Cylindrical roller bearings with disc cage or spacers

Features
Cylindrical roller bearings with a disc cage (series LSL) or with spacers (series ZSL) are of a single row, self-retaining design and correspond to dimension series 23. They have solid outer rings with two ribs, while the inner rings have one rib. The inner ring is removable and thus allows easier mounting of the bearings. The disc cages or spacers prevent the cylindrical rollers from coming into contact with each other during rolling.

Cylindrical roller bearings NJ23..-E and spherical roller bearings 223..-E1 have the same design envelope as LSL1923 and ZSL1923.

Note
Numerous sizes are supplied in the X-life grade. These bearings are indicated in the dimension tables.

Bearings of X-life quality have, for example, lower roughness $R_a$ and higher geometrical accuracy of the raceways than comparable designs that are not X-life. As a result, they have higher load carrying capacity and longer life for the same dimensioning. In certain applications, this means that a smaller bearing arrangement can be designed.

Bearings of TB design
In the case of bearings of TB design, the axial load carrying capacity of cylindrical roller bearings was significantly improved with the aid of new calculation and manufacturing methods. Optimum contact conditions between the roller and rib are ensured by means of a special curvature of the roller end faces. As a result, the axial contact pressures on the rib are significantly minimised and a lubricant film capable of supporting higher loads is formed. Under normal operating conditions, wear and fatigue at the rib contact running and roller end faces is completely eliminated. In addition, axial frictional torque is reduced by up to 50%. The bearing temperature during operation is therefore significantly lower.