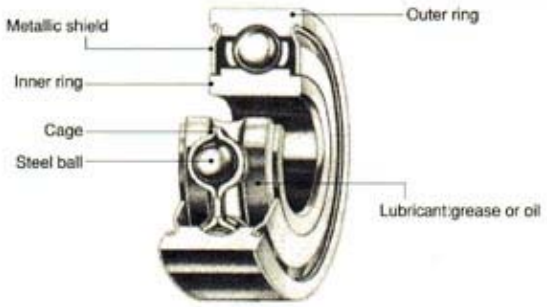
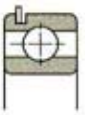
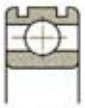
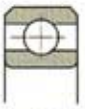
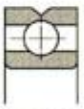
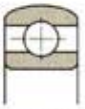
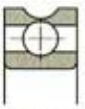
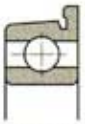
Design and characteristics of radial ball bearings

STRUCTURE OF BEARING



DESIGN OF BEARING

 standard	 extended inner ring	 (V) full complement of balls	 (N) with snap ring groove	 (NR) with snap ring groove and snap ring	 (F) with flanged outer ring
 examples of special designs	 examples of special designs	 examples of special designs	 examples of special designs	 examples of special designs	 examples of special designs

CHARACTERISTICS OF BEARINGS

LOAD	Single row radial ball bearings with balls separated by a cage can support radial loads, axial loads and tilting moments. A full complement V-type ball bearing can support only radial loads and some low axial loads.
SPEED	Maximum permissible speeds for ball bearings are mainly related to the bearing design and size, cage type, bearing internal clearance, method and type of lubrication, manufacturing accuracy, sealing methods and loads.
TORQUE AND NOISE LEVEL	Single row radial ball bearings are precision components and have low torque and noise levels.
INCLINATION OF INNER/OUTER RINGS	Shaft and housing seats with poor accuracy, fitting errors and shaft bending might cause inclination between the inner and outer rings although the internal clearance of the bearing will permit this to a certain extent. Generally, the maximum permissible inclination between the inner and outer, rings is approximately 1 in 300.
TOUGHNESS	Bearings under load deform elastically at the contact point between the rolling element and bearing ring. This in influenced by the bearing type, size, form and load.
INSTALLATION AND REMOVAL	The single row radial ball bearing is a non-separable bearing. Therefore, shafts and housings should be so designed to enable bearing inspection and replacement when necessary.
AXIAL LOCATION	Improved axial location is obtation with NR and F type bearings.