交叉圆锥滚子轴承
Cross Tapered Roller Bearing
高精度高转速高刚性数控立车专用转台轴承

BYC®
博盈轴承

交叉圆锥滚子轴承
Cross Tapered Roller Bearings

特点:

1.高精密交叉圆锥滚子轴承主要用途是满足轴向径向多向承载下的高精度回转需求。该轴承的包括一个外圈，分体内圈和交叉排布的圆锥滚子。滚子是由尼龙隔离块分开。轴承滚道内的呈X排列圆锥滚子使其可以很好地承受轴向和径向载荷以及倾斜力矩，使轴承在尽量小的横截面上保持尽可能高的刚性，单个轴承可以实现对传统组合轴承设计的替代。

2.圆锥形滚子可以有效地防止滚子和滚道之间的单向滑动，从而实现更长久的轴承使用寿命。轴承的润滑是通过内圈之间的间隙进行，简单方便。

3.该轴承成品未进行装配，用户在使用时通过校准和预压，预付荷可调节设计最大限度的保证了轴承刚性并保证了高回转精度。BYC博盈轴承采用高品质轴承钢和特殊的热处理工艺，保证轴承的质量和寿命，能满足数控立车等精密回转设备的设计需求，轴承本身带有吊装孔，安装使用方便。

Features:

1.Precision crossed tapered roller bearings are intended for high Precision arrangements with combined axial–radial loads. A design of the bearing comprises an outer ring, split inner ring and tapered rollers in crossed position. the rollers are separated by plastic spacers. The concept of the bearing with tapered rollers in an x arrangement positioned in turns towards raceways enables to accommodate axial loads in both directions, radial loads as well as tilting moments.

2.In spite of a subtle cross section the bearings are characterized by considerable rigidity. as a result a single bearing can substitute a pair of bearings in a conventional arrangement.The tapered shape of rollers can effectively eliminate circumferential speed difference at rolling and prevent contact surfaces from skidding with further benefit of lower wearing the raceways and rollers. Ultimately a longer operational life of the bearing is achieved.lubrication of the bearings is enabled through a slot between inner rings.

3.The design of bearings assumes a fixed mounting of inner rings and rotating outer rings.the bearings are supplied unassembled after a final assembly the complete bearing adjusted with a preload ensures a clearancefree operation and high accuracy of running. the rings are manufactured from high quality steels heat treated to achieve a desired hardness. holes in the outer ring make handling, installation and fitting of the bearing into a machine easy.

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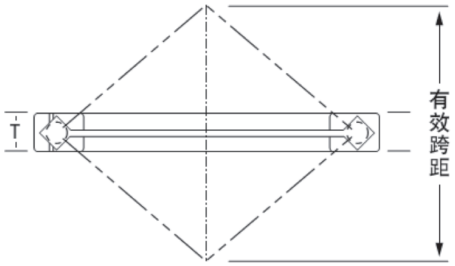
该类轴承具有两组滚道和滚子，相互呈直角组合，滚子交错相对。轴承的横截面高度与单列轴承相似，因此节省了空间和轴承座材料，大锥角和锥形几何设计使轴承总体有效跨距是轴承自身宽度的几倍。

交叉圆锥滚子能承受高倾覆力矩，适用于机床，包括立式镗床和磨床工作台、机床精密圆分度工作台、大型滚齿机、转塔、工业机器人等。

Cross Tapered roller bearing contains two sets of races and rollers brought together at high angles with alternate rollers facing in opposite directions. The height of cross section is similar to single-row bearing for conserving space and saving bearing housing material. And the steep-angle, tapered geometry results in a total effective bearing spread much greater than the width of the bearing itself.

It is able to withstand high overturning moments, and is optimal for machine tools, including vertical boring, grinding machines, precision circular dividing table, gear hobbing machine, turret and industrial robots.

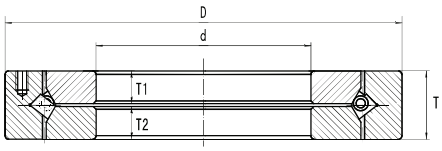


设计和结构特点 Design Features

滚道和滚子构造上的线接触提供了最大旋转精度、高稳定度和更大的倾斜刚度。
预负荷的可调节设计延长了轴承寿命，在最大限度内加大了刚度并提供了最小跳动。
尼龙隔圈惯性较低，运行扭矩较小。
高的旋转精确度和刚度，大幅度节省材料成本。
轴承的夹角和锥形几何形状使得轴承有效跨度要比轴承本身的实际宽度大好几倍。

The line contact of races and rollers can offer high rotation accuracy, high stability and high rigidity.
The adjustment design of pro-load extend the bearing using life , increase the rigidity and reach the smallest runout.
The nylon spacers has low inertia and small running torque.
High rotation accuracy and high rigidity , and conserving material costs.
The steep-angle, tapered geometry results in a total effective bearing spread much greater than the width of the bearing itself.

XR、JXR系列/XR、JXR series



型号 Model Number	主要尺寸 Main dimensions (mm)				基本额定动载荷 Basic dynamic load rating		极限转速 Limiting speed (油Oil) r/m	重量 Weight (Kg)	互换型号 Exchange model			
	内径 Inner ring d(mm)	外径 Outer ring D(mm)	高度 Width T(mm)	倒角 Chamfer r(min)	径向 Radial Cr(KN)	轴向 Axial Ca(KN)			SKF	NACHI	URB	PSL
XR496051	203.2	279.4	31.75	1.5	51.2	61.4	800	6.5	616093A	/	/	/
XR678052	330.2	457.2	63.5	3	100	123	620	35	615661A	300XRN50	/	PSL 912-309A
XR766051	457.2	609.6	63.5	3	141	178	520	51	615894A	0457XRN060	XD.10.0457P5	PSL 912-308A
XR820060	580	760	80	5	215	234	300	100	615662A	580XRN76	XD.10.0580P5	PSL 912-304A
XR855053	685.8	914.4	79.375	3	270	343	260	150	615659A	0685XRN091	XD.10.0686P5	PSL 912-305A
XR882055	901.7	1117.6	82.55	3	300	395	200	185	615895A	0901XRN112	XD.10.0902P5	PSL 912-306A
XR889058	1028.7	1327.15	114.3	3	405	534	160	400	BFKB353282/HA4	1028XRN132	XD.10.1029P5	PSL 912-307A
XR897051	1549.4	1828.8	101.6	3	516	698	80	500	615898A	/	XD.10.1549P5	/
JXR637050	300	400	37	1.5	63	80.1	720	13	/	/	/	/
JXR652050	310	425	45	2.5	82.2	102	640	20	/	/	/	/
JXR699050	370	495	50	3	93.6	119	600	30	/	/	/	/

交叉圆锥滚子轴承–安装

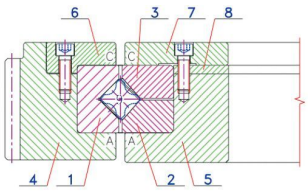
安装检验手册

1.XR系列交叉圆锥滚子轴承由一个外环和两个内环以及圆锥滚子和隔离块所组成，安装结构图如右图一；

2.在标准平台上依次安装零件：(1+4)→6→(2+5)→9→3→7；BYC交叉圆锥滚子轴承已用螺栓预紧，轴承可整体安装，只需依次安装6&7–法兰片，锁定法兰片时对角锁入螺丝，使用厚薄规检查法兰还是否安置适当；

3.轴承旋转检测：安装7–轴颈法兰片前，转动4–外座圈（齿轮盘），使滚动体和隔离块旋转到位，安装压板–F固定轴承内圈，用千分表检查轴承外圈对轴承内圈在“C”面处的平行度及轴向偏摆度，参照图二量测8–间隔片的厚度x；

4.确保轴承的正确性能及使用寿命，必须注意以下几点条件：充分及正确的润滑；定期检验润滑系统；勿超过指定的参数作业；尽量将冲击荷载的风险降至最低。



图一 Figure1

1–轴承外环	1–outer ring
2–轴承下内环 “A”	2–downside innnerring“A”
3–轴承上内环 “C”	3–upside innerring“C”
4–外座圈	4–housing washer
5–轴颈环	5–shaft washer
6–法兰片	6–flange
7–轴颈环法兰片	7–shaft washer flange
8–间隔片	8–distance piece

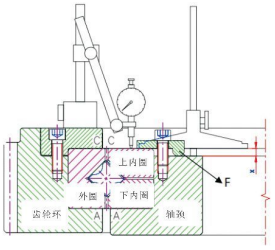
Installation And Inspection Manual

1.XR series Tapered crossed roller bearings consist of 1 outer ring、2 separated inner ring、tapered rollers and spacers,installation drawing as figure1;

2.Install parts on a standard platform in turn of:(1+4)→6→(2+5)→9→3→7; BYC Tapered crossed roller bearings are pre-tighten by bolts,the bearing is integrated, only need to install 6&7-flange,diagonal lock the flange into the screw hole,use thickness gauge to check the flange is properly placed and locked.

3.Bearing turning detection:force the rollers and spacers in place by rotate housing washer-4 several times before install 7-shaft washer flange,install pressure plate-F to fix the inner ring of bearing,use dial indicator to check the Parallelism and Sea(outer ring axial run out)at side“C”,measure the thickness of 8-distance piece refer to figure2;

4.To ensure the best performance and working life of bearing,you must pay attention to the following conditions:full and correct lubrication;regular inspection lubrication system;Don’t exceed the specified parameter of the bearing;try to avoid impact load as far as possible.



图二 Figure2