January 2015

PHOENIX PULLEYS BEARINGS & BELTS

Toll Free 1.800.776.9315 or Fax 1.866.572.6772

Monday-Friday 8:00AM-5:00PM EST

Closed all major holidays

www.phoenix-mfg.com

Safety Tips

Before inspecting or changing belt drives, turn the equipment off and lock the controls if possible.

Never try to pry or roll belts into the pulley groove. Your hand could be pinched between belt and pulley.

Always install guards before operating equipment to keep hands or clothing from being caught in the drive.

Never operate belt drives above recommended speeds because serious damage to personnel or equipment could result.

Do not operate equipment where pulleys and belts are badly out of alignment. The belt could slip off the pulley.

Wear gloves to avoid cutting fingers on sharp metal edges when inspecting or changing belts or pulleys.

Installing Belts and Pulleys

The procedures outlined in your equipment service manual should be followed carefully. The following tips may also be helpful:

- Remove dust, dirt, grit, and rust. If an idler is involved, make sure it turns easily.
- Remove any buildup of paint or rust in the pulley grooves to prevent belt slippage and belt wear.
- Replace pulleys that show wear along the sides. This can result in increased slippage and shorter belt life.
- Replace all old belts with new belts of the same make or brand so the loads will be equally distributed.
- Move the pulleys closer together by adjusting the drive tension adjuster, or move the take-up idler pulley out of the way so the belt will simply slip into place.
- Check pulley and belt alignment using straightedge against outside edges of both pulleys. All edges of both pulleys should touch the straightedge.

After the belts are installed, take up the slack with the adjustment until the belts are snug. Belts should be just tight enough to prevent them from slipping under full load. Do not over tighten. Belt tension should be re-checked after about 15 minutes of operation. If necessary re-tighten belts.

Maintaining Belt / Pulley Drives

Misalignment will cause wear on the sides of v-belts.

Vibration during operation can cause belts to turn over.

Store equipment with belts inside or under cover to protect from weather which causes belts to get dry and hard, resulting Premature wear.

Never use belt dressing which tends to collect dirt resulting in premature wear.

A squeal or chirp noise indicates belt slippage, possibly caused by improper tension or dirt in the pulley groove.

The sound of belts slapping against the guard could be caused by improperly placed guard, loose belts or excessive vibration.

Using Idlers

Idlers are used to take up slack, change direction of transmission, or for clutching action.

Idler failure usually occurs when the bearing fails due to lack of lubrication or foreign particles. Idlers with precision ground double sealed bearings usually will last longer than other types.

Use bushings to reduce idler bores. If bushing is too tight to insert by hand, gently tap with hammer USING SUPPORT UNDER INNER RACE OF BEARING. Bushings are available with or without shoulders. If bushing is loose in bore, use Loctite or make a scratch mark on bushing with file.

Selecting Pulley Types

Cast iron and machined steel bar stock are recommended for heavy duty applications. Stamped steel is commonly used with outdoor power equipment and lawn & garden equipment. Use die cast in light duty applications.

Use A type pulley with A or 4L (1/2” wide) belts Use B type pulley with B or 5L (5/8” wide) belts. Combination groove pulleys can be used in many applications, but not all. The A/B type can be used with B or 5L and A or 4L belts.

Smaller size belts will run deeper in groove.

Determining Pulley Sizes

When retrofitting or designing a new pulley drive it is important that the equipment operate at the recommended speed. The pulley size ratio determines the speed ratio.

First determine the speed at which the equipment should be operated. Look at the name plate or contact the equipment dealer or manufacturer.

Next determine the engine or motor recommended operating speed, often marked on the name plate or in the instruction manual.

Using this formula, or the chart below, find the pulley sizes needed to obtain the desired equipment speed:

Engine Pulley Dia. X Eng. Speed =
Equip. Pulley Dia. X Equip. Speed

When both pulley sizes need to be determined, start with any practical pulley size and then calculate what the other size should be.

When a pulley size is changed, a different length belt will be needed. The belt length is determined by adding the diameter of the two pulleys and multiplying this sum by 1.6. Add double the distance between shaft centers to this sum to get the approximate belt length.