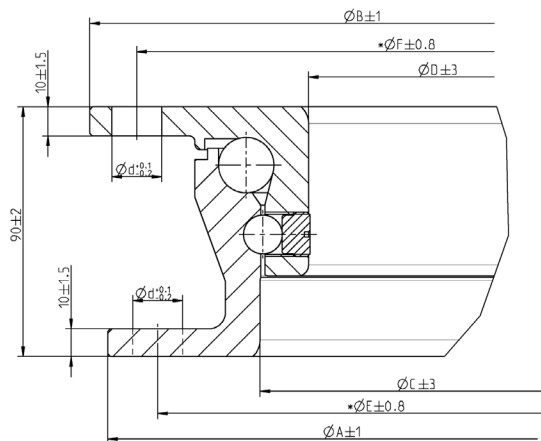


# Slewing ring - Series KLK

## Double Row Ballrace Models



### Model

#### Double Row Ballrace KLK Series

**Typical applications:** Dairy Tankers, Tri Axle Tippers  
**D-Value Rating:** 275kN

- Ballraces are supplied E-coated.
- 8 lubrication points enable the best possible distribution of grease.
- Labyrinth seal.
- Supplied drilled/undrilled.

The specified axle loads for KLKDR series relate to use where the slewing ring is mounted on the front axle of a trailer with three axles and fifth wheel steering, travelling at speeds of up to 100kph (65mph). On dual-axle trailers, the specified axle load can be exceeded by 10% of 20% at speeds below 30kph (18mph).

Type	D-Value (kN)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	d (mm)	Weight kgs
KLKDR41AS010K	160	987	1000	868	842	952	966	18	73
KLKDR4100010K	160	987	1000	868	842	952	966	N/A	73
KLKDR210010K	160	1095	1108	9776	950	1060	1075	N/A	80
KLKDR110020	200	1095	1108	976	950	1060	1074	18	80
KLKDR4200010K	200	1095	1108	976	950	1060	1074	N/A	80
KLKDR4400010K	300	1195	1208	1076	1050	1160	1074	N/A	92

Note: The pre-drilled hole pattern on the KLKDR41AS010K is suited only for a DR assembly replacement. Other ballraces are undrilled as standard. For any special drilling requirements please contact JOST Australia.

The measurements are subject to our standard tolerances.

## Design and Features

The ball bearing turntables enable the rotation of the pivot support towards the trailer frame. Thanks to the functional design, the axial loads are ideally supported and the thrust and tractive forces which occur when driving are transmitted in an optimal fashion.

### The advantages at a glance:

#### Premium force transmissions for the highest demands

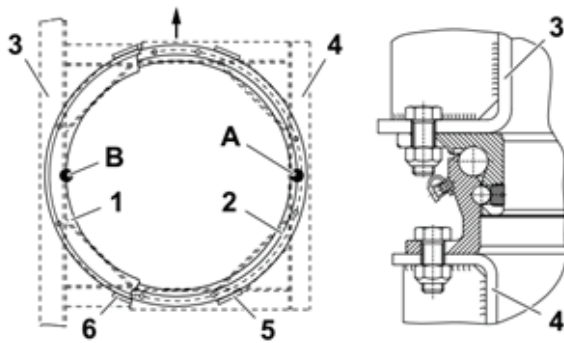
- The extra large support balls transmit the axial loads over a wide area directly onto the vertical bar of the ring parts
- Horizontal forces in pull or push direction, as well as the moment load resulting from braking and centrifugal forces, are supported by the interplay of the two ball rows
- Lifting forces are transmitted by the smaller radial ball
- Optional fastening using splined bolts, making additional welding of thrust plates unnecessary

### Durable construction with very little wear

- The use of high-strength steel ensures the greatest possible surface quality
- Cold-twisting of tracks by shrinking the ball gearing turntable reduces wear to a minimum and increases lifespans significantly
- A robust labyrinth seal protects the tracks from dirt, even in extreme conditions
- The particularly large grease reservoir resulting from the free space between the tracks guarantees smooth running thanks to optimum lubrication.
- 8 lubrication points enable the best possible distribution of grease within the tracks with just minimal rotation (+/- 20°) during lubrication.
- Optionally available with pre-assembled lubrication block to ensure ideal access to the lubrication points or as preparation for connection to a central lubrication system.

Note: D-values may vary when used in conjunction with additional JOST products that have been tested and carry a CRN number. Contact your local JOST branch for further details.

## Fitting and Maintenance Instructions for Slewing Ring KLK DR



1. Upper ring
2. Lower ring
3. Chassis
4. A-frame
5. Thrust plates bottom
6. Thrust plates top
- A. Position of the type plate
- B. Position of the ball bearing filling hole

### 1. Standard mounting.

The ball bearing turntable must be fitted on a flat (max. offset 1mm) support construction that provides torsional, longitudinal and lateral rigidity. To ensure there is an adequate transfer of force, at least 50% of the flange surfaces must be supported with weight-bearing structures. The bearing zone must be distributed evenly in and lateral to the direction of travel and be designed so that the ball bearing turntable is supported in the area of its vertical profile bars, i.e. the ball race-ways. Larger planarity deviations can be compensated with shim panels. With undrilled turntables, the following must be noted with drilling the fastening holes.

- That no drill chips or cutting fluid gets into the raceway.
- That no holes are drilled in the vicinity (+/- 15mm) of the ball insertion hole or in the vicinity of the welds.
- That the type plate is placed at 90 degrees to the right of the vehicle and the ball insertion hole is placed at 90 degrees to the left of the vehicle to remove the smaller cross-sections from the area under maximum stress.
- The lubricating nipples are easily accessible.
- Free motion of the swivel movement is ensured.

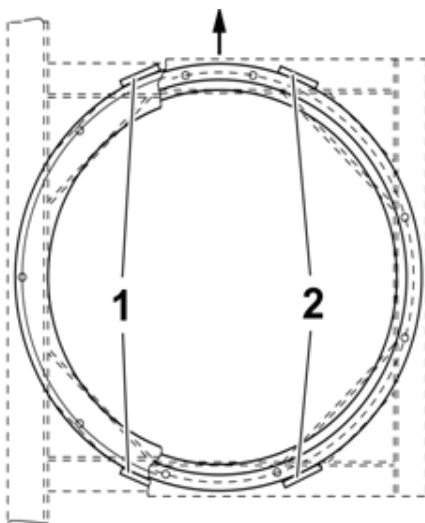
### 2. Assembly

Series	Screws of quality class 8.8	Torque <sup>1)</sup>
DR	Min. 8 hexagon screws per ring section DIN EN ISO 8765/8676 (DIN 960/961) M16 x 1.5	225 Nm
	Alternatively DIN EN 24014 (DIN 931) M16	210 Nm

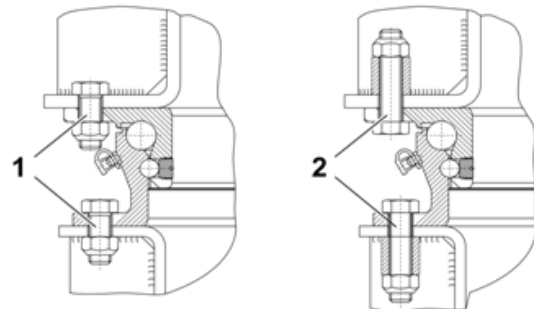
<sup>1)</sup> Setting value, tighten the screw connection with torque wrench DIN EN ISO 6789, class A or B.

Series	Nuts of quality class 8
DR	DIN EN ISO 7042 (DIN 980)

Thrust plates



Special fastening



### Notes on fastening

Screws of strength class 8.8 must be used for fastening. The screw connections must be secured using state of the art methods to prevent them coming loose. Do not secure the ball-bearing turntable by welding. In general, the layer thickness of the paint build-up must be no more than 170 µm per component in the screws grip area so that a perfect friction lock is guaranteed without settling.

The values shown are guide values for a coefficient of friction  $\mu_{tot} = 0.14$ . Further information is available in VDI 2230. Tighten screws with a suitable tool diagonally. In case of fastening with a low number of screws or small screw size, at least the same overall stability must be achieved.

In more arduous operating conditions, we recommend installing screws with a spacer sleeve or increasing the number of screws in order to maintain the correct pre-tensioning force. With different screw connections, as shown in position (1) and (2), free movement of the turntable must be absolutely guaranteed, especially in the area of the lubricating nipples and the type plate.

### Special fastening with JOST splined bolts (fastening without thrust plates)

When used on single axle bogie steering systems at axle loads of up to 10t, the standard hole patterns can be used as per the JOST product data sheet in combination with splined bolts for attachment to the vehicle without the use of thrust plates. If the axle load of the bogie is greater than 10t, we recommend using at least 12 securing points per ring, distributed as evenly as possible, with splined bolts. In order to ensure that the fitting of the turntable or slewing ring is under as little strain as possible, a positional accuracy for the hole pattern of 0.6mm and a drilling diameter of  $18 \pm 0.1$ , should be observed. More detailed information can be found in our installation instructions for JOST splined bolts.

### Thrust plates

To relieve the thrust force on screws subject to horizontal forces, the fitted ball bearing turntable must be attached to the flanges with four pre-welded thrust plates and there must be no play between the components. Use the welding methods set out by the trailer's manufacturer for this purpose. In cases of special fastenings with JOST splined bolts there are no thrust plates required, if the requirements specified in 'special fastening' are met.

### Coating

The JOST DR series has a permanent cathode dip coating. The CDC offers the ideal surface sealing method and therefore excellent protection against corrosion. Thanks to the evenly thin coating, it may be painted over at any time.

### Standard Mounting

Fastening set KLE0000500 (16 screws M16 x 1.5 x 55 - 8.8, 16 nuts M16 x 1.5 - 10 and 8 thrust plates.

### Special fastening with JOST splined bolts

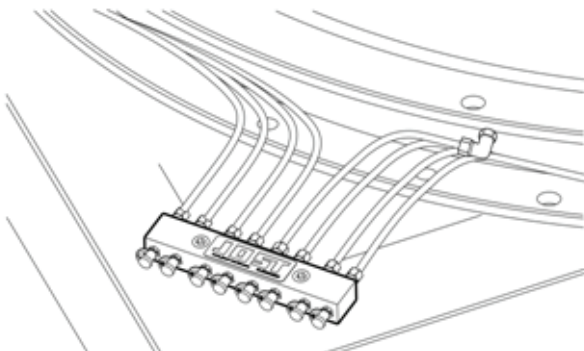
Min. 8 JOST splined bolts M16 x 55-10.9 per ring section and matching JOST nuts M16-10.9, tightening torque 300Nm.

Fastening set KLE0000300 (16 splined bolts and nuts)

Fastening set KLE0000400 (24 splined bolts and nuts)

### Standard ball bearing turntables

Standard ball bearing turntables are supplied with light basic lubrication. Before commissioning, the turntable must be given a thorough re-lubrication over all lubricating nipples with a high quality rolling bearing grease (lithium soap, NGLI consistency class 2), with a closed bead of grease sealing the bearing clearances against the penetration of dirt and spray water. We recommend the use of JOST high performance lubricant (SKE 005 670 000). Where a central lubricating system is used, a high quality rolling bearing (lithium soap, NLGI consistency class min. 1) should be used. At least 6 lubricating nipples should be connected.

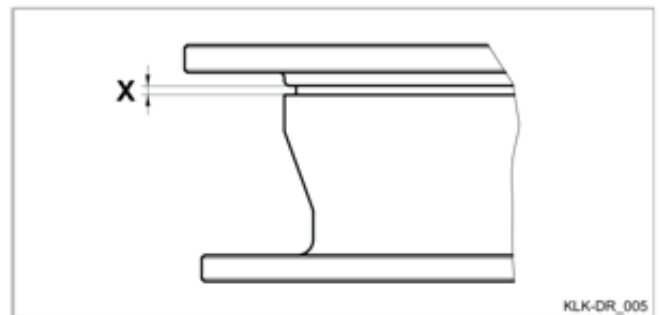


### Maintenance

The ball bearing turntable must be lubricated at least every 8,000 to 10,000km, or once a month, with a high quality rolling bearing grease (lithium soap, NLGI consistency class 2). This is done by swivelling the bogie backwards and forwards until as closed a bead of grease as possible comes out from the entire length of the bearing clearances or sealing lips. We recommend the use of JOST high performance lubricant (SKE 005 670 000).

- If the ball bearing turntable is used in forced steering systems, the servicing instructions of the manufacturer must be observed.
- The screw connections must be checked as part of the vehicle inspections, but no later than 50,000km, to ensure they are tightened to the prescribed tightening torque.
- Check for wear.
- Ball bearing turntables and their fastening elements, must be checked for excessive corrosion, damage or cracks.

### To check for wear



Series	Maximum axial play	Minimum air gap X
DR	3.5 mm	0.0 mm

### Safety information for maintenance

- Only use the specified lubricating grease for servicing work.
- The servicing work should only be completed by trained personnel.

### Safety information for installation

- Do not change the installation area defined by the trailer's manufacturer.
- The assembly work may only be completed by authorised specialists.
- Instructions from the trailer's manufacturer must be observed e.g. the type of fastening and support construction.
- The installation guidelines provided by the trailer's manufacturer must be complied with.

### Advice

Technical modifications reserved. The latest information can be found at [www.jostaustralia.com.au](http://www.jostaustralia.com.au) or [www.jost-world.com](http://www.jost-world.com)