



Work Instruction – How to Replace Wrap Pillow-Block Bearings (ELECTRIC)

Preliminary Note:

This work instruction provides a safe and efficient way to replace failed wrap pillow block bearings. A blown bearing can cause additional stress on the wrap arm and further issues if not addressed. Regular inspections, maintenance, and proper installation and alignment are crucial to prevent premature bearing failure.

- **Improper Maintenance or Adjustment:** If bearings are not properly maintained or adjusted, it can lead to excessive wear and tear. For example, incorrect bearing adjustment can restrict movement, causing additional stress.
- **Contamination:** A blown seal can cause dirt, debris, or moisture to enter the bearing, leading to increased friction and wear.
- **Lubrication Issues:** Insufficient or improper lubrication can cause increased friction and heat, leading to premature failure.



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EXAMPLES OF BEARING FAILURE



Tools Needed:

- Hex/Allen key set
- Soft Blow hammer
- 5-lb hammer + Chisel
- Angle grinder with a cut-off wheel
- ½ Impact wrench
- ¾ Deep-well socket with a ½ drive
- ¾ Wrench
- 9/16 Wrench
- 2 ratchet straps
- 4-in x 4-in 10-ft Wood Post
- Floor jack



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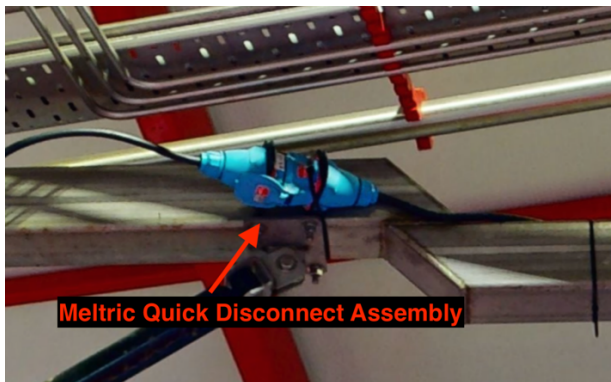
- Anti-seize

Parts Needed:

2" Stainless Steel Pillow Block Bearing (P-M2026-SS) OR 2" Cast Iron Pillow Block Bearing (P-M2026)

Procedure:

1. First, we will need to engage a wash stop.
2. Locate the wrap in question, then isolate power via the overload switch (**MUST BE QUALIFIED + LOCKED-OUT-TAGGED-OUT**) and/or disconnect via the blue Meltric Quick Disconnect on the ladder rack. Then, wait 5 minutes for the VFD to de-energize.



- a. If you do not have a quick disconnect and are **qualified, educated, and understand the danger of 480v high voltage**, Remove the cover from the junction box on the motor.

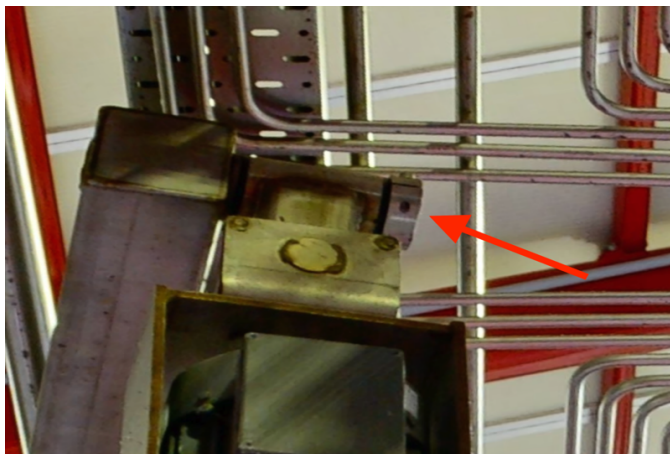


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- b. Take note of the incoming 1 – 3 legs to the 1 – 3 lines of the motor and disconnect them.
 - c. Remove the VFD cable from the motor.
3. Then, remove and unmount the stabilizing shock via the 3/4 bolt.



4. Next, we will need 3 – 4 team members to be able to remove the brush and cage from the arm shaft.
- a. Locate the Lock collar on the end of the arm shaft; loosen the two hex key bolts on both sides until the collar is free and can be removed.

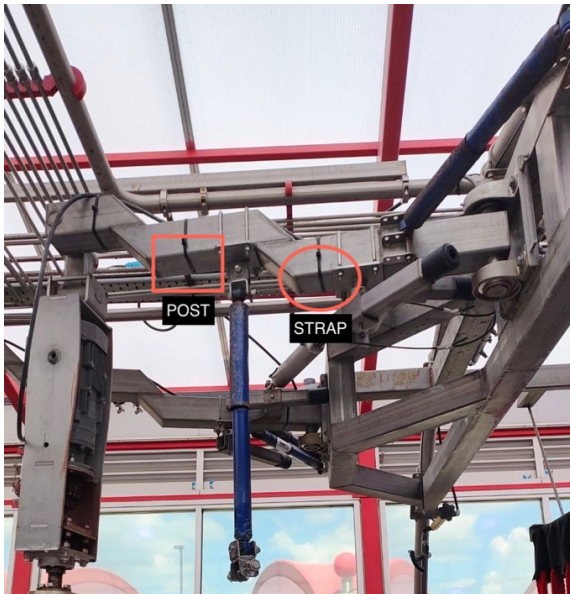




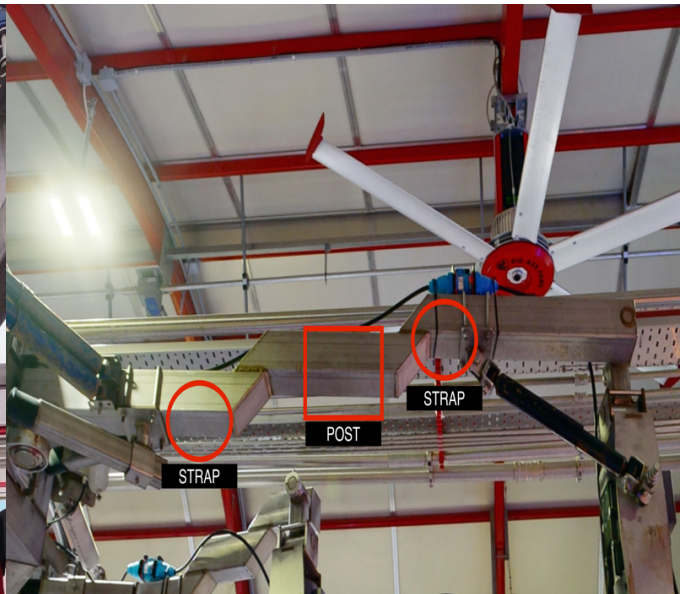
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- b. With the team members holding the wrap brush, begin to slide the cage coupler from the arm shaft; a soft blow may be needed to assist in the removal.
 - c. Lay the motor cage and brush to the side (NOTE: Prepare for the motor cage to be top-heavy and will need extra hands on the cage instead of the brush).
5. Once you have a bare arm, Add the two ratchet straps around the arm and ladder rack. (You will always have them semi-tight to act as a safety net, and they may need to be tightened and loosened during this process.)
6. Place your floor jack underneath the arm and your 4-in x 4-in 10-ft Wood Post onto the jack; raise it so the wood rests firmly on the arm.

DS PLACEMENT

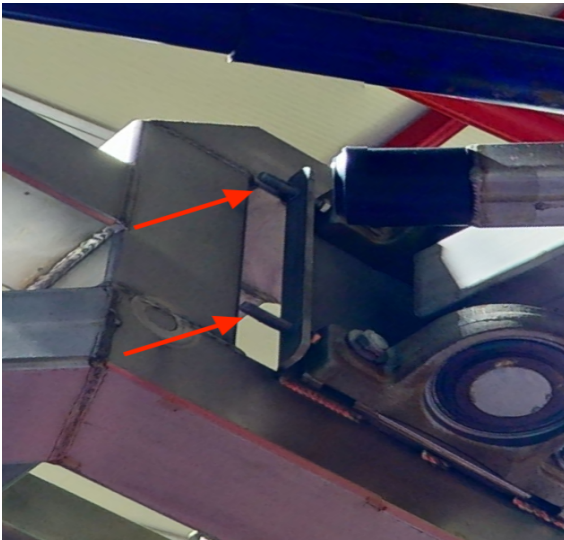


PS PLACEMENT



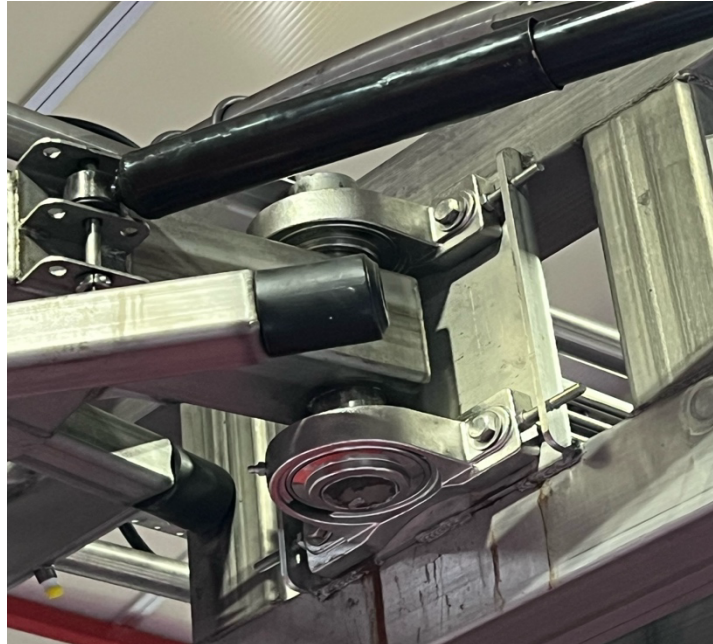


7. Now, we will loosen the left or right side of the set bolts. (Note: If only one side is loosened, the weight adjustment will not need to be done).



8. Then, we will begin with the bottom bearing.
 - a. First, we will confirm our top bearings set screws are tight with a hex key.
 - b. Then, with our impact wrench and $\frac{3}{4}$ wrench, we will remove the bolts holding the bottom bearing in place.
 - c. Loosen the set screws on the bottom bearing with a hex key
 - d. The bearing should come free; if not, you may need to use a 5-lb hammer and chisel to assist in the removal.
 - i. If it is still not free, you may need an angle grinder to remove it. However, be wary of cutting into the shaft of the wrap arm. Any abrasions or damage to the shaft could prevent you from sliding the new bearing onto it.
 - ii. If there is insufficient clearance between the bearing and mount, raise the arm very slightly using the floor jack.

9. Once the bearing is removed, clean and add anti-seize to the arm shaft.
10. Slide your new bearing onto the shaft until the bottom bearing is flush with the bottom of the stub shaft, then tighten the set screws with a hex key.



EXAMPLE:

11. Once the bearing is placed on the shaft, slowly lower the arm via the floor jack until the bearing is against the mounting plate. Insert your 2 $\frac{3}{4}$ hex bolts and semi-tighten them down.
12. Tighten the loose set bolt to its original position, then tighten the $\frac{3}{4}$ bolts holding the bearing.
 - a. The bolts must be fashioned with a lock washer and nut or a nylon lock nut.
13. Then, we will remove the top bearing.
14. We must have your 4-in x 4-in 10-ft Wood Post resting but firm on the arm.



- a. With our impact wrench and $\frac{3}{4}$ wrench, remove the bolts holding the top bearing in place.
 - b. Loosen the set screws on the top bearing with a hex key
 - c. The bearing should come free; if not, you may need to use a 5-lb hammer and chisel to assist in the removal.
 - i. If it is still not coming free, you may need an angle grinder to remove it. However, be wary of cutting into the shaft of the wrap arm. Any abrasions or damage to the shaft could prevent you from sliding the new bearing onto it.
 - ii. If there is insufficient clearance between the bearing and mount, slightly lower the arm using the floor jack.
15. Once the bearing is removed, clean and add anti-seize to the shaft of the arm
16. Slide your new bearing onto the shaft until the bolt holes line up with the mount bolt holes, then tighten the set screws with a hex key.
17. Once the bearing is placed on the shaft, slowly raise the arm via the floor jack until the bearing is against the mounting plate. Insert your 2 $\frac{3}{4}$ hex bolts and semi-tighten them down. Then, remove the floor jack and post.
18. Tighten the loose set bolt to its original position, then tighten the $\frac{3}{4}$ bolts holding the bearing.
19. Once both bearings are tightened down via the set screws, bolts, and the set bolts, remove the ratchet straps from the arm.
20. We will need 3 – 4 team members to be able to lift the brush and cage onto the arm shaft.



- a. Raise the cage and wrap assembly upright, and lift it onto the arm shaft. You will need someone to guide the coupler onto the shaft.
 - b. Then, add the clamp collar to the end of the shaft; tighten each side respectively until it is evenly clamped.
 - c. Reattach the stabilizer shock to the motor cage.
21. Once the Wrap assembly is attached to the arm; reconnect the blue Meltric Quick Disconnect.
 - a. If you do not have a quick disconnect; Reattach the VFD cable to the lines of the motor and securely fasten the cover to the junction box on the motor.
22. With electrical connections secure and correct, turn on the overload switch to the wrap in question.
23. Disengage the Wash Stop.
 - a. We will need to test and confirm that the wrap is operating correctly; Speed, Direction of rotation, and wrap assist are operating properly (weight adjustment).