Tips for Changing Bearings on a Material Handling Blower

What do you need to keep in mind when it's time to change the bearings in your radial blade blower? This article explains.

Radial blade blowers are some of the toughest bearing applications to get correct because the blower is loaded by the normal pull of the drive belts plus the weight of the rotating wheel and shaft. It also has the axial load of the suction on the blower which tries to pull the wheel and shaft towards the blower inlet. The six blades also cause a pulse as they each cross the outlet of the blower which transmits down through the shaft to the bearings. You also can't just oversize the bearings. Doing so typically results in low radial loading of the rolling elements and the rollers or balls skid due to under loading. Skidding results in shortened bearing life.

Here are some issues that our customers have encountered when changing blower bearings:

- **Wrong (Switched) Bearing Type on Each End**: In most but not all cases, a blower has a fixed bearing and an expansion bearing. In most cases, the FIXED bearing goes near the FANWHEEL. The EXPANSION bearing goes near the END of the shaft (the end you can see by the belts). Remember it this way: Fixed = Fanwheel; Expansion=End. Getting the bearings in the wrong position leads to a very short bearing life in most applications. Always check with your blower manufacturer before ordering or changing bearings. Trying to buy local to save a few hundred bucks can result in a bearing fire which can more than offset the savings.

- **Mismatched Bearing Height**: Be sure to use bearings with the same center height to keep the blower blades centered in the position as designed.

- **Fan Won't Balance After Re-Start**: Inspect the blower blades, back plate (front and back side) and fan wheel end of the hub for material build up BEFORE trying to re-balance the blower.

- **Fan Won't Balance After Re-Start**: If you change the drives or take them off and replace them for a bearing change, re-balancing the blower is highly recommended. If the balance machine keeps showing a moving target for the weight, many times the drive pulley is the element that is out of balance. Unless the fan wheel is running 1 to 1 with the motor (both pulleys same diameter), an out of balance pulley will show a moving target on the weight placement.

- **Can't Get New Bearings Back on the Shaft**: Always clean up the shaft with fine grit emery cloth or steel wool before moving the bearings. Also remember to punch down the set screw dimple with the old bearing in place so the bearing slides off without galling the bearing which will gall the shaft as it slides off. Never-Seize (anti-fretting compound) is a good idea to help lube the

shaft. If the shaft is very rusty, cutting the existing bearings off is sometimes the only way to get the old bearings off to minimize the galling when putting the new bearings on. Always use anti-fretting compound under the new bearings.

- **New Bearing(s) Just Went Out Again**: Puhl blowers require #2 NLGI grease. Check with your blower manufacturer for grease specifications. Never grease a bearing that is cold or use cold grease in a bearing. It will cause the rollers or balls to skid and damage the bearing up to and including failure.

- **New Bearing(s) Just Went Out Again**: Most new bearings are pre-greased at the factory, but remember to check with your bearing supplier or bearing instructions before greasing to avoid over greasing or installing without any grease.

It's difficult to change the blower wheel and shaft. For medium and large size blowers (17" inlet diameter and above), we offer a split scroll/clam shell design upgrade to help the maintenance department access the wheel. It adds about 15% to the cost of the blower up front but can save hours of downtime if the wheel needs replaced.

Questions about blowers in particular or your pneumatically-conveyed waste collection system in general? Just give us a call at 615.230.9500 or email us at sales@gfpuhl.com.