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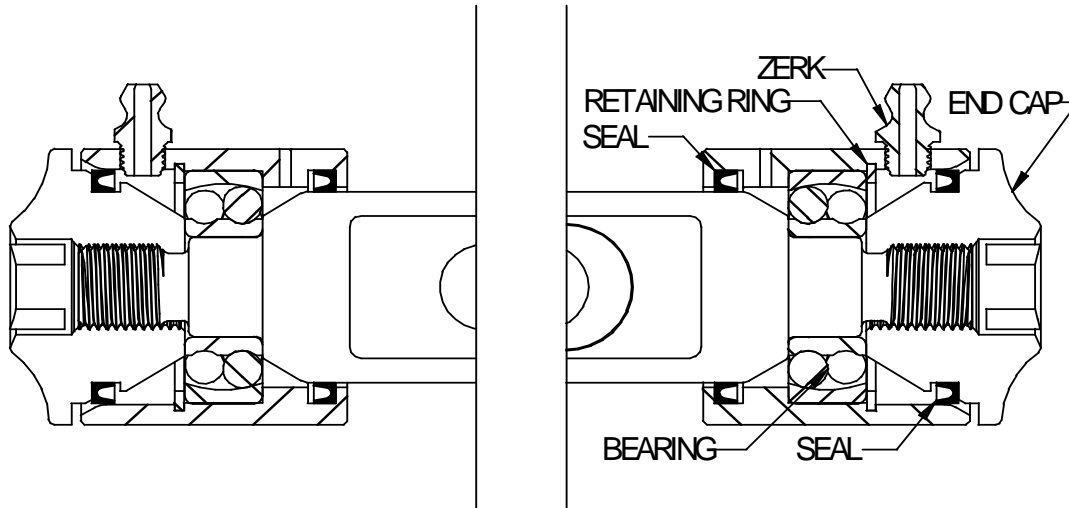
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MAINTENANCE INSTRUCTIONS FOR HOWE PRECISION MAX UPPER A-FRAMES:

WARNING!

- Your new Howe A-Frame is shipped without lubricant. Apply grease prior to use.



PATENT PENDING

Installation

Howe Precision a-frames install like any other cross shaft a-frame. We recommend using grade 8, 1/2" bolt torqued to 120 ft. lbs. for fine thread or 107 ft. lbs. for coarse thread. If you are using an aluminum cross shaft and mounting to a tube or threaded sleeve you will need to install a steel washer between the mount and the a-frame to prevent damage to the cross shaft. To install around a closed end "Tower" type mount you must partially remove the cross shaft (directions below).

Removing the Cross Shaft

1. Remove both of the end caps by turning them counter clockwise with any 1/2" square drive ratchet wrench.
2. Remove one of the grease zerks.
3. On the same side using snap ring pliers, remove the snap ring located behind the cap.
4. Pull the shaft out of the same end which you have removed the snap ring. The near bearing will come out with the shaft.
5. You are ready to install the a-frame or replace the shaft.

Replacing the Cross Shaft

1. With one bearing installed in the a-frame, place the cross shaft through the open end into the bearing. Place the second bearing into the open end.
2. The bearing will most often lock up on the cross shaft before it is all of the way back in. Install the far end cap and hand tighten. This will straighten the far bearing and draw the cross shaft back into place.
3. If the near end bearing does not push easily back in then install the cap and hand tighten to push the bearing back into place. Take the cap back off, install the snap ring and put the cap on a final time.
4. Replace the grease zerk and torque the caps to 30 ft. lbs for aluminum or 40 ft lbs for steel.

Maintenance

With proper maintenance your Howe a-frame will last until you smash it. The a-frame is made with four seals, one on each side of both bearings. By keeping the space between the seals full of grease you are preventing dirt and water from getting to the bearings as well as lubricating them to reduce friction. You may use any grease that has a melting point higher than the temperatures in which it will be used. Add grease via the grease zerk at each end until excess grease is visible in the grease vent hole.

Cross Shaft Types:

There are currently 3 types of cross shafts available; Aluminum with holes, Steel with holes and Steel with Slots and Keys. These are interchangeable and each will fit any Blue Max Precision a-frame. Keys are available in a set of 10 (pn: 22001) that includes 8 different offsets in 1/16" increments, one centered and one slotted.