

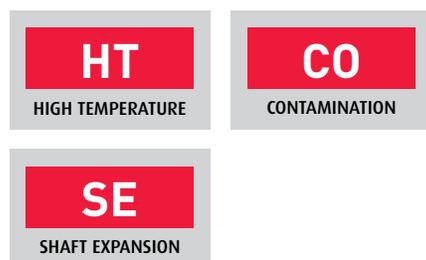
TL SPHERICAL ROLLER BEARINGS

NSK Tough and Long Life (TL) Series of Spherical Roller Bearings are ideally designed for the high temperature and high speed conditions of paper machine dryer and calendar applications. With an innovative steel composition and special heat-treatment that offers superior dimensional stability and resistance to inner ring fractures, TL Spherical Roller Bearings provide utmost performance reliability, bearing life, and critically important machine up-time.

PROVEN BENEFITS

- › More than twice the service life of conventional bearings in contaminated operating conditions
- › High resistance to hoop stress from rising shaft temperatures
- › Greater dimensional stability at temperatures as high as 200°C
- › Reduced fracturing of inner rings
- › Reduced downtime and maintenance costs

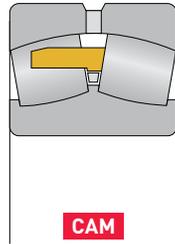
CONDITIONS:



TL SPHERICAL ROLLER BEARINGS

DESIGN FEATURES

- › Manufactured with an innovative steel composition
- › Special heat-treatment process
- › High strength inner and outer rings
- › Available in a wide range of sizes with high strength machined brass cage; pressed steel cage options can also be produced
- › Increased hardness of raceway surface promotes longer service life
- › Dimensionally stabilized for operating temperatures up to 200°C
- › Available from 65 to 530 mm bore diameter

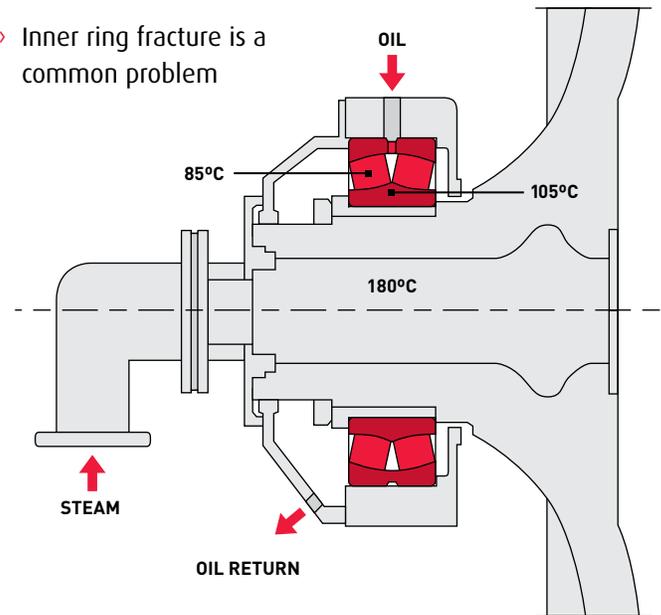


APPLICATIONS

- › Paper Machinery
 - › Dryer section
 - › Calendar rolls

DRYER ROLL APPLICATION

- › Steam is passed through the roll to heat it
- › The journal expands faster than the bearing, making the fit tighter
- › Severe hoop stress on the inner ring is repeated every time the machine is started
- › Inner ring fracture is a common problem



DESIGN SPECIFICATIONS

| TL | 231 | 52 | CA | G3 | M | K | C4 | W507 |
|--------------------|---|--------------------|-----------------|------------------|--------------------|--|--------------------|---------------|
| MATERIAL | DIMENSIONAL SERIES | BORE REFERENCE NO. | INTERNAL DESIGN | CARBURIZED STEEL | CAGE | BORE TYPE | INTERNAL CLEARANCE | SPECIFICATION |
| MATERIAL SERIES | TL: tough and long life | | | | CAGE | M: heavy-duty machined brass Blank: high-strength pressed steel | | |
| DIMENSIONAL SERIES | 222, 223, 230, 231, 232, 239, 240, 241 | | | | BORE TYPE | Blank: Cylindrical K: 1:12 Tapered K30: 1:30 Tapered | | |
| BORE DIAMETER | From 65 to 380 mm | | | | INTERNAL CLEARANCE | Blank: normal C3: > normal C4: > C3 C5: > C4 | | |
| INTERNAL DESIGN | CA, EA, C, CD | | | | SPECIAL FEATURES | S11: Both rings heat stabilized to 200°C P55: Both rings ABEC5 running accuracy W507: S11, lubrication groove and holes - outer ring (E4), special packaging (W31) W509: S11, lubrication groove and holes - inner and outer ring (E7), special packaging (W31) | | |
| CARBURIZATION | g: complete bearing g3: inner ring g5: inner and outer ring | | | | | | | |