

# INSTALLATION, MAINTENANCE & SERVICE BULLETIN

## FKH BALL RACES

### Installation

Prior to installation, the ball race must be greased using a lithium-complex thickened mineral oil based grease of NLGI No.2 consistency (like a Castrol LMX). This must be done whilst rotating the upper ring until a grease 'collar' appears at all bearing gaps around the entire circumference. This ensures that the grease is properly distributed throughout the bearings. Greasing should be repeated after the installation is completed.

**Note:** The Ball Race **must** be fitted with the seal/opening facing towards the bottom (see following drawings)

The ball races must be mounted on the flattest and most rigid structure possible. Total distortion of the mounting surface should not exceed 1.3mm; permissible variations are, for example, 0.8mm up and 0.5mm down. Larger distortions have to be compensated for by suitable methods (machining of the contact surfaces or captive shims in the respective contact area).

It is essential that at least 50% of the mounting surfaces of the ball race flanges are attached to supported load bearing zones. These load bearing zones should be roughly equally spaced along the direction of travel and at right angles to the direction of travel. The essential factor here is to effectively support the ball race, thus assuring direct force transmission into the raceways.

**NEVER weld a ball race direct to the mating plates (top or bottom).**

**When welding close to the ball race, ensure that the current path of the welder does not pass through the ball race (weld arcing will damage the ball race).**

The ball race (turntable) must be fastened in line with the Australian Standard AS4968.2:2003 and VSB6.

To transmit the horizontal forces associated with acceleration and deceleration, shear plates must be welded to the mating structures to minimize the load on the bolts in the radial direction (4 shear stoppers at approx. 45° of the centre line front and rear, left and right).

Please check with FKH for the appropriate hole pattern for a specific ball race and ball race application.

The filler plug (to insert the bearing balls) should be approximately 45° (10.30) forward to the direction of travel. Check that the mounting holes are not in line with the filler plug.

Paint mounting plates (top and bottom) and ball race before bolting them together.

**DO NOT sandblast close to the ball race.**

The above conditions on installations are for public road transport vehicles only.

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## Maintenance and Lubrication

The period of service on the ball race will depend on the application and conditions of operation.

The torque on the bolt connections should be checked on a monthly basis.

M16 - Bolt and lock nut 170-190Nm

M20 - Bolt and lock nut 330-370Nm

The ball race must be greased at least once a month, using a lithium-complex thickened mineral oil based grease of NLGI No.2 consistency (like a Castrol LMX).

Grease should be pump in through the grease nipples while turning the ball race at least  $\pm 30^\circ$  for the grease to distribute evenly.

**To prevent damage to raceways, do not leave ball race fixed in one position for extended periods. Unlock and rotate ball race by hand on a regular basis.**

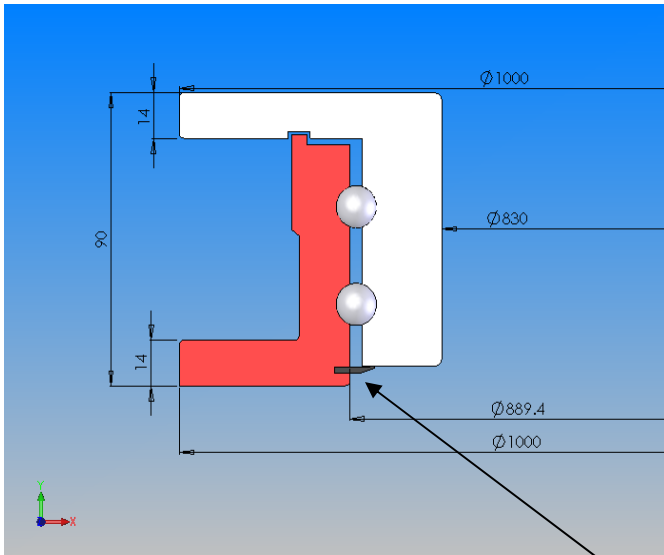
Periodically check the ball race wear for axial and radial movement.

**NOTE:** If the axial and/or radial movement exceeds 3mm, the ball race must be replaced.

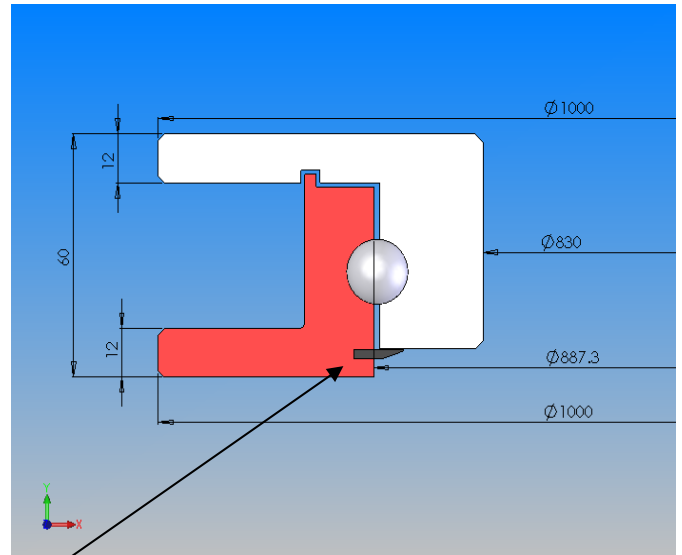
| <i>PART NUMBER</i>   | <i>CAPACITY<br/>(AXIAL LOAD)</i> | <i>WEIGHT</i> | <i>ADR<br/>NUMBER</i> | <i>D - RATING</i> | <i>REPLACES</i>  |
|----------------------|----------------------------------|---------------|-----------------------|-------------------|--|
| <b>KH90/1000-24J</b> | <b>14T</b>                       | <b>65kg</b>   | <b>TBA</b>            | <b>174kN*</b>     | <b>BPW DK90/14 CAPACITY 14T</b>                                    |
| <b>KH90S/1000</b>    | <b>16T</b>                       | <b>82kg</b>   | <b>CRN16355</b>       | <b>195kN</b>      | <b>BPW DK90/12 CAPACITY 12T &amp;<br/>BPW DK90/14 CAPACITY 14T</b> |
| <b>KH90S/1100</b>    | <b>20T</b>                       | <b>92kg</b>   | <b>CRN29118</b>       | <b>260kN</b>      | <b>BPW DK90/13 CAPACITY 13T &amp;<br/>DK90/20 CAPACITY 20T</b>     |
| <b>KHDR/1000</b>     | <b>30T</b>                       | <b>104</b>    | <b>TBA</b>            | <b>260kN*</b>     | <b>HOLLAND HITCH DOUBLE RACE<br/>&amp; D'ANGELO DEDR/1000</b>      |
| <b>KHSR/1000</b>     | <b>30T</b>                       | <b>73.5</b>   | <b>CRN30632</b>       | <b>240kN</b>      | <b>HOLLAND HITCH SINGLE RACE &amp;<br/>D'ANGELO DESR/1000</b>      |

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## Heavy Duty Ball Races



Part Number: **KHDR/1000**  
 Axial Load: 30T  
 Weight: 104kg  
 ADR No: TBA  
 'D' Rating: 260kN\*

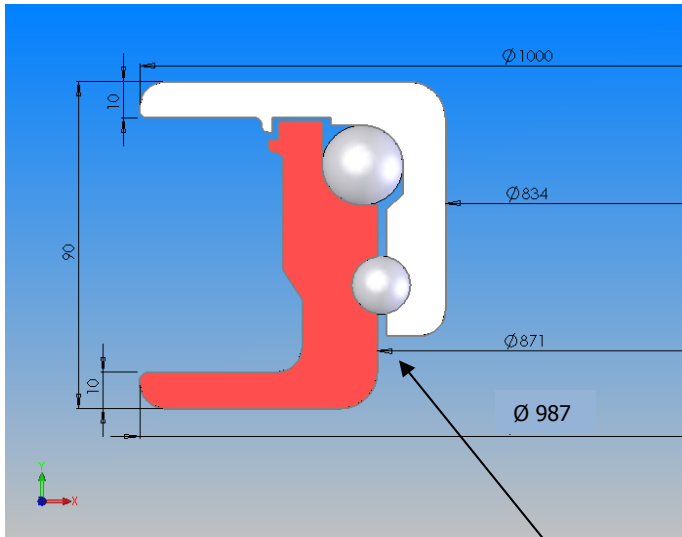


Part Number: **KHSR/1000**  
 Axial Load: 30T  
 Weight: 73.5kg  
 ADR No: CRN30632  
 'D' Rating: 240kN

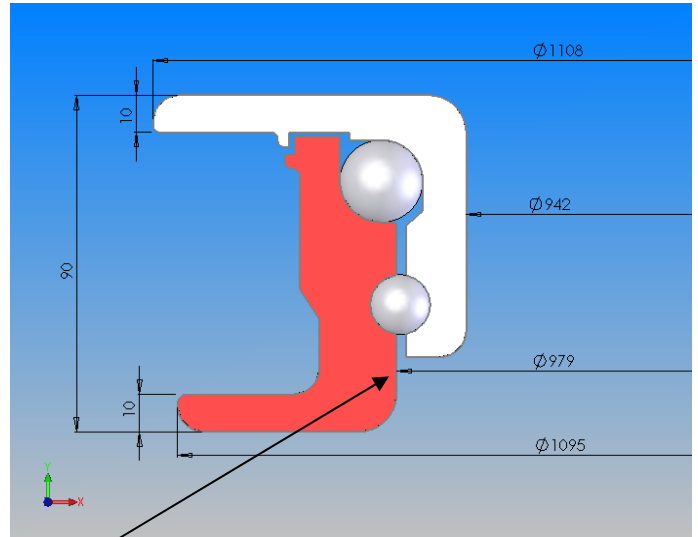
**SEAL**

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## Standard Ball Races

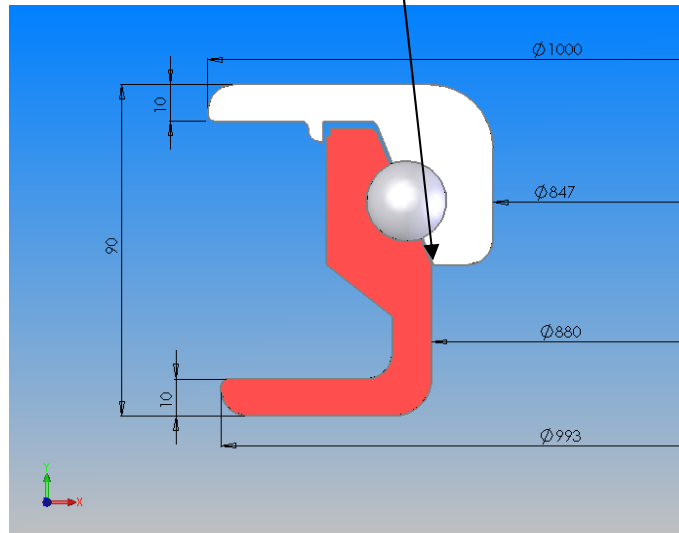


Part Number: **KH90S/1000**  
 Axial Load: 16T  
 Weight: 82kg  
 ADR No: CRN16355  
 'D' Rating: 195kN



Part Number: **KH90S/1100**  
 Axial Load: 20T  
 Weight: 92kg  
 ADR No: CRN29118  
 'D' Rating: 260kN

**OPENING**



Part Number: **KH90/1000J**  
 Axial Load: 14T  
 Weight: 65kg  
 ADR No: TBA  
 'D' Rating: 174kN\*