



Hollister-Whitney
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Hollister-Whitney Elevator Corporation

Replacement Manual – Outboard “A-Stand” Bearing GL101, GL131, GL171, GL171X, GL130A, GL185 and GL260 Machines





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Special Tools Required

- 1) 4" electric grinder with 1/8" cut-off wheel,
- 2) brass hammer,
- 3) 4X 3/8"-16UNC all-thread rods and 8X 3/8" UNC nuts;
 - a. 7" Length all-thread for GL101 thru GL185
 - b. 9" Length all-thread for GL260
- 4) 1/2" cold chisel,
- 5) bastard file,
- 6) "toaster" oven capable of temperature control to at least 225° F,
- 7) gloves to handle the bearing after heating,
- 8) light machine oil such as 3in1,
- 9) Dial Indicator with Magnetic Stand
- 10) Hoist and the necessary tools to remove the outboard stand from the mounting structure.

Parts You Should Receive

- 1) Sealed Spherical Roller Bearing; HW p/n GL185-090 (SKF #23024-2CS5/VT143C)
- 2) Shaft Retaining (Lock) Ring; HW p/n GL130-092 (Smalley # DNS-120)

BEFORE PERFORMING ANY MAINTENANCE ON THE MACHINE, TAKE ALL THE NECESSARY SAFETY PRECAUTIONS TO IMMOBILIZE THE CAR AND COUNTERWEIGHT DURING THE MAINTENANCE PERIOD TO PREVENT ANY UNINTENDED MOVEMENT THAT MAY RESULT IN INJURY OR DEATH!

BEFORE PERFORMING ANY MAINTENANCE ON THE MACHINE, REMOVE ALL ELECTRICITY FROM THE MACHINE AND BRAKES TO PREVENT ANY UNINTENDED MOVEMENT THAT MAY RESULT IN INJURY OR DEATH DURING THE MAINTENANCE PERIOD!

READ THE ENTIRE REPLACEMENT PROCEDURE BEFORE BEGINNING ANY OF THE STEPS OUTLINED BELOW. CONTACT HOLLISTER-WHITNEY WITH ANY QUESTIONS PRIOR TO BEGINNING THE BEARING REPLACEMENT.





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I. OUTBOARD STAND REMOVAL

- Before beginning bearing replacement, the counterweight will need to be landed and immobilized in the pit, and the car will need to be hung by a suitable hoisting system within the hoist way. All tension must be removed from the hoist ropes.
 - a. Once the car has been suspended, and the tension has been removed from the hoist ropes, remove the traction sheave guard.
 - b. Remove Front (outside) Bearing End Caps - Use an allen (hex) wrench remove (6) Outboard Stand End Cap bolts. (See Figure 1) Remove the outside End Cap (See Figure 2) and slide the inside Bearing Cap against the Rotor/Traction Sheave. Do not remove from machine.
 - c. Mark front side of Outboard Stand. It is important to reassemble the outboard stand with the same side facing out.
 - d. Mark the edge of the feet of the outboard stand on the base fabrication. When you reassemble the machine you will be moving the outboard stand back to this mark.
 - e. Remove Outboard Stand mounting bolts. (See Figure 3)

NOTE: Shims are present under Outboard Stand; take care during the following procedures to mark their location, orientation and quantity accordingly. These shims MUST be replaced in the same locations, to correctly align Outboard Stand to Motor upon reassembly.

- f. Slide Outboard Stand off Base Fabrication and mark shims. (See Figure 4)

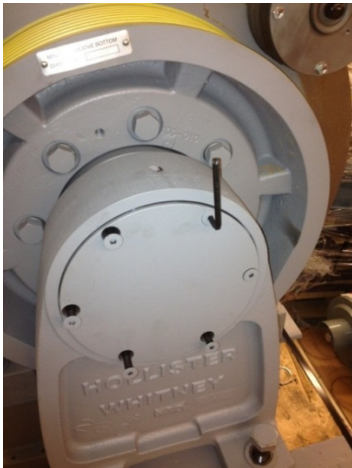


Figure 1



Figure 3



Figure 2



Figure 4



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II. BEARING REMOVAL & REPLACEMENT

- a. Turn on “toaster” oven and set to no greater than 225° F. (Figure 5)



Figure 5

- b. With screwdriver or like tool, carefully pry edge of Shaft Retaining (Lock) Ring out of groove and remove ring. (Figure 6)



Figure 6

- c. With 4” Grinder, cut through outer race of bearing. Note: cut so that sparks are thrown away from Gearless Machine. (Figure 7)



Figure 7

- d. Turn bearing so initial cut is 180° away. (Figure 8)
- e. Make second cut through Outer Race (Figure 9)



Figure 8



Figure 9



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- f. With Brass Hammer, give Outer Race a sharp wrap (Figure 10) to knock Outer Race off. Remove bearing rollers and cages. It may be necessary to cut through cage with grinder.

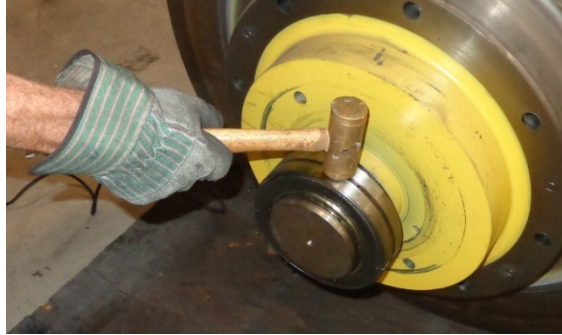


Figure 10

- g. Grind a groove most of the way through the inner race. (Figure 11) Note: Take care not to grind into the Main Shaft.



Figure 11

- h. Place the Cold Chisel in the groove just ground into the inner race. Strike the chisel until the inner race pops apart. (Figure 12) Remove Inner Race, **BUT DO NOT DISCARD**. You may be using the Inner Race later as a Bearing Press.



Figure 12



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- i. If there are any marks on the main shaft that were made during the bearing removal process, file them smooth and remove any burrs from the nose of the shaft (Figure 13).
 - Clean the shaft area where the new bearing and lock ring will be, to remove any metal dust or fragments caused by the bearing removal and subsequent shaft cleanup.



Figure 13

- j. Place a piece of sheet metal in the previously warmed oven and place the bearing on top of the sheet metal. (Figure 14) Allow the bearing to reach approximately 200 to 210° F.



Figure 14

- k. Some care needs to be taken here to be ready to place the bearing on the shaft.
 - Spread a *light coating* of the 3in1 oil (or light machine oil) on shaft where bearing will rest.
 - With heat resistant gloves, remove bearing from oven and line up with end of shaft; it is important to make sure the bearing goes on as straight as possible to avoid the bearing sticking at an odd angle. (Figure 15)
 - The bearing may not go on all the way by hand. If so, use the inner race saved from the previous bearing and a brass hammer to tap the bearing into place. (Figure 16)

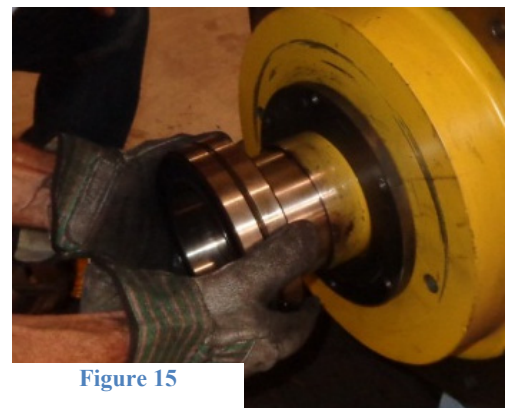


Figure 15



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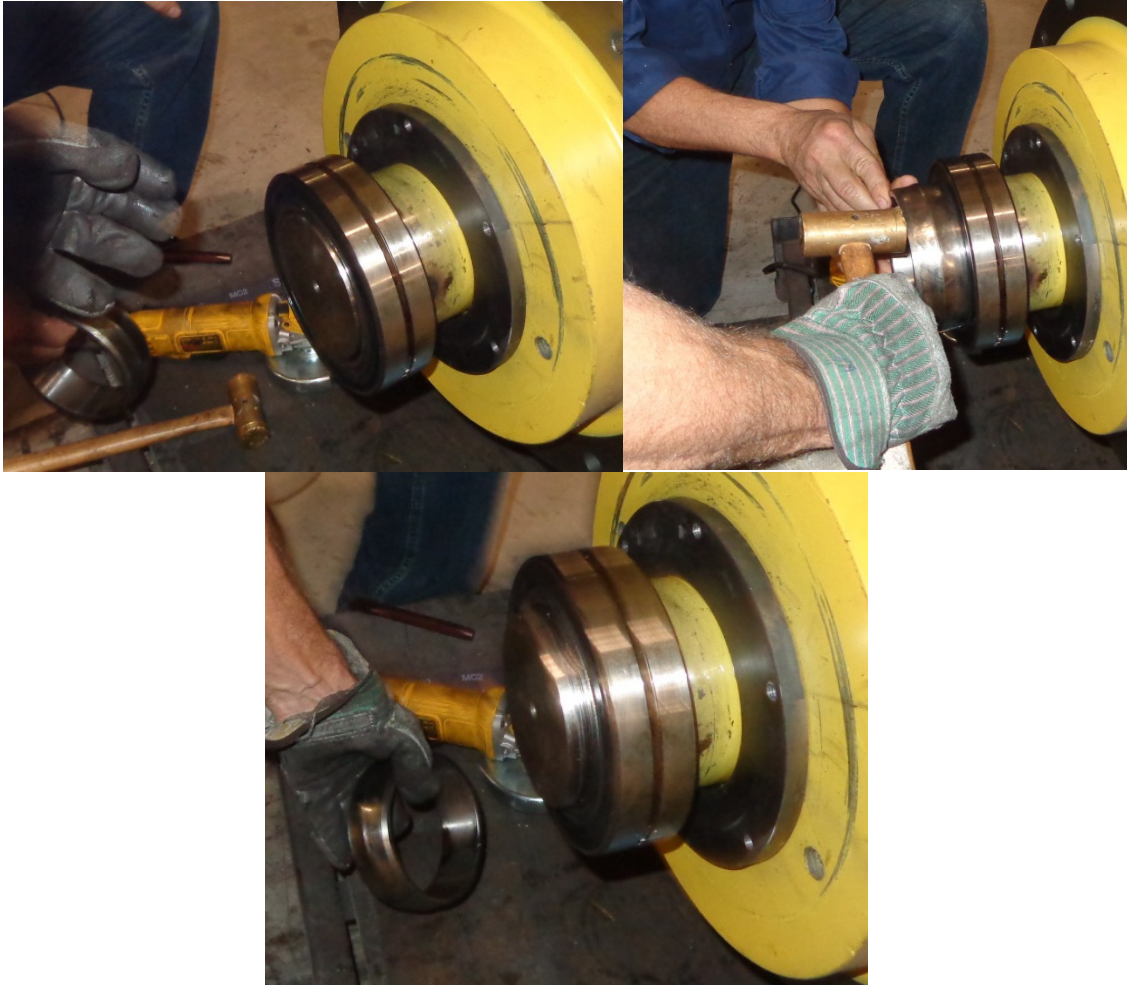


Figure 16

1. Replace Shaft Retaining (Lock) Ring in groove. Make sure Bearing has returned to room temperature before proceeding.

IMPORTANT: Allow Bearing to return to room temperature before attempting to reinstall the outboard stand.



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III. OUTBOARD STAND REASSEMBLY

- a. Run the four 3/8" all thread rods in through the inside bearing cap. Use the rods to push bearing end cap up tight against the bearing/lockring. This will help align the outboard stand and, on some models, hold the bearing straight. (Figure 17)

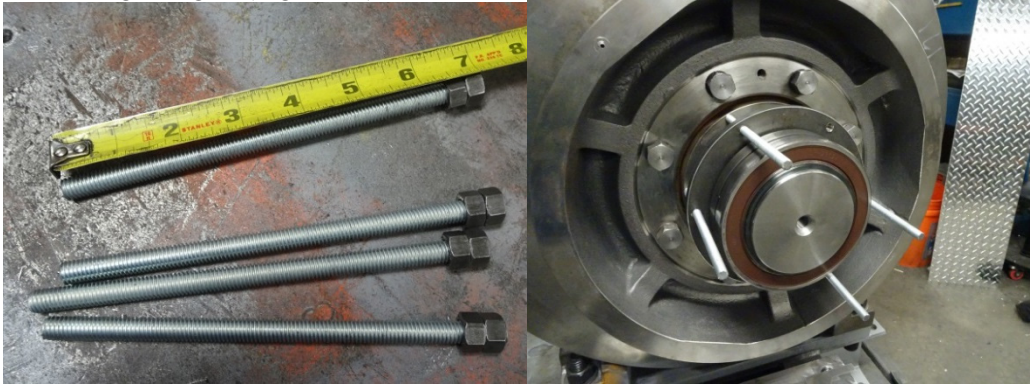


Figure 17

- b. Place marked shims in appropriate positions
- c. Note the Front of the outboard stand and hoist outboard stand onto Base Fabrication. The all-thread rods are in place to help with outboard stand placement and positioning.
- d. Carefully begin sliding the outboard stand onto the machine. Using a pry bar to gently lift the outboard stand, it may be necessary to remove a shim or two from the set under one of the feet. Shim removal will help relieve pressure and help ease the movement of the stand.

When installing Outboard Stand use extreme care when sliding Stand over Bearing so that you don't bind the Outboard Stand Bearing in any way.

- e. **IMPORTANT:** If any shims were taken out in "Step d." above, install them now.
- f. Use a Dial Indicator mounted on a Magnetic Base. Set Magnetic Base on Motor Shaft and rest Indicator against Outboard Stand Bolting rim. Check Outboard Stand is in Alignment with Motor by turning motor by hand. Adjust Outboard stand as necessary and double check final alignment prior to removing indicator. (See Figure 18)



Figure 18



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- g. Tighten Outboard Stand Bolts. (1" Bolts, no less than 575 ft-lbs)
- h. Double check final alignment is within 0.002" and adjust alignment as necessary.
- i. Slide Bearing End Cap against back of Outboard Stand. Install Front Bearing End Cap on Front of Outboard Stand. Bolt End Caps together.

IV. STARTUP

- a. Remove any dirt, grease, rust or other foreign material that may have accumulated on the brake rotor. Use fine sandpaper or emery cloth with light pressure to remove rust from the rotor, taking care to keep the rust and metal dust out of the machine.
- b. Reconnect all machine wiring that was removed.
- c. Verify machine data tag matches all the motor related settings and brake parameters. (See Figure 19)
- d. Briefly run the machine to verify the machine functionality and brake operation.
- e. Return Car and Counterweight to original operating conditions, and run car to confirm successful repair conditions.
- f. Reinstall all guarding.


PM-AC GEARLESS ELEVATOR MACHINE			
MODEL:	CL 100-15H	SER. NO:	304934
HP:	3.9	HZ:	8.9
VOLTS:	180	AMPS:	11.6
RPM:	38.2	POLES:	28
DUTY:	60 MIN	INSUL. CLASS:	F
AMB:	40C / 104F	MACH. WT.:	1340
SPEED:	100 FPM	CAPACITY:	2000
TORQUE:	536 FT/LB	SUSPENSION:	2-1
BRAKE PICK:	103.5 VDC	BRAKE PICK:	1.7 A
BRAKE HOLD:	52 VDC	BRAKE HOLD:	0.86 A
HOLLISTER-WHITNEY ELEVATOR CORP. 			
MADE IN USA			

Figure 19 - Sample Data Tag

V. Warranty and Repair Information

- All parts and equipment manufactured by Hollister-Whitney Elevator Corporation are guaranteed against defects in material and workmanship for a period of one (1) year from the date of shipment. Warranty covers only the repair or replacement of parts, F.O.B. our factory, upon determination by inspection at our factory that warranty is applicable. Equipment and components not of our manufacture are warranted only to the extent of the original manufacturer's warranty. Our warranty specifically does not include any other incidental liability or expense such as transportation, labor, and unauthorized repairs.
- Repair Information can be found at: <https://www.hollisterwhitney.com/support>
 - Bulletin 1156 - Traction Sheave Replacement
 - Bulletin 1157 - Main Shaft Bearing Replacement
 - Bulletin 1158 - Mayr Brakes Service
 - Bulletin 1162 - Gearless Installation/Service Manual
- For free technical support, contact Hollister-Whitney at 217-222-0466 or send an e-mail to info@hollisterwhitney.com