



Hollister-Whitney Elevator Corporation

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





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Table of Contents

- I. Removal of Outboard Stand
- II. Bearing Removal and Replacement
- III. Re-Assembly of Outboard Stand
- IV. Startup
- V. Warranty Information

Special Tools Required

- 1) 4" electric grinder with 1/8" cut-off wheel,
- 2) brass hammer,
- 3) 1/2" cold chisel,
- 4) bastard file,
- 5) "toaster" oven capable of temperature control to at least 225° F,
- 6) gloves to handle the bearing after heating,
- 7) light machine oil such as 3in1,
- 8) Dial Indicator with Magnetic Stand
- 9) 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 Bearing End Caps - Use an allen (hex) wrench, loosen and remove (6) Outboard Stand End Cap bolts. (See Figure 1) Remove End Cap; slide Motor Side Bearing End Cap against Traction Sheave. Do not remove from machine.
 - c. Remove Outboard Stand - Mark front side of Outboard Stand. Loosen and remove Outboard Stand mounting bolts. (See Figure 2)
 - d. Slide Outboard Stand off Base Fabrication. **NOTE:** If shims are present under Outboard Stand, note their location and quantity. These shims **MUST** be replaced in same location, to correctly align Outboards Stand to Motor upon reassembly.

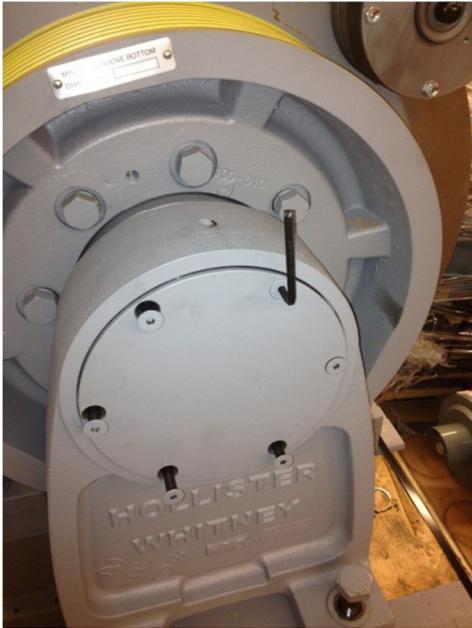


Figure 1



Figure 2

II. BEARING REMOVAL & REPLACEMENT

- a. Turn on "toaster" oven and set to no greater than 225° F. (Figure 3)



Figure 3



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- b. With screw driver or like tool, carefully pry edge of Shaft Retaining (Lock) Ring out of groove and remove ring. (Figure 4)



Figure 4

- c. With 4" Grinder, cut through outer race of bearing. Note: cut so that sparks are thrown away from Gearless Machine. (Figures 5)



Figure 5

- d. Turn bearing so initial cut is 180° away. (Figure 6)

- e. Make second cut through Outer Race (Figure 7)



Figure 6



Figure 7



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- f. With Brass Hammer, give Outer Race a sharp wrap (Figure 8) to knock Outer Race off. Remove bearing rollers and cages. It may be necessary to cut through cage with grinder.



Figure 8

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



Figure 9

- h. Place the Cold Chisel in the groove just ground into the inner race. Strike the chisel until the inner race pops apart. (Figure 10) Remove Inner Race, **BUT DO NOT DISCARD**. You may be using the Inner Race later as a Bearing Press.



Figure 10



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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 11).
 - 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 11

- j. Place a piece of sheet metal in the previously warmed oven and place the bearing on top of the sheet metal. (Figure 12) Allow the bearing to reach approximately 200 to 210° F.



Figure 12

- 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 13)
 - 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 14)

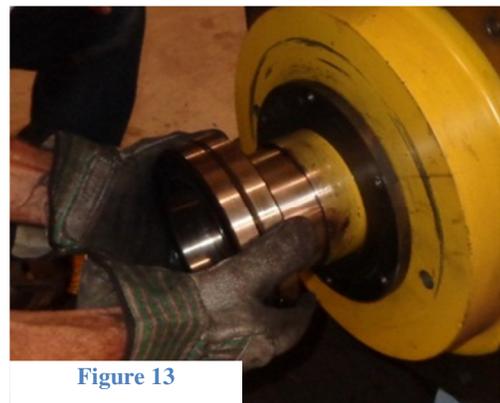


Figure 13



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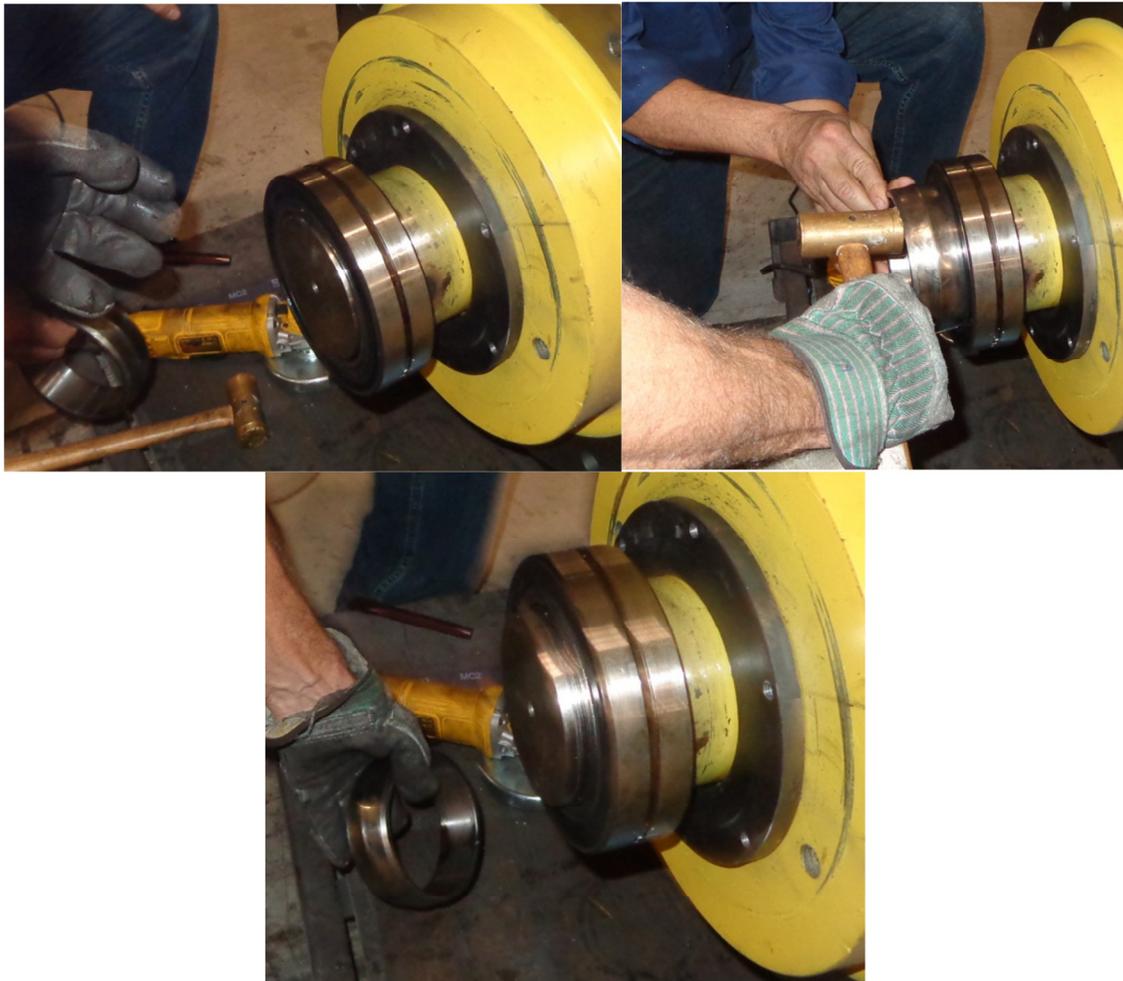


Figure 14

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

III. OUTBOARD STAND REASSEMBLY

- a. Hoist Outboard Stand onto Base Fabrication. Remember to install shims where they were located in Step I.d. **NOTE:** *When re- installing Outboard Stand use extreme care when sliding Stand over Bearing so that you don't bind the Outboard Stand Bearing in any way.*
- b. 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 15)

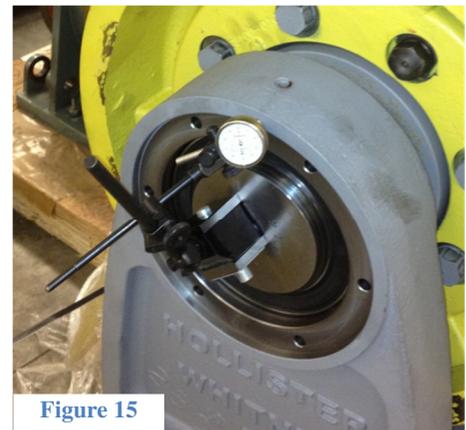


Figure 15



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- c. Tighten Outboard Stand Bolts. (1" Bolts, no less than 575 ft-lbs)
- d. Re-check Outboard Stand is in Alignment.
- e. 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 16)
- 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:	G-100-19H	SER. NO:	30433A
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

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Figure 16 - 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: <http://www.hollisterwhitney.com/#tech-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