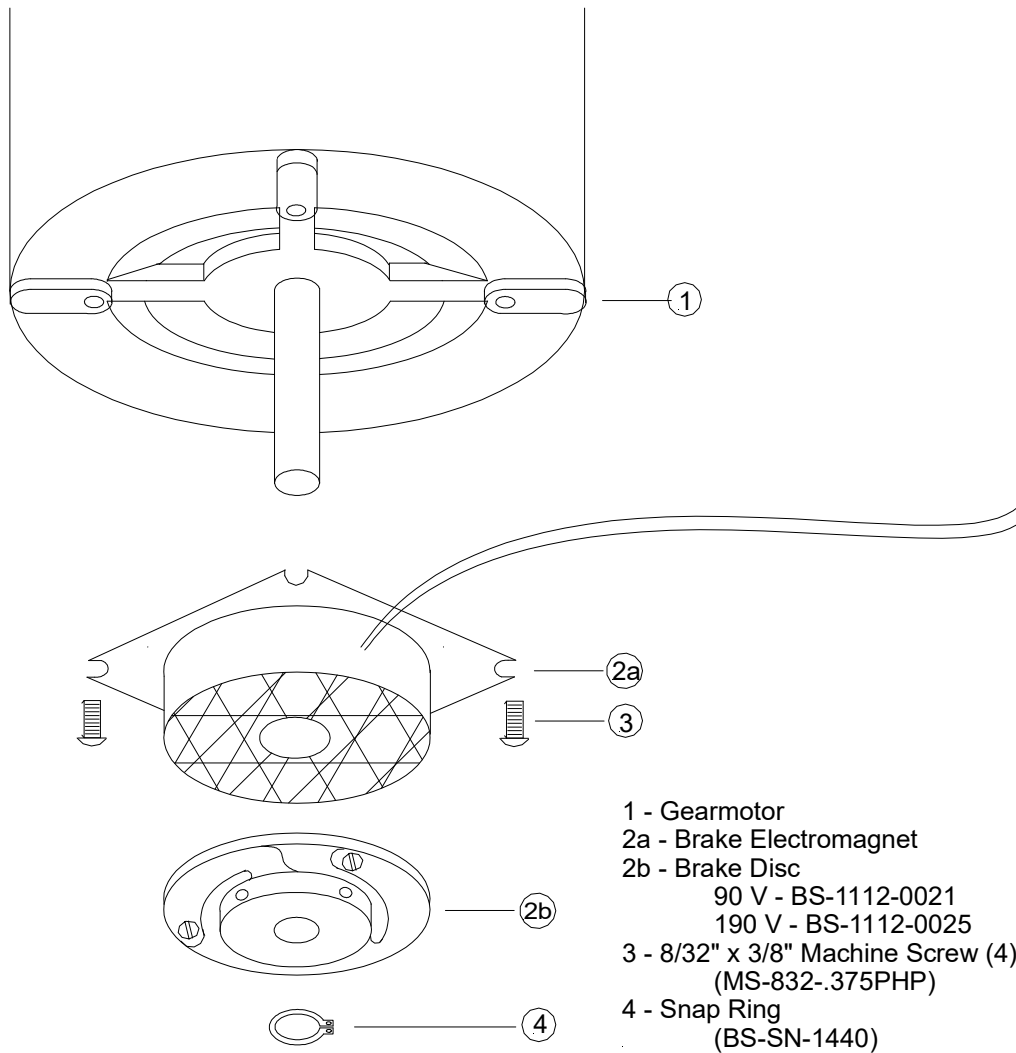
1. Ball Screw Rod (BS-3004-x)
2. Nut 3/8" (NT-.375)-4
3. Bearing Plate (Double Plated)
(BS-CE-0002)
4. Thrust Bearing 1-1/4" (BS-SCJ-114)
5. Bolt 3/8x1-1/2" (BT-.375-1.5G)-4
6. Split Bushing-2 halves (BS-3002)
7. 5/8" Lovejoy Coupling (DR-LJ-0000)-2
8. Urethane Spider (DR-LJ-000U)
9. Gearmotor Shaft
10. Motor Plate (BS-CE-0004)
11. Gearmotor
(Check Voltage & RPM)
12. Gearmotor Mounting Bolts
1/4"x1/2" (BT-.250-.5G2)



BALLSCREW MOTOR PLATE ASSEMBLY

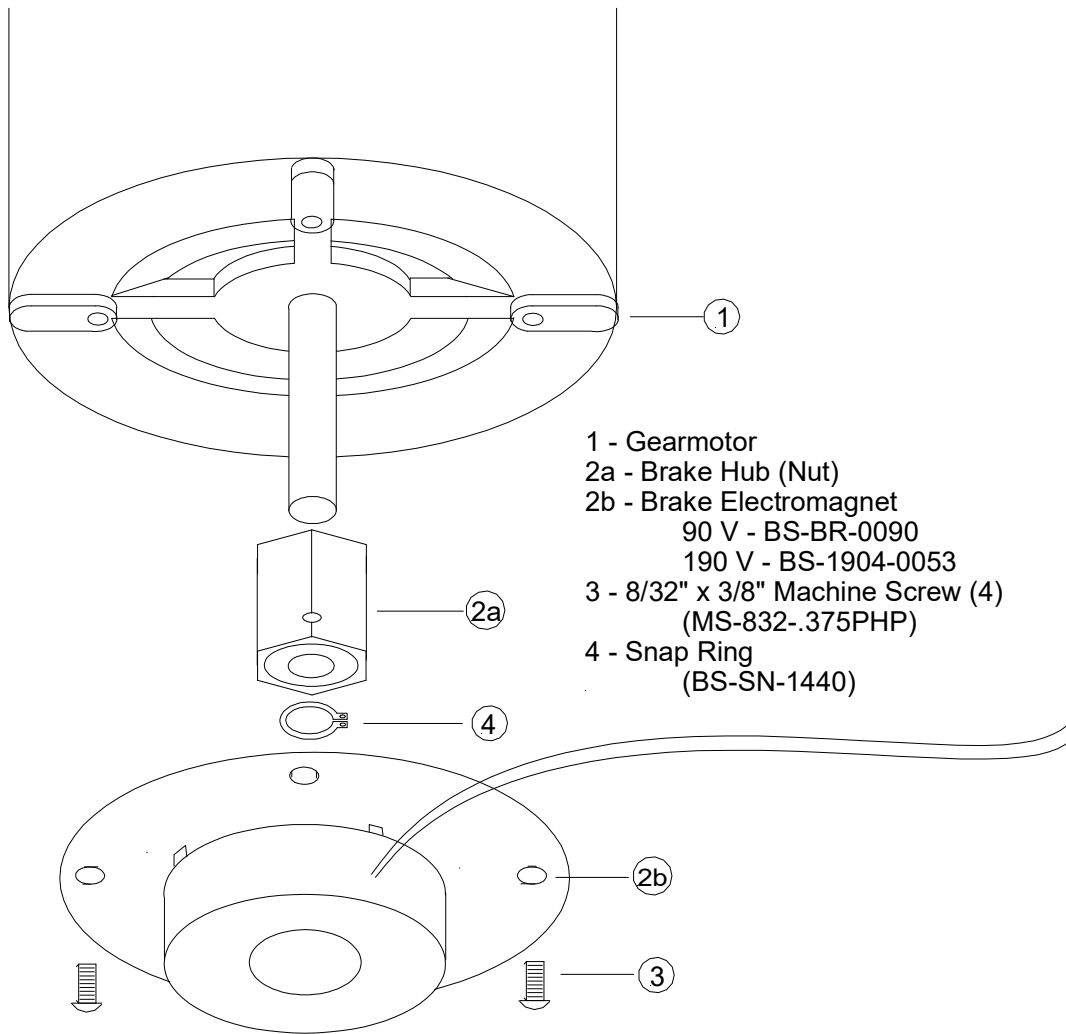


POWER ON BRAKE ASSEMBLY



The Motor Brake is mounted on the rotor end of the gearmotor, away from the output shaft/ballscrew. The Electromagnet is mounted first, adjacent to the motor end cap. The Brake Disc is mounted next to the Electromagnet, but with a gap of 0.005 inches between the two. A smaller gap is acceptable, provided that there is no drag of the Disc on the Electromagnet. This allows the Disc to rotate freely when the power is off to the electromagnet such as when the motor is given a signal to run in either direction, or when the electric power is off to the Ballscrew Drive Unit. When the power is off, the weight of curtains and the low resistance of the Ballnut on the Shaft will allow the curtains to freely fall open. When power is restored, the Drive Unit will return to normal operation without the need to reset the curtains with hand winches.

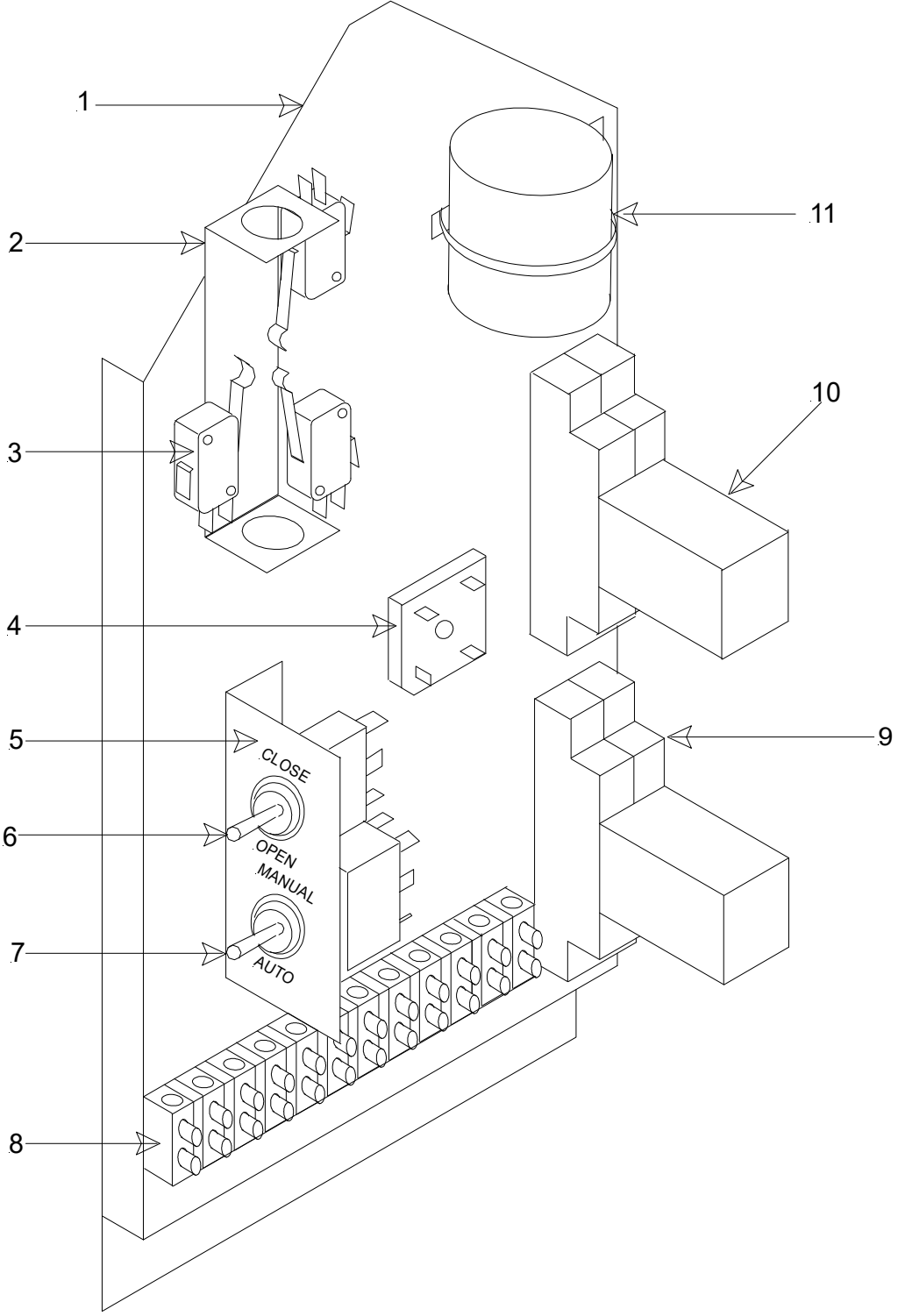
POWER OFF BRAKE ASSEMBLY



SECTION 6
ELECTRICAL ASSEMBLY CONFIGURATION

MODEL NO.	DESCRIPTION	PAGE
Electrical Plate	Reference Layout of Electrical Plate	24,25
BP-xx-x010	Standard Clutch/ Power Fail configuration: 2 relays, 1 Bridge Rectifier, Manual control switches, PowerOn Motor Brake.	26
BL-xx-x010	Standard Lovejoy configuration (no Power Fail): 2 relays, 1 Bridge Rectifier, Manual control switches, PowerOff Motor Brake.	27
BP-xx-x016	Delay Power Fail configuration: Clutch, 2 relays, 2 Bridge Rectifiers, Manual control switches, PowerOff Motor Brake, 3900 UF/ 450V Capacitor (240VAC system) or 12,000 UF/ 200V Capacitor (120VAC system).	28

ELECTRIC PLATE ASSEMBLY



ELECTRICAL PLATE ASSEMBLY

Diagram #'s refer to diagram on previous page.

Diagram

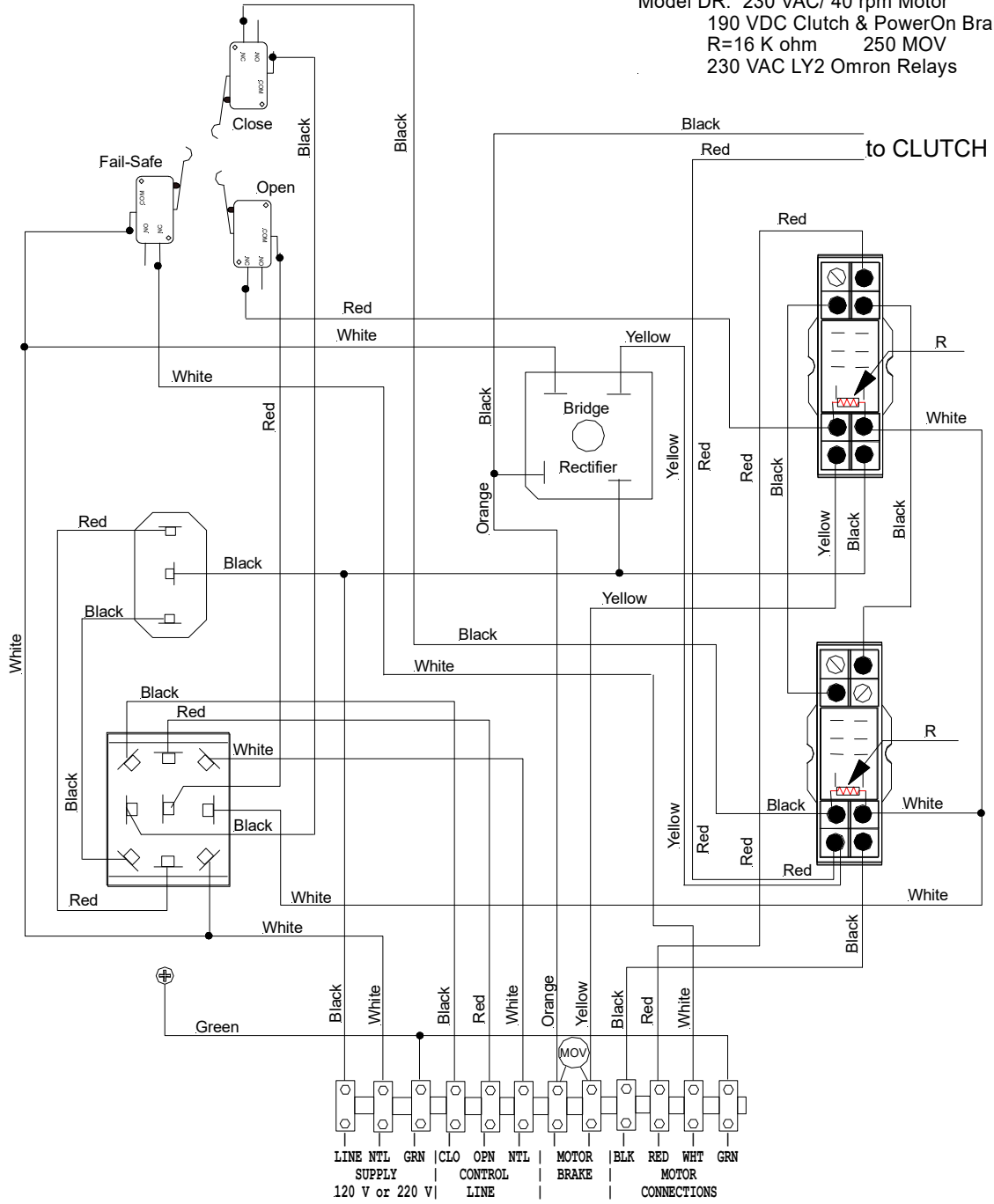
#	AVS Part #	Part Description
1	BS-CE-0013	Electrical Plate
2	BS-CE-0009	Cam Bracket
	MS-632-.375P	Machine Screw: 6/32x0.375 PHMSP (2 per bracket)
	NT-632	Hex Nut 6/32 (2 per bracket)
3	EP-SW-10G4	Limit Switch, Simulated Roller (3 per plate)
	MS-440-1PHP	Machine Screw 4/40x1 PHMSP (2 per switch)
	EP-SP-0325	Spacer 1/8" (2 per switch)
	NT-440	Hex Nut 4/40 (4 per switch)
	EP-AA-2202	Wire Terminal Pink Insulated Quick (2 per switch)
4	BS-BR-1212	Bridge Rectifier, 600 V 25 amp
	MS-632-.75PH	Machine Screw: 6/32x0.75 PHMSP
	NT-632	Hex Nut 6/32
5	EP-CE-0014	Toggle Switch Mounting Bracket
	MS-632-.375P	Machine Screw: 6/32x0.375 PHMSP (2 per bracket)
	NT-632	Hex Nut 6/32 (2 per bracket)
	EP-SS-3160	Wire Terminal #6 Spade
6	EP-SW-1200	Toggle Switch SPDT Center Off
	EP-BB-2206	Wire Terminal Blue Insulated Quick (3 per switch)
7	EP-SW-3200	Toggle Switch TPDT Center Off
	EP-BB-2206	Wire Terminal Blue Insulated Quick (9 per switch)
8	EP-TR-2131	12x Terminal Block-18 gage
	MS-632-.75PH	Machine Screw: 6/32x0.75 PHMSP (2 per block)
	NT-632	Hex Nut 6/32 (2 per block)
9	EP-RB-2002	Relay Base, Surface Mount, 2 Pole (2 per plate)
	MS-632-.75PH	Machine Screw: 6/32x0.75 PHMSP (2 per base)
	NT-632	Hex Nut 6/32 (2 per base)
10	EP-OR-0120	Relay, DPDT, 120 VAC
	EP-OR-0240	Relay, DPDT, 240 VAC
	EP-OR-0024	Relay, DPDT, 24 VAC
	EP-OR-CLIP	Relay Hold Down Clip
11	EP-CP-0006	20 MFD Capacitor, for 115 VAC/ 23 RPM Motor
	EP-CP-0008	30 MFD Capacitor, for 115 VAC/ 40 RPM Motor
	EP-CP-0009	40 MFD Capacitor, for 115 VAC/107 RPM Motor
	EP-CP-0006	7 MFD Capacitor, for 230 VAC/ 40 RPM Motor
	EP-CP-0014	10 MFD Capacitor, for 230 VAC/107 RPM Motor
	EP-CP-0019	45 MFD Capacitor for 115 VAC Bison Gearmotor
	EP-CP-0018	12.5 MFD Capacitor for 230 VAC Bison Gearmotor
	EP-WT-014W	Wire Tie, 14 inch
	116-WIRE	Wire, 16 AWG stranded for assembly

BP-xx-x010

update 10/1/02

Model AO: 115 VAC/ 40 rpm Motor
 90 VDC Clutch & PowerOn Brake
 R=8.2 K ohm 150 MOV
 115 VAC LY2 Omron Relays

Model DR: 230 VAC/ 40 rpm Motor
 190 VDC Clutch & PowerOn Brake
 R=16 K ohm 250 MOV
 230 VAC LY2 Omron Relays

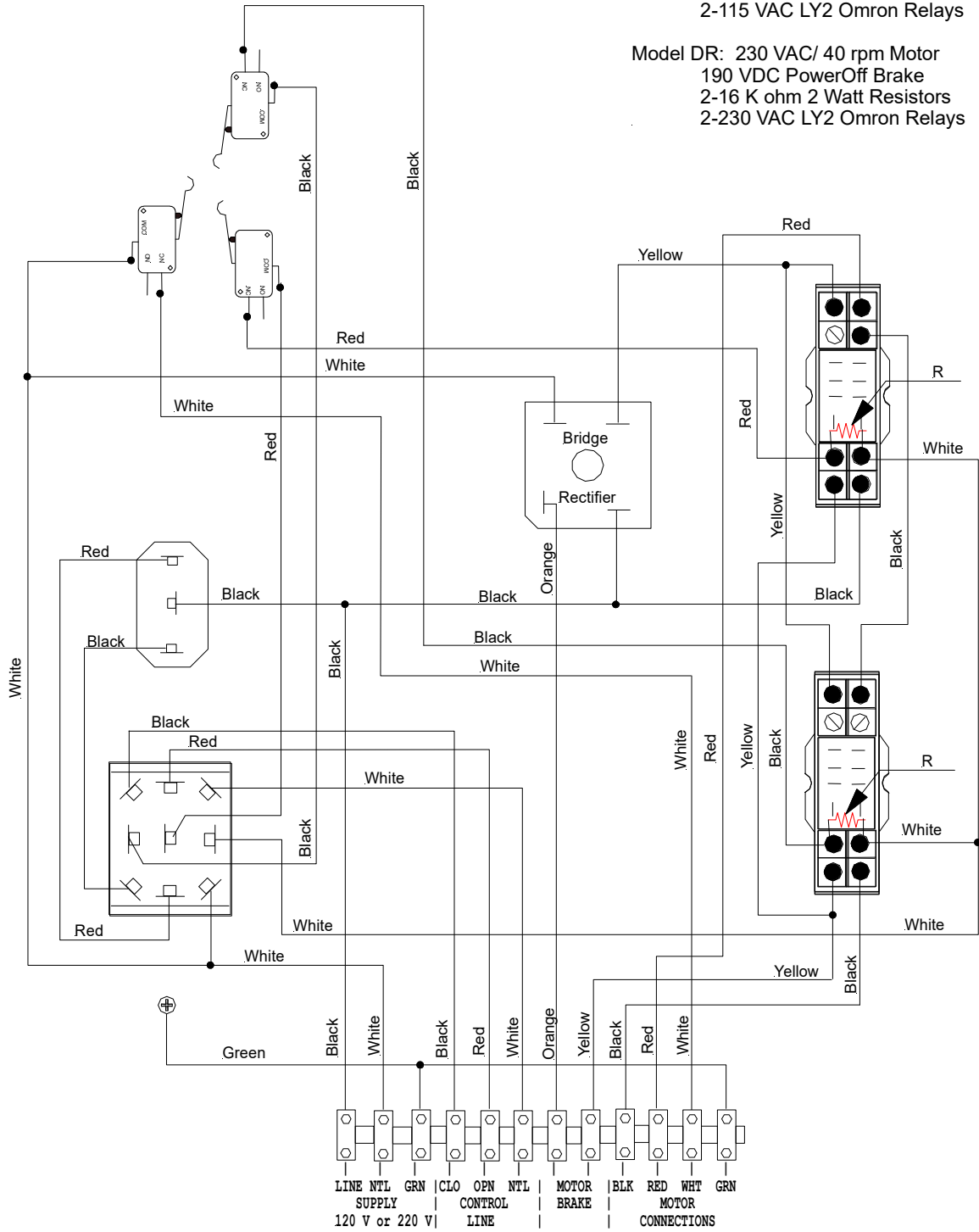


BL-xx-x010

update 10/1/02

Model AO: 115 VAC/ 40 rpm Motor
 90 VDC PowerOff Brake
 2-8.2 K ohm 2 Watt Resistors
 2-115 VAC LY2 Omron Relays

Model DR: 230 VAC/ 40 rpm Motor
 190 VDC PowerOff Brake
 2-16 K ohm 2 Watt Resistors
 2-230 VAC LY2 Omron Relays

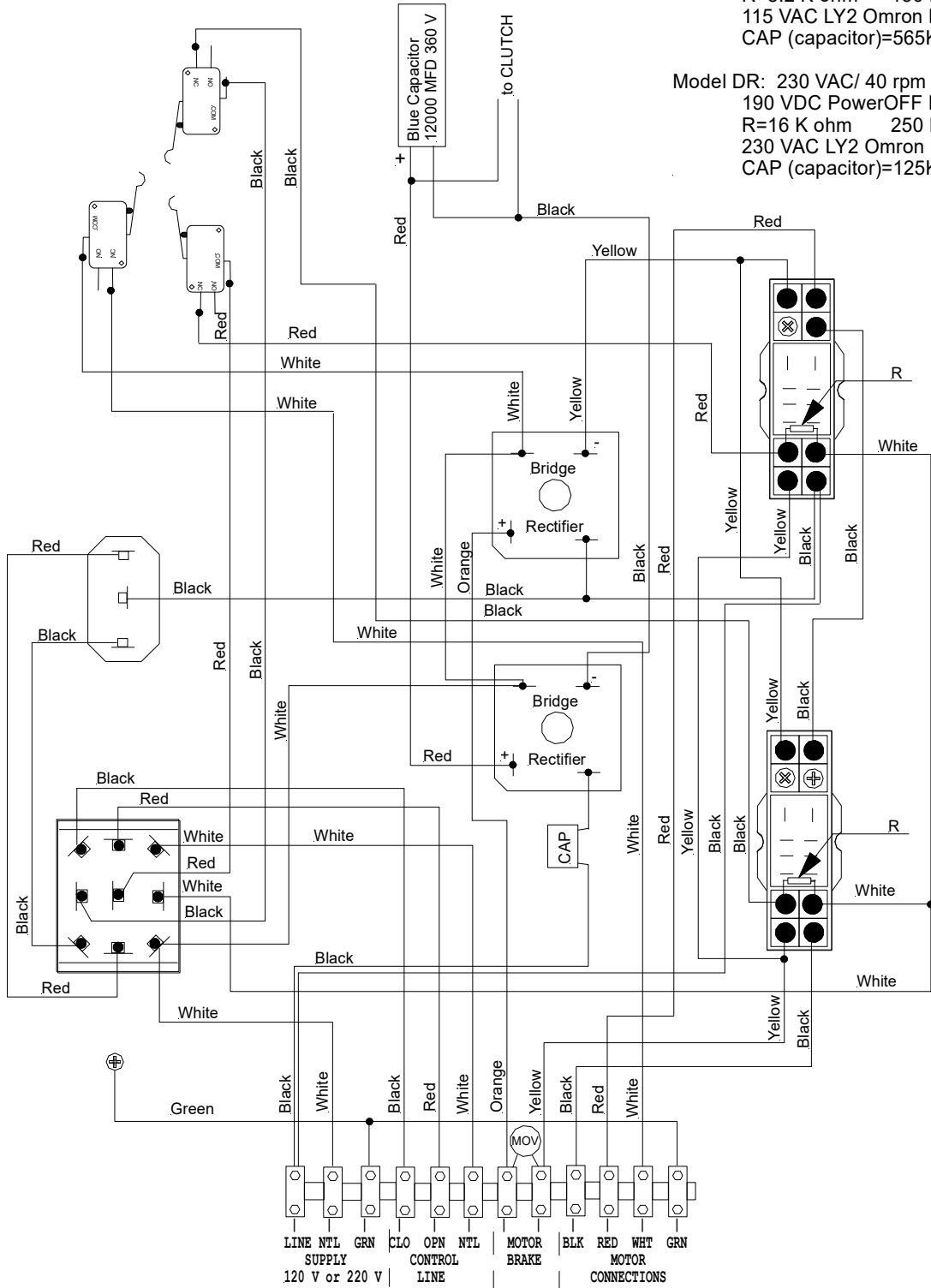


BP-xx-x016

update 1/31/08

Model AO: 115 VAC/ 40 rpm Motor
 90 VDC PowerOFF Brake
 R=8.2 K ohm 150 MOV
 115 VAC LY2 Omron Relay
 CAP (capacitor)=565K

Model DR: 230 VAC/ 40 rpm Motor
 190 VDC PowerOFF Brake
 R=16 K ohm 250 MOV
 230 VAC LY2 Omron Relay
 CAP (capacitor)=125K



TROUBLESHOOTING GUIDE

	Symptom	Cause	Remedy	See Page
1.	Unit will not run	Fail safe switch activated No Power to unit No control signal	Turn off power & turn screw shaft by hand to get off fail safe switch Check input voltage, breaker Check manual operation at unit & control	3 11 26-28
2.	Motor hums but won't run	Motor brake not releasing Both relays activated (trying to run both directions)	Check voltage to brake: 90vdc for 120V unit 200vdc for 240V unit No voltage, bad rectifier Brake coil may be shorted Activate open or close limit switch to see if motor will run (relay sticking, or control sending both signals)	24-28 3 24-28
3.	Clutch slips (Power Fail models) – Ballscrew shaft will not turn with motor	Gap too large Dirt or grease on clutch Curtain load too great No or low voltage to clutch	With power off, check gap between electromagnet & disc – adjust as necessary The electromagnet must be adjusted toward (or away from) the disc. There are 2 allen/set screws holding electromagnet in place. Clean clutch surfaces using a rapid evaporating solvent Check for binding cables, pulleys, etc. Check voltage to electromagnet: 90vdc for 120V unit 200vdc for 240V unit No voltage, bad rectifier Clutch coil may be shorted	18 7-10 26,28
4.	Unit runs only one direction	Sticking relay Sticking or faulty limit switch	Interchange relays; replace faulty relay Lever arm of limit switch may need to be adjusted (always on no matter position on cam); replace limit switch	24-28 3

5,	Clutch growls	Electromagnet & disc are out of alignment	With power off, loosen bolts for thrust bearing (#5), and adjust bearing to center disc to electromagnet	18
6.	Curtains will not drop (Power Fail models)	No clutch gap	With power off, check that ballscrew shaft is free to turn. Check gap (see item 3 above)	18
		Centrifugal brake sticking	Check that arms and shoes of centrifugal brake move freely	18
7.	Ballnut fails, loses bearings	Ballscrew shaft not greased	Replace ballnut, and check for wear and galling on ballscrew shaft	7-10
		Curtain, or cable load not balanced		
8.	Motor not running, but hot	Thermal overload switch tripped	<p>Motor ran excessively: check control settings to see if they are too tight.</p> <p>Brake failure causes unit to drift off close limit switch and run repeatedly.</p> <p>Brake not releasing (see item 2 above)</p> <p>Relay sticking, runs past close limit, hits failsafe switch, drifts backwards and runs repeatedly.</p>	
9.	Unit repeatedly runs to and drifts off close limit switch	Brake failure (Power On)	<p>Bridge rectifier not supplying required voltage (see item 2)</p> <p>Brake electromagnet failed (coil bad)</p>	21
		(Power Off)	Fiber disc in brake electromagnet damaged	22

LIMITED WARRANTY

If it appears within one year from the date of invoice between the Purchaser and Agri Ventilation Systems, LLC, that any products or component parts do not conform to the specifications and physical descriptions given to the Purchaser, or that such products or component parts do not perform the function for which they were intended, the Purchaser, at their expense, shall return the products or component parts to the Seller, as prescribed in the AVS Return Materials Policy, with a RGA number, and a written report of defects or failed performance. The Seller shall review the report and inspect the items, and shall determine warranty status, and shall authorize, where applicable, either the repair or replacement of any non-conforming, or non-functioning product or component parts. The liability of the Seller to the Purchaser arising out of the supply of, or use of the product or component parts, whether such liability shall arise during the warranty period, shall in no case exceed the amount paid by the Seller in the repair or replacement of non-conforming, or non-functioning product or component parts. Upon the expiration of the warranty period, all liability of the Seller shall terminate.

Any warranty will be terminated if any product or component parts are installed improperly, misused, misapplied, tampered with, abused, modified, or altered without authorization from Agri Ventilation Systems, LLC. Warranty will not apply to defects of failures caused by, or due to Acts of God, or nature.

WARNING: WHEN THE PRODUCT OR COMPONENT PARTS ARE USED IN A LIFE SUPPORT VENTILATION SYSTEM, WHERE FAILURE COULD RESULT IN LOSS OR INJURY, THE USER SHALL PROVIDE ADEQUATE PERSONAL ATTENTION, BACK-UP VENTILATION, SUPPLEMENTARY NATURAL VENTILATION, OR FAILURE SYSTEMS, ETC., NECESSARY TO CONTROL THE OPERATION, OR ACKNOWLEDGE WILLINGNESS TO ACCEPT THE ASSOCIATED RISKS OF SUCH LOSS OR INJURY.

This equipment is offered for sale specifically on the Purchaser's acceptance of the above condition and the manufacturer's warranty for this equipment. Acceptance, retention, installation, or operation of this equipment by the Purchaser shall be considered as acknowledgment and acceptance of the above conditions.

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