

Crank Bearings Replacement

Tools Required:

Phillips head screwdriver
9/16-in. socket wrench
9/16-in. open-end wrench
7/64-in. Allen wrench
5/64-in. Allen wrench
3/16-in. Allen wrench
Rubber mallet
Belt tensioner gauge
External Retainer Ring Pliers (13/32-1-in. with 0.51-in. tip diameter)

Remove the front shroud:

1. Using Phillips head screwdriver, remove the eight Phillips head screws from the rear shroud.
2. Lift the rear shroud off the unit.

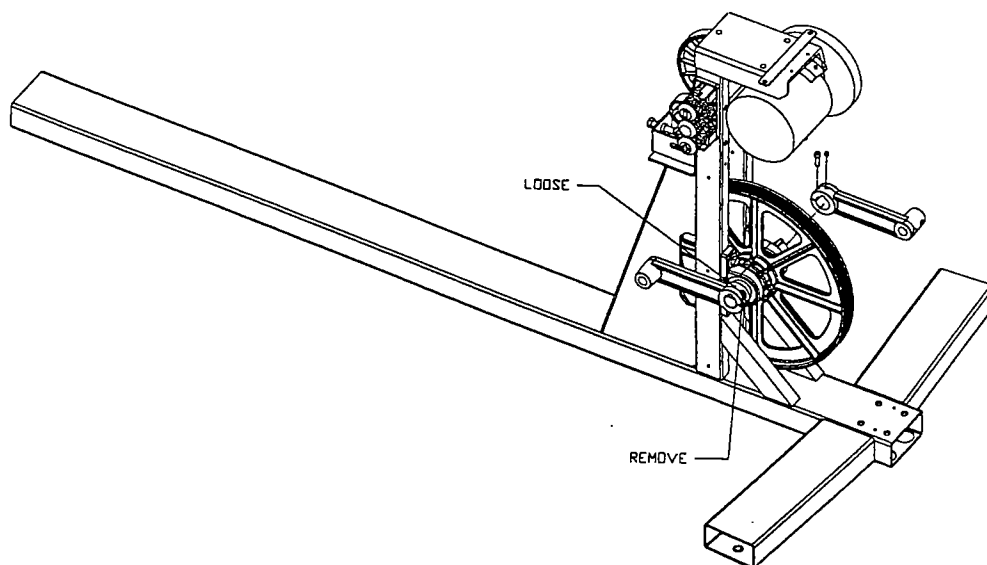
NOTE: Remove ONLY ONE skate rail at a time.

Remove the skate rails from the crank arms:

1. Using 5/32-in. Allen wrench, remove the two Allen screws from the crank arm.
2. CAREFULLY slide the crank arm shaft and two nylon washers out of the skate rail. BE CAREFUL not to lose the two nylon washers.

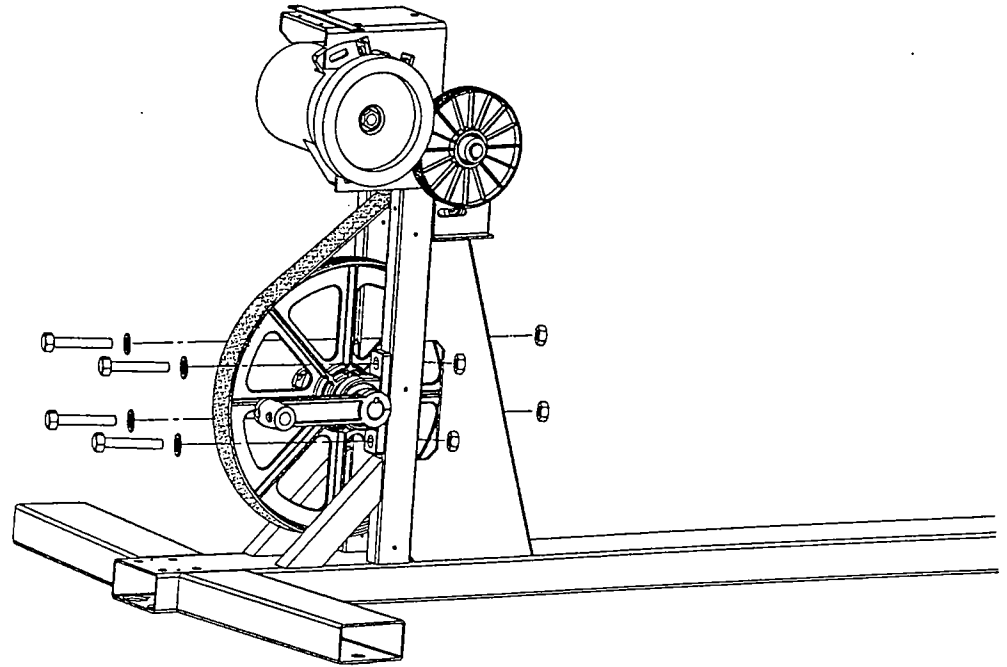
Remove the crank assembly:

1. Using 9/16-in. open-end wrench, loosen the transmission idler tension nut and bolt so the crank belt is completely loose.
2. Using 3/16-in. Allen wrench, loosen the two crank arm Allen screws. GENTLY slide the two crank arms and keys off of the crank shaft. BE CAREFUL not to lose the crank arm keys. See Diagram A1.



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- Loosen the crank belt from the crank pulley. Using 9/16-in. hex head socket wrench and 9/16-in. open-end wrench, remove the four bolts, washers and nuts securing the crank assembly to the frame. CAREFULLY remove the crank assembly from the frame. See Diagram B1.



NOTE: If necessary, GENTLY tap the crank pulley to aid in removing the crank pulley from the crank shaft.

NOTE: If necessary, GENTLY tap the crank pulley keys into place with a rubber mallet.

Disassemble the crank assembly:

- Using 5/64-in. Allen wrench, loosen the Allen screws on the two pillow blocks. GENTLY slide the two pillow blocks off of the crank shaft.
- Using external retainer ring pliers, remove the two retainer rings from the grooves on the crank shaft.
- CAREFULLY remove the crank pulley and the two crank pulley keys from the crank shaft. BE CAREFUL not to lose the two crank pulley keys.

Assemble the crank assembly:

- Install the crank pulley on the crank shaft, aligning the two keyways in the crank pulley with the keyways in the crank shaft.
- GENTLY insert the two crank pulley keys into the crank shaft key slots. DO NOT force the keys into place.
- Using external retainer ring pliers, install the two retainer rings in the grooves on the crank shaft (on either side of the crank pulley).
- Install the two pillow blocks on the crank shaft with the Allen screws facing outward (toward the ends of the crank shaft). MAKE SURE the Allen screws in the pillow blocks align with the flats on the crank shaft.

NOTE: MAKE SURE the crank belt is properly positioned before tightening the crank pulley screws.

5. Using 5/64-in. Allen wrench, tighten the pillow block Allen screws just until snug against the crank shaft. **DO NOT OVERTIGHTEN THE SCREWS.**

Install the crank assembly:

1. Insert the crank assembly through the crank belt and position the crank assembly in place on the frame.
2. Using 9/16-in. hex head socket wrench and 9/16-in. open-end wrench, secure the crank assembly to the frame with the four bolts, washers and nuts. **TIGHTEN THE NUTS SECURELY.**
3. **GENTLY** slide the two crank arms onto the crank shaft, aligning the key slots in the crank arm with the key slots in the crank shaft. Insert the two crank arm keys into the crank shaft key slots.
4. Using a straight edge ruler, line up the crank belt with the transmission idler pulley by adjusting the position of the crank pulley on the crank shaft as needed.
5. Using 7/64-in. Allen wrench, tighten the two crank pulley Allen screws to 80 in.-lbs.
6. Using 5/64-in. Allen wrench, tighten the two pillow block Allen screws to 34 in.-lbs.
7. Using 3/16-in. Allen wrench, tighten the two crank arm Allen screws (securing the crank arms to the crank shaft) to 80 in.-lbs.

Re-tention the transmission pulley:

1. Using 9/16-in. open-end wrench, tighten the transmission idler tension bolt to increase crank belt tension.
2. Using belt tensioner gauge to check crank belt tension, continue to tighten the transmission idler tension bolt to achieve 80 pounds tension.
 - If a belt tensioner gauge is not available, check the crank belt tension by pressing down hard on top of the belt, midway between the transmission idler pulley and the crank pulley. The belt should deflect between 3/8-in.~1/2-in. (9.5~12.5 mm).
3. Once the correct crank belt tension is obtained, tighten the transmission idler tension nut **SECURELY** using 9/16-in. open-end wrench.

Install the skate rails on the crank arms:

1. Install one nylon washer on the crank arm shaft. **CAREFULLY** insert the crank arm shaft through the skate rail, then install the remaining nylon washer on the crank arm shaft.
2. Insert the crank arm shaft through the crank arm.
3. Rotate the crank arm shaft, as needed, until the flats on the shaft are aligned with the holes in the crank arm.
4. Using 5/32-in. Allen wrench, install the two Allen screws in the crank arm. **TIGHTEN THE SCREWS SECURELY.**

NOTE: Install **ONLY ONE** skate rail at a time.