

# Drawn Cup Needle Bearings

# Koyo®

## Ball, Needle & Roller Bearings

Koyo designs and manufactures a wide variety of standard and specialty drawn cup needle bearings at TS-16949/ISO-9000-certified global manufacturing locations. Advanced bearing and manufacturing technology and specialty steels help ensure that each customer receives cost-effective, high-quality products.

Our custom-engineered solutions are supported by the state-of-the-art design and manufacturing equipment of our technical centers and global manufacturing facilities. This includes precision metal forming, in-house heat treatment and complete on-site metallurgical labs.

Our drawn cup needle bearings incorporate the optimum tolerances, features and materials for specific applications. All designs are supported by Koyo's unsurpassed engineering support and technical know-how.



Drawn cup needle bearings include two basic designs: the full complement and the caged version. Both have a drawn outer shell that serves as the raceway for the rollers contained in the bearing.

**The full complement version** is comprised of an optimized number of rollers mechanically retained by the drawn outer shell.

**The standard caged version** contains a one-piece steel cage to guide and retain the rollers. This design provides high speed and maximum lubricant retention capability.

Koyo drawn cup needle bearings are offered both in metric and inch nominal series, with size ranges of 3 mm to 60 mm (1/8 in. to 5-1/2 in.) bore.

Drawn cup needle bearings support radial loads and reduce friction between rotating components. The low cross section provides maximum load carrying capability with a minimum of space required. They are easily installed with a press fit in the housing.

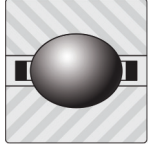
### Applications

Any power transmission application where relatively high radial loads must be supported in a limited space, including:

- Hydraulic pumps
- Fax machines/copiers
- Consumer equipment and appliances
- Watercraft /ATVs
- ABS braking systems
- Steering systems
- Transmissions, transfer cases, engines and valve trains
- Axle support
- Outboard engines
- Power tools
- A/C compressors
- Steering column joints
- Switch gears
- Door closers
- Medical devices

## Bearing Selection Matrix

Comparison of Bearing Options (1" Shaft)



S10K Ball Bearing	HJ-162412 Machine Race Bearing	J-1612 Drawn Cup Bearing	B-1612 Full Complement Drawn Cup Bearing
Bore - 1.00"	Bore - 1.00"	Bore - 1.00"	Bore - 1.00"
OD - 2.00"	OD - 1.50"	OD - 1.25"	OD - 1.25"
Width - .375"	Width - 0.750"	Width - 0.750"	Width - 0.750"
Capacity - 2500 lbf	Capacity - 5680 lbf	Capacity - 4080 lbf	Capacity - 5770 lbf
Req. cross section = 0.5"	Req. cross section = 0.25"	Req. cross section = 0.125"	Req. cross section = 0.125"
<b>Capacity Advantage<sup>(1)</sup> = 1</b>	<b>Capacity Advantage<sup>(1)</sup> = 4.5</b>	<b>Capacity Advantage<sup>(1)</sup> = 6.5</b>	<b>Capacity Advantage<sup>(1)</sup> = 9</b>

$$^{(1)}\text{Capacity Advantage} = \frac{\text{Capacity}}{\text{Required Cross Section}} \quad \text{With Ball Bearing} = 1$$

### Features

TS-16949/ISO9000-certified.

Surface coatings available include nickel plating and black oxide coating.

Many materials available, including brass, stainless steel and high-carbon steel.

Specially heat-treated rollers for improved durability.

Controlled stress technology for high-slope applications.

Thin cross section compared to ball bearings, machined race bearings or cage-and-roller assemblies.

Value-added assemblies / Extra precision / Oil holes / Closed end

Sealed and double-sealed versions available

### Benefits

Lower cost compared to the ball bearing and the machined race bearing.

Unitized and easy to assemble into customer applications.

Located by press fit; nothing needed to hold in place.

Optimal load-carrying capability.

With the cup on the outer race, a bearing-quality housing is not required.

Greater durability.

Sealed bearings help keep lubrication in and contamination out.



**Koyo Drawn Cup  
Needle Roller Bearings**

The low cross section of drawn cup needle bearings provides optimal load-carrying capability in a small design envelope.

# Koyo®

**Call Koyo Today 1-800-331-5696**

Our sales and service engineers are available to assist with product design needs, maintenance recommendations, and technical support.

To learn more, contact your sales representative or visit us online at [www.JTEKT-NA.com](http://www.JTEKT-NA.com)

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