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INSTALLATION, MAINTENANCE, AND TROUBLE SHOOTING INSTRUCTIONS

FOR

Models #620, #622, #624, #625, #626, & #626SPL Hollister-Whitney "Rope Gripper ®"& Pumping Unit

(Patent # 5,228,540)
CSA Certification File #88181

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Hollister-Whitney "Rope Gripper ®"& Pumping Unit

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CONTENTS:

Hollister-Whitney "Rope Gripper ™" & Pumping Unit Ratings

(Patented)

CSA Certification File #88181

			"ROPE GRIPPER™" MODEL				
			#620	#622	#624	#625	#626	#626-SPL.
		MAX. OUT TO OUT OF CABLES:	4-7/8" (124 mm)	6" (152 mm)	10" (254 mm)	11-1/2" (292 mm)	10" (254 mm)	13-3/4" (349 mm)
		POWER SUPPLY:	6A, 120V ac, 1 PH, 60Hz.					
		CONTACT RATINGS:	6A, 250V ac, 0.15A, 250V dc					
1:1 ROPING	MAXIMUM RATINGS	RATED SPEED:	350 fpm (1.78 m/s)	600 fpm (3.05 m/s)	1,200 fpm (6.10 m/s)			
		"ROPE GRIPPER" TRIPPING SPEED:	402 fpm (2.04 m/s)	690 fpm (3.51 m/s)	1,368 fpm (6.95 m/s)			
		CAR RATED LOAD: (with 40 to 50% Counterweights)	2,500 lbs (1,134 kg)	5,000 lbs (2,268 kg)			10,000 lbs (4,536 kg)	
		CAR, CAR LOAD, COUNTER-WEIGHT, HOIST AND COM-PENSATION ROPE MASS	11,500 lbs (5,216 kg)	18,600 lbs (8,437 kg)			38,000 lbs (17,236 kg)	
		DOOR ZONE:	10 inches (254mm)±					
	MIN.	CAR RATED LOAD:	600 lbs (272 kg)	1,500 lbs (680 kg)			2,500 lbs (1,134 kg)	
		CAR & COUNTERWEIGHT MASS:	2,280 lbs (1,034 kg)	6,000 lbs (2,722 kg)			8,000 lbs (3,629 kg)	
2:1 ROPING	MAXIMUM RATINGS	RATED SPEED:	250 fpm (1.27 m/s)	400 fpm (2.03 m/s)	800 fpm (4.06 m/s)			
		"ROPE GRIPPER" TRIPPING SPEED:	303 fpm (1.54 m/s)	459 fpm (2.33 m/s)	921 fpm (4.68 m/s)			
		CAR RATED LOAD: (with 40 to 50% Counterweights)	5,000 lbs (2,268 kg)	10,000 lbs (4,536 kg)			20,000 lbs (9,072 kg)	
		CAR, CAR LOAD, COUNTER-WEIGHT, HOIST AND COM-PENSATION ROPE MASS	23,000 lbs (10,432 kg)	38,000 lbs (17,236 kg)			76,000 lbs (34,472 kg)	
		DOOR ZONE:	10 inches (254mm)±					
	MIN.	CAR RATED LOAD:	1,500 lbs (680 kg)	2,500 lbs (1,134 kg)			5,000 lbs (2,268 kg)	
		CAR & COUNTERWEIGHT MASS:	6,000 lbs (2,722 kg)	8,000 lbs (3,629 kg)			16,000 lbs (7,258 kg)	
		SHIPPING WEIGHT:	100 lbs (45 kg)	180 lbs (82 kg)	300 lbs (136 kg)		335 lbs (152 kg)	

6-2-05

HOLLISTER-WHITNEY "ROPE GRIPPER™"

Instructions for Model #620, 622, 624, 625, 626, 626SPL
(US PATENT 5,228,540)

WARNING: WHENEVER WORKING ON THE "ROPE GRIPPER™" KEEP HANDS CLEAR. FORCES CREATED CAN CRUSH FINGERS.

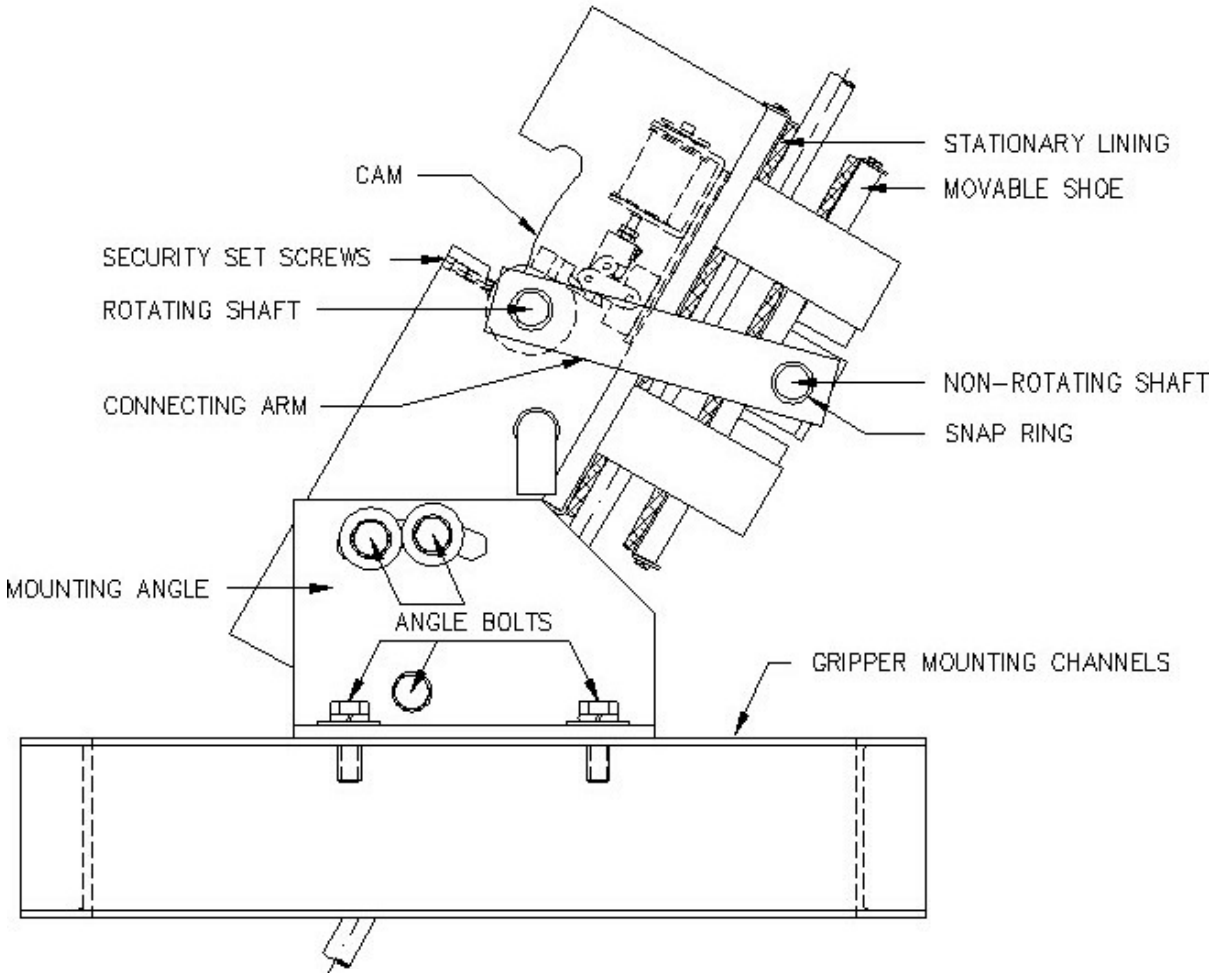
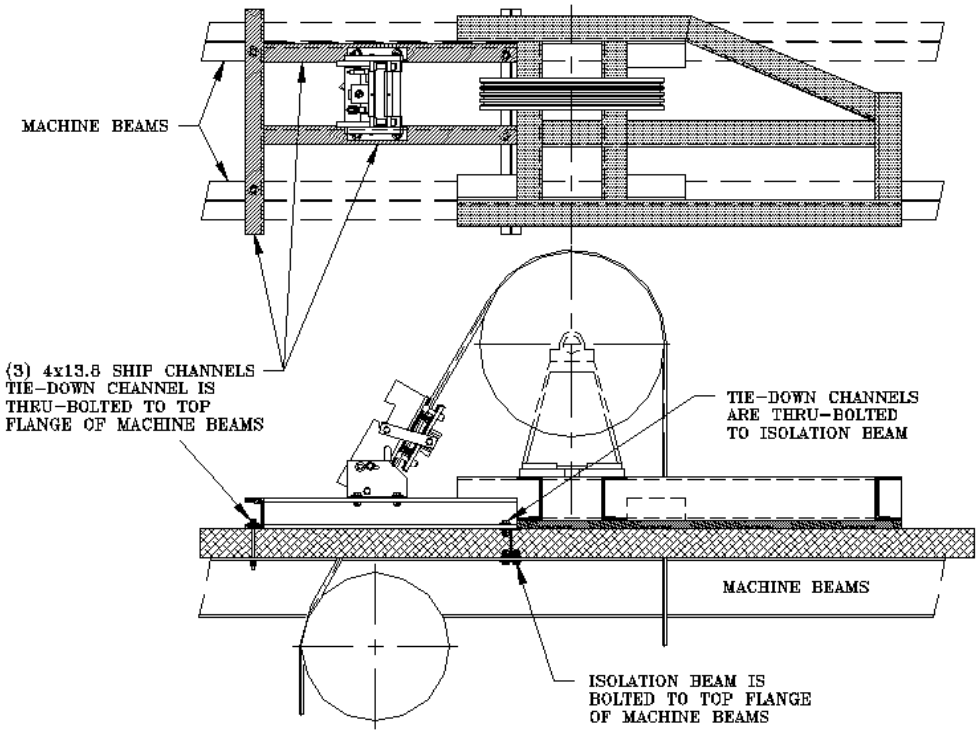


FIGURE 1

GRIPPER MOUNTING CHANNELS

- The Mounting Channel Framework supporting the "ROPE GRIPPER™" must withstand upward and downward forces according to **Chart 1** below.
- The Mounting Channel Framework must also be prevented from sliding and be securely fastened to the Machine Beams. The Traction Machine must also be prevented from sliding. See **Figures 2 and 3** for suggested mountings.
- When adding a "ROPE GRIPPER™" to an existing installation, it may not be possible to mount the gripper in the machine room. It is acceptable to mount the gripper horizontal or even upside down, so long as proper consideration is given to future gripper maintenance and Pumping Unit location. Note: The Pumping Unit must be mounted right side up and hydraulic hose standard length is 27 inches. Hose lengths of up to 8 feet are available, with longer lengths available by special order.

Typical Mounting Arrangements for Overhead Machines
New Installations



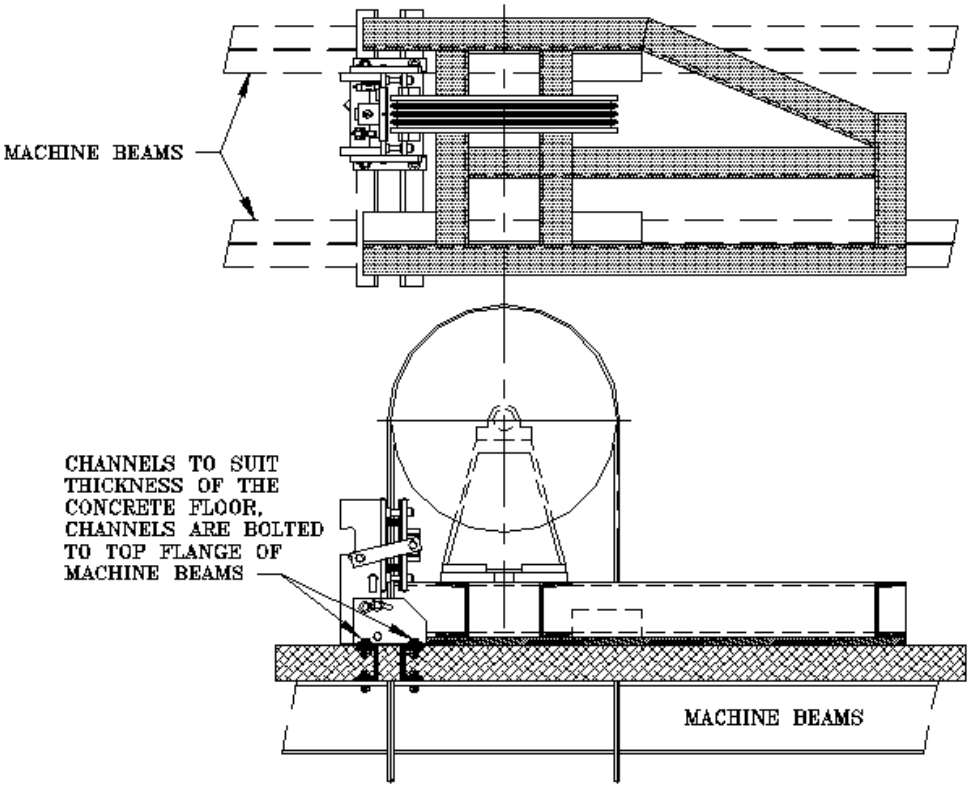
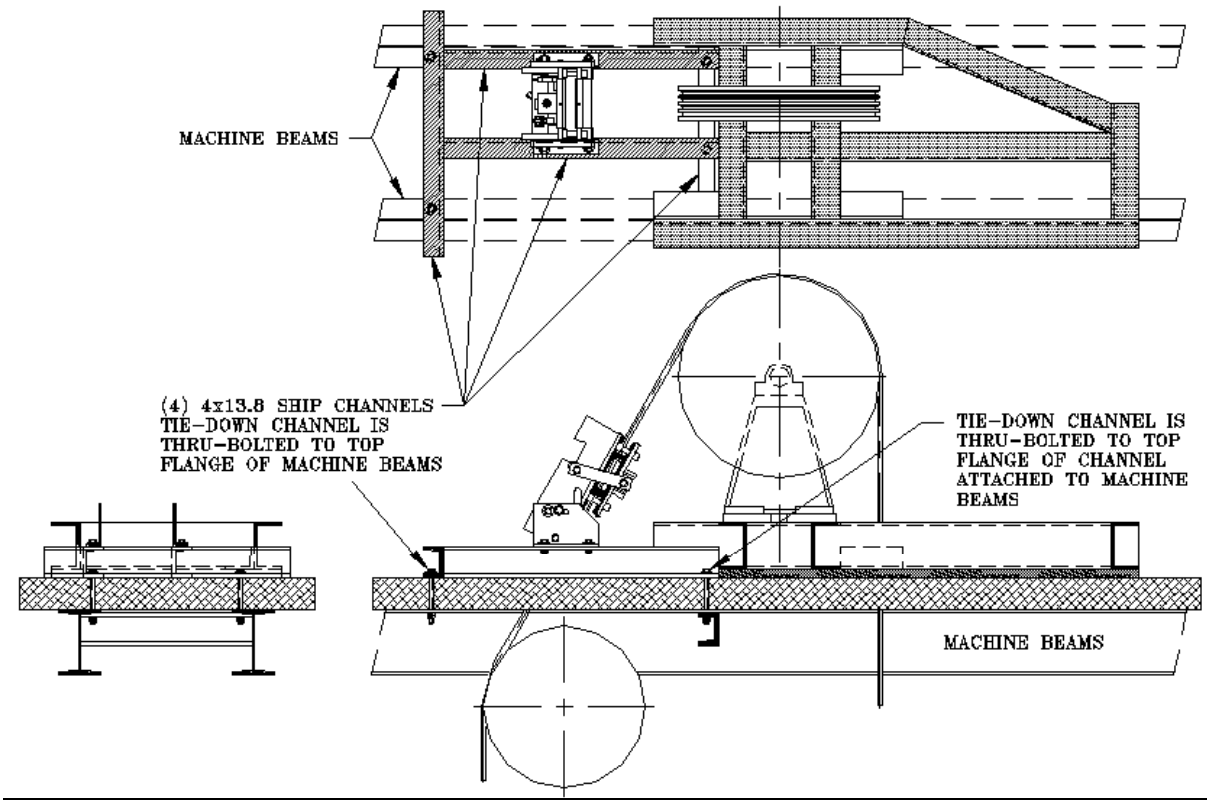


FIGURE 2

Typical Mounting Arrangements for Overhead Machines
Existing Installations



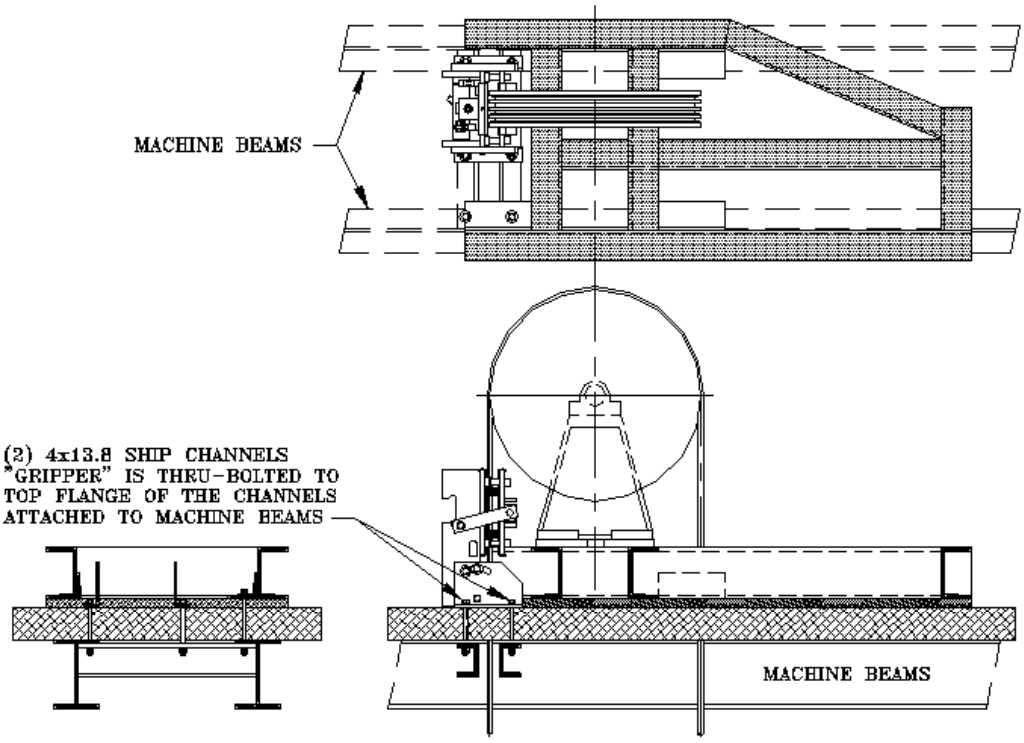


FIGURE 3

INSTALLATION OF "ROPE GRIPPER™"

- Be sure security set screws are touching and holding the rotating shaft in the LOADED position as shown in **Figure 1** above.
- Remove both connecting arms by removing the four snap rings.
- Remove movable shoe assembly.
- Mount "ROPE GRIPPER™" to mounting channels with appropriate bolts through the mounting angles as shown per **Chart 1** below. Do not fully tighten bolts.

MODEL #	APPROXIMATE UP & DOWN FORCE	GRADE 5 MOUNTING BOLTS (Approximate Torques)	REFERENCE DRAWINGS
620	2000 lbs	1/2" UNC @ 74 ft-lbs	620-DIM
622	4000 lbs	1/2" UNC @ 74 ft-lbs	622-DIM
624	4000 lbs	5/8" UNC @ 143 ft-lbs	624-DIM
625	4000 lbs	5/8" UNC @ 143 ft-lbs	625-DIM
626 & 626SPL	8000 lbs	5/8" UNC @ 143 ft-lbs	626-DIM

Note: Mounting must conform to applicable codes.

CHART 1

- Position the "ROPE GRIPPER™" so that the stationary shoe lining barely touches the ropes from top to bottom. Make sure "ROPE GRIPPER™" is squarely aligned, and centered side to side as much as possible, with the ropes. Misalignment may cause uneven and/or excessive lining wear.
- Securely fasten "ROPE GRIPPER™" 2 mounting bolts & 3 side angle bolts per side. Make sure they are torqued correctly. Note that the Side Angle Bolts are provided, the Mounting Bolts are not. Note Also: 626 models, side bolts are Grade 8, torque @ 225 ft-lbs.
- Double check rope alignment. Make sure the ropes touch the stationary shoe lining evenly.
- Reinstall movable shoe assembly.
- Reinstall connecting arms with chamfered edges facing inside and secure the four snap rings.
- Find best location for pumping unit. Unit must be upright, but can face forward or backward and can be placed on either side of "ROPE GRIPPER™".

CAUTION: At this time, REMOVE shipping cap on the Pumping Unit reservoir and install Dipstick provided or Pumping Unit may be damaged. PLEASE NOTE: THE DIPSTICK IS SHIPPED STRAPPED TO **INSIDE** OF PUMPING UNIT!

- Route male hydraulic fitting through knockout hole on side of pumping unit. Inside pumping unit, push male Quick-Connect fitting into female fitting while lifting ring on female fitting. Release ring to secure the fittings together.
- Wiring on "ROPE GRIPPER™" can be rerouted to opposite side of assembly by removing the 90° box connector and pulling wire through "ROPE GRIPPER™" and out opposite side.
- Wiring from "ROPE GRIPPER™" to pump unit is color coded per **Chart 2**.
- Connect terminals RG1, RG2, RG5 and RG7 to elevator control. Check control diagram for proper connection.

White	RG2
Black	RG3
Red	RG4
Orange	RG5
Blue	RG6
Green	Ground

CHART 2

- When wiring and hydraulic connections are complete, make sure valve stem (dump valve) in pumping unit is set to AUTOMATIC. Turn pumping unit test switch ON (see **Figure 4**). Latch solenoid on "ROPE GRIPPER™" should energize and push down trigger onto latch.

If it does not, check control wiring.

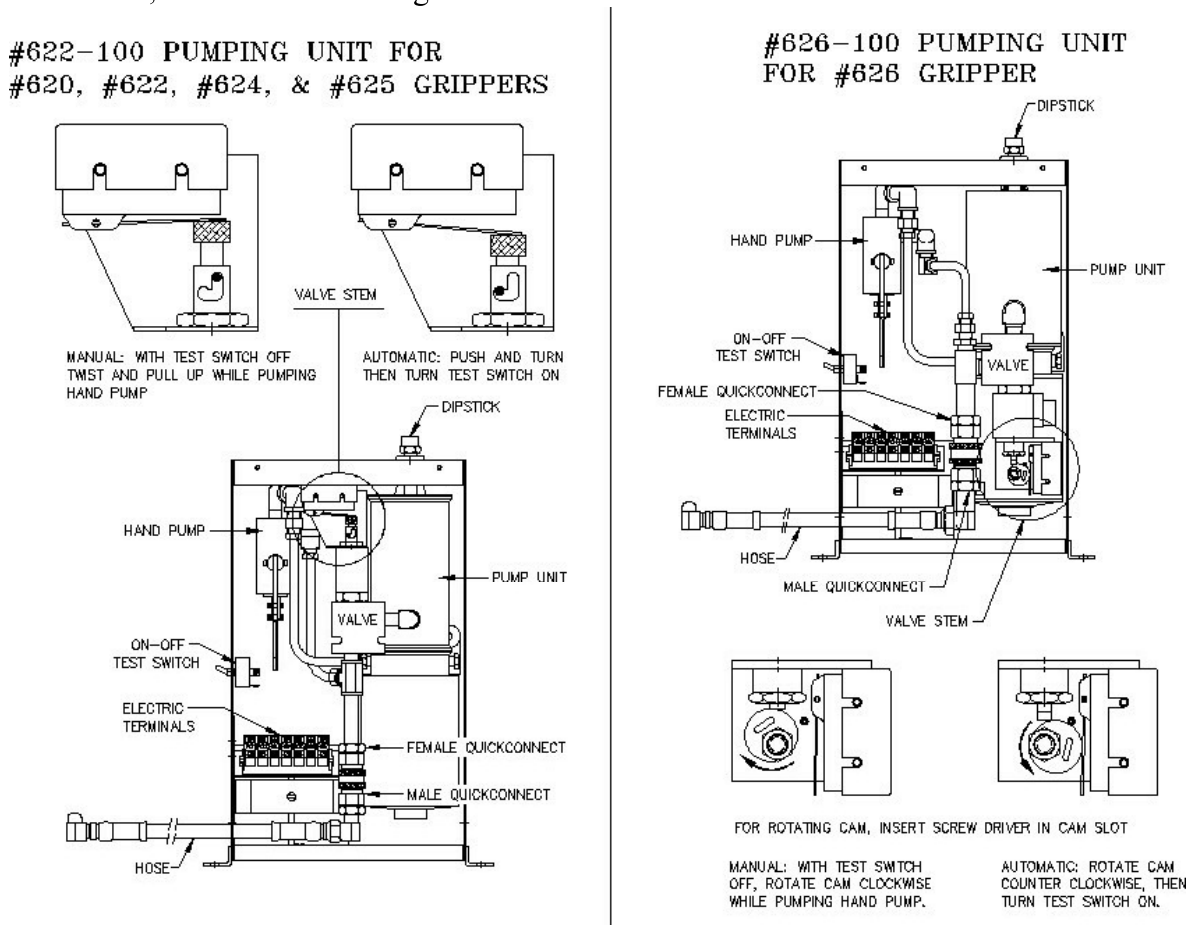


FIGURE 4

- When solenoid energizes, begin to loosen security set screws. If rotating shaft moves, turn valve stem to MANUAL and use hand pump to move shaft back, or jump terminal RG3 to RG4 to temporarily operate electric pump, to make sure the trigger has properly engaged the latch.
- Remove security set screws. *Once removed, store set screws in bottom of pump unit.* **NOTE: Security set screws must be completely removed or damage may result when activating "ROPE GRIPPER™".**
- Unit is now ready for testing and lining wear-in.

TESTING OF "ROPE GRIPPER™"

- Make sure pumping unit valve stem is in AUTOMATIC and turn test switch ON. The "ROPE GRIPPER™" should be in the ready (LOADED) position NOT clamping the ropes.
- Turn test switch to OFF. This will activate the "ROPE GRIPPER™" and clamp the ropes. Be sure when clamping the ropes the microswitch contacts on the "ROPE GRIPPER™" stop or prevent power from being applied to the motor and machine brake.
- Turn the valve stem in the pumping unit to MANUAL. This will open the manual microswitch contact and prevent the elevator from running.
- Use hand pump to return the "ROPE GRIPPER™" to the ready or loaded position.
- Turn the valve stem back to AUTOMATIC and the manual contact will close allowing the elevator to run.
- Turn test switch ON.

"ROPE GRIPPER™" LINING WEAR-IN

- **A line has been marked on the side wall of the gripper** to aid in the Wear-In process. *Note that at this point in the procedure, this line is well above the Connecting Arm and will be met or covered by the Connecting Arm during the Wear-In process (see **Figure 1** for location of Connecting Arm).*
- Make sure pumping unit valve stem is in AUTOMATIC and test switch is ON.
- Run the car at the slow or inspect speed from top to bottom and wipe down the ropes to remove any dirt and/or excess oil and grease. After cleaning the ropes in this manner, return car to top floor.

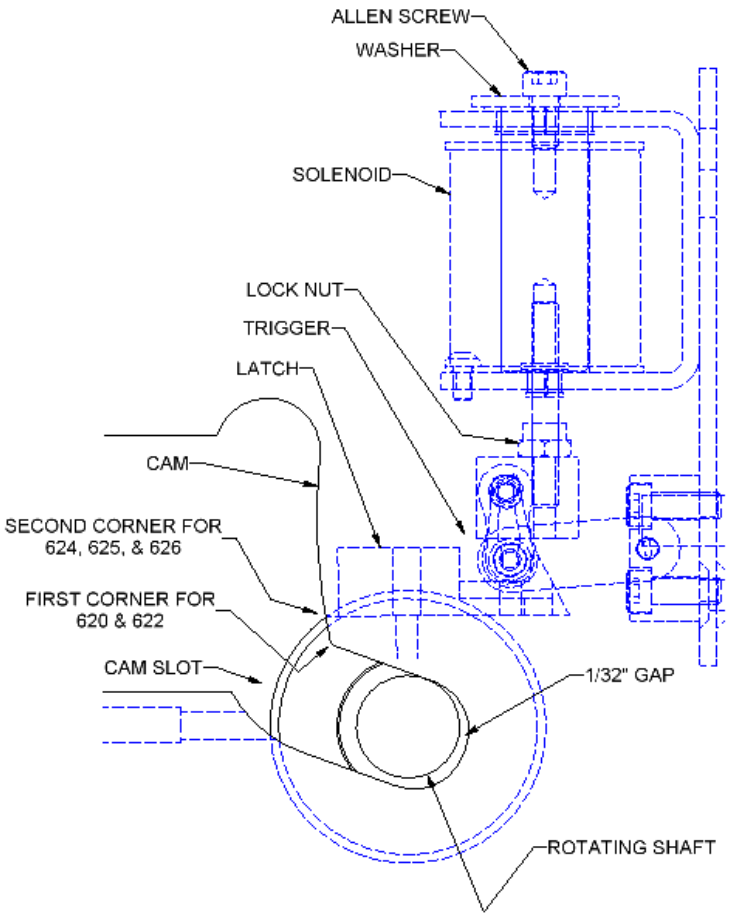


FIGURE 5

- Jump terminals RG5 to RG6 and run the empty car DOWN in slow speed. When the car is up to speed, turn the test switch OFF. The "ROPE GRIPPER™" will clamp the ropes with a light pressure and ropes will begin to wear grooves in the linings.
- As the linings wear-in, the rotating shaft will move up the cam slot and around the corner(s) of the cam noted above (**Figure 5**), and the connecting arms (see **Figure 1**) will move up the side wall and begin to match or line up with the wear-in line marked on the side wall.

  Note: #624, #625, and #626 have **two** corners. These grippers are not worn-in until the rotating shaft goes past the **second** corner of the cam as noted above (see **Figure 5**) and the connecting arm meets or covers the line marked on the side wall.

- ***Note that it may take several car runs to complete lining wear-in.***
- Once the rotating shaft has turned the corner(s) and the wear-in line is matched or covered, stop the car and remove the jumper from RG5 to RG6.

- If the lining wear-in is not completed after the grooves in the linings have reached approximately 1/16" deep, spacer shims (**Figure 6**) can be moved from between the shaft support blocks and moveable shoe to the back of the support block to allow the rotating shaft to completely turn the corner and move up the cam. Refer to **Chart 3** for initial spacer and shim set-up. **Note:** Before changing spacers, first install security set screws to prevent unintended "ROPE GRIPPER™" activation.

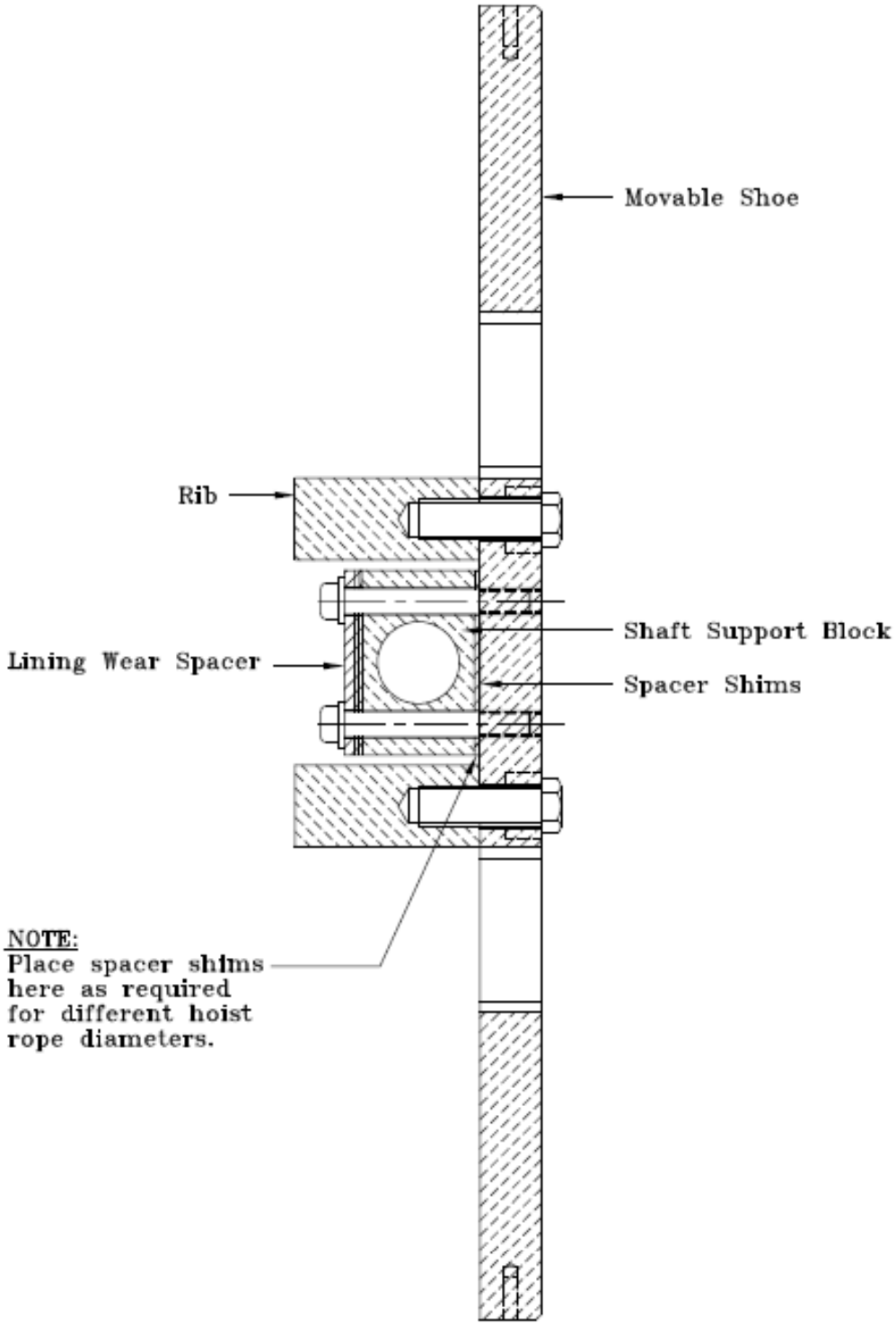


FIGURE 6

ROPE SIZE			620 or 622		624, 625, or 626	
MM	Decimal	Nominal	TOP	BOTTOM	TOP	BOTTOM
			Lining Wear Spacer	Spacer Shims	Lining Wear Spacer	Spacer Shims
9 10	0.354 0.394	3/8”	1/8	1/32 + 2 x 1/8	1/32+1/8	1/16 + 2 x 1/8
11	0.433	7/16”	1/8	1/32+1/16+1/8	1/32+1/8	2 x 1/16 +1/8
12 13	0.472 0.512	1/2”	1/8	1/32+1/8	1/32+1/8 1/32+1/8	1/16+1/8
14	0.551	9/16”	1/8	1/32+1/16	1/32+1/16+1/8	1/8
15 16	0.591 0.63	5/8”	1/8	1/32	1/32+1/8	1/16
17 18	0.669 0.709	11/16”	1/8	1/32+SPL. BLOCK which is 1/16 thinner	1/32+1/8	1/16+SPL. BLOCK which is 1/16 thinner
19 20	0.748 0.787	3/4”			1/32+1/16+1/8	SPL. Block which is 1/16 thinner

CHART 3

LINING REPLACEMENT

- If there are multiple high speed stops, linings will wear. As the linings wear, the rotating shaft will move towards the upper end of the cam. Near the end of the cam, the excessive wear microswitch will open and the “ROPE GRIPPER™” will not automatically reload.
- To inspect linings for wear, first reload the “ROPE GRIPPER™” using manual operation. Once in the loaded position install the security set screws so they touch the rotating shaft. If the grooves in the linings have worn to approximately 3/16” or greater, new linings should be installed as soon as possible. **Note:** Before changing shoes or spacers, first install security set screws to prevent unintended “ROPE GRIPPER™” activation.
  1. If installing new linings, remove both connecting arms by removing 4 snap rings. Remove moveable shoe assembly. Remove screws from each lining assembly and remove linings. Refer to **Chart 3** for initial spacer and shim set-up. **NOTE:** It may be necessary to loosen mounting bolts to tip “ROPE GRIPPER™” in order to allow access to stationary shoe. When linings have been replaced, follow the INSTALLATION OF “ROPE GRIPPER™” procedure and the LINING WEAR-IN procedure.
  2. If lining wear is not excessive (less than 3/16”), spacer shims (**Figure 6**) can be added between the shaft support blocks and the moveable shoe. Remove the bolts that hold the blocks to the movable shoe, place the lining wear spacer shims under the blocks and reinstall and tighten bolts. Addition of shims will move the rotating shaft toward the bottom end of the cam.
- When inspection/replacement is complete, turn the valve stem to AUTOMATIC and the pumping unit ON. Carefully remove the security set screws. Use hand pump, if necessary, so that rotating shaft does not move when removing the security set screws. The “ROPE GRIPPER™” is now ready for operation. Check to ensure that the connecting arm position matches or covers the wear-in line marked on the side wall (the rotating shaft will be around the corner(s) at the bottom of the cam) when gripping the ropes.

TESTING ALL CIRCUITS

- During each test the “ROPE GRIPPER™” should:
  A. Grab the Ropes,
  B. Stop the car, and
  C. Open the control safety circuits disconnecting power to the motor and machine brake.

- The following three tests should be made in both the up and down directions while the car is running in slow speed.
  1) Turn the pump test switch OFF. Observe A, B, and C above.
  2) With the car outside of the door zone, open the door or open the door lock circuit and observe A, B, and C above. **NOTE:** The control circuits may require a manual reset before the "ROPE GRIPPER™" reloads.
  3) Manually open the governor overspeed switch and observe A, B, and C above. **NOTE:** The control circuits may require a manual reset before the "ROPE GRIPPER™" reloads.
- The "ROPE GRIPPER™" is now ready for operation.

SUGGESTED CONTROLLER CIRCUITS

- Both the B44 and A17.1-2000 Codes require new circuitry for activation of the "ROPE GRIPPER™". It is the responsibility of the controller manufacturer to provide the proper circuitry to operate this device in a manner that meets all local, city, state, province, and federal codes.
- The function of the "ROPE GRIPPER™" is to clamp the ropes and stop the car. We recommend that the "ROPE GRIPPER™" is activated when an overspeed occurs or when the car leaves the floor (door zone) with the doors open (hoistway door unlocked and the car gate switch opened). If the doors happen to open when the car is between floors, the "ROPE GRIPPER™" should not be activated.
- In addition, the "ROPE GRIPPER™" is always activated when there is a loss of power. When power is returned, if the car is in the door zone, we recommend resetting the "ROPE GRIPPER™". If the car is between floors when power returns, or if changing from "Inspection" to "Automatic" operation, we suggest a time interval to signal door closure, and when the car gate switch or door interlock makes contact, then reset the "ROPE GRIPPER™".
- The suggested circuits shown in **Diagrams 1 & 2** below activate the "ROPE GRIPPER™" by opening contacts RG1, RG2, DZ1, and DZ2. Relay coils RG1, RG2, DZ1 and DZ2 are controlled by the Governor overspeed switch (GOS) and function blocks GRC1, GRC2, DZC1, and DZC2, respectively.

GRC1 DESCRIPTION

- If the car is not in the door zone when main line power turns "ON", or when switching from "Inspection" to "Normal Operation", or when resetting the Governor overspeed switch; allow a time interval, signal the door closure, and when the car gate or door interlock contact makes, energize RG1.
- Anytime the car is in the door zone ("Inspection" or "Normal Operation"), RG1 is de-energized when both the car gate contact and door interlock contact are opened. Should the car now leave the door zone (unintended motion), power to the "ROPE GRIPPER™" is removed and the "ROPE GRIPPER™" is activated. In the door zone, when the car gate contact or door interlock contact make, energize RG1. If the car should leave the door zone with RG1 energized then "ROPE GRIPPER™" activation is prevented. RG1 should remain energized even if both the car and hoistway doors are opened between floors. When the car is in the door zone again, RG1 should function as above.

GRC2 DESCRIPTION

- Redundant circuits are required by the 2000 A17.1 and B44 Codes. Circuits for RG2 function identical to RG1 except separate logic for the timing function, door locks, gate switch and door zone should be used. DZC1 logic could be used for circuits of RG1 and DZC2 for circuits of RG2. (See **Diagram 3** NOTE)

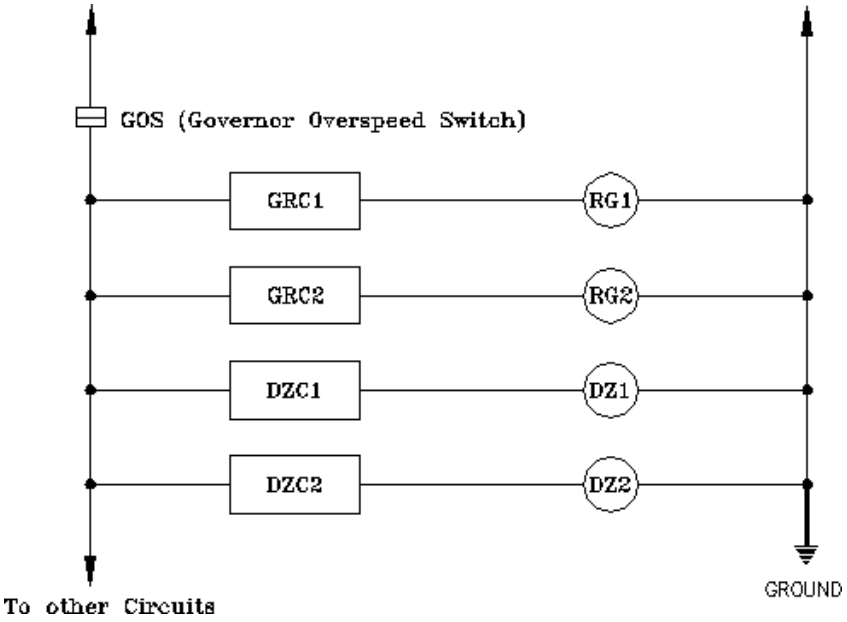


DIAGRAM 1

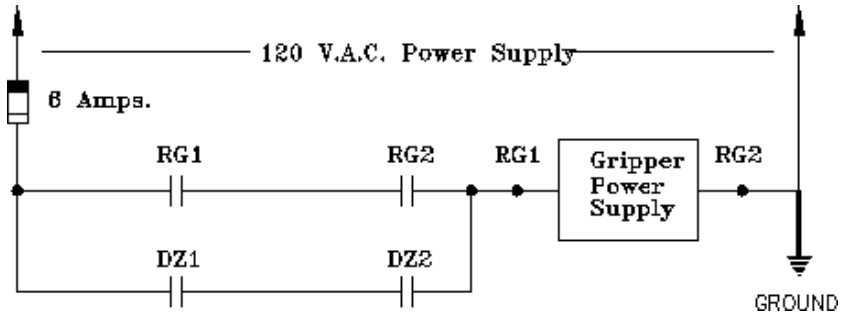
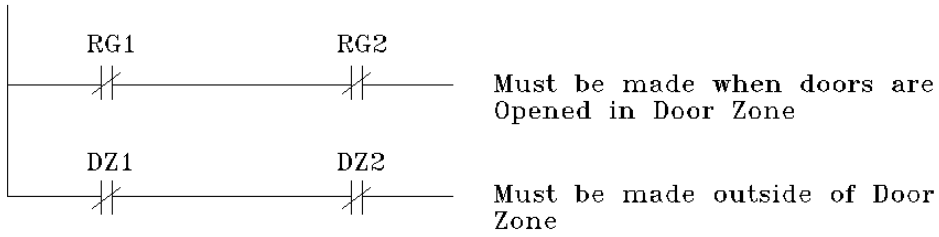


DIAGRAM 2



NOTE: If force guided relays are used for RG1, RG2, DZ1, and DZ2, use this diagram.

DIAGRAM 3

DZC1 DESCRIPTION

- DZ1 is energized in the first door zone and de-energized outside of the first door zone (See **Diagram 3** NOTE). Maximum door zone is 10"

DZC2 DESCRIPTION

- Circuits for DZ2 function are identical to DZ1 except a second door zone signal is utilized.
- If the above circuits (**Diagram 3**) do not make contact when required, the elevator must be prevented from running. If other types of relays are used, circuits must prove that contacts from RG1, RG2, DZ1 and DZ2 are functioning properly and when failures are detected the elevator is prevented from running.

HOLLISTER-WHITNEY "ROPE GRIPPER™" OPERATION

NORMAL OPERATION

- Power to the "ROPE GRIPPER™" is constantly maintained. When in the door zone DZ1 and DZ2 provide power to the "ROPE GRIPPER™"; when the doors close, RG1 and RG2 energize. As the car leaves the floor DZ1 and DZ2 de-energize, power to the "ROPE GRIPPER™" is maintained through RG1 and RG2. When approaching a new floor DZ1 and DZ2 again energize, when the doors open RG1 and RG2 de-energize.

OVERSPEED

- When overspeed is detected, the Governor overspeed switch opens. An additional overspeed can be detected by an encoder or tachometer that detects the speed of the elevator. (Not the motor or worm shaft of a geared elevator.) When detected, relays RG1, RG2, DZ1 and DZ2 de-energize. This removes power from the "ROPE GRIPPER™", clamping the ropes and stopping the car.

OVERSPEED RESET

- Overspeed reset is accomplished by resetting the Governor overspeed switch and possibly the elevator control circuits. Refer to and follow the control manufacturer's instructions for "ROPE GRIPPER™" reset.

  IMPORTANT: The code requires that the "ROPE GRIPPER™" be manually reset if it is triggered by fault. It is intended that a qualified technician inspect for and correct any malfunction before the car is placed back into service. A dangerous situation can be produced if a "ROPE GRIPPER™" is manually reset without first correcting the cause of the fault. eg: If there has been a brake failure that has not been corrected, when the "ROPE GRIPPER™" is reset, it is very likely that the car will fall either up or down.

UNINTENDED MOTION

- When at the floor with the doors open, relays RG1 and RG2 are de-energized and relays DZ1 and DZ2 are energized. If the car leaves the floor, DZ1 and DZ2 de-energize, removing power from the "ROPE GRIPPER™", clamping the ropes and stopping the car.

UNINTENDED MOTION RESET

- Unintended motion reset is accomplished through elevator control circuits. Refer to and follow the control manufacturer's instructions for "ROPE GRIPPER™" reset.

  IMPORTANT: The code requires that the "ROPE GRIPPER™" be manually reset if it is triggered by fault. It is intended that a qualified technician inspect for and correct any malfunction before the car is placed back into service. A dangerous situation can be produced if a "ROPE GRIPPER™" is manually reset without first correcting the cause of the fault. eg: If there has been a brake failure that has not been corrected, when the "ROPE GRIPPER™" is reset, it is very likely that the car will fall either up or down.

MANUAL OPENING

- During a power failure the "ROPE GRIPPER™" will activate. When power is restored the "ROPE GRIPPER™" will automatically reload and put the elevator back into service. If the car is to be moved during a power outage, a manual pump is provided to open the "ROPE GRIPPER™".
- Turn the valve stem (**Figure 4**) in the pumping unit to MANUAL. Use the hand pump to move the "ROPE GRIPPER™" towards the loaded position releasing the ropes. If the hydraulic valve is left in the manually closed position, when power is restored a microswitch contact will prevent the elevator from running.

TEST PROCEDURE FOR COMPLIANCE WITH
CANADIAN CAN/CSA B44 AND ASME A17.1-2000, & EN81
SAFETY CODE FOR ELEVATORS

1) **POWER INTERRUPTION TEST**
   Run the car in slow speed and turn the toggle switch on the side of the pump unit to OFF. This will activate the "ROPE GRIPPER™" causing it to clamp the ropes and stop the car. When the "ROPE GRIPPER™" is activated, the "ELEVATOR CAN RUN" microswitch will open and signal the controls to interrupt power to the driving motor and machine brake.
2) **ASCENDING CAR OVERSPEED TEST**
   With an empty car, overspeed the car in the "UP" direction while keeping the machine brake open. The Governor overspeed switch will activate the "ROPE GRIPPER™". The "ROPE GRIPPER™" will stop the car before the counterweight strikes the buffer or, at least, reduce the car speed to the speed for which the buffer is designed. If it is impractical to overspeed the car, run the empty car up at high speed with the machine brake held open and manually trip the Governor overspeed switch. The "ROPE GRIPPER™" will cause the car to slow down and stop. The Governor can then be tested to make sure the Governor switch opens at the correct overspeed setting.
3) **UNCONTROLLED LOW SPEED TEST**

   CAUTION: DO NOT ALLOW ANYONE TO ENTER
   THE ELEVATOR DURING THIS TEST!!!

   With the car level at any floor and the door open, open the machine brake. (With empty car the elevator moves up, with full load the elevator moves down.) The "ROPE GRIPPER™" should apply and stop the car within 1220 mm (48"). If the car does not move when the machine brake is opened, the brake drum or disc can be turned to start the car.

ROPE GRIPPER™ TROUBLE SHOOTING GUIDE

WARNING! WHENEVER WORKING ON THE ROPE GRIPPER KEEP HANDS CLEAR. FORCES CREATED CAN CRUSH FINGERS.

GRIPPER WILL NOT RESET AUTOMATICALLY – GRIPPER SET ON ROPES

- Check location of rotating shaft in cam; if against wear-out switch refer to section concerning Lining Replacement.
- Check for open Safety Circuit
- Check for blown fuse; refer to that section

BLOWING FUSES AT THE CONTROLLER – Read and understand this section completely prior to performing any checks.

- Check type of fuse being used. Note that Hollister-Whitney specifies a 3 amp Fusetron fuse, which is a dual element time delay fuse. **(see Diagram 4)**. Many controller manufacturers have not supplied this fuse. If the fuse is not correct, consult with your controller manufacturer. A 4 Amp MDL or 5 Amp MDL fuse may be substituted but only with the approval of your controller manufacturer. If the fuse is correct, see **CHECKING PUMP UNIT AMP DRAW** below.

- If Electric Pump Functions, but Gripper will not pump open, First check hydraulic oil level. Refer to **FLUID LEVEL LOW** line item below. If the pump runs too long at low fluid levels, the fuse may blow, and in some cases, the motor and/or motor capacitors may fail.
- Check resistance of the Dump Valve Coil. Resistance should not be "open" and can be as high as approximately 3.5 Mega Ohms. If you obtain an "open" reading, replace the Dump Valve Coil.
- If Fluid Level, Dump Valve Coil, and Amp Draw are OK, place the Dump Valve in the Manual position and run the pump. If the gripper opens with the pump running and the valve in manual position, replace the Dump Valve.

CHECKING PUMP UNIT AMP DRAW

1. Make sure the security set screws are installed or that the "ROPE GRIPPER™" is clamped to the ropes.
2. Switch the pump unit OFF.
3. Disconnect the power supply from the controller at RG1 and RG2 on the Pumping Unit.
4. Disconnect hydraulic line from "ROPE GRIPPER™" at the Quick Connect.
5. Get an extension cord and remove the female end. Bare the wire ends and connect cord L1 to RG1 and cord L2 to RG2. Plug the extension cord into a 120 VAC wall outlet. Put a Clamp-on Amp Meter around cord L1 and switch the pump unit ON. The pump motor should run. (NOTE: It may be necessary to jump out RG3 and RG4 to get pump unit to run.) After the initial high spike, you should see the amp draw drop and level out to no more than **6.5 amps**. 6.5A or less will indicate that there is no problem with your pump unit and you should consult with your controller manufacturer. If your Amp Draw is more than this value, call Hollister-Whitney Technical Support for assistance.

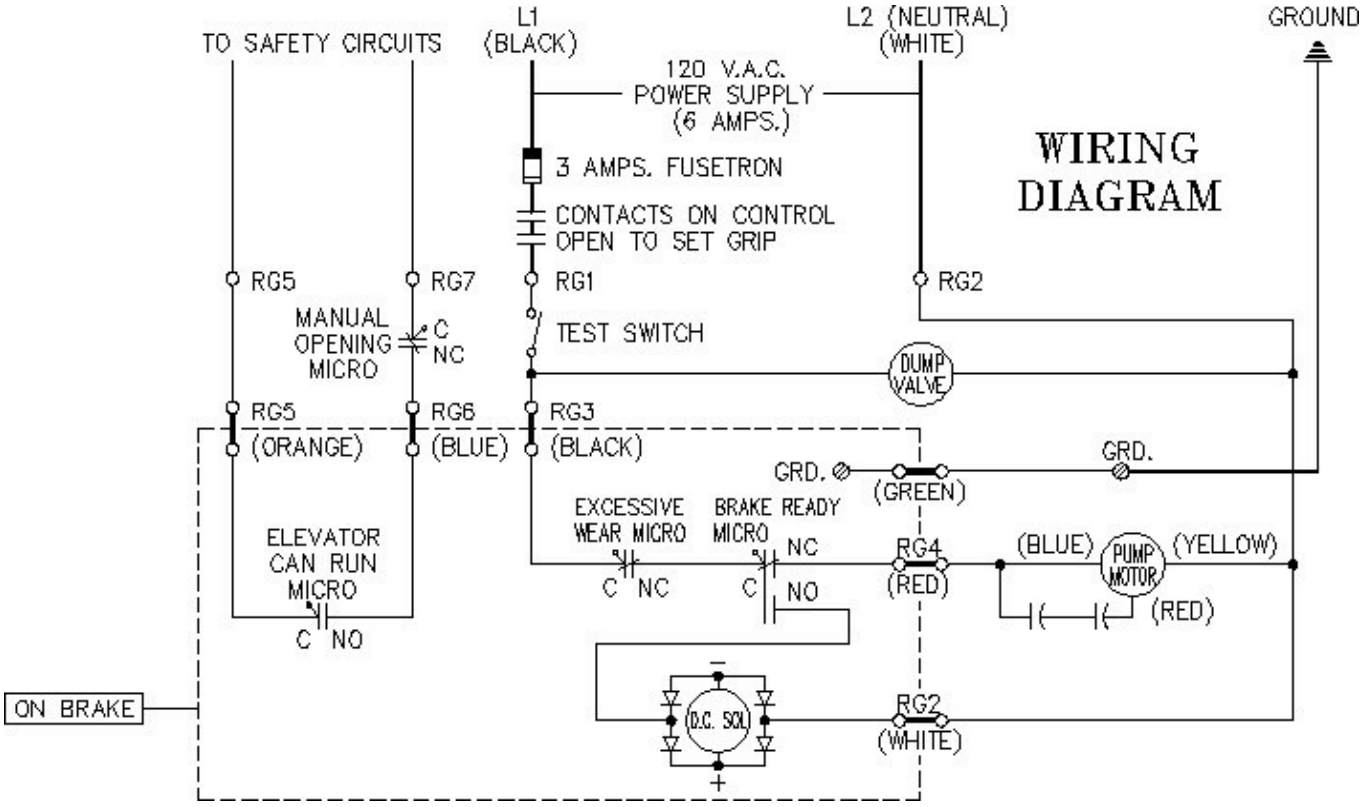


DIAGRAM 4

PUMP UNIT CYCLING ON AND OFF - MICROSWITCH OUT-OF-ADJUSTMENT

- First, it should be understood that the "ROPE GRIPPER™" is hydraulically pumped open to the "Ready" or "Loaded" position, and thereafter held electro-mechanically.
- When the "ROPE GRIPPER™" rotating shaft reaches the loaded position, the Brake-Ready microswitch contact will open turning off the pump. The pump should run just long enough to get the latch hook past the trigger, and then shut off. The hydraulic pressure will slowly bleed off until trigger and latch are resting together. At this point, the trigger and latch should be engaged as shown in **Figure 5**.
- Many problems can be traced back to the "ROPE GRIPPER™" not latching properly. Latch engagement problems are typically a result of:
  1) the Brake-Ready microswitch out of adjustment, causing mis-engagement of the trigger and latch,
  2) a malfunctioning latch coil, or less commonly,
  3) mis-alignment of the latch.

  Any of the above will be indicated by the Pumping Unit cycling on and off. This cycling could be as quick as every 15 seconds or so, to as long as every couple of minutes. Repeated cycling may cause unnecessary wear on the cylinder and pump unit, requiring premature maintenance, fluid loss (cylinder leaks), and can cause motor and/or capacitor failure.
  - The Brake-Ready microswitch **(Figure 7)** should be adjusted to allow proper engagement of the trigger and latch and to prevent the rotating shaft from bottoming out in the cam slot. There should be approximately 1/32" clearance between the rotating shaft and the bottom of the cam slot when the trigger and latch are engaged. In other words, the pump must run long enough to allow the trigger and latch to properly engage, yet not so long as to push the rotating shaft into the back of the cam slot.

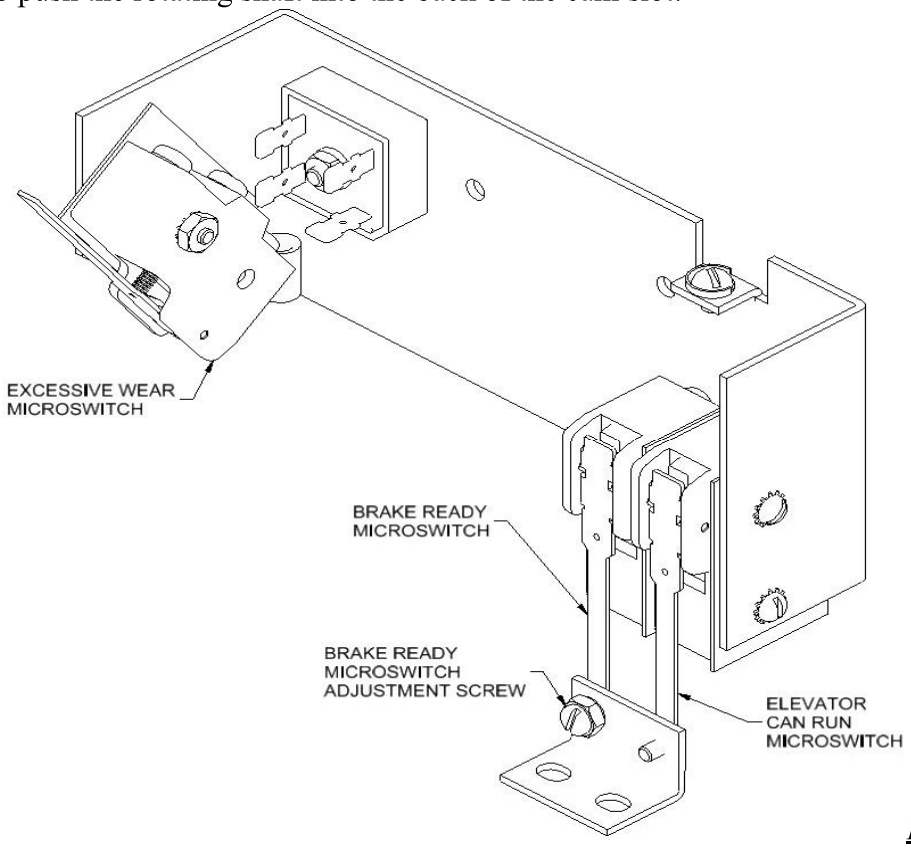


FIGURE 7

- After "ROPE GRIPPER™" installation or after any maintenance check, it is suggested that the in-service "ROPE GRIPPER™" be observed for 15 minutes or so to assure proper operation.

MICROSWITCH ADJUSTMENT PROCEDURE

1. To check adjustment, first switch pumping unit OFF. This will activate the "ROPE GRIPPER™" and clamp the ropes. Note the position of the large washer and Allen Screw on top of the latch coil **(see Figure 5).**
2. Switch pumping unit ON. This will return "ROPE GRIPPER®" to the "READY" position. While returning to the ready position, watch the large washer at the top of the latch coil. The washer (and Allen Screw) should rise with the passing of the latch under the trigger, then lower and return to its original position. If it does, move on to Step 5.
3. If the washer did not return to the fully seated position, either a.) the pump is not running long enough indicating microswitch out of adjustment, or b.) as has happened on *very* rare occasions, the latch is slightly out of adjustment causing the trigger to bind on one edge of the latch. Visually, when the trigger and latch engage, you should see run-by clearance between the sides of the latch and the trigger, and the latch should be fairly well centered on the trigger. Run Steps 1 & 2 again to check your results. If the latch is centered, move on to Step 5.
4. *If the latch is not centered, you should consider calling Hollister-Whitney Technical support.* To center the latch, first switch pumping unit OFF. This will activate the "ROPE GRIPPER®" and clamp the ropes. Slightly loosen screws holding latch, and tap latch into a more centered location, making sure the latch remains square. Retighten screws and repeat Steps 1 & 2.
5. Re-install the security screws so that they just touch the rotating shaft.
6. At this point, the coil should be activated. If the large washer and Allen Screw are seated properly, it should not be possible to raise the washer and Allen Screw with thumbnail pressure. If you can raise the washer, check all power to and across the coil. If there is a problem with the power or the coil, repair it now and move on to Step 9.

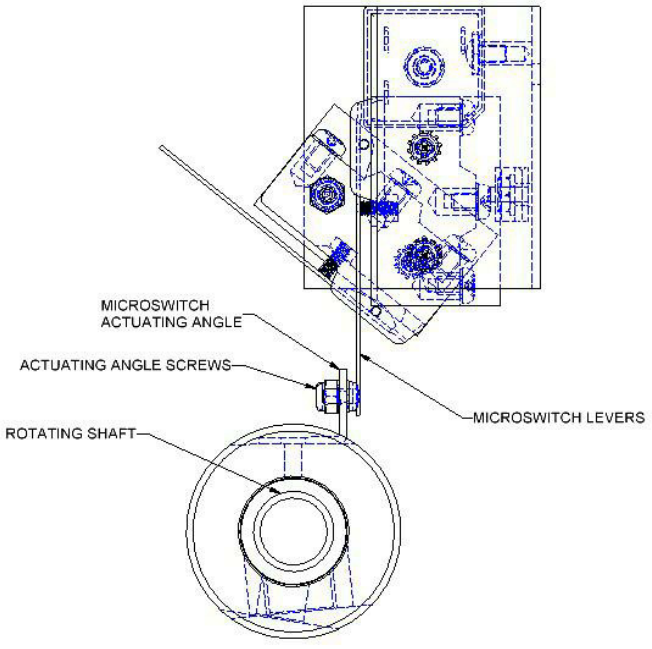


FIGURE 8

7. Remove one or both of the connecting arms from the "ROPE GRIPPER®". Check the clearance between the rotating shaft and the cam slot (approximately 1/32", see **Figure 5**),

and reinstall the connecting arm(s). Note: If clearance approaches zero, contact Hollister-Whitney Technical support.

8. There are two screws in the Actuating Angle **(Figure 8)**. Facing the unit, the left screw adjusts the Brake-Ready microswitch. To make the pump run longer, adjust the screw outwards in ¼ turn increments. **WARNING: It is advised that you check the rotating shaft/cam slot clearance after each adjustment by repeating this procedure.**
9. Remove the security screws and retest the "ROPE GRIPPER™" to check adjustment.

HYDRAULIC CYLINDER REPLACEMENT INSTRUCTIONS

NOTE: Read and understand instructions prior to cylinder replacement!!! It is highly recommended that the mechanic have a long handled (7" long) 5/32" Ball End Allen wrench or driver in his kit, in addition to the normal mechanics tools including wrenches, screw drivers and Allen wrenches.

Situation 1: Leaking Cylinder

1. Pump "ROPE GRIPPER™" into the LOADED or Ready position and install security screws to hold "ROPE GRIPPER™" shoes open.
2. Remove 4 snap rings, both connecting arms and movable shoe.
3. Turn pumping unit OFF and place valve stem in the MANUAL position. Using hand pump, pump cylinder down to relieve pressure on security screw. Remove security screws.
4. Return valve stem to the AUTOMATIC position. The rotating shaft will go entirely up the cam. At this time, with the rotating shaft at the top of the cam, remove the hydraulic hose from the cylinder.
5. Remove 3 angle bolts from both sides of mounting angle, leaving mounting angles attached to floor (Gripper Mounting Channels).
6. Place "ROPE GRIPPER™" on a suitable work surface. Locate the shaft holding the cylinder and remove shaft from "ROPE GRIPPER™".
7. Locate the block holding the cylinder stem to the rotating shaft tube. Using a long 5/32" Ball Nose Allen Wrench, remove (4) 10-32 screws from block. Remove block from cylinder.
8. Put block on new cylinder. Re-install cylinder by installing shaft first, then block and screws. Install hose on cylinder. Restore "ROPE GRIPPER™" to mounting angles.
9. With valve stem at MANUAL, bleed air out of system. See next section **"AIR IN LINE".**
10. Turn pumping unit ON. Hand pump cylinder down until pump motor takes over pumping. With rotating shaft down and trigger latched, install security set screws.
11. Re-assemble moveable shoe, arms, and snap rings to "ROPE GRIPPER™". When complete, remove security set screws, turn valve to AUTOMATIC and place "ROPE GRIPPER™" back into operation.

Situation 2: Cylinder will not pump down (or hold pressure)

1. Make sure "ROPE GRIPPER™" is gripping ropes, the pumping unit is OFF and machine brake is set.
2. Remove 5 bolts from both mounting angles and set mounting angles aside.
3. Locate the shaft holding the cylinder and remove shaft from "ROPE GRIPPER™".
4. With valve stem on MANUAL, follow instructions 7., 8. and 9. above.
5. Return valve stem to AUTOMATIC and turn pumping unit ON. "ROPE GRIPPER™" will return to loaded or open position.

AIR IN LINE (CHANGING OUT HOSES OR CYLINDERS)

- Note: this typically only is necessary when changing out cylinders or hoses. If the hand pump is not working, see that section below; do not try to bleed air.
- Old Cylinders: To bleed air, first loosen the hose at cylinder, then use hand pump until no air is evident.
- New Cylinders: A bleeder port has been provided next to the oil inlet. Use this port bleed air when changing a hose or cylinder.

FLUID LEVEL LOW – Gripper pumps partially down, pump continues to run

- With the "ROPE GRIPPER™" in the loaded position, the level should be at least 1 inch up the dipstick. Use SHC524 Mobil Synthetic Hydraulic Oil or Mobil 1 Fully Synthetic ATF (Automatic Transmission Fluid).

HAND PUMP DOES NOT FUNCTION - AIR LOCK - GRIPPER WILL NOT HAND PUMP OPEN

- Disconnect the Hydraulic hose from the gripper at the Quick-connect coupling.
- Put Dump Valve in manual position and lower the hand pump handle.
- Run pumping unit electrically. The hand pump handle should rise. This should prime the hand pump and force fluid into the system, allowing proper use of the hand pump.
- This procedure may need to be repeated a few times to effectively remove the air from the hand pump.

"ROPE GRIPPER™" LUBRICATION

- Apply a thin layer of a general purpose grease lubricant to the cam surface, the trigger and latch mechanism, and the four movable shoe guides.

WIRE ROPE LUBRICATION

- Use a high friction lubrication such as: NYLUBE CABLE CARE #65, or AMERICAN OIL VITALIFE #600. Care should be taken to not over lubricate ropes.

For further technical assistance, please contact HOLLISTER-WHITNEY directly.

Hollister-Whitney Elevator Corp.
#1 Hollister-Whitney Parkway
Quincy, Illinois 62305
Phone: 217-222-0466
Fax: 217-222-0493
www.hollisterwhitney.com

CSA INTERNATIONAL

Certificate of Compliance

Certificate: 1002290 (LR 88181-2) **Master Contract:** 155941

Project: 2204847 **Date Issued:** Aug 25, 2009

Issued to: **Hollister-Whitney Elevator Corp.**
P.O. Box 4025
2603 N. 24th St.
Quincy, IL 62305
USA
Attention: Mr. Frank Musholt, VP
FAX: (217) 222-0493

Also Manufactured by Factory:
GumYoung General Co.,Ltd.
225-9 BoonSu-Ri GwangTan-Myun
Paju-City GyeongGi-Do
KOREA 413-853
Mr. GumGee Lee, President
Fax 82 31 949 0113
Fax 82 2 540 5007

The products listed below are eligible to bear the CSA Mark shown

Issued by: G. Cerbu, P. Eng.

C US

CSA B44.1/ASME A17.5

PRODUCTS

CLASS 2411 01 - ELEVATOR EQUIPMENT
CLASS 2411 81 - ELEVATOR EQUIPMENT- Certified to US Standards
"Rope Gripper", Models 600, 601, 605 and 610 (with pumping unit), electrical rating: 6A, 120V ac.
"Rope Gripper", Models 618, 620, 622, 624, 625 ,626 and 626 SPI (with pumping unit), electrical rating: 6A, 120V ac.

LIFTINSTITUUT

PRODUCTS
RvA C 087

EC TYPE-EXAMINATION CERTIFICATE

Acting under the Warenwetbesluit liften issued by Liftinstituut B.V.
identification number Notified Body 0400,
commissioned by Besluit no. A&G/W&P/03 56126 of October 15th, 2003

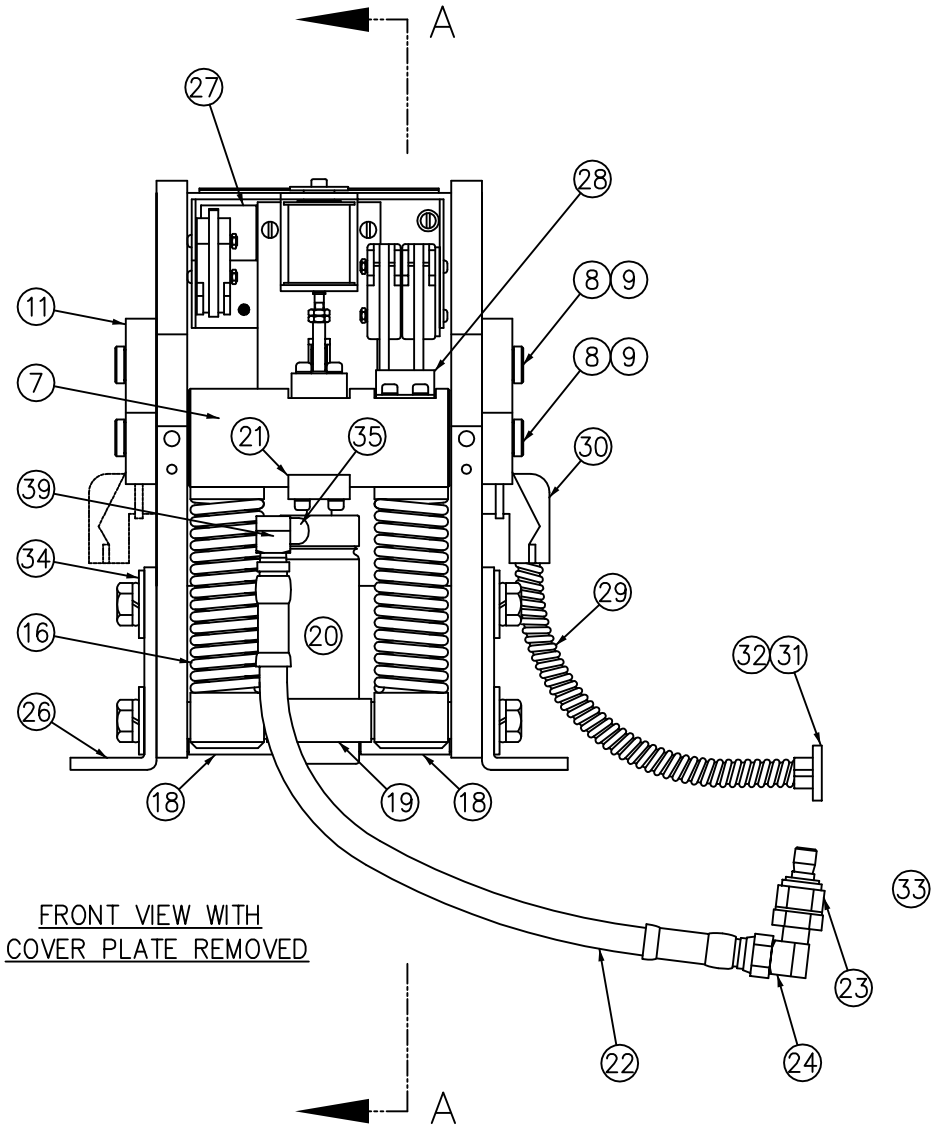
Certificate nr.	:	NL 01-400-1002-020-03 Revision nr.: 4.1
Description of the product	:	"Rope Gripper", certified as stopping element of ascending car overspeed protection and unintended car movement protection
Trademark, type	:	"Rope Gripper", Models 618, 620(G), 622, 624, 625 and 626(SPL)
Name and address of the manufacturer and certificate holder	:	Hollister Whitney Elevator Corp. P.O. Box 4025 2603 North 24th Street Quincy, Illinois 62305, USA Gum Young General Co., Ltd. 225-9 BoonSu-Ri GwangTan-Myun Paju-City GyeongGi-Do KOREA 413-853 DTS Mechelec LTD 5-6/F Suixing Industrial Building Minghua 1 Sreet,Getdd Guangzhou, Guangdong, China
Certificate issued based on the following requirements	:	Lifts Directive 95/16/EC EN 81-1:1998+A3:2009
Test laboratory	:	CSA International, Toronto, Canada Hollister Whitney, Quincy, Illinois, USA
Date and number of the laboratory report	:	August 25, 2009; CSA 155941-1002290 (LR 88181-2) Edition 10 November 4, 2010; CSA 155941- 2308945 (LR 88181-2) Ed. 1 February 4, 2011; NL 01-400-1002-020-03 rev. 2.0 May 17, 2011; NL 01-400-1002-020-03 rev. 2.1
Date of EC type-examination	:	March 12, 2001, April 22, 2004 and January 27, 2005 Rev.3.0; December, 2009; Rev.4.0; June 2010 – January 2011 Rev. 4.1; January – May 2011
Annexes with this certificate	:	Report belonging to the EC type examination certificate no.: NL 01-400-1002-020-03 rev. 2.0
Additional remarks	:	-
Conclusion	:	The safety components meets the requirements of the Lifts Directive 95/16/EC taking into account any additional remarks mentioned above.

Issued in Amsterdam
Date of issue :
May 17, 2011

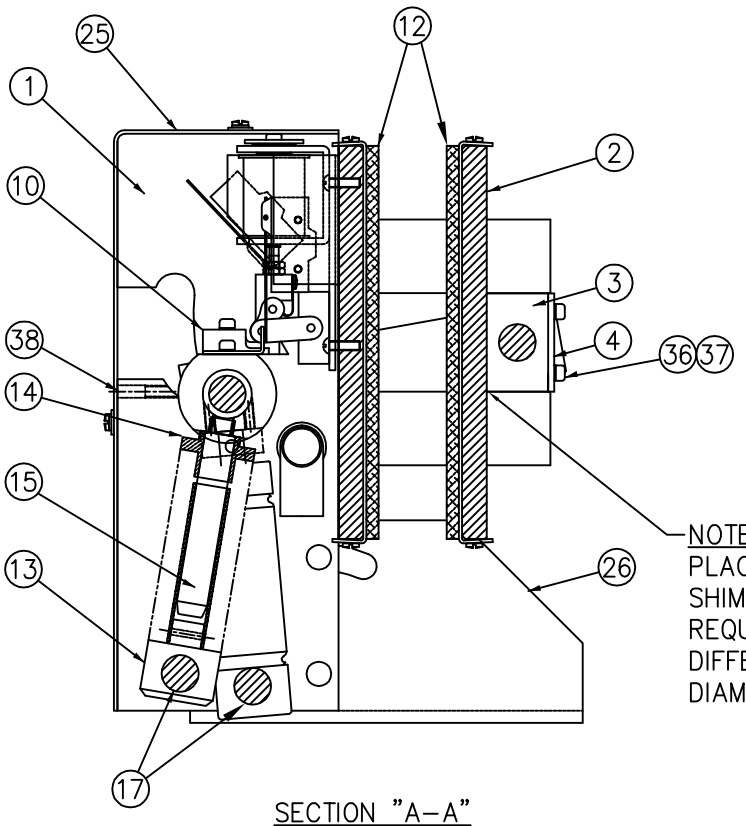
LIFTINSTITUUT B.V.
Ir. V.M.A. Barendregt
Senior Officer Certification & Technology

LIFTINSTITUUT B.V.
Drs. B. Mulder
Director Certification & Inspection International

CERT05P



FRONT VIEW WITH
COVER PLATE REMOVED



NOTE:
PLACE SPACER SHIMS HERE AS REQUIRED FOR DIFFERENT ROPE DIAMETERS

SECTION "A–A"

HOLLISTER–WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217–222–0466 FAX: 217–222–0493

"ROPE GRIPPER™" ASSEMBLY

P.U.R. #383	1–15–09
P.U.R. #377	4–4–08
P.U.R. #359	1–2–07

DATE 4–7–03

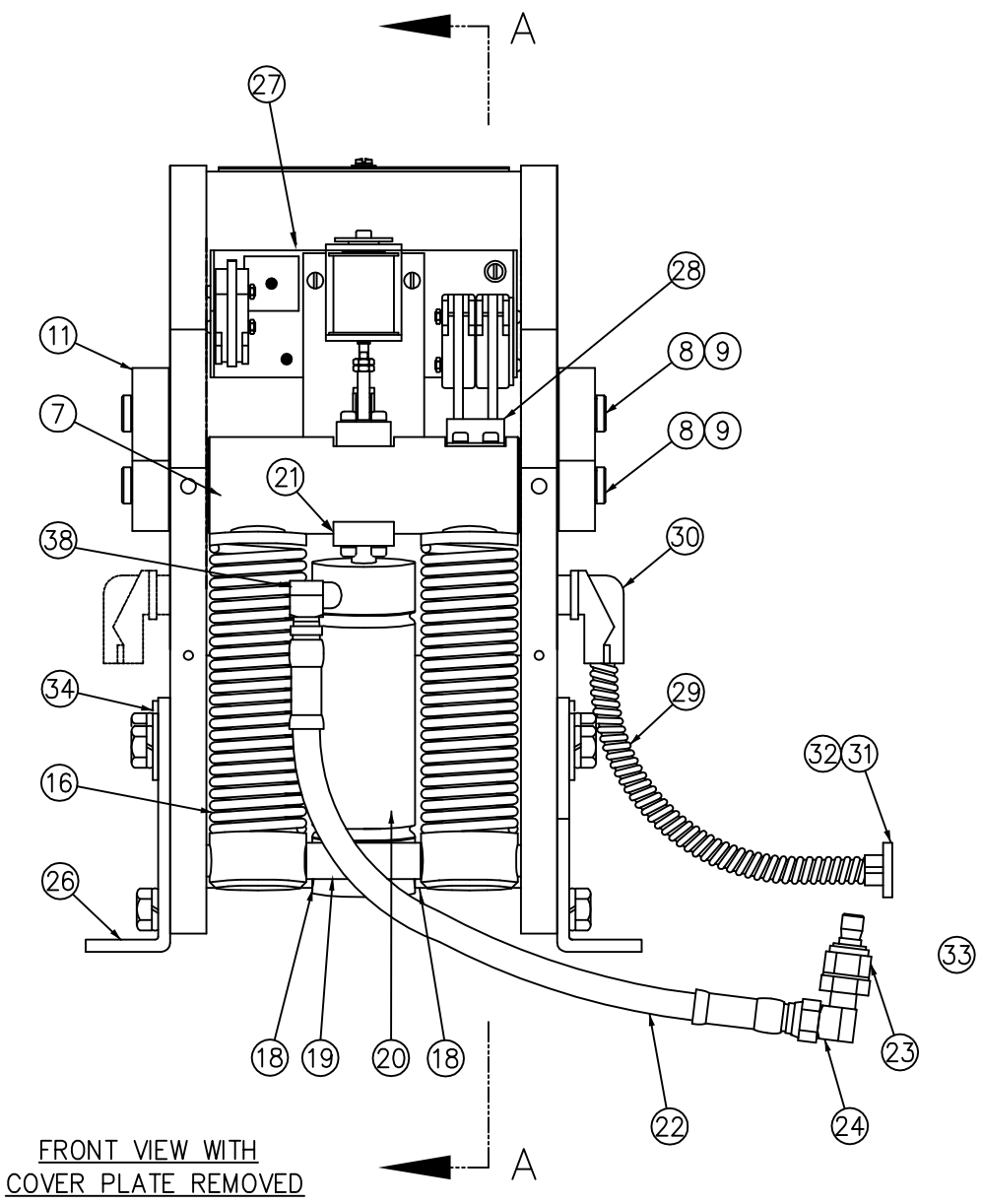
620

MATERIAL LIST

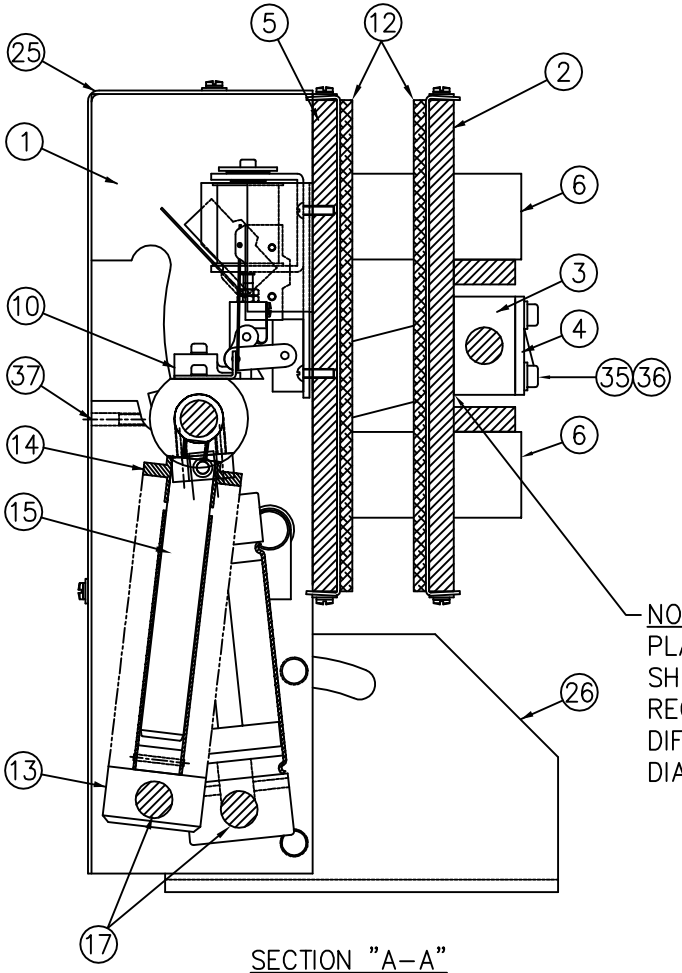
#620 ROPE GRIPPER ASSEMBLY

NO.	PART NO.	QTY.	DESCRIPTION
1	620–013	1	CAM WALL ASSEMBLY
2	620–004	1	SHOE – MOVABLE
3	620–007	2	BLOCK – SHAFT SUPPORT
4	601–008	2	SPACER – LINING WEAR
5	(NOT USED)		
6	(NOT USED)		
7	620–015	1	TUBING ASSEMBLY
8	620–018	2	SHAFT – ROTATING & NON–ROTATING
9	90–033	4	SNAP RING – TRUARC #X5133–74
10	601–078	1	LATCH
11	601–020	2	CONNECTING ARM ASSEMBLY
12	601–022	2	LINING ASSEMBLY
13	601–025	2	SPRING LOWER SUPPORT ASSEMBLY
14	601–027	2	UPPER SUPPORT – SPRING
15	601–029	2	GUIDE – SPRING UPPER SUPPORT
16	601–030	2	SPRING
17	620–031	2	SHAFT
18	620–032	2	TUBING – SPACER (1.656" LG.)
19	620–033	1	TUBING – SPACER (2.234" LG.)
20	601–035	1	CYLINDER – HYDRAULIC
21	622–036	1	HYDRAULIC CYLINDER PIVOT BRACKET ASSEMBLY
22	600–037	1	HOSE
23	600–038	1	COUPLING – QUICK DISCONNECT
24	600–039	1	STREET ELBOW – 90°
25	620–040	1	COVER
26	601–041	2	ANGLE – MOUNTING
27	620–050	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY.
	620–050–1	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY. WITH 9'–2" LEADS
28	600–051	1	ACTUATING ANGLE
29	600–081	1	CONDUIT – FLEXIBLE (1/2")
30	600–082	1	BOX CONNECTOR – 90° ANGLE (1/2")
31	600–083	1	CONNECTOR – FLEXIBLE (1/2")
32	600–084	1	BUSHING (1/2")
33	622–100	1	PUMPING UNIT
34	601–095	2	WASHER – DOUBLE BOLT
35	601–039	1	STREET ELBOW – 90°
36	5/16 N.C. x 2	4	SCREW – SOCKET HEAD CAP
37	5/16	4	WASHER – LOCK
38	1/4–20 x 1 1/2	2	SCREW – HALF DOG SOCKET SET
39	610–087	1	ELBOW – 90° (3/8" TUBE O.D. x 1/4" PIPE)

P.U.R. #383	1–15–09
P.U.R. #377	4–4–08
P.U.R. #359	1–2–07
	6–25–03



FRONT VIEW WITH
COVER PLATE REMOVED



SECTION "A–A"

NOTE:
PLACE SPACER SHIMS HERE AS REQUIRED FOR DIFFERENT ROPE DIAMETERS

HOLLISTER–WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217–222–0466 FAX: 217–222–0493

"ROPE GRIPPER™" ASSEMBLY

P.U.R. #383	1–15–09
P.U.R. #359	1–2–07

DATE 4–7–03

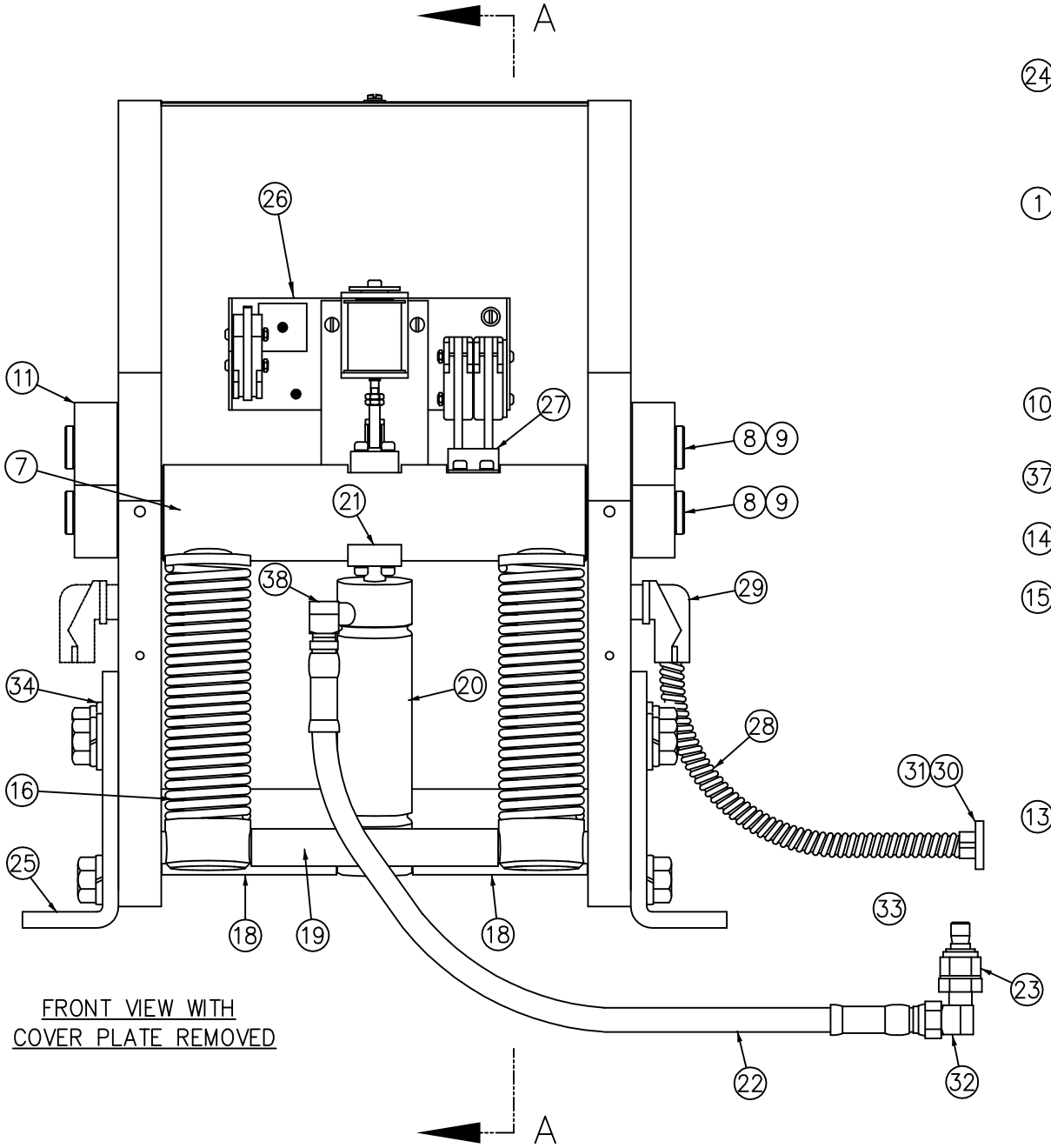
622

MATERIAL LIST

#622 ROPE GRIPPER ASSEMBLY

NO.	PART NO.	QTY.	DESCRIPTION
1	622–001	2	WALL – SIDE
2	622–002	1	MOVABLE SHOE ASSEMBLY
3	600–007	2	BLOCK – SHAFT SUPPORT
4	600–008	2	SPACER – LINING WEAR
5	622–003	1	STATIONARY SHOE ASSEMBLY
6	622–096	4	GUIDE – MOVABLE SHOE
7	622–015	1	TUBING ASSEMBLY
8	622–018	2	SHAFT – ROTATING & NON–ROTATING
9	90–33	4	SNAP RING – TRUARC #X5133–74
10	601–078	1	LATCH
11	600–020	2	CONNECTING ARM ASSEMBLY
12	600–022	2	LINING ASSEMBLY
13	600–025	2	SPRING LOWER SUPPORT ASSEMBLY
14	600–027	2	UPPER SUPPORT – SPRING
15	600–029	2	GUIDE – SPRING UPPER SUPPORT
16	600–030	2	SPRING
17	622–031	2	SHAFT
18	601–032	2	TUBING – SPACER (1.969" LG.)
19	622–033	1	TUBING – SPACER (2.375" LG.)
20	600–035	1	CYLINDER – HYDRAULIC
21	622–036	1	HYDRAULIC CYLINDER PIVOT BRACKET ASSEMBLY
22	600–037	1	HOSE
23	600–038	1	COUPLING – QUICK DISCONNECT
24	600–039	1	STREET ELBOW – 90°
25	622–040 or 622–040–P	1	COVER
26	600–041	2	ANGLE – MOUNTING
27	622–050	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY.
	622–050–1	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY. WITH 9'–2" LEADS
28	600–051	1	ACTUATING ANGLE
29	600–081	1	CONDUIT – FLEXIBLE (1/2")
30	600–082	1	BOX CONNECTOR – 90° ANGLE (1/2")
31	600–083	1	CONNECTOR – FLEXIBLE (1/2")
32	600–084	1	BUSHING (1/2")
33	622–100	1	PUMPING UNIT
34	600–095	2	WASHER – DOUBLE BOLT
35	5/16 N.C. x 2	4	SCREW – SOCKET HEAD CAP
36	5/16	4	WASHER – LOCK
37	1/4–20 x 1 1/2	2	SCREW – HALF DOG SOCKET SET
38	610–087	1	ELBOW – 90° (3/8" TUBE O.D. X 1/4" PIPE)

P.U.R. #383	1–15–09
P.U.R. #359	1–2–07
	2–19–04



FRONT VIEW WITH
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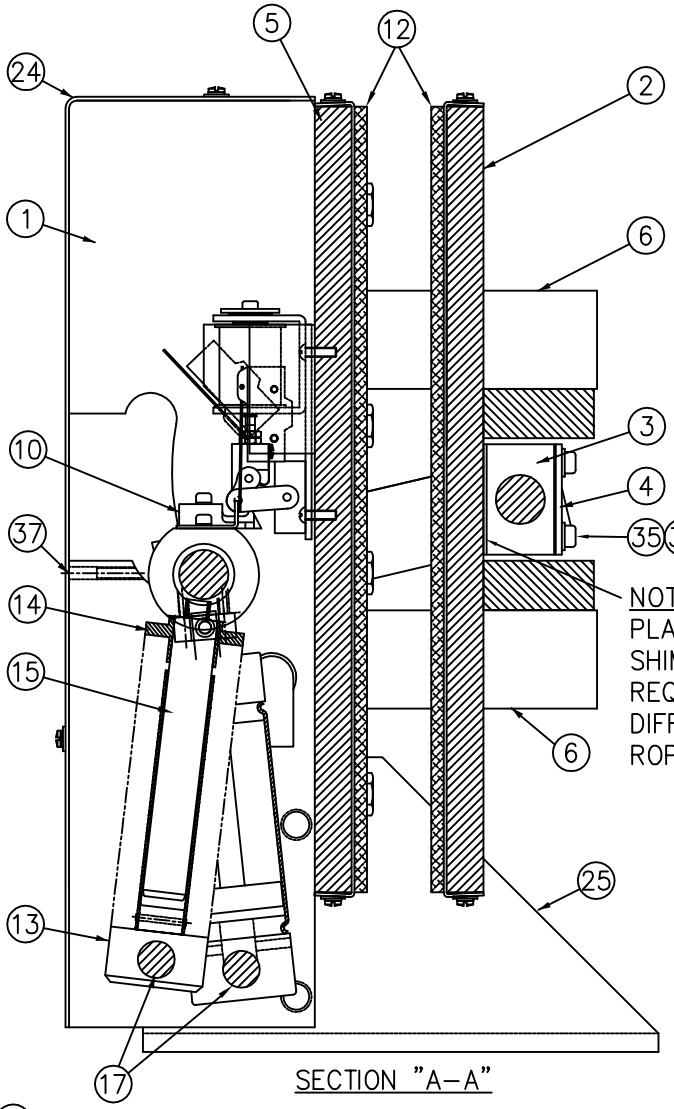

NOTE:
PLACE SPACERS
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SECTION "A–A"

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POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217–222–0466 FAX: 217–222–0493

"ROPE GRIPPER™" ASSEMBLY

P.U.R. #383	1–15–09
P.U.R. #359	1–2–07

DATE 4–7–03

624

MATERIAL LIST

#624 ROPE GRIPPER ASSEMBLY

NO.	PART NO.	QTY.	DESCRIPTION
1	624–001	2	WALL – SIDE
2	626–002	1	MOVABLE SHOE ASSEMBLY
3	610–007	2	BLOCK – SHAFT SUPPORT
4	610–008	2	SPACER – LINING WEAR
5	624–003	1	STATIONARY SHOE ASSEMBLY
6	626–096	4	GUIDE – MOVABLE SHOE
7	624–015	1	TUBING ASSEMBLY
8	626–018	2	SHAFT – ROTATING & NON–ROTATING
9	610–085	4	SNAP RING – TRUARC #X5133–98
10	601–078	1	LATCH
11	610–020	2	CONNECTING ARM ASSEMBLY
12	610–022	2	LINING ASSEMBLY
13	600–025	2	SPRING LOWER SUPPORT ASSEMBLY
14	600–027	2	UPPER SUPPORT – SPRING
15	600–029	2	GUIDE – SPRING UPPER SUPPORT
16	600–030	2	SPRING
17	626–031	2	SHAFT
18	624–032	2	TUBING – SPACER (3.735" LG.)
19	624–033	1	TUBING – SPACER (5.813" LG.)
20	600–035	1	CYLINDER – HYDRAULIC
21	622–036	1	HYDRAULIC CYLINDER PIVOT BRACKET ASSEMBLY
22	600–037	1	HOSE
23	600–038	1	COUPLING – QUICK DISCONNECT
24	626–040	1	COVER
25	610–041	2	ANGLE – MOUNTING
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29	600–082	1	BOX CONNECTOR – 90° ANGLE (1/2")
30	600–083	1	CONNECTOR – FLEXIBLE (1/2")
31	600–084	1	BUSHING (1/2)
32	600–039	1	ELBOW – 90° STREET (3/8" PIPE x 3/8" PIPE)
33	622–100	1	PUMPING UNIT
34	610–095	2	WASHER – DOUBLE BOLT
35	5/16 N.C. x 2–1/4	4	SCREW – SOCKET HEAD CAP
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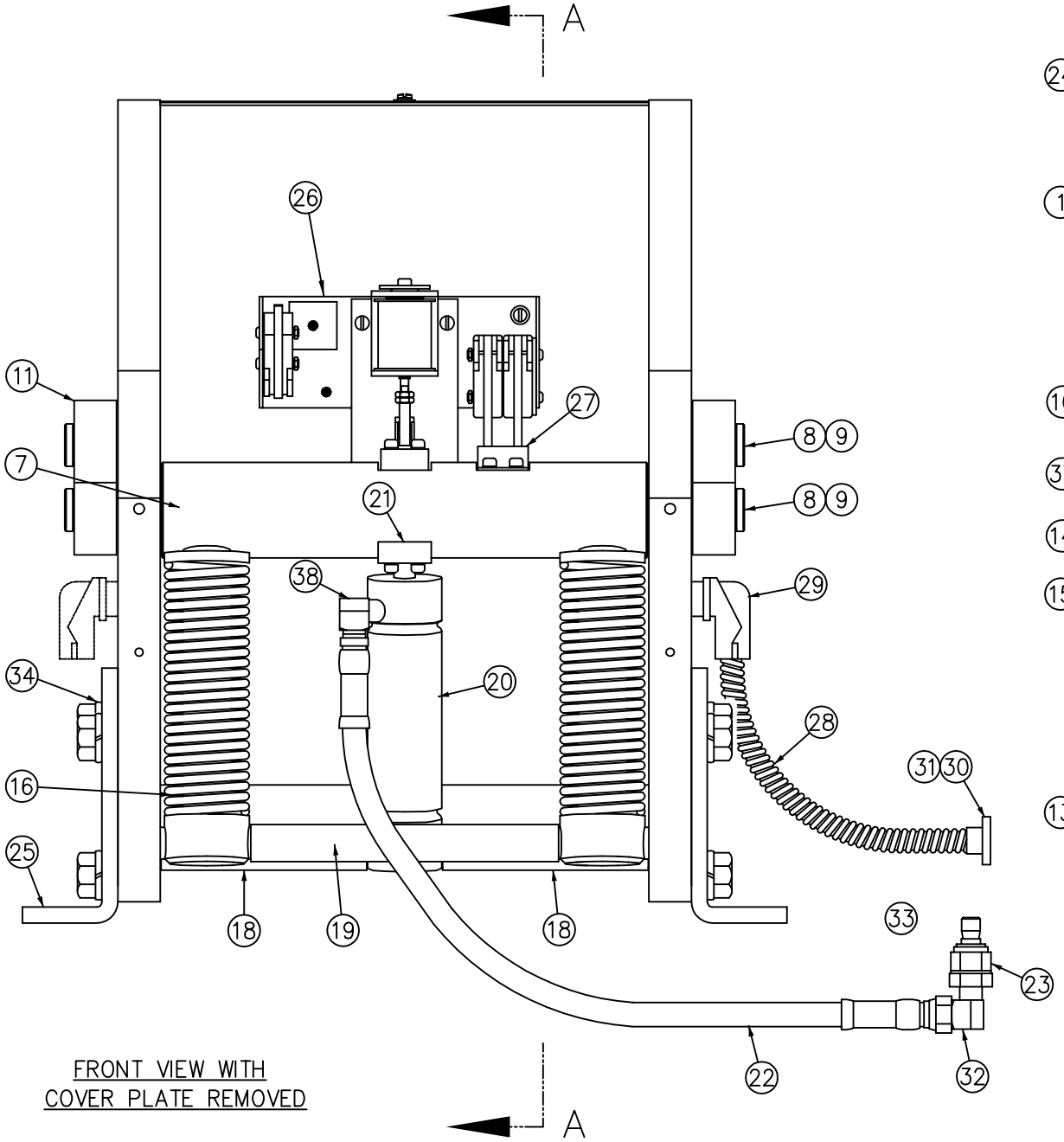
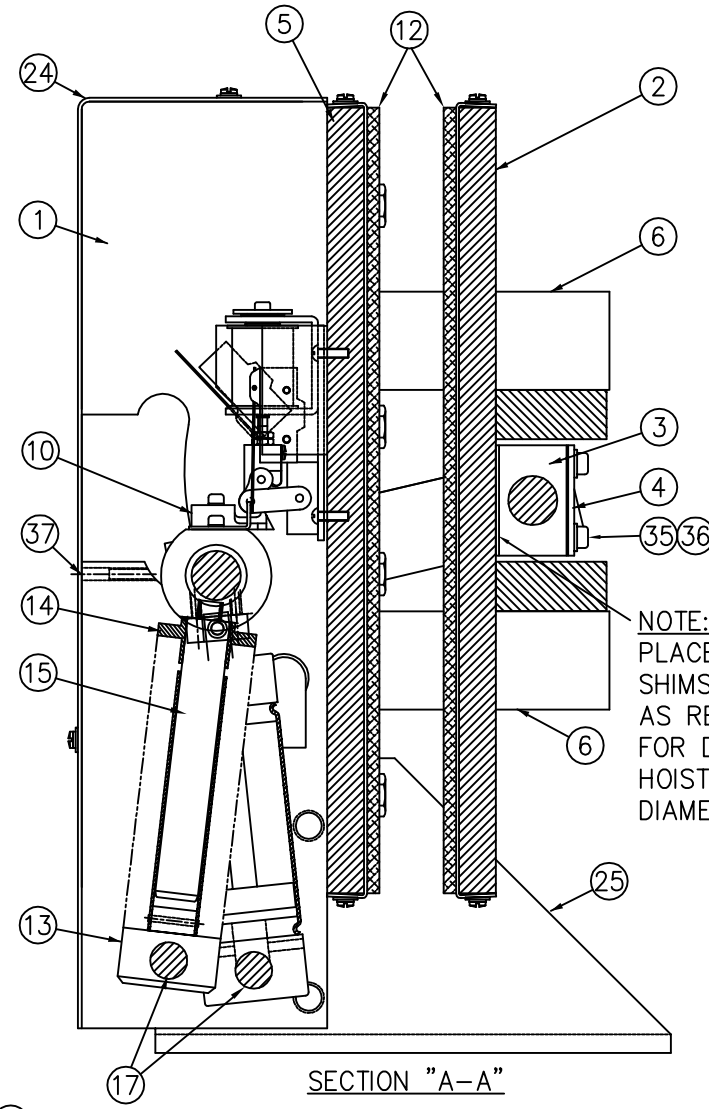
37	1/4–20 x 1 1/2	2	SCREW – HALF DOG SOCKET SET
38	610–087	1	ELBOW – 90° (3/8" TUBE O.D. x 1/4" PIPE)

P.U.R. #383	1–15–09
P.U.R. #359	1–2–07
	6–25–03



FRONT VIEW WITH
COVER PLATE REMOVED



NOTE:
PLACE SPACER SHIMS HERE AS REQUIRED FOR DIFFERENT HOIST ROPE DIAMETERS

SECTION "A–A"

HOLLISTER–WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217–222–0466 FAX: 217–222–0493

"ROPE GRIPPER™" ASSEMBLY

P.U.R. #383	1–15–09
P.U.R. #359	1–2–07

DATE 4–7–03

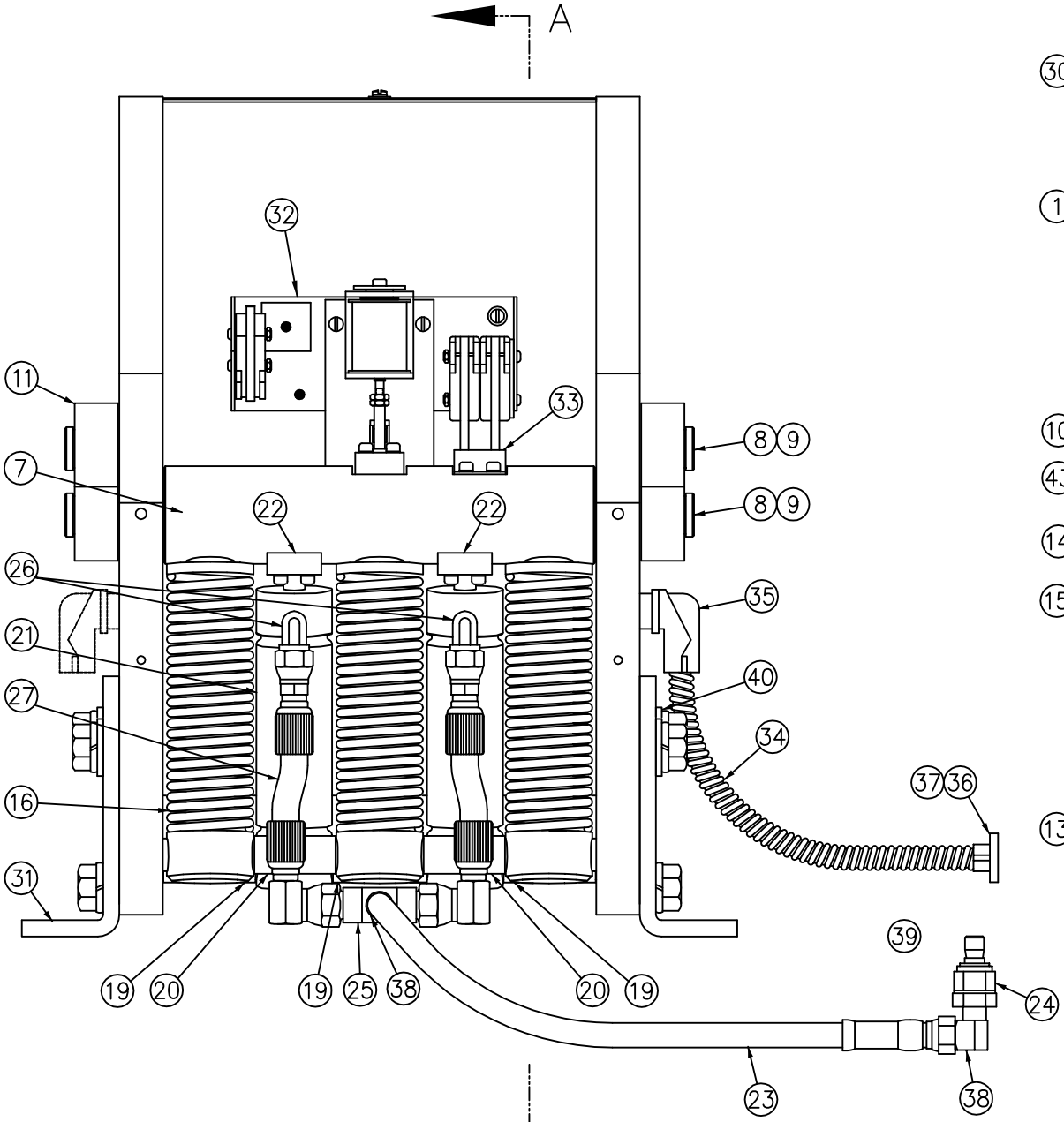
625

MATERIAL LIST

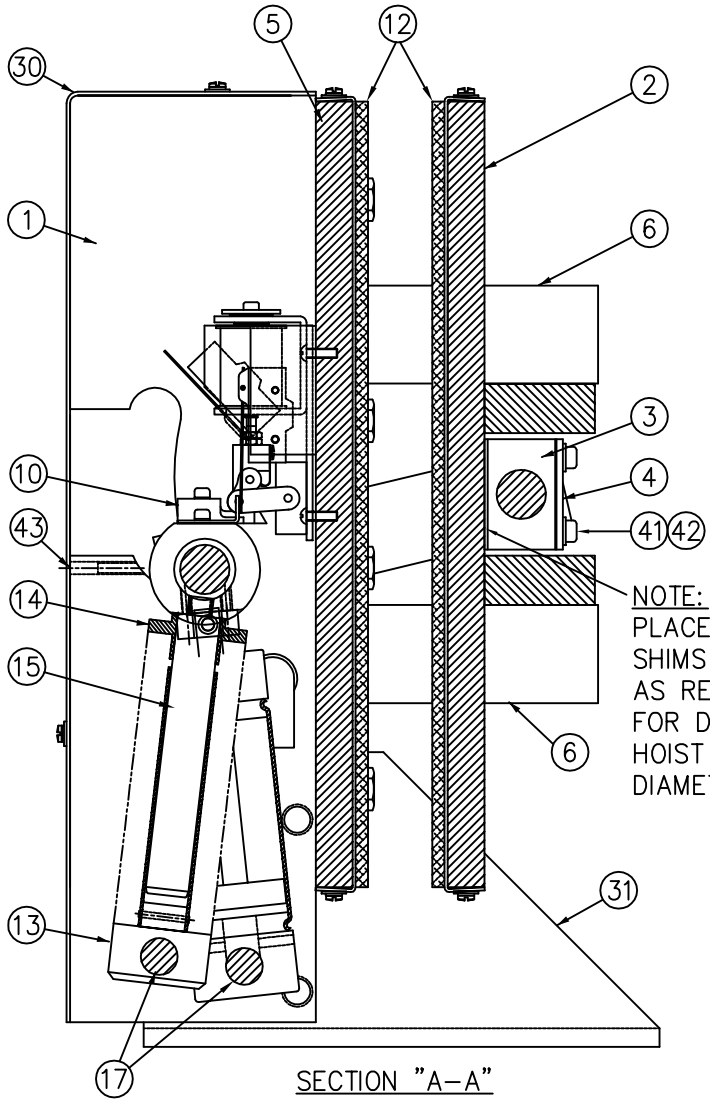
#625 ROPE GRIPPER ASSEMBLY

NO.	PART NO.	QTY.	DESCRIPTION
1	624–001	2	WALL – SIDE
2	625–002	1	MOVABLE SHOE ASSEMBLY
3	610–007	2	BLOCK – SHAFT SUPPORT
4	610–008	2	SPACER – LINING WEAR
5	625–003	1	STATIONARY SHOE ASSEMBLY
6	626–096	4	GUIDE – MOVABLE SHOE
7	625–015	1	TUBING ASSEMBLY
8	610–018	2	SHAFT – ROTATING & NON–ROTATING
9	610–085	4	SNAP RING – TRUARC #X5133–98
10	601–078	1	LATCH
11	610–020	2	CONNECTING ARM ASSEMBLY
12	625–022	2	LINING ASSEMBLY
13	600–025	2	SPRING LOWER SUPPORT ASSEMBLY
14	600–027	2	UPPER SUPPORT – SPRING
15	600–029	2	GUIDE – SPRING UPPER SUPPORT
16	600–030	2	SPRING
17	610–031	2	SHAFT
18	605–032	2	TUBING – SPACER (4.469" LG.)
19	605–033	1	TUBING – SPACER (7.250" LG.)
20	600–035	1	CYLINDER – HYDRAULIC
21	622–036	1	HYDRAULIC CYLINDER PIVOT BRACKET ASSEMBLY
22	600–037	1	HOSE
23	600–038	1	COUPLING – QUICK DISCONNECT
24	625–040	1	COVER
25	610–041	2	ANGLE – MOUNTING
26	622–050	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY.
	622–050–1	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY. WITH 9'–2" LEADS
27	600–051	1	ACTUATING ANGLE
28	600–081	1	CONDUIT – FLEXIBLE (1/2")
29	600–082	1	BOX CONNECTOR – 90° ANGLE (1/2")
30	600–083	1	CONNECTOR – FLEXIBLE (1/2")
31	600–084	1	BUSHING (1/2")
32	600–039	1	ELBOW – 90° STREET (3/8" PIPE x 3/8" PIPE)
33	622–100	1	PUMPING UNIT
34	610–095	2	WASHER – DOUBLE BOLT
35	5/16 N.C. x 2–1/4	4	SCREW – SOCKET HEAD CAP
36	5/16	4	WASHER – LOCK
37	1/4–20 x 1 1/2	2	SCREW – HALF DOG SOCKET SET
38	610–087	1	ELBOW – 90° (3/8" TUBE O.D. x 1/4" PIPE)

P.U.R. #383	1–15–09
P.U.R. #359	1–2–07
	6–25–03



FRONT VIEW WITH
COVER PLATE REMOVED



NOTE:
PLACE SPACER SHIMS HERE AS REQUIRED FOR DIFFERENT HOIST ROPE DIAMETERS

SECTION "A–A"

HOLLISTER–WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217–222–0466 FAX: 217–222–0493

"ROPE GRIPPER™" ASSEMBLY

P.U.R. #359	1–2–07
P.U.R. #349	8–21–06

DATE 4–7–03

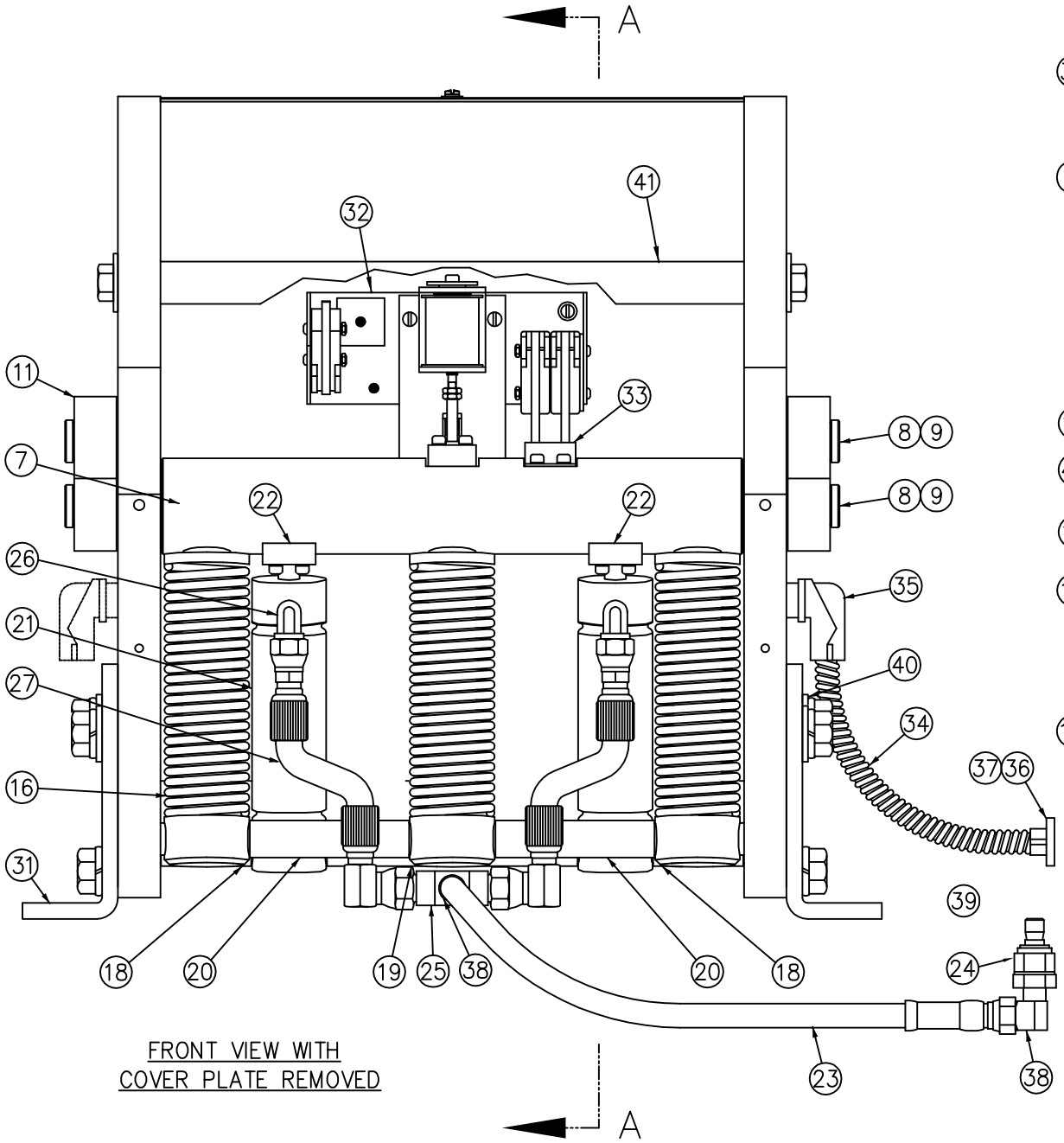
626

MATERIAL LIST

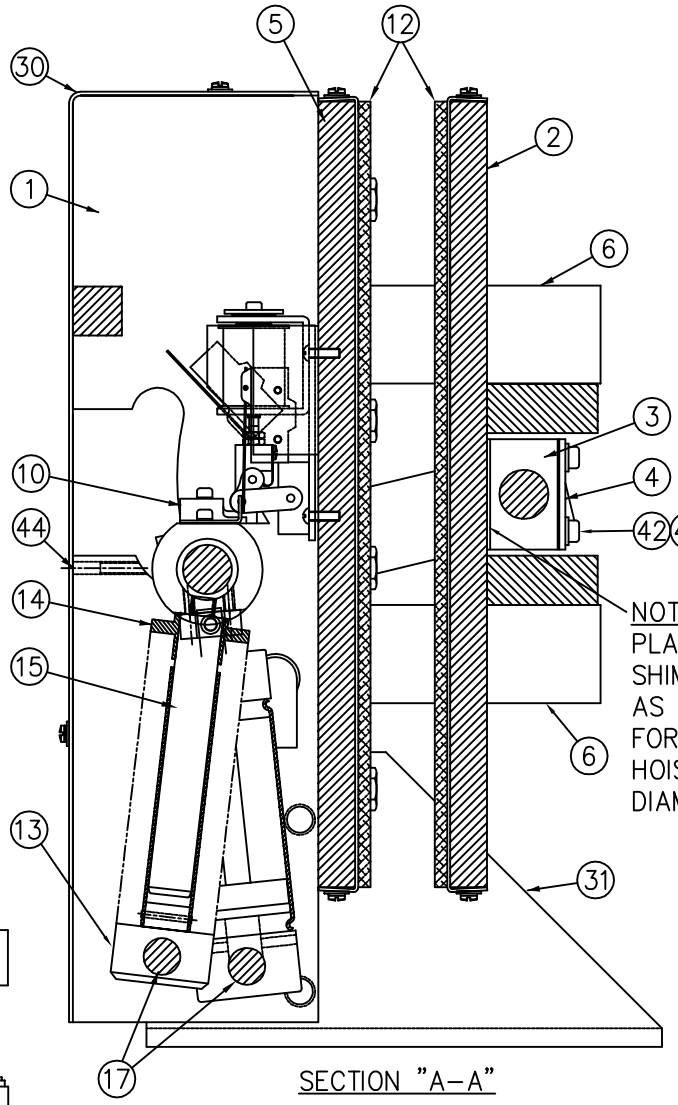
#626 ROPE GRIPPER ASSEMBLY

NO.	PART NO.	QTY.	DESCRIPTION
1	626–001	2	WALL – SIDE
2	626–002	1	MOVABLE SHOE ASSEMBLY
3	610–007	3	BLOCK – SHAFT SUPPORT
4	610–008	3	SPACER – LINING WEAR
5	626–003	1	STATIONARY SHOE ASSEMBLY
6	626–096	4	GUIDE – MOVABLE SHOE
7	626–015	1	TUBING ASSEMBLY
8	626–018	2	SHAFT – ROTATING & NON–ROTATING
9	610–085	4	SNAP RING – TRUARC #X5133–98
10	601–078	1	LATCH
11	610–020	2	CONNECTING ARM ASSEMBLY
12	610–022	2	LINING ASSEMBLY
13	600–025	3	SPRING LOWER SUPPORT ASSEMBLY
14	600–027	3	UPPER SUPPORT – SPRING
15	600–029	3	GUIDE – SPRING UPPER SUPPORT
16	600–030	3	SPRING
17	626–031	2	SHAFT
18	(NOT USED)		
19	626–032	3	TUBING – SPACER (1.938" LG.)
20	626–033	2	TUBING – SPACER (1.875" LG.)
21	610–035	2	CYLINDER – HYDRAULIC
22	622–036	2	HYDRAULIC CYLINDER PIVOT BRACKET ASSEMBLY
23	610–037	1	HOSE
24	610–038	1	COUPLING – QUICK DISCONNECT
25	610–086	1	TEE – (3/8")
26	610–087	2	ELBOW – 90° (3/8" TUBE O.D. x 1/4" PIPE)
27	626–092	2	HOSE ASSEMBLY
28	(NOT USED)		
29	(NOT USED)		
30	626–040	1	COVER
31	610–041	2	ANGLE – MOUNTING
32	622–050	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY.
	622–050–1	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY. WITH 9'–2" LEADS
33	600–051	1	ACTUATING ANGLE
34	600–081	1	CONDUIT – FLEXIBLE (1/2")
35	600–082	1	BOX CONNECTOR – 90° ANGLE (1/2")
36	600–083	1	CONNECTOR – FLEXIBLE (1/2")
37	600–084	1	BUSHING (1/2")
38	610–091	2	ELBOW – 90° STREET (3/8" PIPE x 3/8" PIPE)
39	626–100	1	PUMPING UNIT
40	610–095	2	WASHER – DOUBLE BOLT
41	5/16 NC. x 2–1/4	6	SCREW – SOCKET HEAD CAP
42	5/16	6	WASHER – LOCK
43	1/4–20 x 1 1/2	2	SCREW – HALF DOG SOCKET SET

P.U.R. #359	1–2–07
P.U.R. #349	8–21–06
	6–25–03



FRONT VIEW WITH
COVER PLATE REMOVED



SECTION "A–A"

HOLLISTER–WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217–222–0466 FAX: 217–222–0493

"ROPE GRIPPER™" ASSEMBLY

P.U.R. #359	1–2–07	DATE 4–7–03	626 SPL.

MATERIAL LIST

#626 SPL. ROPE GRIPPER ASSEMBLY

NO.	PART NO.	QTY.	DESCRIPTION
1	626–001 SPL.	2	WALL – SIDE
2	626–002 SPL.	1	MOVABLE SHOE ASSEMBLY
3	610–007 SPL.	3	BLOCK – SHAFT SUPPORT
4	610–008	3	SPACER – LINING WEAR
5	626–003 SPL.	1	STATIONARY SHOE ASSEMBLY
6	626–096	4	GUIDE – MOVABLE SHOE
7	626–015 SPL.	1	TUBING ASSEMBLY
8	626–018 SPL.	2	SHAFT – ROTATING & NON–ROTATING
9	610–085	4	SNAP RING – TRUARC #X5133–98
10	601–078	1	LATCH
11	610–020	2	CONNECTING ARM ASSEMBLY
12	610–022 SPL.	2	LINING ASSEMBLY (SPL. – 13 3/4" WIDE)
13	600–025	3	SPRING LOWER SUPPORT ASSEMBLY
14	600–027	3	UPPER SUPPORT – SPRING
15	600–029	3	GUIDE – SPRING UPPER SUPPORT
16	600–030	3	SPRING
17	626–031 SPL.	2	SHAFT
18	601–032	2	TUBING – CYLINDER SPACER (1.969" LG.)
19	626–032 SPL.	1	TUBING – CYLINDER SPACER (5.6875" LG.)
20	626–033 SPL.	2	TUBING – SPRING SPACER (3.750" LG.)
21	610–035	2	CYLINDER – HYDRAULIC
22	622–036	2	HYDRAULIC CYLINDER PIVOT BRACKET ASSEMBLY
23	610–037	1	HOSE
24	610–038	1	COUPLING – QUICK DISCONNECT
25	610–086	1	TEE – (3/8")
26	610–087	2	ELBOW – 90° (3/8" TUBE O.D. x 1/4" PIPE)
27	626–092	2	HOSE ASSEMBLY
28	(NOT USED)		
29	(NOT USED)		
30	626–040 SPL.	1	COVER
31	610–041	2	ANGLE – MOUNTING
32	622–050	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY.
	622–050–1	1	MICROSWITCH – SOLENOID LOCKING UNIT ASSY. WITH 9'–2" LEADS
33	600–051	1	ACTUATING ANGLE
34	600–081	1	CONDUIT – FLEXIBLE (1/2")
35	600–082	1	BOX CONNECTOR – 90° ANGLE (1/2")
36	600–083	1	CONNECTOR – FLEXIBLE (1/2")
37	600–084	1	BUSHING (1/2")
38	610–091	2	ELBOW – 90° STREET (3/8" PIPE x 3/8" PIPE)
39	626–100	1	PUMPING UNIT
40	610–095	2	WASHER – DOUBLE BOLT
41	626–097 SPL.	1	BAR – SUPPORT
42	5/16 N.C. x 2–1/4	6	SCREW – SOCKET HEAD CAP
43	5/16	6	WASHER – LOCK
44	1/4–20 x 1 1/2	2	SCREW – HALF DOG SOCKET SET

P.U.R. #359	1–2–07
	6–25–03

P.U.R. #359	1-2-07

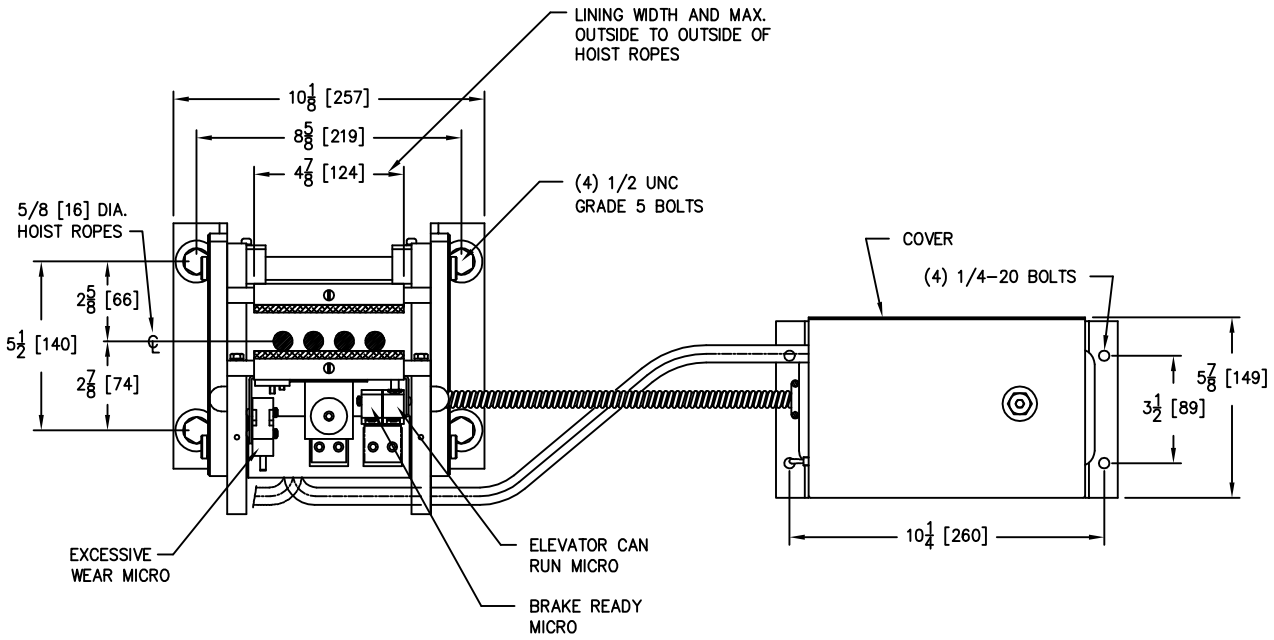
HOLLISTER-WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217-222-0466 FAX: 217-222-0493

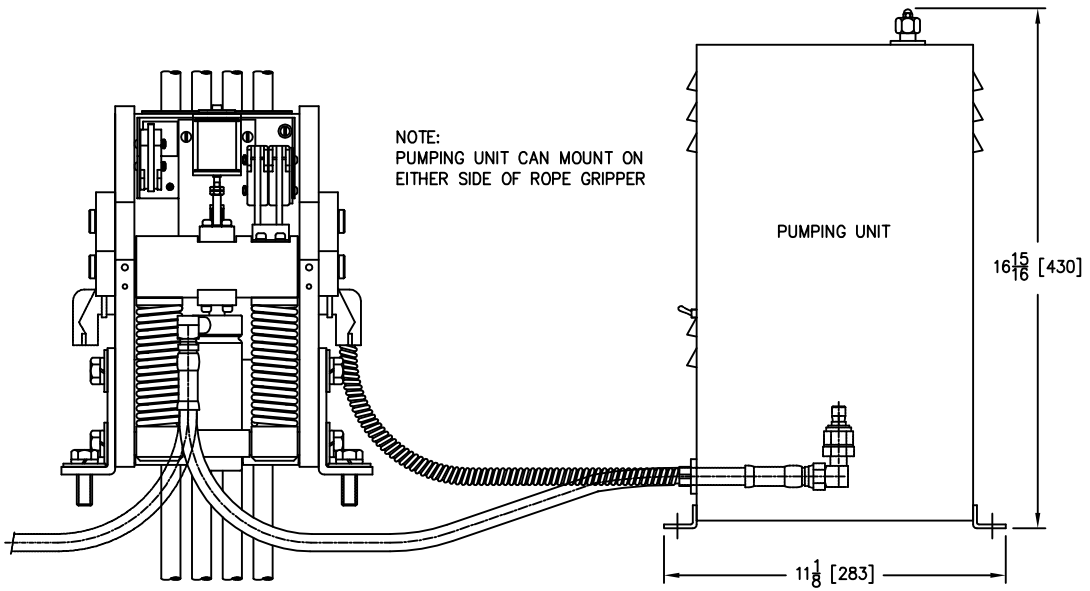
#620 "ROPE GRIPPER"

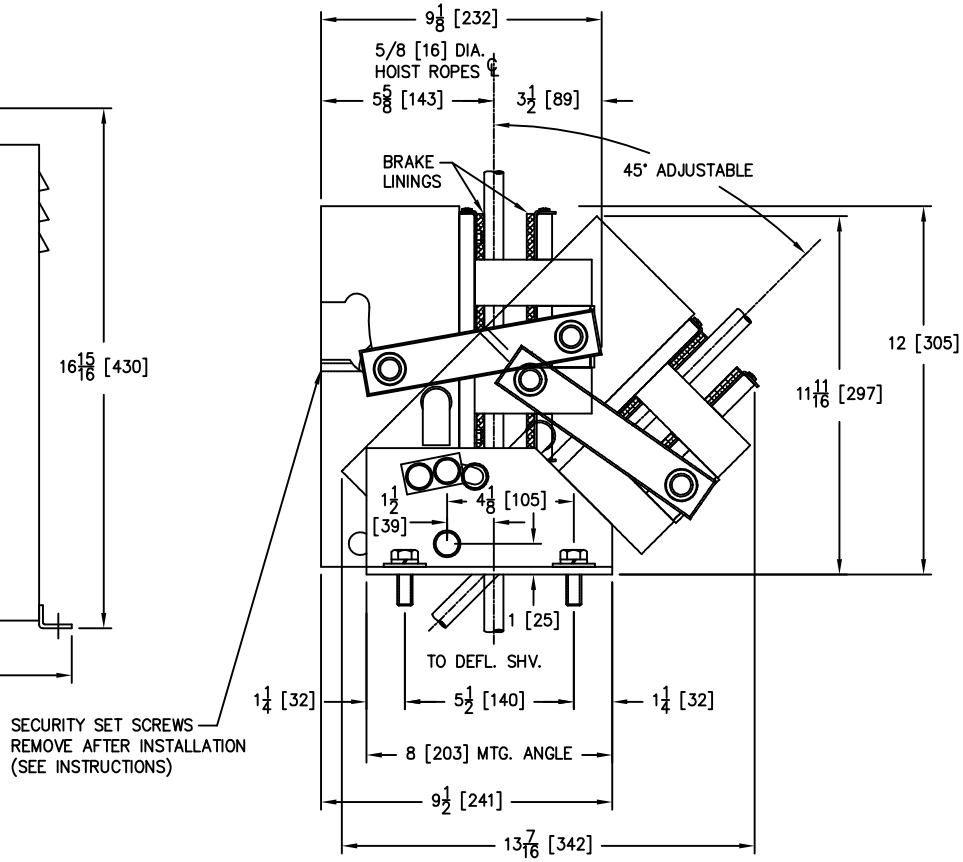
T.M.

SCALE	NTS	DATE	5-28-02
DWN. BY	KLG	DWG.	620-DIM
CHK. BY			

(DIMENSIONS ARE IN INCHES AND MILLIMETERS)







P.U.R. #359	1-2-07

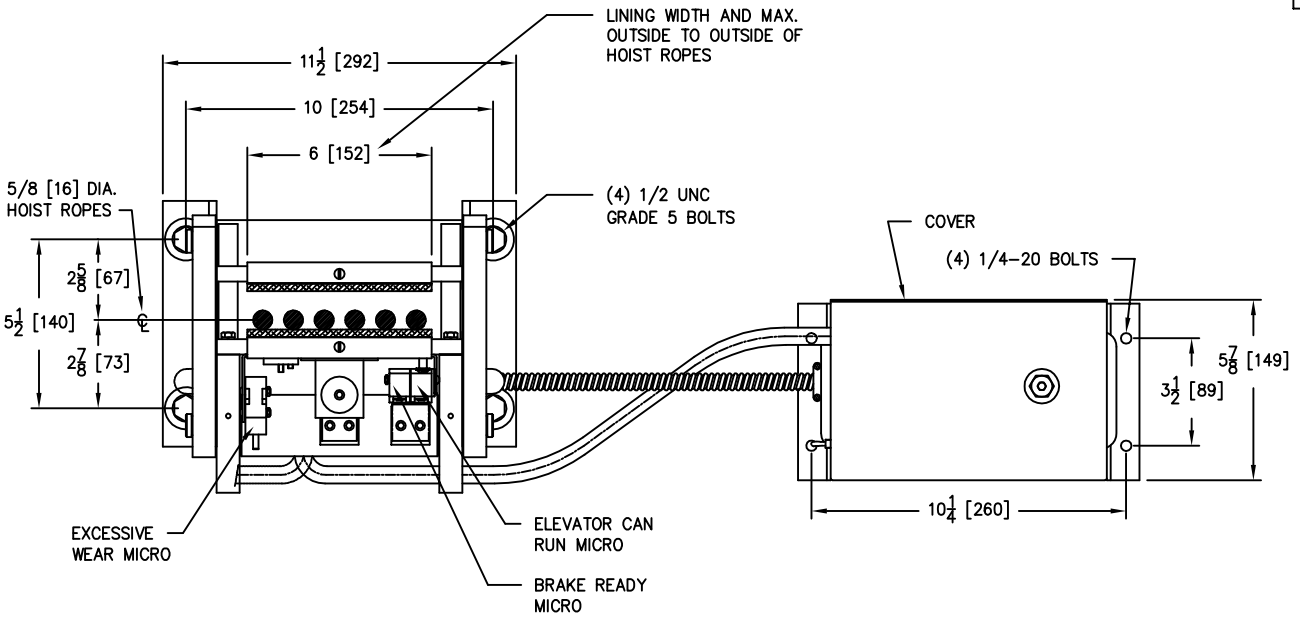
HOLLISTER-WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217-222-0466 FAX: 217-222-0493

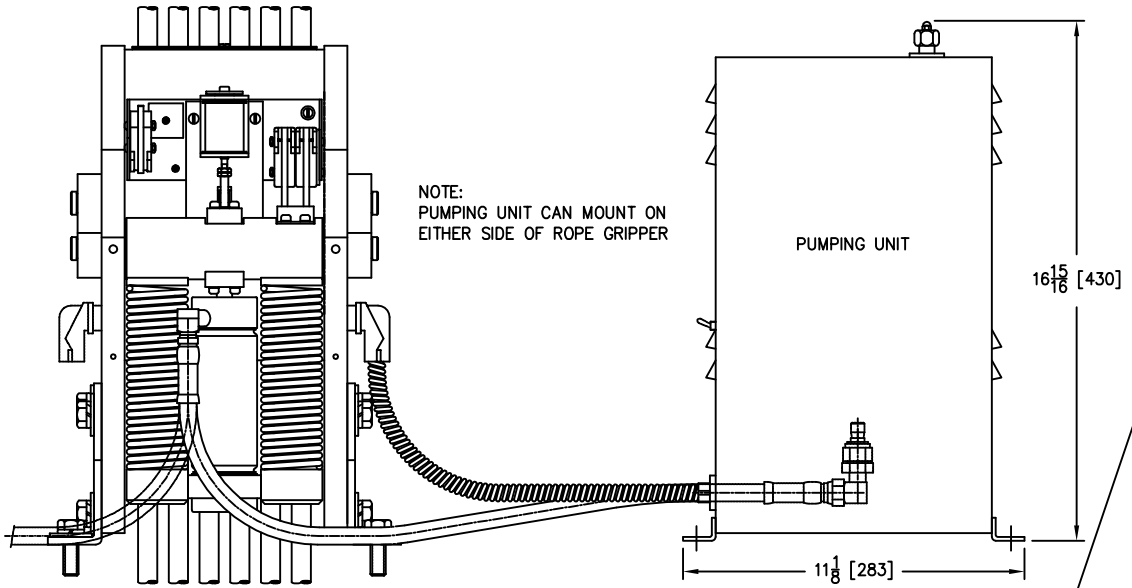
#622 "ROPE GRIPPER"

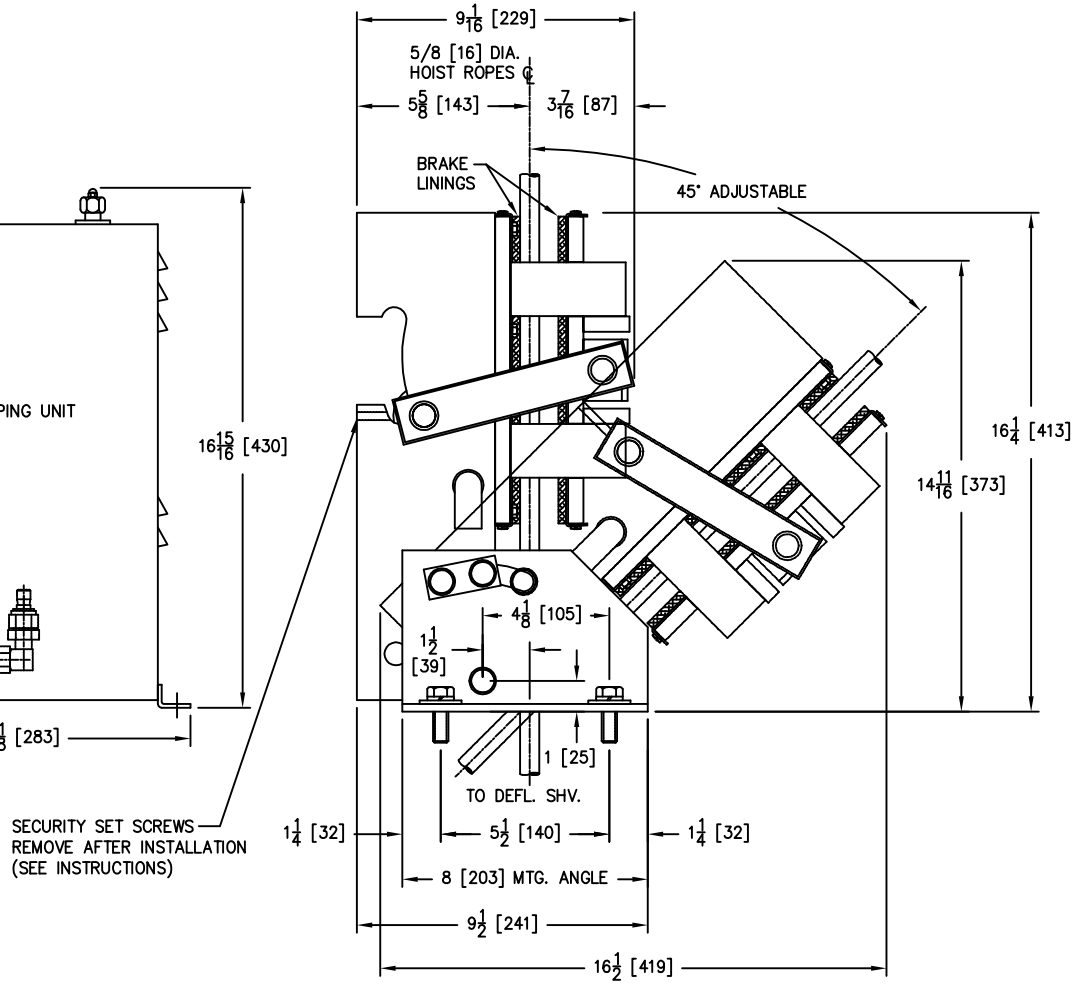
T.M.

SCALE	NTS	DATE	5-28-02
DWN. BY	KLG	DWG.	622-DIM
CHK. BY			

(DIMENSIONS ARE IN INCHES AND MILLIMETERS)







P.U.R. #332	12-29-05
P.U.R. #359	1-2-07

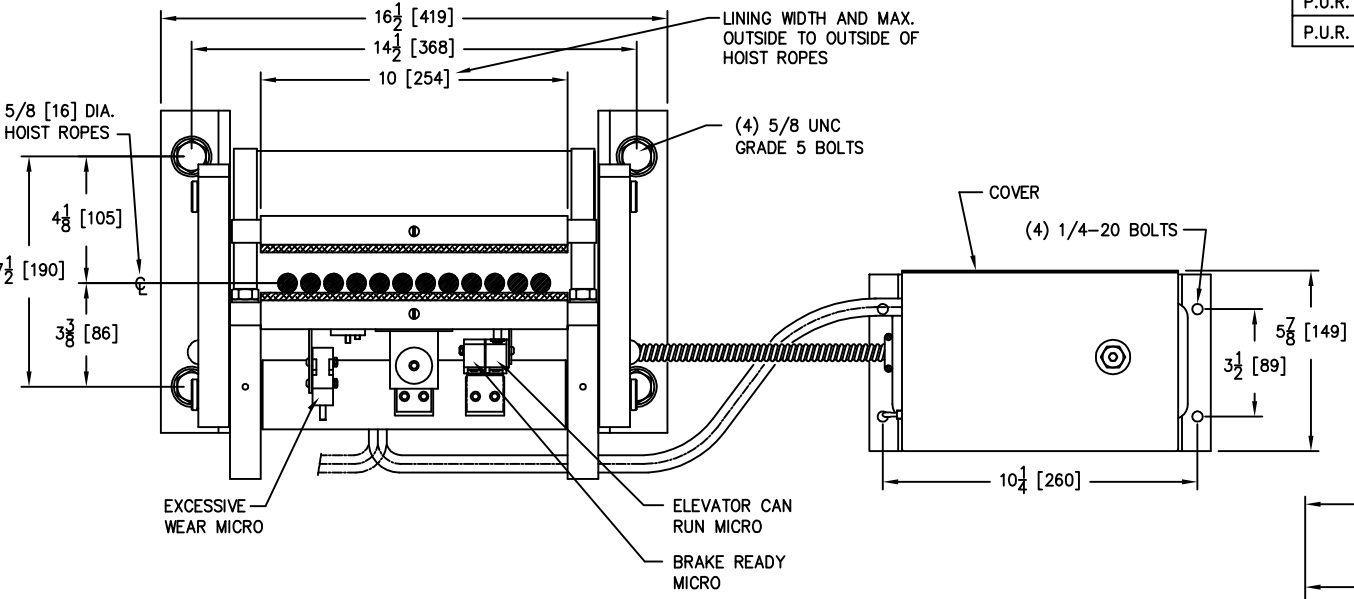
HOLLISTER-WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217-222-0466 FAX: 217-222-0493

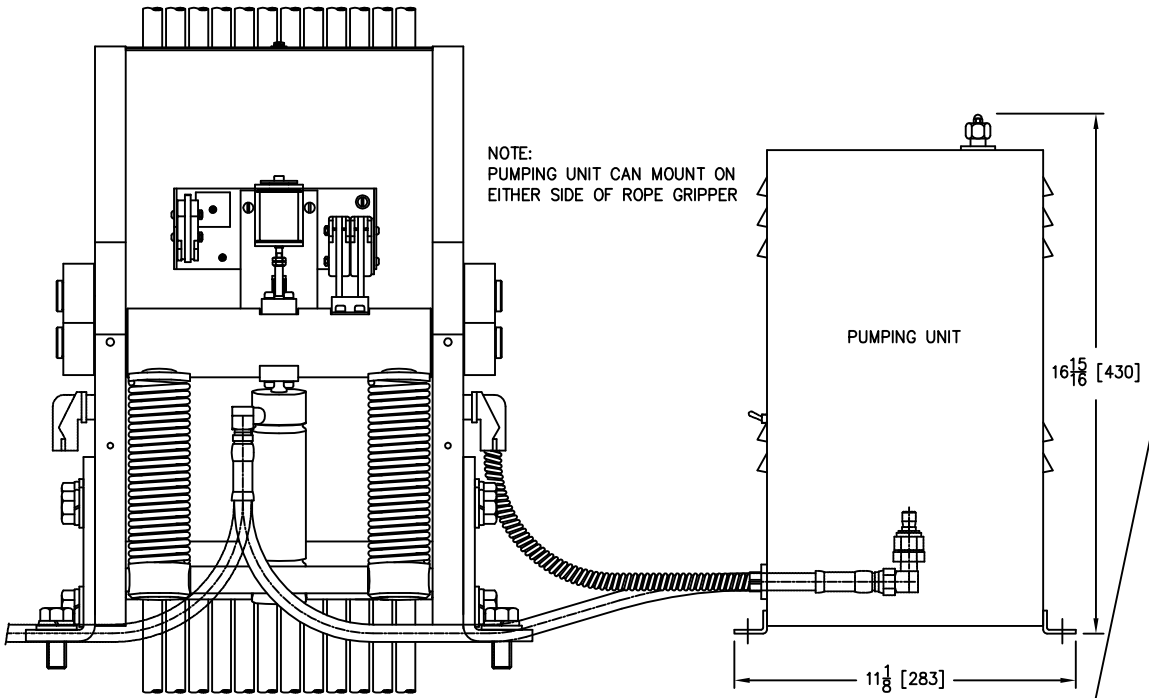
#624 "ROPE GRIPPER"

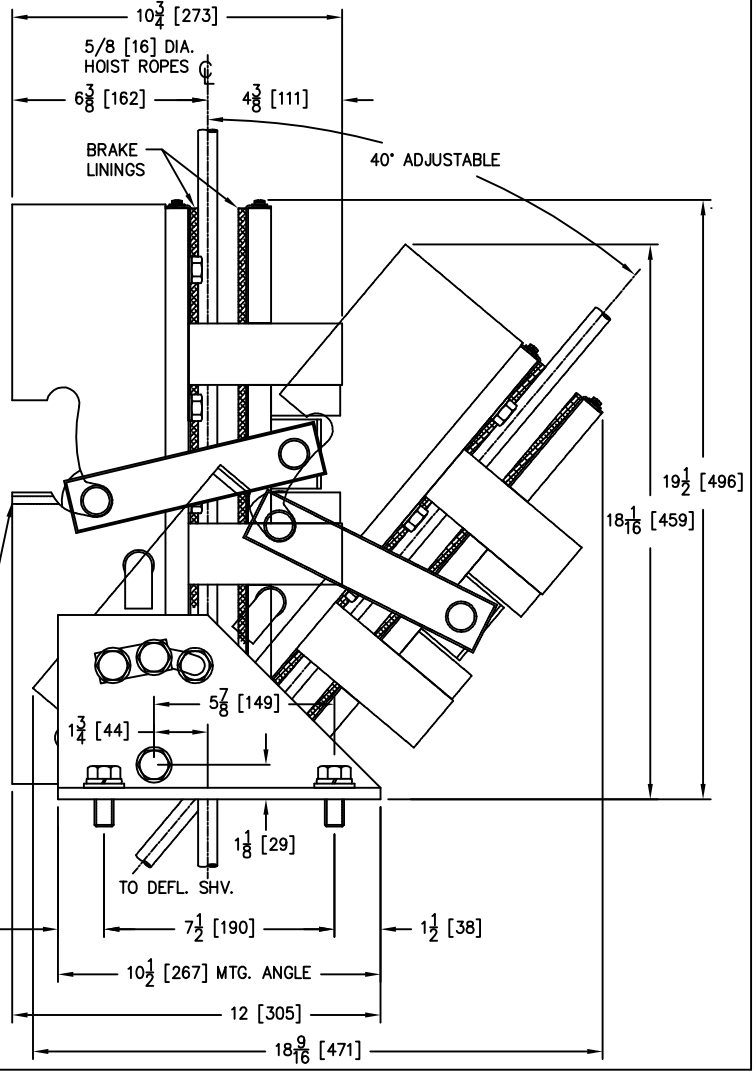
T.M.

SCALE	NTS	DATE	5-28-02
DWN. BY	KLG	DWG.	624-DIM
CHK. BY			

(DIMENSIONS ARE IN INCHES AND MILLIMETERS)







P.U.R. #332	12-29-05
P.U.R. #359	1-2-07

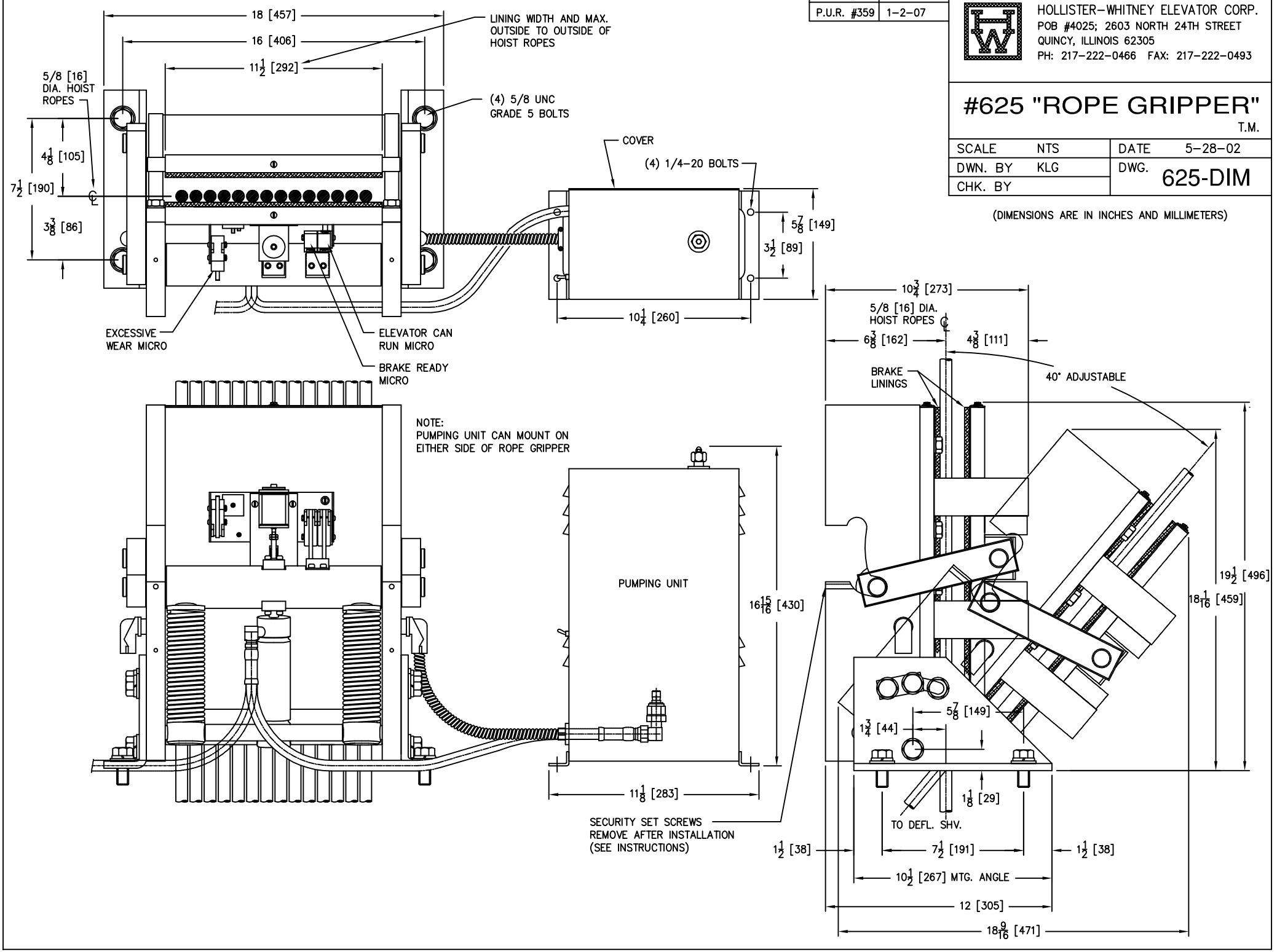
HOLLISTER-WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217-222-0466 FAX: 217-222-0493

#625 "ROPE GRIPPER"

T.M.

SCALE	NTS	DATE	5-28-02
DWN. BY	KLG	DWG.	625-DIM
CHK. BY			

(DIMENSIONS ARE IN INCHES AND MILLIMETERS)



P.U.R. #332	12-29-05
P.U.R. #359	1-2-07

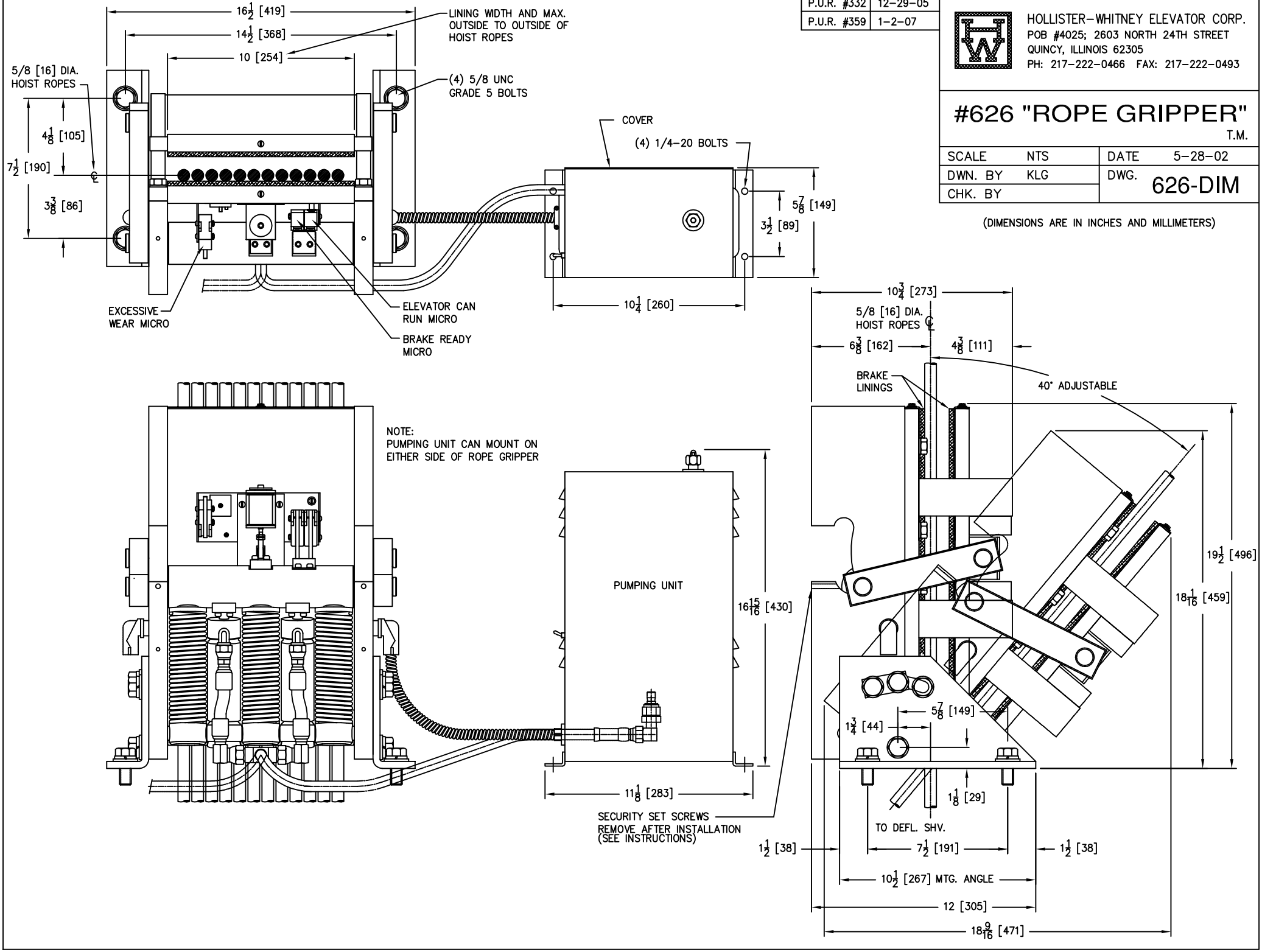
HOLLISTER-WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217-222-0466 FAX: 217-222-0493

#626 "ROPE GRIPPER"

T.M.

SCALE	NTS	DATE	5-28-02
DWN. BY	KLG	DWG.	626-DIM
CHK. BY			

(DIMENSIONS ARE IN INCHES AND MILLIMETERS)



P.U.R. #332	12-29-05
P.U.R. #359	1-2-07

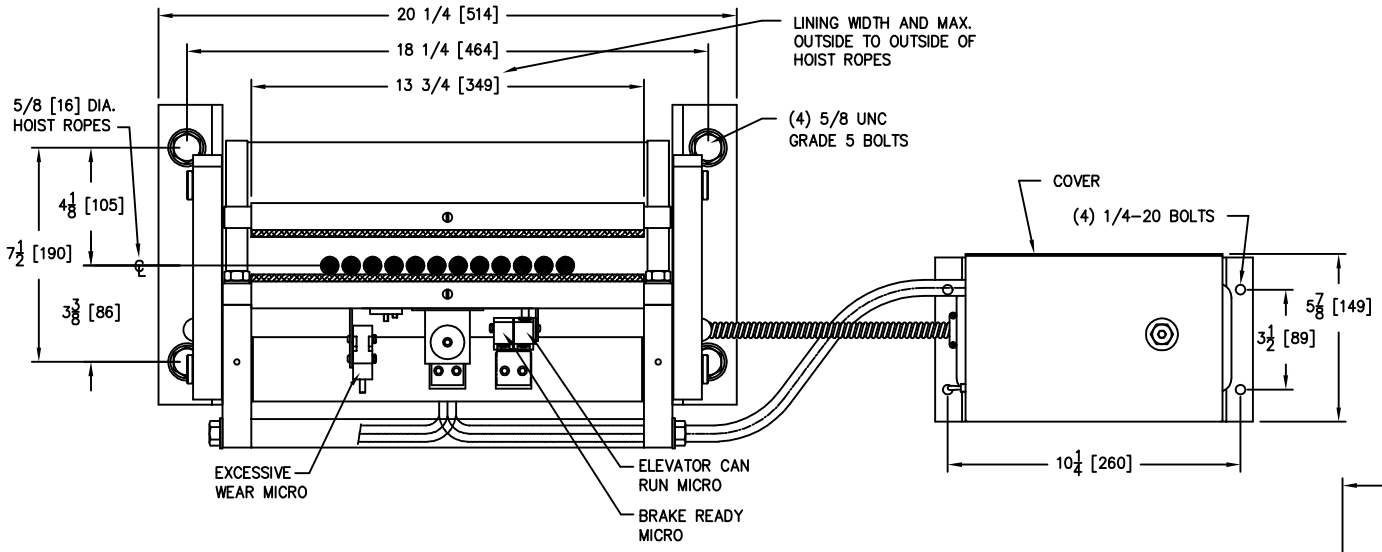
HOLLISTER-WHITNEY ELEVATOR CORP.
POB #4025; 2603 NORTH 24TH STREET
QUINCY, ILLINOIS 62305
PH: 217-222-0466 FAX: 217-222-0493

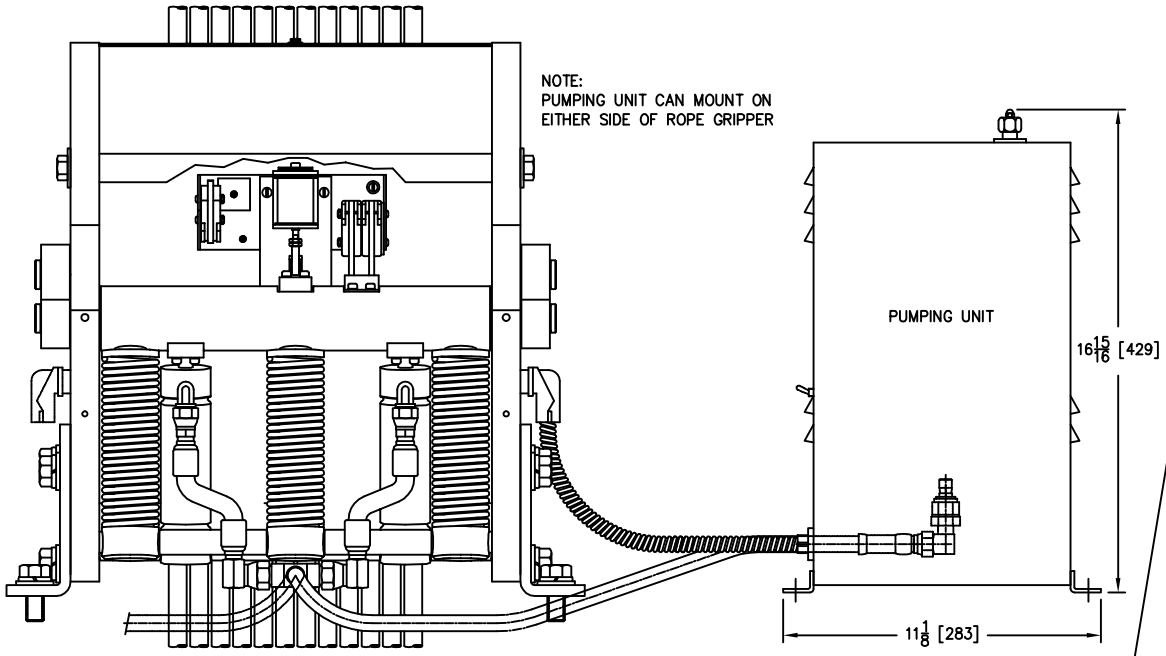
#626 SPL. "ROPE GRIPPER"

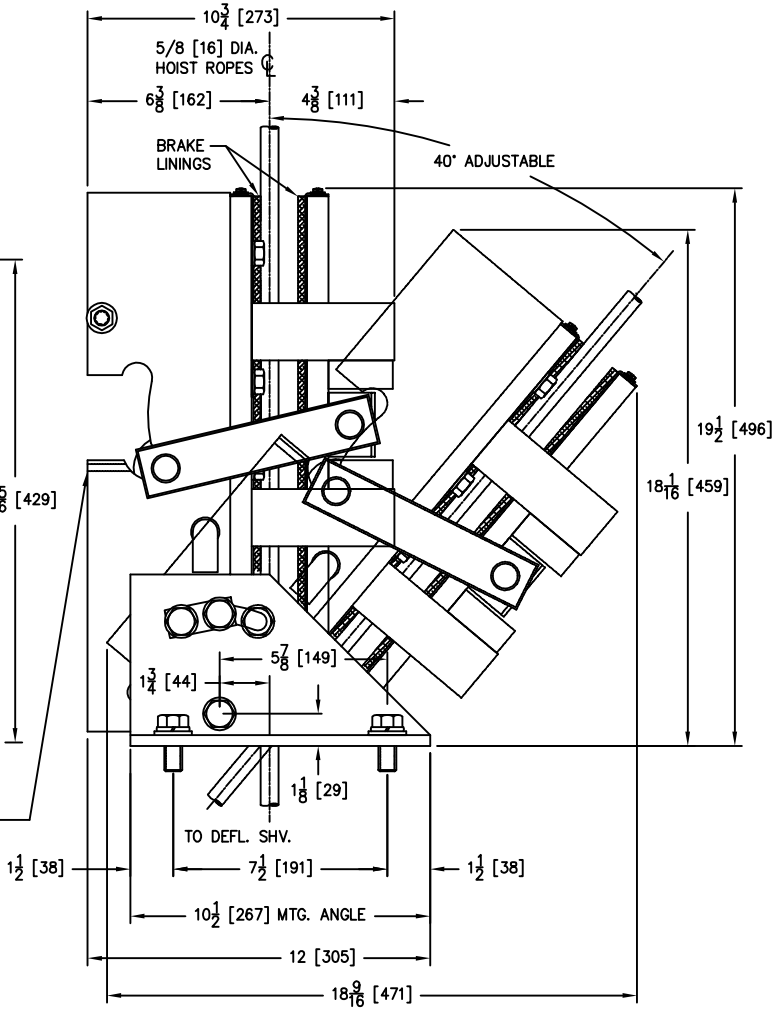
T.M.

SCALE	NTS	DATE	1-30-03
DWN. BY	KLG	DWG.	626 SPL.-DIM
CHK. BY			

(DIMENSIONS ARE IN INCHES AND MILLIMETERS)







REV.	DESCRIPTION	DATE
G	MADE HIGH TEMP MICROSWITCH	5-08
B	7269-8 REV. A ADDED	9-00
A	7949 REV. B ADDED	9-99

HOLLISTER WHITNEY ROPE GRIPPER

PARTS LIST FOR UNIT RG-0004N, PART OF RG-0001N AND RG-0002N

7949-4-1

REV. G

MICROSWITCH / SOLENOID MOUNTING BRACKET (H.W.622-050)

NOTES	DESCRIPTION	ITEM No.	SPECIFICATIONS	AMOUNT	COST $	SOURCE	DRAWING	REV.
H.W. 622-050	MICROSWITCH/SOLENOID MT'G. BRACKET	136	# 14 GAUGE C.R.S.	1		G.A.L.	7949-1	
		117				SPANO FASTENERS		
		118						
	FEMALE STUD	119	8-32 x 7/16 LONG	1	.28			
	CUP WASHER	120	# 8	1		STIMPSON		
	GROUND SCREW	121	8-32 x 5/16 LONG PAN HEAD SCREW	1		UNEEDA		
	RECTIFIER DIOD-0015N	122	GI # GBPC 2508	1	1.89	WIN-COR		
	CABLE CLAMP	123	HEYCO 12607	1	.03	HEYCO		
	BRASS FLAT WASHERS	124	# 8	2		UNEEDA		
	NUT	125	8-32 THREAD	2				
	MICROSWITCH INSULATOR	126	1/32 FR700 INSULATOR	3		G.A.L.	7949-3	
	MICROSWITCH	127	BZ-2RW824-A2	3	3.1	I/O		
	MICROSWITCH MOUNTING SCREW	128	6-32 x 5/8 LONG PAN HEAD SCREW	1		UNEEDA		
	MICROSWITCH MOUNTING SCREW	129	6-32 x 1" LONG PAN HEAD SCREW	1				
	MICROSWITCH MOUNTING SCREW	130	6-32 x 1 1/2 LONG ROUND HEAD SCREW	1		SCREW AND SUPPLY		
	MICROSWITCH MOUNTING SCREW	131	6-32 x 1 3/4 LONG ROUND HEAD CREW	1				
	STAR WASHERS	132	# 6	6		UNEEDA		
	NUT	133	6-32 THREAD	2				
	CABLE	134	CAROL CABLE 406 # 18-6 CONDUCTOR 45" LONG	1	.45/FT	CENTRAL ELECTRIC		
	NYLON TIE	135	4" LONG	3	.014			
MICROSWITCH ACTUATING ANGLE UNIT	MICROSWITCH ACTUATING ANGLE	138	# 16 GAUGE C.R.S.	1		G.A.L.	7269-4	
	SCREW	139	6-32 x 3/16 LONG PAN HEAD SCREW	1		TOWER FASTENERS		
	SCREW	140	6-32 x 5/16 LONG PAN HEAD SCREW	1				
	NUT	141	6-32 THREAD	1		UNEEDA		
	STAR WASHERS	142	# 6	2				
HW 622-036	HYDRAULIC CYLINDER PIVOT BRACKET	143	1/2 x 1 1/4 ALUMINUM 2024 T351	1	5.95/Lb	G.A.L.	7269-8	A
RG-0007N	PIN	144	1/4 DIA. x 1 1/4 LONG	1	.28	MAIN TOOL SUPPLY		

SOLENOID LOCKING UNIT (RG-0003N)

NOTES	DESCRIPTION	ITEM No.	SPECIFICATIONS	AMOUNT	COST $	SOURCE	DRAWING	REV.
SUPPLIED WITH MICROSWITCH SOLENOID MT'G. BRACKET H.W. 622-050	LOCK PLATE	102	# 11 GAUGE C.R.S.	1		G.A.L.	7949	B
	COIL FRAME	103	# 11 GAUGE C.R.S.	1				
	NYLON BUSHING	104	10L-2FF	1	.22	KAMAN IND. TECH		
	NYLON BUSHING	105	3L-2FF	1	.14			
	COIL	106	# 9432 13000 T. 36 W. 110 VDC. 1430 OHMS COIL RESISTANCE COLD 1000 AMPERE-TURNS	1	3.56	MAGNETIC COILS		
	SCREW	107	6-32 x 5/16 LONG PAN HEAD SCREW	1		UNEEDA		
	ARMATURE	108	5/8 DIA. C.R.S.	1		G.A.L.		
	ARMATURE WASHER	109	# 16 GAUGE C.R.S. GALVANIZED	1		IND. RIVER & WASHER		
	SCREW	110	10-32 x 3/8 LONG SOCKET HEAD CAP SCREW	1		UNEEDA		
	STUD	111	3/16 DIA. ALUMINUM ROD	1		G.A.L.		
	NUT	112	10-32 THREAD	1		UNEEDA		
	CHAIN LINK HOLDER	113	1/4 x 1" ALUMINUM	1		G.A.L.		
	CHAIN LINK HOLDER	114	1/2 x 1/2 BRASS	1				
	CHAIN	115	RS40NP CONN. W/SPRING CLIP C2040NP OFFSET LINK	1	2.16	U.S.T.		
	CHAIN HOLDER MOUNTING SCREWS	116	10-32 x 1/2 LONG SOCKET HEAD CAP SCREW	2		UNEEDA		
	NYLON SPACER	145	5/16" O.D. x 3/16" I.D. x 1/8" THICK	1	.05	MCMASTER-CARR		

REV.	DESCRIPTION	DATE
G	MADE HIGH TEMP MICROSWITCH	5-08
B	7269-8 REV. A ADDED	9-00
A	7949 REV. B ADDED	9-99

MICROSWITCH / SOLENOID MOUNTING BRACKET (H.W.620-050)

NOTES	DESCRIPTION	ITEM No.	SPECIFICATIONS	AMOUNT	COST $	SOURCE	DRAWING	REV.
H.W. 620-050	MICROSWITCH/SOLENOID MT'G. BRACKET	137	# 14 GAUGE C.R.S.	1		G.A.L.	7949-2	
	RECTIFIER MOUNTING SCREW	117	6-32 x 5/8 LONG PAN HEAD SCREW	1		UNEEDA		
	CLAMP MOUNTING SCREW	118	6-32 x 3/8 LONG PAN HEAD SCREW	1				
	FEMALE STUD	119	8-32 x 7/16 LONG	1	.28	SPANO FASTENERS		
	CUP WASHER	120	# 8	1		STIMPSON		
	GROUND SCREW	121	8-32 x 5/16 LONG PAN HEAD SCREW	1		UNEEDA		
	RECTIFIER DIOD-0015N	122	GI # GBPC 2508	1	1.89	WIN-COR		
	CABLE CLAMP	123	HEYCO 12607	1	.03	HEYCO		
	BRASS FLAT WASHERS	124	# 8	2		UNEEDA		
	NUT	125	8-32 THREAD	2				
	MICROSWITCH INSULATOR	126	1/32 FR700 INSULATOR	3		G.A.L.	7949-3	
	MICROSWITCH	127	BZ-2RW824-A2	3	3.1	I/O		
	MICROSWITCH MOUNTING SCREW	128	6-32 x 5/8 LONG PAN HEAD SCREW	1		UNEEDA		
	MICROSWITCH MOUNTING SCREW	129	6-32 x 1" LONG PAN HEAD SCREW	1				
	MICROSWITCH MOUNTING SCREW	130	6-32 x 1 1/2 LONG ROUND HEAD SCREW	1		SCREW AND SUPPLY		
	MICROSWITCH MOUNTING SCREW	131	6-32 x 1 3/4 LONG ROUND HEAD CREW	1				
	STAR WASHERS	132	# 6	8		UNEEDA		
	NUT	133	6-32 THREAD	4				
	CABLE	134	CAROL CABLE 406 # 18-6 CONDUCTOR 45" LONG	1	.45/FT	CENTRAL ELECTRIC		
	NYLON TIE	135	4" LONG	3	.014			
MICROSWITCH ACTUATING ANGLE UNIT	MICROSWITCH ACTUATING ANGLE	138	# 16 GAUGE C.R.S.	1		G.A.L.	7269-4	
	SCREW	139	6-32 x 3/16 LONG PAN HEAD SCREW	1		TOWER FASTENERS		
	SCREW	140	6-32 x 5/16 LONG PAN HEAD SCREW	1				
	NUT	141	6-32 THREAD	1		UNEEDA		
	STAR WASHERS	142	# 6	2				
HW 622-036 RG-0007N	HYDRAULIC CYLINDER PIVOT BRACKET	143	1/2 x 1 1/4 ALUMINUM 2024 T351	1	5.95/Lb	G.A.L.	7269-8	A
	PIN	144	1/4 DIA. x 1 1/4 LONG	1	.28	MAIN TOOL SUPPLY		

SOLENOID LOCKING UNIT (RG-0003N)

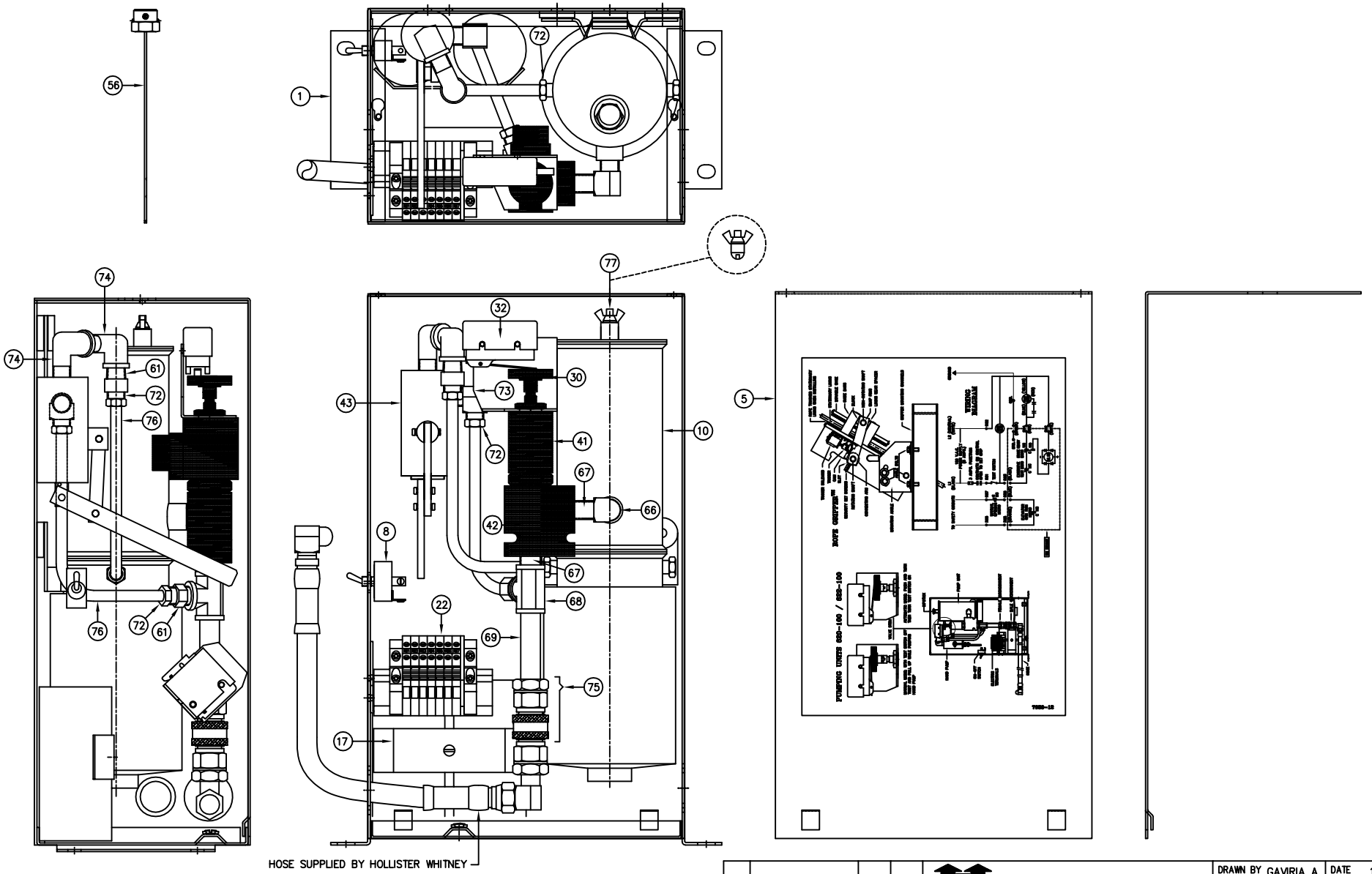
NOTES	DESCRIPTION	ITEM No.	SPECIFICATIONS	AMOUNT	COST $	SOURCE	DRAWING	REV.
SUPPLIED WITH MICROSWITCH SOLENOID MT'G. BRACKET H.W. 620-050	LOCK PLATE	102	# 11 GAUGE C.R.S.	1		G.A.L.	7949	B
	COIL FRAME	103	# 11 GAUGE C.R.S.	1				
	NYLON BUSHING	104	10L-2FF	1	.22	KAMAN IND. TECH		
	NYLON BUSHING	105	3L-2FF	1	.14			
	COIL	106	# 9432 13000 T. 36 W. 110 VDC. 1430 OHMS COIL RESISTANCE COLD 1000 AMPERE-TURNS	1	3.56	MAGNETIC COILS		
	SCREW	107	6-32 x 5/16 LONG PAN HEAD SCREW	1		UNEEDA		
	ARMATURE	108	5/8 DIA. C.R.S.	1		G.A.L.		
	ARMATURE WASHER	109	# 16 GAUGE C.R.S. GALVANIZED	1		IND. RIVER & WASHER		
	SCREW	110	10-32 x 3/8 LONG SOCKET HEAD CAP SCREW	1		UNEEDA		
	STUD	111	3/16 DIA. ALUMINUM ROD	1		G.A.L.		
	NUT	112	10-32 THREAD	1		UNEEDA		
	CHAIN LINK HOLDER	113	1/4 x 1" ALUMINUM	1		G.A.L.		
	CHAIN LINK HOLDER	114	1/2 x 1/2 BRASS	1				
	CHAIN	115	RS40NP CONN. W/SPRING CLIP C2040NP OFFSET LINK	1	2.16	U.S.T.		
	CHAIN HOLDER MOUNTING SCREWS	116	10-32 x 1/2 LONG SOCKET HEAD CAP SCREW	2		UNEEDA		
	NYLON SPACER	145	5/16" O.D. x 3/16" I.D. x 1/8" THICK	1	.05	MCMASTER-CARR		

HOLLISTER WHITNEY ROPE GRIPPER

PARTS LIST FOR UNIT RG-0006N, PART OF RG-0005N

7949-4-2

REV. G



REV	DESCRIPTION	DATE	ECN
C	NEW BOX DESIGN AND TERMINAL BLOCK	12-13-04	
B	UPDATED PUMP VALVE AND HAND PUMP HANDLE	11-01-04	
A	DIP STICK REDESIGNED	5-02	

G.A.L. MANUFACTURING CORP.
50 E. 153rd STREET BRONX, N.Y. 10451

H.W. ROPE GRIPPER PUMPING STATION
ASSEMBLY UNIT 622-100

DRAWN BY	GAVIRIA A.	DATE	10-19-98
ENGINEER	ALVAREZ A.	SHEET	OF
SCALE	3/8	SIZE	
PART No.	RG-0008N		REV
DOCUMENT No.	7950-15		C

PUMPING UNIT 622-100 (RG-0008N) IS PART OF RG-0001N AND RG-0005N (ASS'Y. DWG. 7950-15 – WIRING DIAGRAM 7950-12)

SUB-ASSEMBLY	DESCRIPTION	ITEM No.	SPECIFICATIONS	AMOUNT	COST $	SOURCE	DRAWING	REV.
	SIDE WALL	1	# 16 GAUGE C.R.S., GALVANIZED	1		G.A.L.	7950-1	
				1		G.A.L.		
	BOTTOM COVER	--	# 16 GAUGE C.R.S., GALVANIZED	1		G.A.L.	7950-2	
BOX ITEM No. 1 DWG. 7950								
	CUP WASHER	3	# 8	1		STIMPSON		
	GROUND SCREW	4	8-32 x 5/16 LONG HEAD PAN SCREW	1		UNEEDA		
	BOX COVER	5	# 16 GAUGE C.R.S., GALVANIZED	1		G.A.L.	7950-20	
	COVER MOUNTING SCREWS	6	8-32 x 5/16 ROUND HEAD STEEL PLATED SCREW	2		UNEEDA		
	DISCONNECT SWITCH	8	82600	1	1.70	NEWARK ELECTRONICS		
	SWITCH WIRE	9	# 18 GAUGE AWG BLACK SOLID WIRE x 11" LONG	2	.02/FT	CENTRAL ELECTRIC		
	MOTOR AND RESERVOIR	11	HYPAC 1/4 PIPE BM # 21010196	1		HOLLISTER WHITNEY		
RESERVOIR UNIT ITEM No. 10	WOOD SPEED T NUTS	12	1/4-20 # 142054	3	.035	UNEEDA	7950-7	
	LOCK WASHERS	13	1/4	3				
		14						
	RESERVOIR MOUNTING SCREWS	15	1/4-20 x 5/8 LONG HEX. HEAD CAP SCREW	3				
	HYDRAULIC OIL	16	R & O 46		3.95/Gal	TEXACO		
CAPACITOR UNIT ITEM No. 17	CAPACITOR MOUNTING BRACKET	18	# 14 GAUGE C.R.S.	1		G.A.L.	7950-3	
	CAPACITORS	19	PHILLIPS 124-149 MFD 250 VAC	2		HOLLISTER WHITNEY		
	CAPACITOR MOUNTING SCREW	20	10-32 x 2 1/2 LONG ROUND HEAD SCREW	1		UNEEDA		
	LOCK WASHER	21	# 10	1				
	TERMINAL MOUNTING BRACKET	23	# 14 GAUGE C.R.S.	1		G.A.L.		
	TERMINAL BLOCK W/DIN RAIL	24	ENTRELEC #T7030399	1	6.40	BENFIELD ELECTRIC SUPPLY		
TERMINAL BLOCK UNIT ITEM No. 22	TERMINAL BRACKET MOUNTING SCREWS	25	8-32 x 3/8 LONG ROUND HEAD SCREW	2				
	TERMINAL BLOCK MOUNTING SCREWS	26	8-32 x 1/4 LONG ROUND HEAD SCREW	2				
	FLAT WASHER	27	# 8	1		UNEEDA		
	LOCK WASHERS	28	# 8	2				
	NUT	29	8-32 THREAD	1				
	MICROSWITCH WIRE	31	# 18 GAUGE AWG BLACK SOLID WIRE x 18" LONG	2		CENTRAL ELECTRIC		
	HIGH TEMP MICROSWITCH (MICS-0017N)	32	BZ-2RW824-A2	1	3.10	I/O CORP.	8713.IDW	
	MICROSWITCH COVER	33	MICROSWITCH COVER	1	.52			
MICROSWITCH UNIT ITEM No. 30	MICROSWITCH MOUNTING BRACKET	34	# 16 GAUGE C.R.S.	1		G.A.L.	7950-8	
	MICROSWITCH MOUNTING SCREW	35	6-32 x 1" LONG PAN HEAD SCREW	2		SCREW AND SUPPLY		
	NUT	36	1/2-20, 3/4 HEX. x 9/32	1		SCREW AND SUPPLY		
	STAR WASHER	37	# 6	3		UNEEDA		
	NUT	38	6-32 THREAD	1				
	NYLON TIE	39	4" LONG	8	.014	CENTRAL ELECTRIC		
DUMP VALVE ITEM No. 40	DUMP VALVE COIL	41	VICKERS 4999788-001	1		HOLLISTER WHITNEY		
	DUMP VALVE	42	VICKERS SV4-68011	1				
	DUMP VALVE BODY	105	VICKERS 20055A	1				
	CYLINDER	44	1 1/2 DIA ALUMINUM 2024 T351	1				
	LEVER PIVOT	45	5/8 DIA. ALUMINUM 2024 T4	1		G.A.L.		
	PISTON	46	3/8 C.R.S.	1				
	"O" RINGS	47	PARKER 2-10	2	.02	GALLAHER FLUID SEALS		
	ROLL PIN	48	3/32 DIA. x 15/16 LONG	1	.005	HOBBS FASTENERS		
HAND PUMP UNIT ITEM No. 43	LEVER ARM	49	3/16 x 3/8 C.R.S.	1		G.A.L.	7950-4	
	HANDLE	50	3/16 x 1/2 H.R.S.	1				
	COTTER PINS	51	REIN-LEITZKE No. 21-01	6	.04	SCREW AND SUPPLY		
	HANDLE PIVOT PIN	52	3/16 DIA. x 19/32 LONG C.R.S.	2		G.A.L.		
	LEVEL ARM PIVOT PIN	53	3/16 DIA. x 7/8 LONG C.R.S.	1				
	BRASS LOCK WASHERS	54	# 10	2		UNEEDA		
	HAND PUMP MOUNTING SCREWS	55	10-32 x 3/8 LONG ROUND HEAD SCREW	2		TOWER		
	STICK	57	1/16 x 1/4 C.R.S.	1		--		
DIP STICK ITEM No. 56	CAP	58	213P-4 (MODIFIED)	1	.73	CENTURY IND. BEARINGS SUPPLY Co.	7950-5	B
	ROLL PIN	59	3/32 x 3/4 LONG	1		--		
	FILTER	60	1/4 x 40" x 36" STYLE F3 FELT	1		--		
RESERVIOR PLUG ITEM No. 77	WING NUT	102	10-32 WING NUT	1		SCREW & SUPPLY		
	RUBBER TUBING	103	3/8 OD x 3/16 ID x 9/32 LG. NEOPRENE WASHER	1		--		
	SCREW	104	10-32 x 5/8 BRASS LONG ROUND HEAD SCREW	1		TOWER FASTENERS		
	MALE CONNECTOR	62	48 IFHD-5-4	2	.67	CENTURY IND. BEARINGS SUPPLY Co.		
CHECK VALVE ITEM No. 61	BALL	63	1/4 DIA.	2	.03	Mc MASTER CARR	7950-6	
	SPRING (SPG-0066N)	64	.016 MUSIC WIRE .246 O.D. 10 TURNS 3/4 LONG	2	.11	TEKA PRECISION		
	SPRING CAP	65	5/16 DIA. BRASS ROD	2		G.A.L.		
	MALE ELBOW	66	2491 FHD-5-4	1				
	CLOSE NIPLE	67	215PN-4	3				
	UNION TEE	68	1203P-4	1				
	LONG NIPLE	69	215PNL-4-25	1				
BRASS FITTINGS 1/4 PIPE						CENTURY IND. BEARINGS SUPPLY Co.		
	CAP	71	213P-4	1	.73			
	NUT	72	41 IF-5	4	.31			
	90° STREET ELBOW	73	2202P-4-4	1	1.11			
	90° STREET ELBOW	74	1202P-4-4	2	1.36			
	SNAPTITE COUPLING	75	1/4 VHC-44F	1		HOLLISTER WHITNEY		
	TUBING	76	.032 WALL 5/16 O.D. x 8" LONG FLARED COPPER TUBING	2		Mc MASTER CARR	7950-9	

REV	DESCRIPTION	DATE	ECN
H	ITEM NO. 41 & 42 REVISED, ADDED ITEM NO. 105	3-16-05	
G	ITEM NO. 77 ADDED, ITEM NO. 24 REVISED	1-20-05	
	ITEM NO. 78 REMOVED, ITEM NO. 72 QTY. CHG.		
F	ITEM NO. 50 REVISED	12-13-04	
E	ADDED ITEM 36	6-22-04	
D	EXTRUSION FOR GROUND ADDED		
	ITEM NO. 2 REMOVED.	2-5-03	
C	ITEM 57 MATERIAL REVISED	11-27-02	
B	COST COLUMN ADDED	5-28-02	
A	DIP STICK REDESIGNED	5-6-02	
1	MAKE ITEM NO. 32 HIGH TEMP & UPDATED STYLE	4-26-06	137

H.W. ROPE GRIPPER PUMPING STATIONS
PARTS LIST FOR UNIT 622-100

DRAWN BY GAVIRIA A.
ENGINEER VARON J.
DATE 3-23-99 SIZE B
SHEET 1 OF 1 SCALE 1=1
PART # RG-0008N

G.A.L. MANUFACTURING CORP.
50 E. 153rd STREET, BRONX, N.Y. 10451
PHONE: (718) 292-9000, FAX: (718) 292-2034
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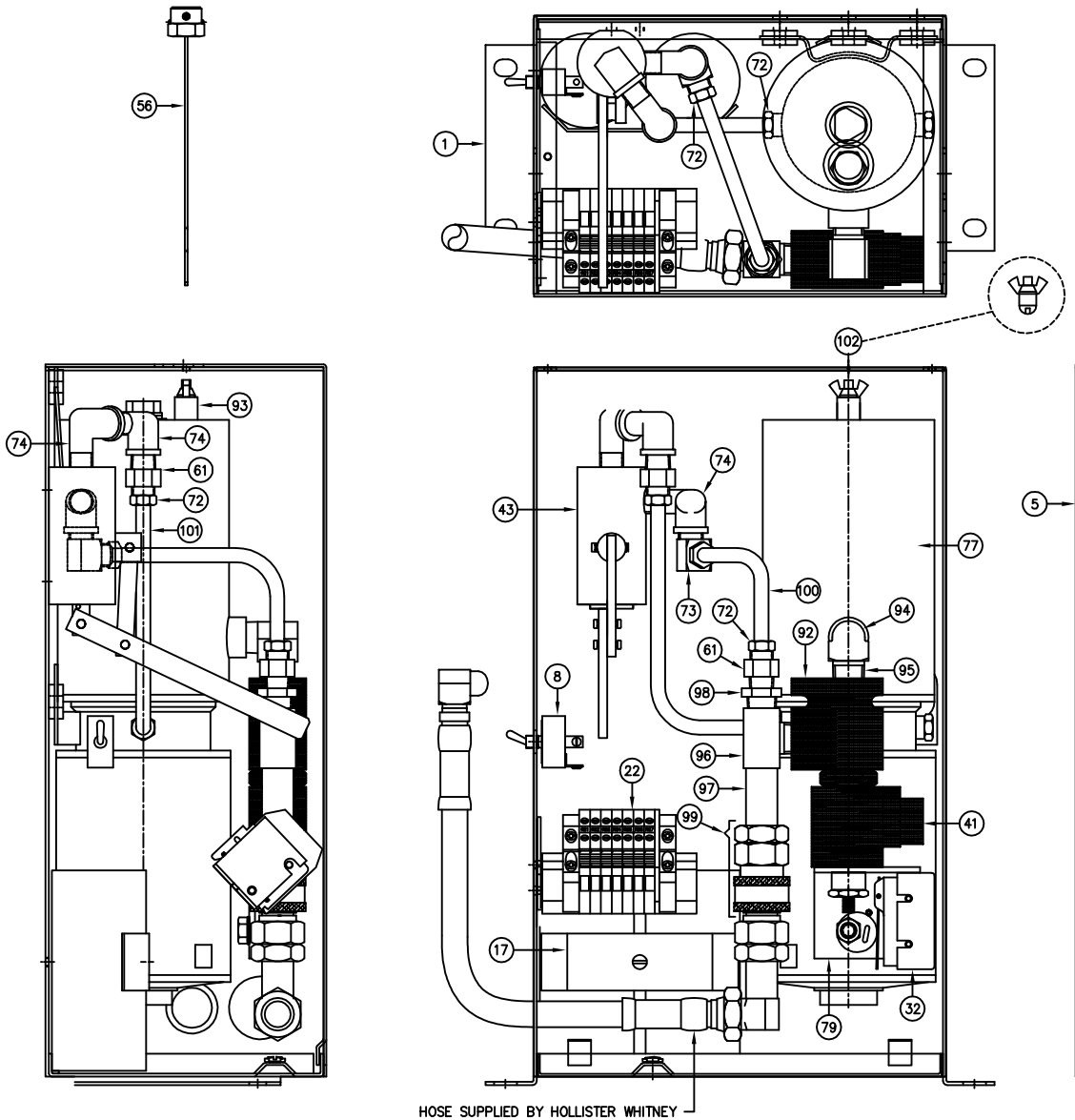
DOCUMENT No. 7950-18 REV 1



REV	DESCRIPTION	DATE	ECN
D	NEW BOX DESIGN AND TERMINAL BLOCK	12-21-04	
C	UPDATED HAND PUMP HANDLE	11-08-04	
B	DIP STICK REDESIGNED	5-6-02	
A	MICROSWITCH NUT MODIFIED	1-18-00	

G.A.L. MANUFACTURING CORP.
50 E. 153rd STREET BRONX, N.Y. 10451

H.W. ROPE GRIPPER PUMPING STATION
ASSEMBLY UNIT 626-100

DRAWN BY HARPER M.	DATE 10-19-98
ENGINEER HARPER M.	SHEET OF
SCALE 3/8	SIZE
PART No. RG-0009N	REV D
DOCUMENT No. 7950-16	

PUMPING UNIT 626-100 (RG-0009N) IS PART OF RG-0002N (ASS'Y. DWG. 7950-16 – WIRING DIAGRAM 7950-13)

SUB-ASSEMBLY	DESCRIPTION	ITEM No.	SPECIFICATIONS	AMOUNT	COST $	SOURCE	DRAWING	REV.
BOX ITEM No. 1 DWG. 7950	MOUNTING ANGLE	--	# 11 GAUGE C.R.S.	2		G.A.L.	7270-1	
	SIDE WALL	--	# 16 GAUGE C.R.S.	1		G.A.L.	7950-1	
	TOP COVER	--	# 16 GAUGE C.R.S.	1		G.A.L.	7950-2	
	BOTTOM COVER	--	# 16 GAUGE C.R.S.	1				
		2						
	CUP WASHER	3	# 8	1		STIMPSON		
	GROUND SCREW	4	8-32 x 5/16 LONG HEAD PAN SCREW	1		UNEEDA		
	BOX COVER	5	# 16 GAUGE C.R.S.	1		G.A.L.	M7299-3	A
	COVER MOUNTING SCREWS	6	8-32 x 5/16 LONG BINDING BRASS SEMS W/FLAT WASHER	2		P & R		
	RUBBER GROMMET	7	AN 931-10-14	1	.11	S.D. CHRISTIE ASSOC.		
	DISCONNECT SWITCH	8	82600	1	1.70	NEWARK ELECTRONICS		
	SWITCH WIRE	9	# 18 GAUGE AWG BLACK SOLID WIRE x 11" LONG	1	.02/FT	CENTRAL ELECTRIC		
RESERVOIR UNIT ITEM No. 77	MOTOR AND RESERVOIR	78	HYPAC 3/8 PIPE BM # 2101400	1		HOLLISTER WHITNEY	7950-10	
	WOOD SPEED T NUTS	12	1/4-20 # 142054	3	.035	UNEEDA		
	LOCK WASHERS	13	1/4	3				
		14						
	RESERVOIR MOUNTING SCREWS	15	1/4-20 x 5/8 LONG HEX. HEAD CAP SCREW	3				
	HYDRAULIC OIL	16	R & O 46	--	3.95/Gal	TEXACO		
CAPACITOR UNIT ITEM No. 17	CAPACITOR MOUNTING BRACKET	18	# 14 GAUGE C.R.S.	1		G.A.L.	7950-3	
	CAPACITORS	19	PHILLIPS 124-149 MFD 250 VAC	2		HOLLISTER WHITNEY		
	CAPACITOR MOUNTING SCREW	20	10-32 x 2 1/2 LONG ROUND HEAD SCREW	1		UNEEDA		
	LOCK WASHER	21	# 10	1				
TERMINAL BLOCK UNIT ITEM No. 22	TERMINAL MOUNTING BRACKET	23	# 14 GAUGE C.R.S.	1		G.A.L.		
	TERMINAL BLOCK W/DIN RAIL	24	ENTRELEC #T7030399	1	6.40	BENFIELD ELECTRIC SUPPLY		
	TERMINAL BRACKET MOUNTING SCREWS	25	8-32 x 3/8 LONG ROUND HEAD SCREW	2		UNEEDA		
	TERMINAL BLOCK MOUNTING SCREWS	26	8-32 x 1/4 LONG ROUND HEAD SCREW	2				
	FLAT WASHER	27	# 8	1				
	LOCK WASHERS	28	# 8	2				
	NUT	29	8-32 THREAD	1				
MICROSWITCH UNIT ITEM No. 79	SWITCH WIRE	80	# 18 GAUGE AWG BLACK SOLID WIRE x 14" LONG	1		CENTRAL ELECTRIC	7950-11	
	HIGH TEMP MICROSWITCH (MICS-0017N)	32	BZ-2RW824-A2	1	3.10	I/O CORP.	8713.IDW	
	MICROSWITCH COVER	33	MICROSWITCH COVER	1	.52			
	MICROSWITCH MOUNTING BRACKET	81	# 11 GAUGE C.R.S.	1		G.A.L.		
	MICROSWITCH MOUNTING SCREW	35	6-32 x 1" LONG PAN HEAD SCREW	2		SCREW AND SUPPLY		
	SPACER	36	5/8 I.D. ALUMINUM TUBING	1		G.A.L.		
	STAR WASHER	37	# 6	3		UNEEDA		
	NUT	38	6-32 THREAD	1				
	NYLON TIE	39	4" LONG	8	.014	CENTRAL ELECTRIC		
	ROLL PIN	82	1/8 DIA. x 3/4 LONG	1	.005	HOBBS FASTENERS		
	NUT	83	1/2-20, 3/4 HEX. x 5/32	1		SCREW & SUPPLY		
	STEEL HEX HEAD CAP SCREW	84	5/16-18 x 1 1/4 LONG	1		UNEEDA		
	STAR WASHER	85	5/16 DIA.	1				
	NUT	86	5/16-18 THREAD	1				
	LOCK WASHER	87	5/16 DIA.	1				
	FLAT WASHER	88	5/16 DIA.	1				
	NYLOCK	89	5/16-18 THREAD	1	.016			
	ECCENTRIC CAM	90	# 11 GAUGE C.R.S.	1		G.A.L.	7948	
DUMP VALVE ITEM No. 91	DUMP VALVE COIL	41	VICKERS 4999788-001	1		HOLLISTER WHITNEY		
	DUMP VALVE	92	VICKERS SV3-10-OP	1				
	DUMP VALVE BODY	103	VICKERS 20056A	1				
HAND PUMP UNIT ITEM No. 43	CYLINDER	44	1 1/2 DIA ALUMINUM 2024 T351	1		G.A.L.	7950-4	
	LEVER PIVOT	45	5/8 DIA. ALUMINUM 2024 T4	1				
	PISTON	46	3/8 C.R.S.	1				
	"O" RINGS	47	PARKER 2-10	2	.02	GALLAHER FLUID SEALS		
	ROLL PIN	48	3/32 DIA. x 15/16 LONG	1	.005	HOBBS FASTENERS		
	LEVER ARM	49	3/16 x 3/8 C.R.S.	1		G.A.L.		
	HANDLE	50	3/16 x 1/2 H.R.S.	1				
	COTTER PINS	51	REIN-LEITZKE No. 21-01	6	.04	SCREW AND SUPPLY		
	HANDLE PIVOT PIN	52	3/16 DIA. x 19/32 LONG C.R.S.	2		G.A.L.		
	LEVEL ARM PIVOT PIN	53	3/16 DIA. x 7/8 LONG C.R.S.	1				
	BRASS LOCK WASHERS	54	# 10	2		UNEEDA		
	HAND PUMP MOUNTING SCREWS	55	10-32 x 3/8 LONG ROUND HEAD SCREW	2		TOWER		
DIP STICK ITEM No. 56	STICK	57	1/16 x 1/4 C.R.S.	1		--	7950-5	B
	CAP	58	213P-4 (MODIFIED)	1	.73	CENTURY IND. BEARINGS SUPPLY Co.		
	ROLL PIN	59	3/32 x 3/4 LONG	1		--		
	FILTER	60	1/4 x 40" x 36" STYLE F3 FELT	1		--		
RESERVIOR PLUG ITEM No. 102	WING NUT	103	10-32 WING NUT	1		SCREW & SUPPLY		
	RUBBER TUBING	104	3/8 OD x 3/16 ID x 9/32 LG. NEOPRENE WASHER	1		--		
	SCREW	105	10-32 x 5/8 BRASS LONG ROUND HEAD SCREW	1		TOWER FASTENERS		
CHECK VALVE ITEM No. 61	MALE CONNECTOR	62	48 IFHD-5-4	2	.67	CENTURY IND. BEARINGS SUPPLY Co.	7950-6	
	BALL	63	1/4 DIA.	2	.03	Mc MASTER CARR		
	SPRING (SPG-0066N)	64	.016 MUSIC WIRE .246 O.D. 10 TURNS 3/4 LONG	2	.11	TEKA PRECISION		
	SPRING CAP	65	5/16 DIA. BRASS ROD	2		G.A.L.		
BRASS FITTINGS 1/4 PIPE	CAP	71	213P-4	1	.73	CENTURY IND. BEARINGS SUPPLY Co.		
	NUT	72	41 IF-5	4	.31			
	90° STREET ELBOW	73	2202P-4-4 (2491 FHD-5-4)	1	1.11			
	90° STREET ELBOW	74	1202P-4-4	3	1.36			
BRASS FITTINGS 3/8 PIPE	90° STREET ELBOW	94	2202P-6-6	1	1.68	CENT. IND. BEARINGS SUPPLY Co.		
	CLOSE NIPLE	95	215PN-6	1	.88			
	MALE BRANCH TEE	96	2224P-6	1	2.80			
	LONG NIPLE	97	215PNL-6-20	1	1.23			
	BUSHING	98	209P-6-4	1	.54			
	SNAPTITE COUPLING	99	3/8 VHC-44F	1		HOLLISTER WHITNEY		
	TUBING	100	.032 WALL 5/16 O.D. x 6 1/4 LG. FLARED COPPER TUBING	1	.57/FT.	Mc MASTER CARR	7950-9	
	TUBING	101	.032 WALL 5/16 O.D. x 8 1/4 LG. FLARED COPPER TUBING	1				

REV	DESCRIPTION	DATE	ECN
I	MAKE ITEM NO. 32 HIGH TEMP & UPDATED STYLE	4-28-08	137
H	ITEM NO. 41 & 42 REVISED, ADDED ITEM NO. 103	3-16-05	
G	ITEM NO. 102 ADDED, ITEM NO. 24 REVISED	1-20-05	
	ITEM NO. 93 REMOVED		
F	ITEM NO. 50 REVISED	12-13-04	
E	ITEM No. 2 REMOVED	2-5-03	
D	ITEM 57 MATERIAL REVISED	11-27-02	
C	COST COLUMN ADDED	5-28-02	
B	DIP STICK REDESIGNED	5-6-02	
A	ITEM No. 36 ADDED	1-18-00	

H.W. ROPE GRIPPER PUMPING STATIONS
PARTS LIST FOR UNIT 626-100

DRAWN BY GAVIRIA A.
ENGINEER VARON J.
DATE 3-23-99 SIZE B
SHEET 1 OF 1 SCALE 1=1
PART # RG-0009N

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