Installation, Operation & Maintenance – K-Conveyor Pulleys

Kinder Australia product:	K-Conveyor Pulleys
Product category:	Conveyor Pulleys & Lagging
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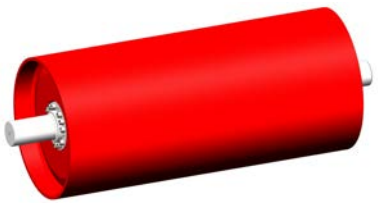
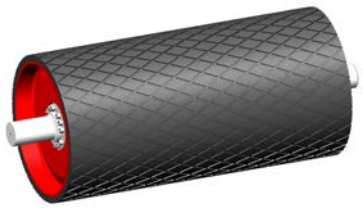
Revision:	3

Overview:

K-Conveyor Pulleys are specially designed for use on bulk product belt conveyors. Pulleys can be engineered and constructed to suit your specific application. The shells are normally made from heavy wall pipe but can also be rolled to suit specific requirements. Stainless steel pulleys are also available.





Procedure:

CHECKS PRIOR TO INSTALLATION

1. Check to see if pulley shell is central between bearings.

2. Check structure mounting holes centres are correct and match the pulley shaft support mount centres.

3. Check that lagging (if fitted) is not damaged; in the case of drive pulleys with grooved herringbone lagging, the lagging is correctly installed with the point of the vee in the direction of the belt travel.

4. Check all bolts, keys (if fitted) are secure.

If any faults show from these checks, they should be corrected before installing the pulley.

If the pulley shell is not central between bearings or the structure is incorrect, adjustment can be made to live shaft pulley assembly by releasing the bearing on the shaft and re-locating to suit.

This adjustment is minimal and care must be taken to ensure the correct reassembly of the bearing in the housing making sure the bearing is locked and correct clearances are maintained.

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WARNING: NEVER OPERATE, ADJUST, OR INSTALL EQUIPMENT ON A MOVING CONVEYOR!

Before beginning installation or maintenance of any conveyor component, make sure to isolate, lock and danger tag the conveyor at the main positive isolator (in accordance with the appropriate occupational health and safety regulations) to prevent unauthorised starting.

INSTALLATION:

Lagged pulleys are sometimes supplied with protective wrapping around the shell. **DO NOT REMOVE** until after assembly to the structure.

Some installers choose to leave protective wrapping on until belt is pulled on also.

LIFTING:

Only use fabric slings or specially designed lifting frames. Always ensure sling will not press against the edge of the pulley shell or lagging. Lifting of the pulley should never take place from the shaft extensions or any part of the bearing housings.

DO NOT USE CHAINS OR WIRE SLINGS.

ALIGNMENT:

When assembling the pulley to the structure the pulley must be:

1. Central about the conveyor centre line.

2. Horizontal and level across the pulley face.

3. The axis of the shaft **MUST BE** at 90 degrees to the conveyor centre line.

NOTE: Drive pulleys with grooved herringbone lagging must be installed with the lagging pointing in the direction of the belt travel.

SECURING:

After installation it is recommended that the bearing housing or shaft support bracket be locked into position by dowelling, or other approved method, to prevent any movement when the belt tensions are applied.

FINAL INSPECTION:

1. Remove any protective coverings.

2. Check bearings and seals run smoothly.

3. Cover external surfaces of compression hubs or locking assemblies with approved long life anti-corrosive protective.

4. Touch up any damaged paint surfaces and apply anti-corrosive coating to any exposed shafting.

STORAGE INSTRUCTIONS

If the pulley is not to be installed on delivery, careful storage must be undertaken to ensure the assembly is not degraded.

i) Pulleys should be stored protected from the elements.

- Rubber covered pulleys should not be stored in direct sunlight or enclosed with operating electrical equipment.

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ii) Pulleys with roller or ball bearings should be isolated from ANY vibration. Storage in machinery rooms or on concrete slabs, which extend into vibrating areas, will lead to brinelling of the bearings and early failure in service.

- Frequent rotation of bearing or pulley if pulley is supported by the bearings will minimise the risk of brinelling.

- Recommended storage is by the shaft with the bearing free to rotate.

iii) Bearing housings to be stored with 100% grease fill.

As standard, pulleys supplied with bearings fitted are greased ready for operation, with Shell Gadus S2 V100 2. Additional grease will need to be added to the bearings of these pulleys prior to storage.

Bearing can be supplied ready for storage upon requested. All pulleys supplied with bearings that are ready for storage will be tagged as such.

Grease must be purged and refilled according to the initial grease fill recommendations on page 4 before operation. Where pulleys are supplied without the bearings and housings fitted, these must be fitted to the pulley shaft in accordance with the bearing manufacturer's instructions.

iv) Pulleys should be inspected at least annually to ensure the bearings remain charged with sufficient grease, that the lagging remains in good condition and that the protective coating is also in good condition.

- Any evidence of grease discharge from the bearings should be investigated and remedied. (See maintenance section of this manual).

- Replace / repair protective coating as required.

MOUNTING SNL HOUSINGS WITH TACONITE SEALS

Before starting installation work, the following instructions should be care-fully read.

1. Ensure that the environment is clean. Check the dimensional and form accuracy of the shaft seating.

2. Check that the surface roughness of the support surface Ra ≤ 12,5 µm. The flatness (planicity) tolerance should be to IT7. For moderate demands IT8 may be satisfactory.

3. If the bearing is mounted on an adapter sleeve, determine the position of the housing. The grease nipple arranged at one side of the housing cap (for improved lubrication) should be at the side opposite to the sleeve nut. Where housings are mounted at shaft ends, grease should be applied at the end cover side. It is necessary to consider the complete housing as the base and cap will only fit together as supplied.

4. Position the housing on the support surface. Fit the attachment bolts but do not tighten them

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5. Mount the first V-ring together with one labyrinth seal on the shaft in the correct position. The lip of the V-ring should point towards the bearing. Place the split ring over the V-ring and labyrinth ring and screw together. The two parts of this split ring are not inter-changeable. They should be checked to see that they carry the same identification.

6. Mount the bearing on the shaft – either directly on a stepped shaft or using an adapter sleeve. Completely fill the bearing with grease either via annular groove and lubrication holes in the outer race or packed from the side. The remainder of the recommended grease quantity is dependent on the method used to pack the bearing (see table below) and should be put in the housing base at the sides.

Bearing Fill Method	**Housing Initial Grease Fill (% Bearing Housing Free Space)**
Annular Groove and Lubrication Holes in Outer Race	20%
Hand Packed from Side	40%

7. Mount the second seal according to point 5. If the housing is to be used at a shaft end, the second seal is omitted, and an end cover inserted in the housing base instead.

8. Use the hollow O-section cord to fix the labyrinth ring in position on the shaft. A screwdriver can be used to fit the cords whilst rotating the shaft. Mount the O-ring on the seal outer diameter.

9. Lay the shaft with bearing and seals in the housing base taking care that the O-rings are not damaged.

10. Put one locating ring (when needed) at each side of the bearing.

NB. Locating rings are only used for locating bearing arrangements, except for CARB bearings which, although always non-locating, must always be mounted with locating rings.

11. Carefully align the housing base. Vertical markings at the middle of the side faces and ends of the housing base can facilitate this. Then lightly tighten the attachment bolts.

12. The housing cap should be placed over the base and the cap bolts (to join cap and base) tightened to the torque.

The cap and base of one housing are not interchangeable with those of other housings. The cap and base should be checked to see that they bear the same identification.

13. Fully tighten the attachment bolts in the housing base. Recommended tightening torques are given.

14. Finally, before the first test run, rotate the shaft and supply grease via the nipple until it exudes from the labyrinth rings. The same grease as that used for the bearing should also be used to lubricate the labyrinth rings.

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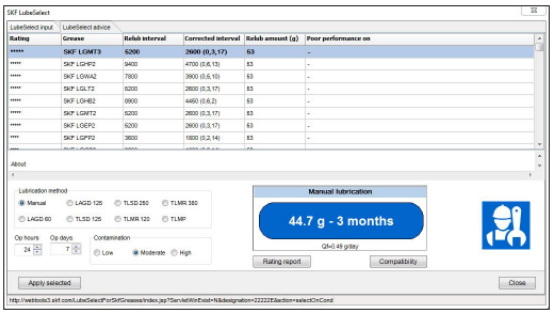
Maintenance

Bearings are to be lubricated with a high-quality Lithium Complex based mineral oil grease, such as Shell Gadus S2 V100 2. Fresh grease should be added periodically as part of preventative maintenance. Relubrication interval and grease quantity should be calculated using the SKF Lubrication Planner application which can be downloaded from https://www.skf.com/au/knowledge-centre/engineering-tools/skflubricationplanner.html



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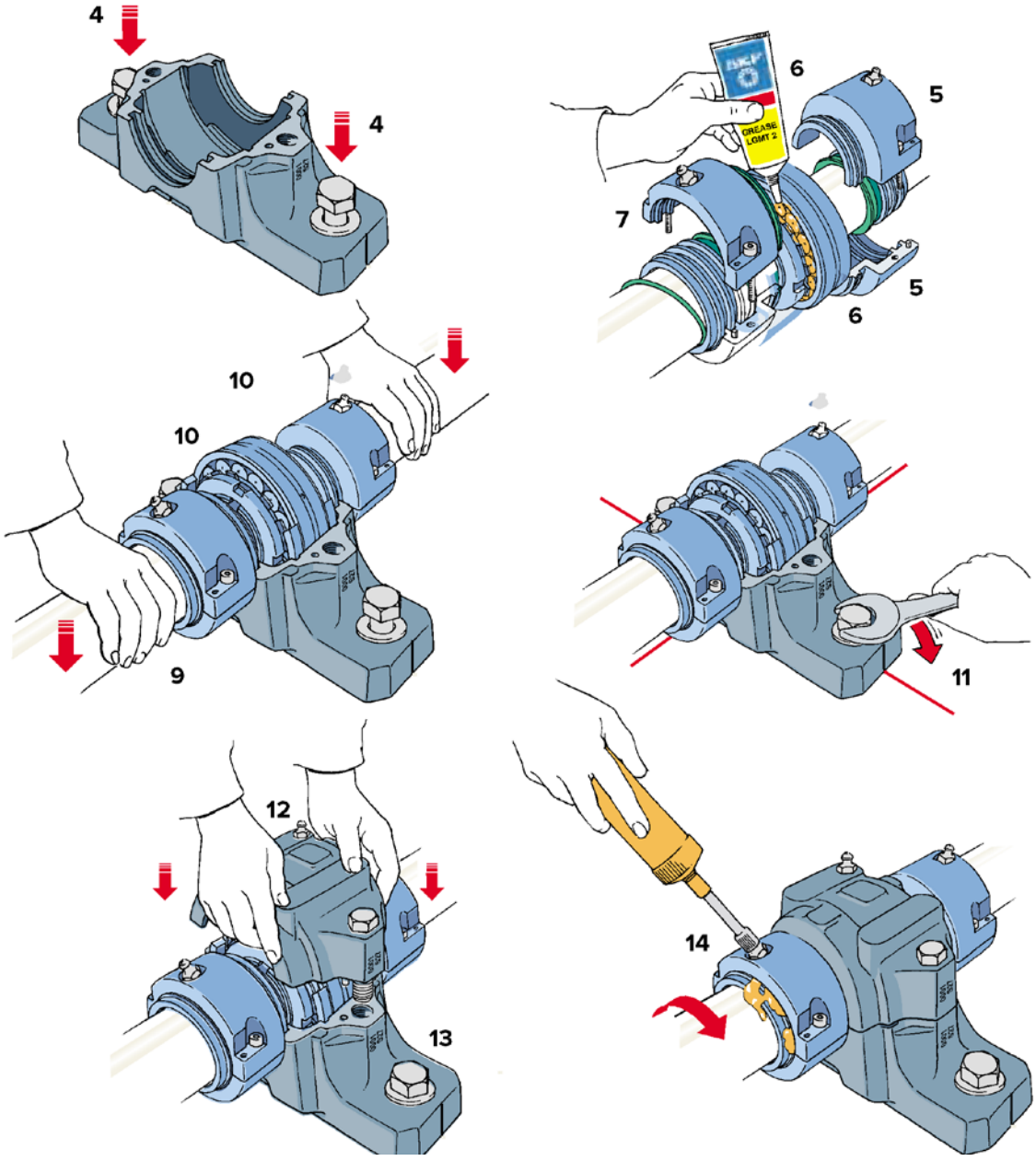

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