

## Needle Roller Bearings with Ribs



Needle roller bearings with ribs (Without inner ring)



Needle roller bearings with ribs (With inner ring)

### Needle roller bearing with Ribs

Needle roller bearings with ribs can accommodate radial loads despite their small size.

Two versions of this bearing exist. One version includes an inner ring while the other does not. Internally, bearing roller diameters are within 2 millimicrons ( $\mu\text{m}$ ) of each other. The rollers are properly and precisely guided in a parallel direction about the shaft axis.

Double-row Needle Roller Bearings are especially suitable where large loads are operating or where support is required over a large area. When more than one NTN bearing is used, they should be installed in such a way that the load on the bearing is equal.

### Needle roller bearings without inner ring

Needle Roller Bearings without inner rings are ideal in cases where the shaft surface itself can be hardened and ground to act as a raceway. They allow the use of larger shafts than are possible when inner rings are used, and since no influence is exerted by inner ring accuracy, high running accuracy is obtainable. The enveloping circle diameter in these bearings is usually within tolerance F6. Therefore, depending on the type of bearing chosen, various radial clearances can be obtained.

### Needle roller bearings with inner ring

Needle Roller Bearings with inner ring are comparable in both function and assembly with cylindrical roller bearings. The use of an inner ring should be considered when it is not practical to harden the shaft. The inner rings can be axially retained on the shaft by adjacent components or retaining rings. In addition, slight grinding undercuts are provided at both ends of the inner raceway surface to facilitate assembly.