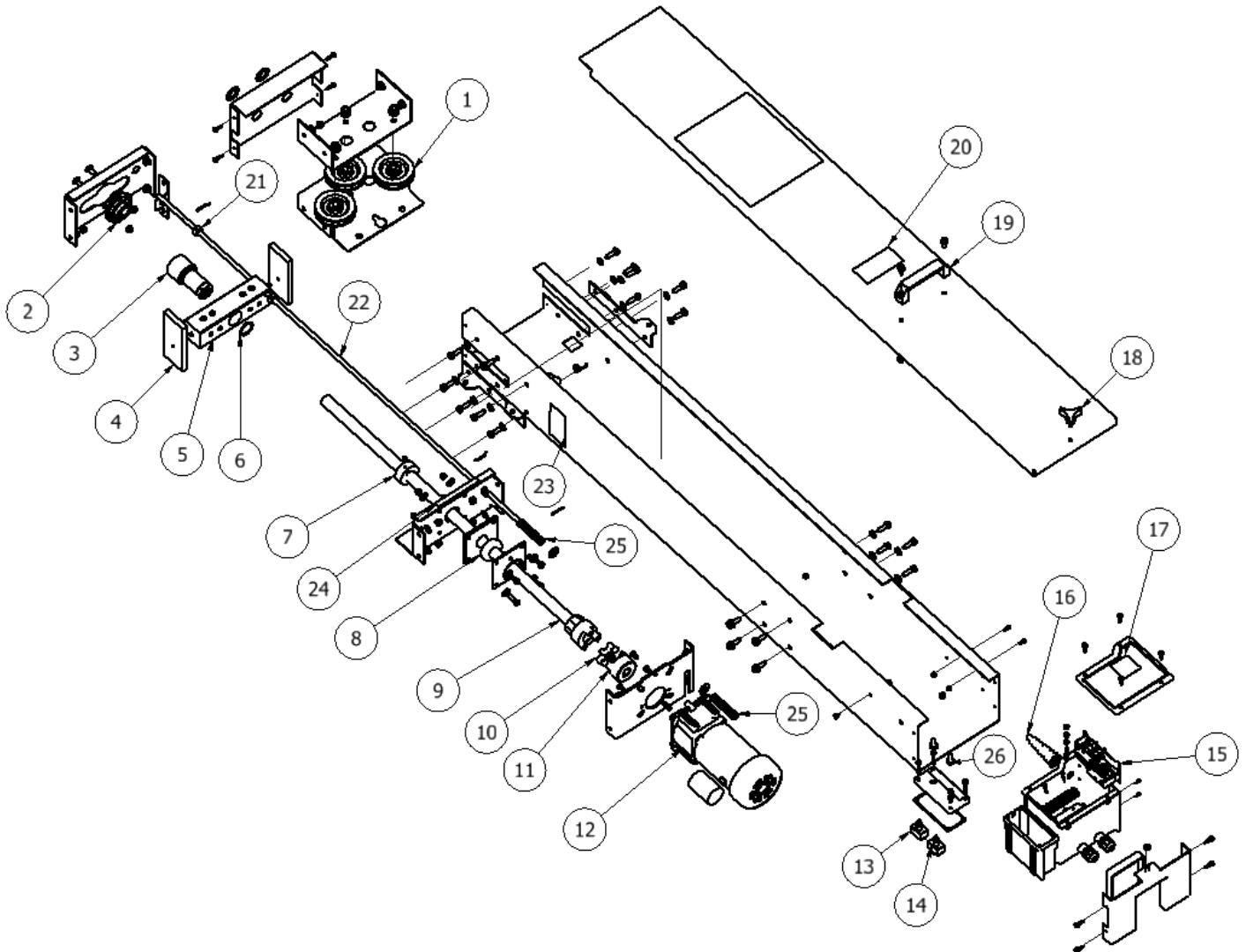


**GrowerSELECT[®] HS583E- Series Curtain /Vent machine
with Enclosed Limit Switch
Service Manual**

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Parts Diagram



ITEM #	PART #	QTY PER	DESCRIPTION
1	HS583-34	3	Pulley, Cast 3-1/2" with double ball bearings
2	HS583-42	1	Bearing Flange 1" I.D
3	HS583-8-2	1	Load Nut, nylon
	HS583-8-2A	1	Load Nut Replacement Kit
4	HS583-9	2	Slide, load block
5	HS583-8-1	1	Load block
	HS583-8	1	Kit, Complete Load Block Assembly including Load Nut
6		1	1 1/4" External snap ring, supplied with HS583-8-2A
7	HS583-41	1	Threaded collar, seal thrust bearing nylon

8	HS583-12	1	Thrust bearing, 1" ID, D9
9	HS583-11A24	1	ACME screw, 24" machine
	HS583-11A36	1	ACME screw, 36" machine
	HS583-11A48	1	ACME screw, 48" machine
10	HS613	1	Spider Gear-spacer Hytrel (white) L090/L095
11	LOV38146	1	Coupling Jaw L095 5/8" bore with keyway
12	HS9050	1	Motor 1/8 HP, 115V AC, 60 Hz, 1.9A FL, 28RPM
	HS9051	1	Motor 1/8 HP 230V AC, 50/60Hz, 0.75/0.90A FL, 24/29 RPM
	HS9052	1	Motor 1/8 HP, 115V AC, 60 Hz, 1.65A FL, 16RPM
	HS9053	1	Motor 1/8HP 115V 60Hz, 1.9A FL, 60RPM
	HS9054	1	Motor 1/8HP 230V 50/60Hz, 0.75 / 0.90 FL, 60RPM
13	EL1001	1	Switch, Toggle SPDT , 10A @ 250 Volt, CTR OFF
14	EL1005	1	Switch, Toggle DPDT , 10A @ 250 Volt, CTR OFF
15	HS583E-31	1	Switch assembly with (6) EL1135 micro switches for enclosed style only.
16	HS583-46-6	1	Bellows Rubber Limit Rod
17	HSLABEL-008	1	Label, Warning-Shock Hazard
18	HS612	1	Knob, tri-handle, 1/4-20 insert
19	HS583-45	1	Handle, Front door
20	HSLABEL-084	1	Label, "Caution Automatic Equipment"
21	HS583-28	2	Collar, steel 3/8" w/ set screw
22	HS583-27-24	1	Limit rod, 24" machine
	HS583-27-36	1	Limit rod, 36" machine
	HS583-27-48	1	Limit rod, 48" machine
23	HSLABEL-083	2	Label, "Warning Moving Parts"
24	HSLABEL-087	1	Label, "Grease Location"
25	HS583-29	2	Spring, limit rod
26	EL1083	2	Rubber cover, toggle switch

Section 1: Drive Motor Replacement

Tools Required:

- 7/16" socket/wrench
- 5/32" Allen Wrench

1.1 Removal of Drive Motor

<p>A. Disconnect power to machine. B. Unplug motor connector.</p>	
<p>C. Refer to section 9.1 : "Removal of Limit Switch Enclosure". Steps 9.1-A thru 9.1-G</p> <p>It is not necessary to fully remove enclosure from the machine chassis. Once screw/nuts are removed reference section 9.1 -G, slide enclosure out of chassis approximately 2". If curtain/vent machine is hanging vertically on a wall, slide limit switch enclosure until the top limit switch enclosure mounting hole aligns with bottom hole. Re-insert one of the fasteners removed to hang the enclosure while the drive motor is being serviced.</p>	
<p>D. While supporting motor, remove (3) motor mounting bolts using 7/16" wrench or socket</p>	
<p>E. Pull motor out of mounting bracket while angling fan end of motor out and away from machine chassis.</p>	

1.2 Installation of Drive Motor

A. If jaw coupling from old motor is to be re-used, loosen both set-screws using 5/32" Allen wrench and remove jaw coupling.



B. Install jaw coupling onto motor shaft along with key provided with motor.
 C. Slide coupling onto shaft until shaft end of motor is flush to 1/8" protruding from coupling.



D. Lightly tighten set-screws with 5/32" Allen wrench.
 E. Re-install motor in reverse order of removal.
 F. Tighten (3) mounting bolts securely. Refer to **section 9.2: "Installation of Limit Switch Enclosure"**.
Perform sections A thru K

G. Slide jaw coupling on motor toward mating coupling on drive screw. It may be necessary to loosen the set-screws.
 H. Once coupling is in place tighten both set-screws to 150 in-lbs. If using standard L shape Allen wrench, tighten until wrench bends while holding the wrench near the end.
 I. Re-connect power.



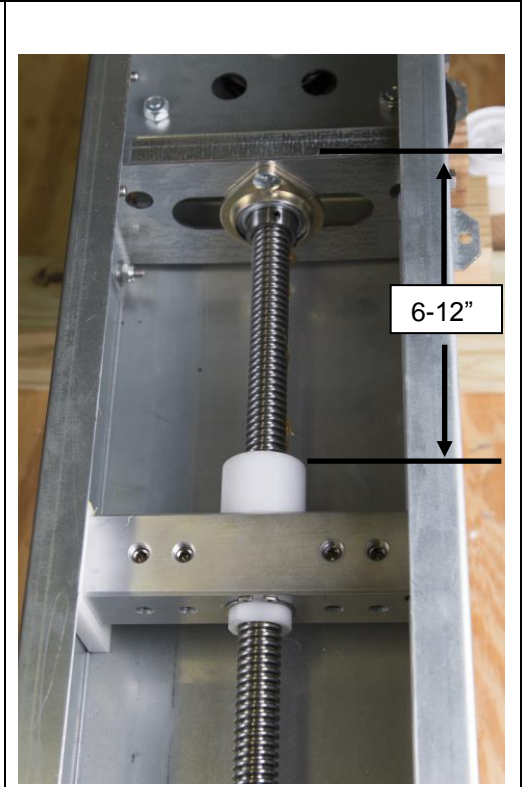
Section 2: Load Nut Replacement

Tools Required:

- 1/8" Allen wrench
- External snap ring pliers

2.1 Removal of Load Nut

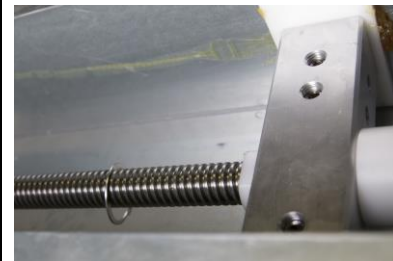
A. If load nut is able to travel the drive screw, put machine in manual mode and run the load block until it is approximately 6-12" from the top of the machine.



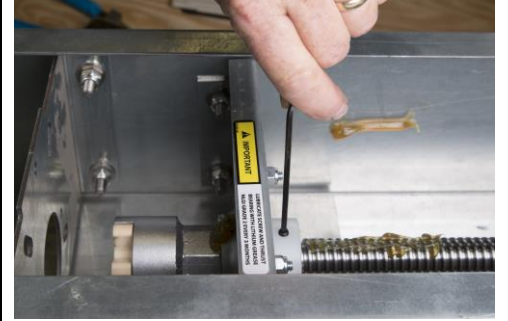
- B. Disconnect power from machine.
- C. Remove tension on cables/chains that are connected to the load block assembly.
- D. Remove drive motor per instructions in **Section 1: " Drive Motor Replacement"**.

- E. Remove snap ring from load nut which is located on motor side of the load block assembly. It is not necessary to take care to save the snap ring unless it is to be re-used. A new snap ring is provided with the replacement load nut kit HS583-8-2A.

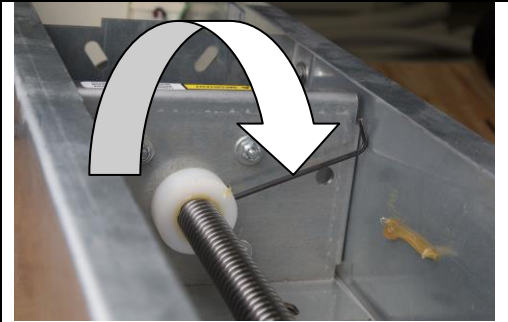
- F. Loosen set-screws on upper flange bearing with 1/8" Allen wrench.



G. Loosen set-screw on plastic collar found at the base of the drive screw so the collar can be rotated by hand. Use 1/8" Allen wrench.



H. Leave Allen wrench inserted in set-screw. Rotate drive screw CCW by the jaw coupling end.
I. Allow Allen wrench to rest on the side of the chassis stopping the rotation of the plastic collar.



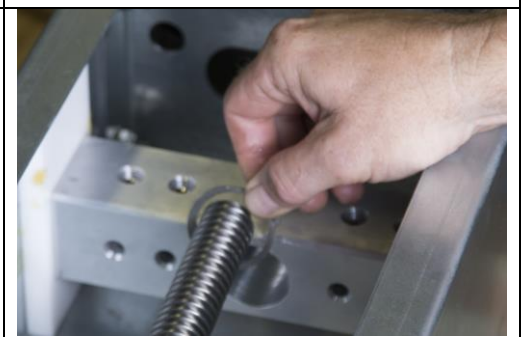
J. Continue to rotate the drive screw CCW. Shaft will unscrew itself out of the load nut.



K. Rotate shaft until it has cleared the load nut and load nut can be removed from the machine.



L. If replacing snap ring, pull aluminum load block up and off the end of the drive screw so the snap ring can be removed.

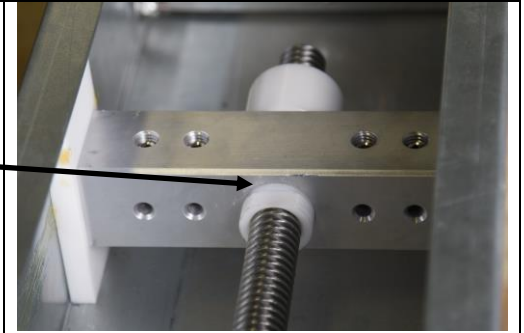


2.2 Installation of Load Nut

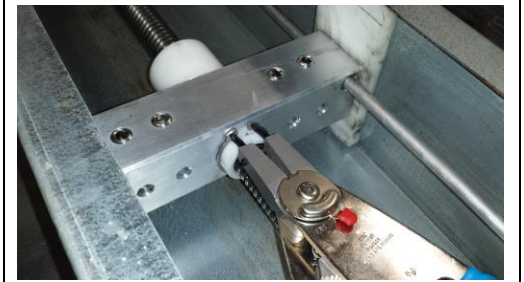
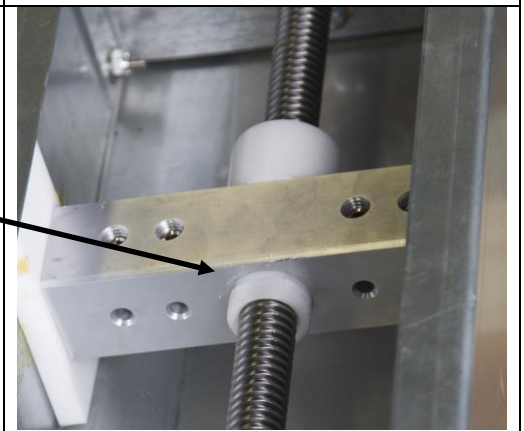
- A. Re-install snap ring over shaft end.
- B. Place load block over shaft end and let it hang down supported by the attached cable/chain.
- C. Thread new load nut onto end of drive screw until it gets to the aluminum load block.



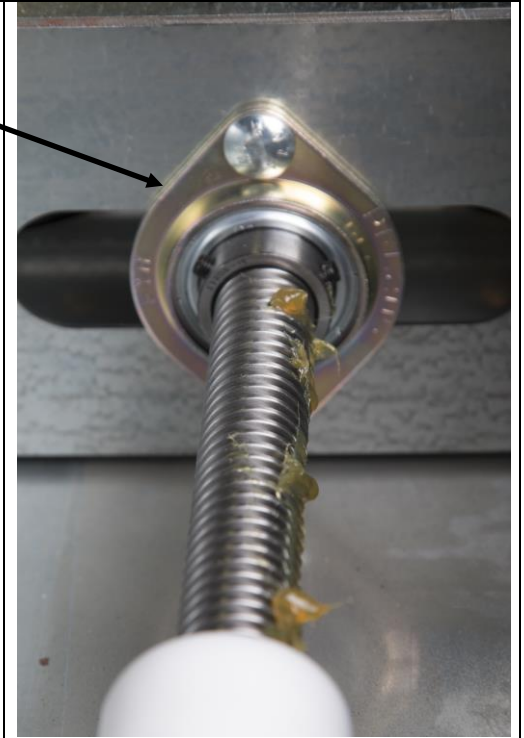
- D. Align load nut so that the hex portion aligns with hex opening of the aluminum load block.
- E. Load nut should be oriented with the flat portion near the snap ring location is facing outward of the machine chassis.



- F. Rotate drive screw CW until load nut is fully seated into load block.
- G. Re-install snap ring on load nut end. Ensure snap ring is fully seated into groove.

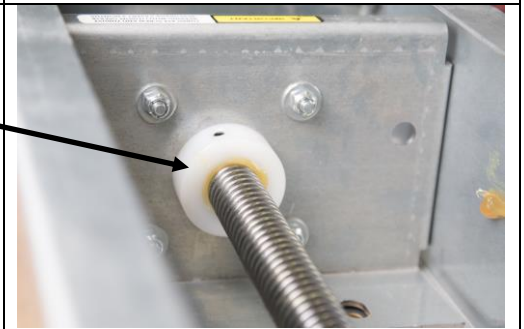


H. Continue to rotate drive screw CW until it has positioned into top end flange bearing.

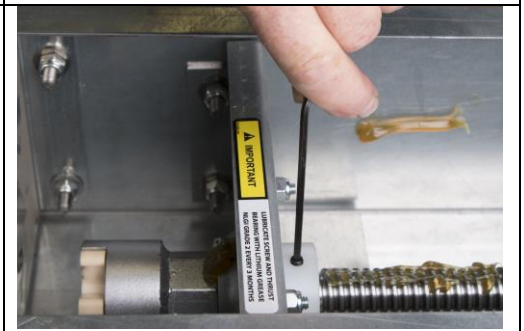


I. The drive screw will eventually stop rotating as the plastic collar tightens against the thrust bearing mounting plate.

J. While holding the drive screw from rotating, rotate the plastic collar 1/8 turn CCW.



K. Tighten set-screw in plastic collar.



<p>L. Tighten set-screws in upper flange bearing.</p>	
<p>M. Verify drive screw rotates freely and is not binding at the plastic collar. If it is too tight, loosen set screw in plastic collar and repeat step J.</p> <p>N. Replace drive motor per instructions found in Section 1.2: "Installation of Drive Motor"</p> <p>O. Apply line of Lithium NLGI Grade 2 grease to length of drive screw.</p> <p>P. Re-apply tension to cables/chain in machine.</p> <p>Q. Re-connect power.</p>	

Section 3: Load Block Assembly Replacement

Tools Required: NONE

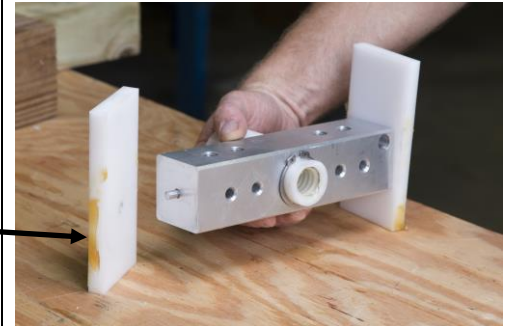
3.1 Removal of Load Block Assembly.

- A. Remove drive screw. Refer to Section 5.1: **"Removal of Drive Screw"**
- B. Unscrew load block assembly by rotating CCW on drive screw until load block unscrews off the end of the shaft.



- C. With load block removed from the drive screw, remove plastic slides from each side of load block by pulling the plastic blocks outward away from load block. Plastic slides are secured by dowel pins located on each side of load block.

*NOTE ORIENTATION OF SLIDES. THEY ARE OFFSET TO ONE SIDE.



3.2 Installation of Load Block Assembly

- A. Thread load block assembly onto drive screw by rotating load block assembly CW.
 - B. Press plastic block over dowel pins located on the side of the load block. Re-install drive screw per **section 5.2: "Installation of Drive Screw"**
- *NOTE ORIENTATION OF SLIDE BLOCKS

Section 4: Upper Drive Screw Flange Bearing Replacement

Tools Required:

1/2" socket/wrench

4.1 Removal of Upper Drive Screw Flange Bearing

- A. Refer to **Section 2.1: "Removal of Load Nut"**
- B. Perform steps A - D. Exception to step A, load block does not have to be in any particular location.
- C. Perform step F -I.
- D. Rotate drive screw until it unscrews and is away from upper flange bearing.



- E. Remove (2) retaining bolts securing the flange bearing into the machine housing. Using 1/2" wrench or socket.



4.1 Installation of Upper Drive Screw Flange Bearing

- A. Install flange bearing using removed hardware fasteners.
- B. Refer to Section 2.2: "Installation of Load Nut": Perform steps H - Q.

Section 5: Drive Screw Removal/Installation

NOTE: If machine is ceiling mounted, it should be removed before removing drive screw

Tools Required:

1/2" socket/wrench

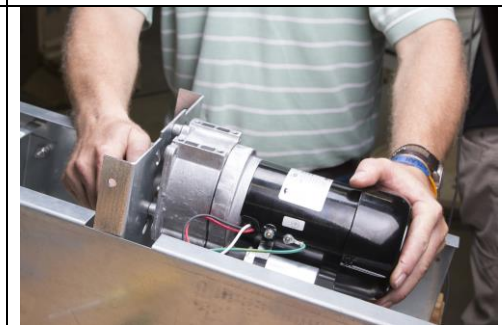
5.1 Removal of Drive Screw

<p>A. If load nut is able to travel the drive shaft, put machine in manual mode and run the load block until it is approximately 4" from the top of the machine.</p>	
<p>B. Disconnect power C. Disconnect cable/chains from load block assembly by loosening Allen set-screws in load block in Cable drive unit: Remove Chain adapters from load block if Sprocket drive Unit D. Unplug motor connector. E. Remove limit rod: refer to section 7.1: "Limit Rod Removal"</p>	

F. Remove Drive motor with mounting plate intact. Remove four bolts/nuts that secure motor mounting plate into chassis using 1/2" socket/wrench.



G. Slide motor with mounting plate away from the drive screw toward two cutouts found in the chassis approximately 12" from the end of the machine.
H. Align mounting bracket with slots and pull motor and plate out of the machine.



I. Loosen set-screws in top end flange bearing.



J. Remove bolts securing drive screw thrust bearing plate to chassis.



<p>K. Remove bolts/lag bolts that are through the back of the plate which secure the machine to the wall. (Unit will still hang on top bolts)</p>	
<p>L. Holding thrust bearing plate and supporting the drive screw, move entire assembly toward cut outs in chassis. M. Slide the first section of the thrust plate through the slots. Pull thrust plate outward and continue to move the plate to align bottom section with cut-outs.</p>	
<p>N. Once thrust plate is clear of chassis, angle thrust plate away from chassis while pulling the drive shaft and load block assembly toward the cut-outs. O. Align plastic slide blocks found on each end of the aluminum load block assembly with the cutouts. P. Lift load block assembly out of chassis.</p>	
<p>Q. Unscrew load block assembly by rotating CCW on drive screw until load block unscrews off the end of the shaft.</p>	
<p>R. Loosen set-screw on plastic collar and unscrew collar off the end of the drive screw.</p>	

S. Pull shaft out of Thrust bearing plate.



5.2 Installation of Drive Screw

- A. Install drive screw in reverse order of removal.
- B. Re-connect power.



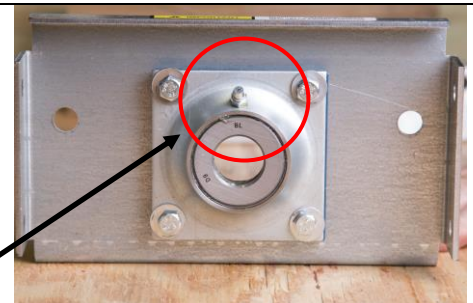
Section 6: Thrust Bearing Replacement

Tools Required:

7/16" socket/wrench

6.1 Removal of Thrust bearing

- A. Perform **section 5: "Removal of Drive Screw"**
- B. On thrust bearing plate, remove (4) retaining bolts holding thrust bearing cover to mounting bracket using 7/16" wrench.



C. NOTE GREASE FITTING ORIENTATION.



<p>D. Remove thrust bearing assembly from mounting plate.</p>	
<p>E. Remove thrust bearing.</p>	

6.2 Installation of Thrust bearing

<p>A. Place new bearing onto backing plate. B. Make sure rotating side of bearing faces away from backing plate. C. Align bearing grease access hole so that it will align with grease fitting on thrust bearing plate.</p>	
<p>D. Place thrust bearing retaining plate over bearing orienting grease fitting aligning with grease access hole in bearing.</p>	
<p>E. Check that thrust bearing rotates easily to ensure bearing is placed with correct side up. F. Check thrust bearing does not have excessive movement from side to side. If necessary install small piece of rubber approximately 1/8" thick between bearing and retaining plate to hold bearing in place during assembly and to keep</p>	

<p>bearing from rotating in assembly.</p> <p>G. Place assembly onto thrust bearing plate orienting grease fitting as noted in step C.</p>	
<p>H. Tighten (4) retaining bolts holding bearing cover to backing plate.</p> <p>I. Re-install Drive Screw , see section 5.2: "Installation of Drive Screw"</p>	

Section 7: Limit Rod Removal / Installation

Tools Required:

- 1/8" Allen wrench
- Cotter Key pliers or side cutters
- Locking pliers

7.1 Limit Rod Removal

<p>A. Remove Limit Switch Enclosure. See Section 9.1: "Removal of Limit Switch Enclosure".</p> <p>B. Mark limit rod lock collars identifying their position on the limit rod. This will aid in re-installation and set the open and close limits back to original set points.</p>	
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<p>C. Loosen set-screw of top lock collar nearest the cable exit of the machine using 1/8" Allen wrench.</p>	
<p>D. Loosen set-screw on lower lock collar and position lock collar approximately 12" from thrust bearing mounting bracket.</p>	
<p>E. Remove (2) cotter pins located above and below load block found at top and bottom of limit rod in the drive screw area of the machine.</p>	
<p>F. Grasp limit rod and pull downward moving it toward the motor end. While holding the limit rod in this position, place a set of locking pliers over the limit rod just underneath the load block. This will hold the limit rod in this position.</p>	
<p>G. Remove the lower cotter pin from the limit rod found near the motor end. H. Remove the lower spring and washer. Note the order of parts come off the limit rod end for re-assembly.</p>	

<p>I. Remove locking pliers. Grasp limit rod and move it in the opposite direction. Again using locking pliers clamp the limit rod just above the load block to lock the limit rod in position.</p> <p>J. Remove the next cotter pin in line from the bottom (located between motor mount plate and thrust bearing mounting bracket).</p>	
<p>K. While holding limit rod, remove locking pliers. Limit rod is now loose to be removed from machine.</p> <p>L. Lower limit rod in the direction of the limit switch end approximately 3 inches. Slide the top lock collar off the end of the limit rod.</p>	
<p>M. Continue to lower limit rod in the direction of the limit switch end of the machine until it is out of the load block.</p>	
<p>N. Pull limit rod outward and pull up and out of the lower guide holes in the thrust mount plate.</p> <p>O. Remove limit rod from machine noting location of springs, washers and cotter pins.</p>	

7.2 Limit Rod Installation

<p>A. Install limit rod in reverse order of removal.</p> <p>B. Install new 3/32" x 1" Stainless Steel cotter pins in limit rod at (4) locations.</p> <p>C. If installing new load block assembly, new cotter pins are provided.</p> <p>D. Re-connect power.</p>	
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Section 8: Top Cable Pulley or Sprocket Replacement

Tools Required:

5/16" socket/wrench/drill driver

1/2" socket/wrench

17mm socket/wrench

8.1 Removal of Cable Pulley or Sprocket

<p>A. Disconnect power.</p> <p>B. Disconnect all cables /chains from load block assembly and pull out of machine.</p> <p>C. Remove machine from wall or mounted location.</p> <p>D. Remove top end cap from machine by removing (4) mounting screws found on each side of the chassis using 5/16" socket.</p>	
<p>E. Remove (8) bolts securing the cable pulley/sprocket mounting bracket to the machine chassis using 1/2" wrench. These are located near end of machine and each side of chassis. Access windows are located on back side of chassis to aid in removal of nuts for the lower inboard fasteners.</p>	
<p>F. Pull cable pulley / sprocket assembly from end of machine.</p>	

<p>G. To replace pulleys/sprockets, remove lock nuts securing pulleys/sprockets to bracket using a 17mm wrench/socket.</p>	
<p>H. It will be necessary to hold one side while removing the opposite side nut. I. Re-assembly of pulley/sprocket in reverse order.</p>	

8.2 Installation of Cable Pulley/Sprocket assembly.

<p>A. Install Cable Pulley/Sprocket assembly in reverse order. B. Re-connect power.</p>	
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Section 9: Limit Switch Enclosure Removal/Installation - HS583E series

Tools Required:

- 5/16" socket/wrench/drilldriver
- 1/8" Allen wrench
- #2 Phillips screwdriver
- 11/32" socket / wrench

9.1 Removal of Limit Switch Enclosure

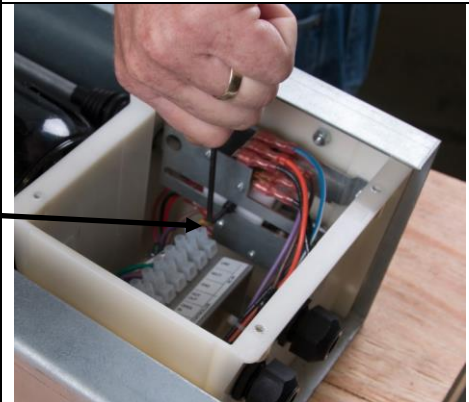
- A. Disconnect power
- B. Remove lower end cap near limit switch enclosure end of machine by removing (4) screws from side of chassis using 5/16" socket/ wrench/drill driver.



- C. Remove (4) screws from large cover on limit switch enclosure using 5/16" socket/wrench/drill driver. Remove enclosure cover.



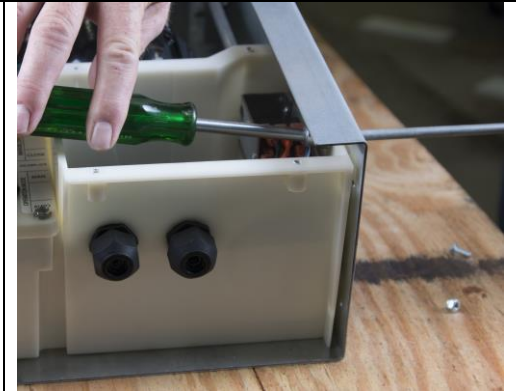
- D. Disconnect incoming wiring from terminal strip (required *ONLY* if replacement of limit switch enclosure assembly is necessary).
- E. Loosen set-screw on limit switch slide block using 1/8" Allen wrench.



- F. Remove (1) bolt and nut holding ground wire to side of chassis located near "OPEN"/"CLOSE" toggle switch. (Not necessary if replacing motor only as the enclosure will only be dropped down out of the way and not removed.)



G. Remove (2) bolts and nuts holding enclosure to side of chassis using # 2 Phillips screwdriver and 11/32" socket/wrench.

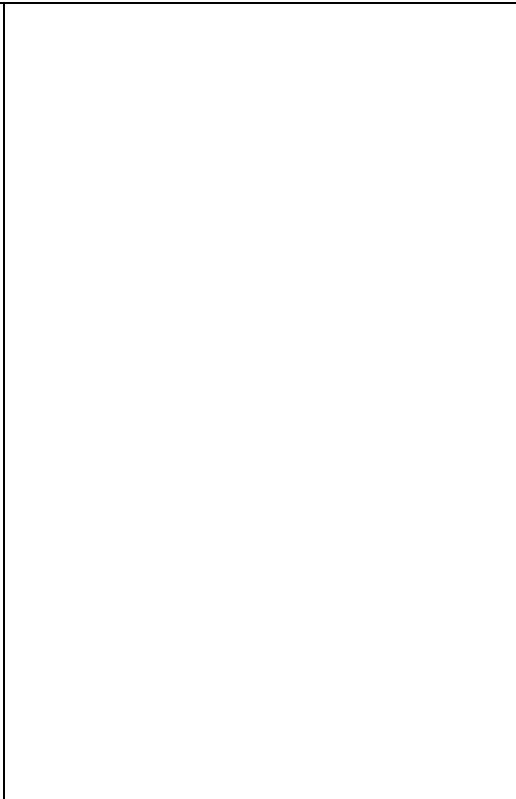


H. Slide complete enclosure out the end of the machine chassis taking care not to damage the rubber boot that is slid over the limit rod.



9.2 Installation of Limit Switch Enclosure

- A. Position enclosure to end of machine chassis. Align limit rod with rubber boot found on the side of the limit switch enclosure. It may be necessary to apply a small amount of grease to the ID of the boot to aid in assembly.
- B. Guide limit rod into limit switch slide block making sure it does not bind.
- C. Slide enclosure into chassis until the (2) mounting holes align. Replace bolts and nut and tighten.
- D. Replace ground wire to chassis located near the "OPEN/CLOSE" toggle switch.
- E. Move limit switch slide block to confirm it moves freely.
- F. With no pressure applied to the limit rod pushing in one direction or the other, set limit switch slide block in the center position and tighten set-screw.
- G. Re-connect all wiring if removed from terminal strip.
- H. Replace enclosure cover and re-install (4)



previously removed fasteners.

- I. Re-install end cap to end of machine chassis and secure with previously removed fasteners.
- J. Plug motor leads into wiring harness match plug. Plugs are polarized and should fit only one way.
- K. Re-connect power.

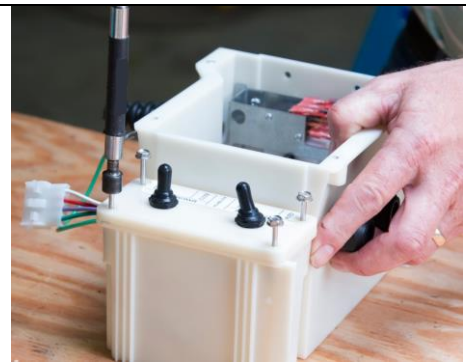
Section 10: Limit Switch Removal/Installation - HS583E series

Tools Required:

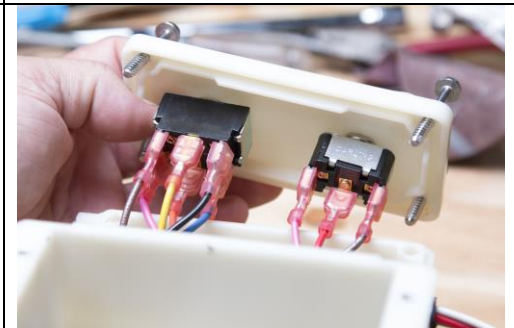
- 5/16" socket/wrench/drilldriver
- #2 Phillips screwdriver
- 11/32" socket / wrench
- 5/8" deep well socket
- 3/8" socket

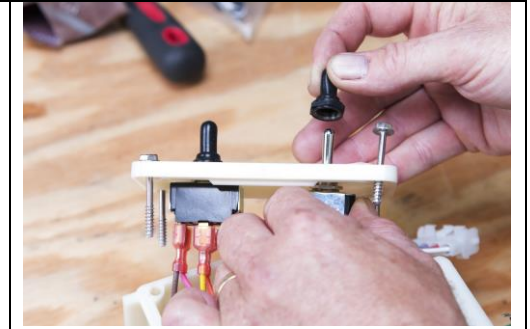
10.1 Removal of Limit Switch

- A. Remove limit switch enclosure. **Refer to section 9.1: "Removal of Limit Switch Enclosure"**.
- B. Remove (4) fasteners securing the small enclosure lid containing the toggle switch controls. Use 5/16" socket/wrench/drill driver.

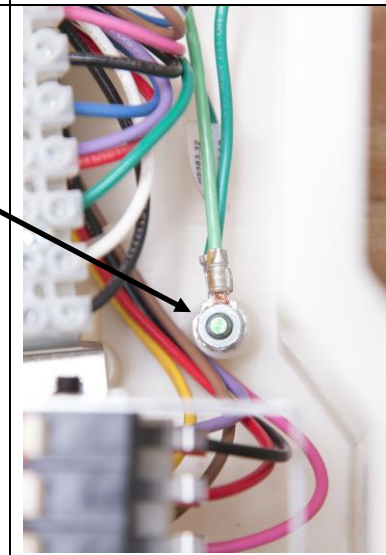


- C. Remove each toggle switch from small cover using 5/8" deep well socket or wrench. -Note location of each toggle switch.

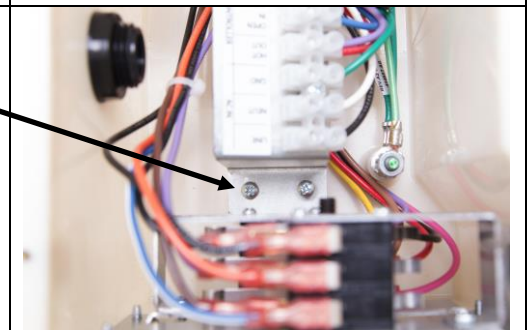




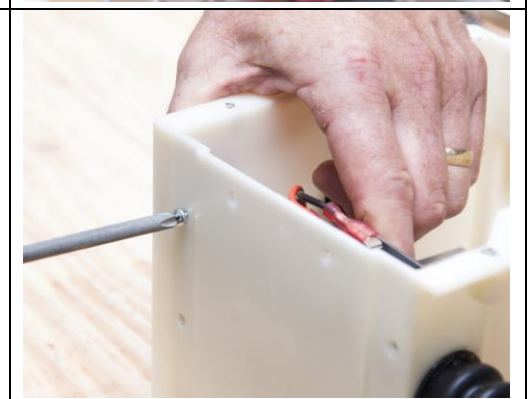
D. Remove nuts that secure all (3) green bonding wires from green ground post in the bottom of the enclosure. Requires 3/8" socket/drill driver. Note the order of removal of each bonding wire for re-installation.



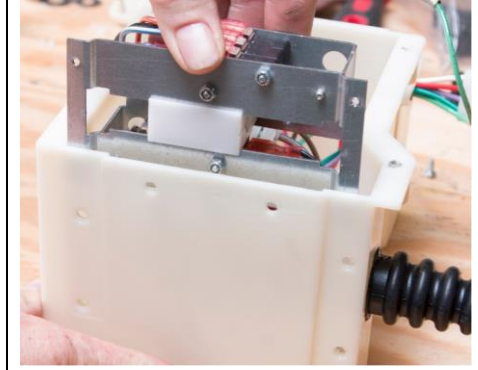
E. Remove (2) screws securing the terminal block bracket to the bottom of the enclosure using #2 Phillips screwdriver.



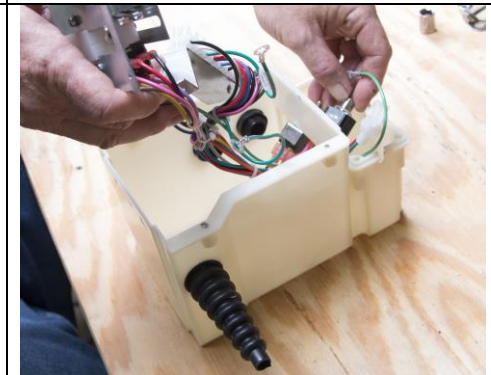
F. Remove (4) screws/nuts that secure the limit switch assembly to the side of the enclosure. Use #2 Phillips screwdriver.



G. Pull limit switch assembly straight upward clearing the enclosure.

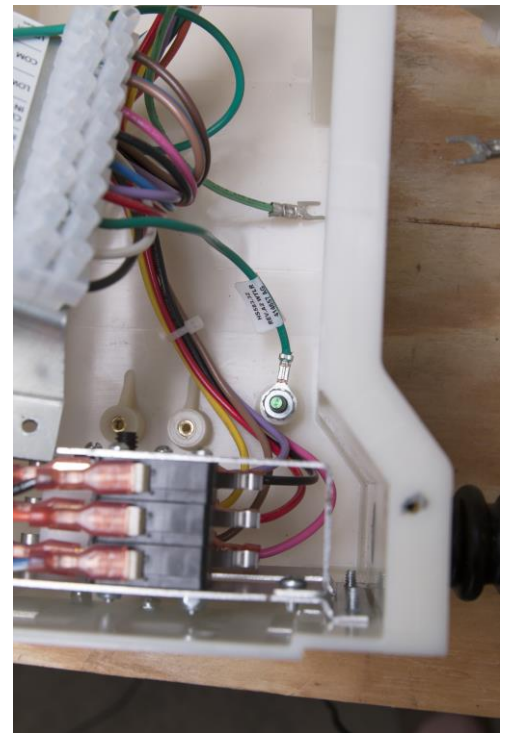
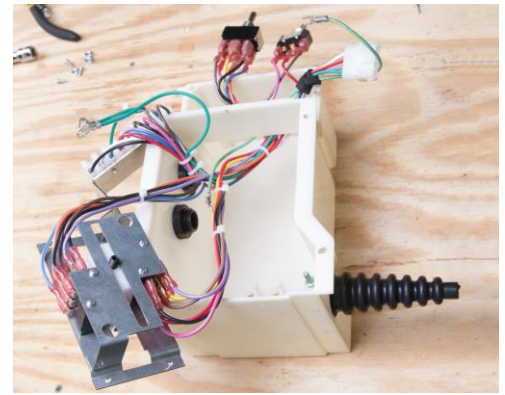


H. Guide wiring harness out of enclosure.



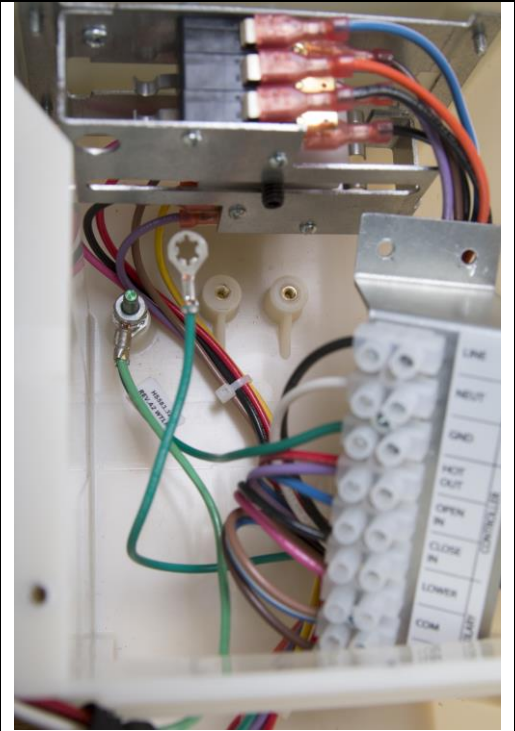
10.2 Installation of Limit Switch

- A. Install limit switch into enclosure in reverse order of removal. Route switches/wire into small section first.
- B. Route wires underneath terminal block bracket and ensure wires are not in contact with metal. Re-connect bonding wires to green ground post in the same order as removed.
- C. See below
Bonding wire connection order

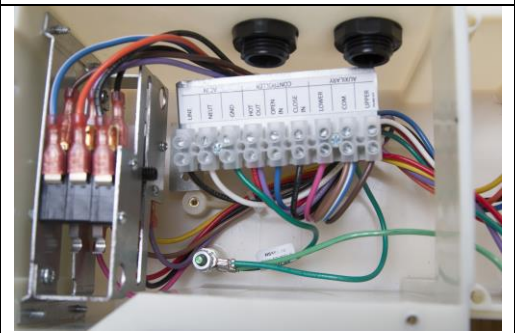


1. Green wire from terminal block

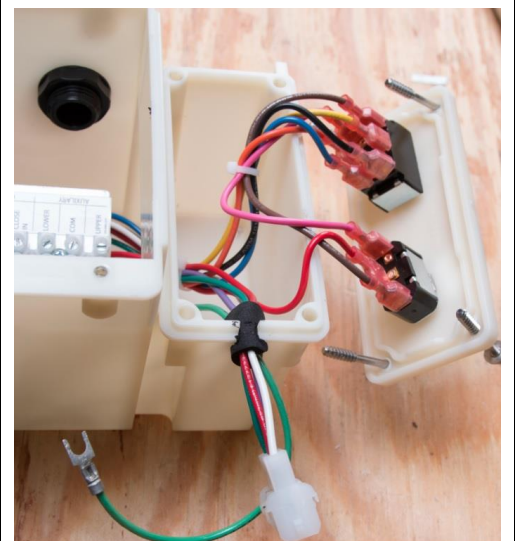
2. Green wire (loose) from chassis ground



3. Green wire from motor connector



- D. Insert wire grouped by neoprene rubber strip into enclosure slot. Press to bottom of slot.
- E. Reinstall Limit Switch Enclosure in machine chassis per **Section 9.2: "Installation of Limit Switch Enclosure"**.



This equipment must be installed in accordance with all State and Local Codes and applicable Regulations which should be followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



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