

特种轴承及应用

山东锋迪轴承有限公司

SHANDONG FODA BEARING TRANSMISSION CO.,LTD





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Company profile

FODA BEARING factory covers an area of more than 50,000 square meters, office and workshop area of more than 30,000 square meters, more than 200 employees, the company has more than 400 sets of all kinds of equipment, bearing testing equipment and instruments more than 500 sets, Our main ability is special materials, special purposes of high-speed ultra-precision bearing manufacturing.

Our products range from 8mm inside diameter to 620mm outside diameter of P2, P4 class ultra-precision bearings for various purposes and special performance in more than 1000 specifications.

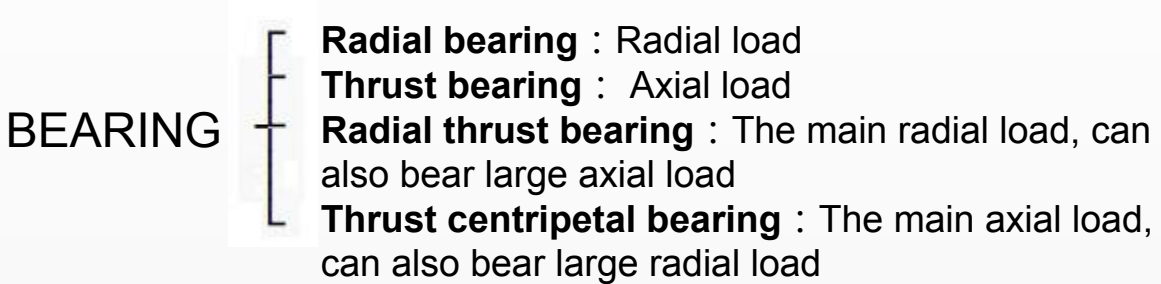
The company adhering to the "quality factory, the pursuit of perfection" purpose, will continue to improve the quality of products, is committed to catch up with foreign famous brands, to make contributions to the development of bearing industry.



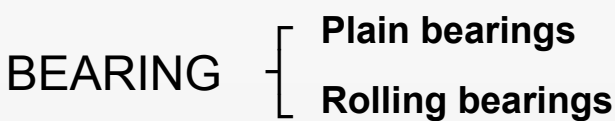
Basic knowledge of rolling bearings

Bearings -- important parts that support shafts and shafting

According to the direction of the load :



Massage operation nature points :



The basic composition of rolling bearings :

Radial bearings (FIG. 1)

- 1. Inner ring
- 2. Outer ring
- 3. Roller body
- 4. Cage

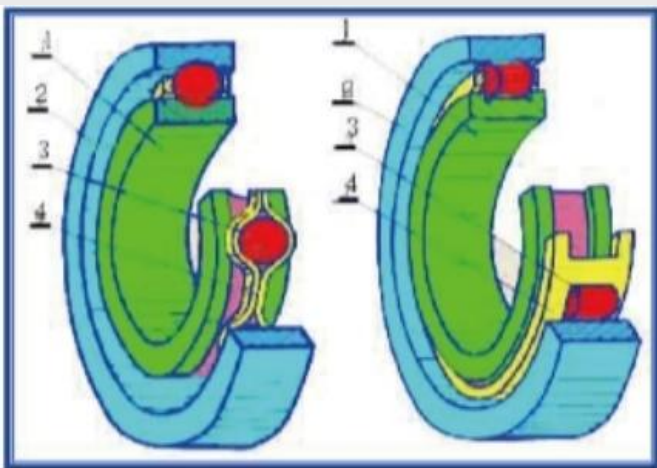


FIG. 1

Thrust bearing (FIG. 2)

- 1. Tight ring
- 2. Loose ring
- 3. Rolling body
- 4. Cage

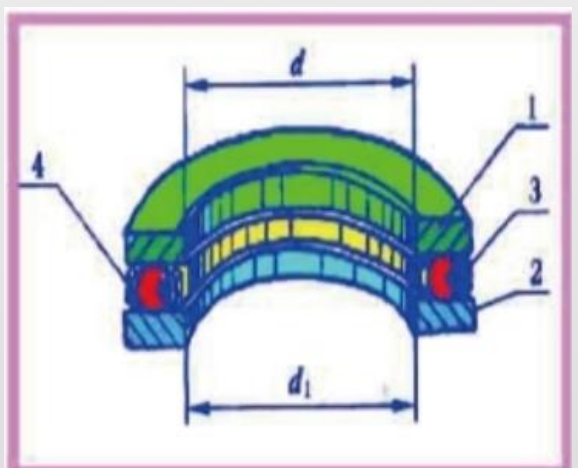
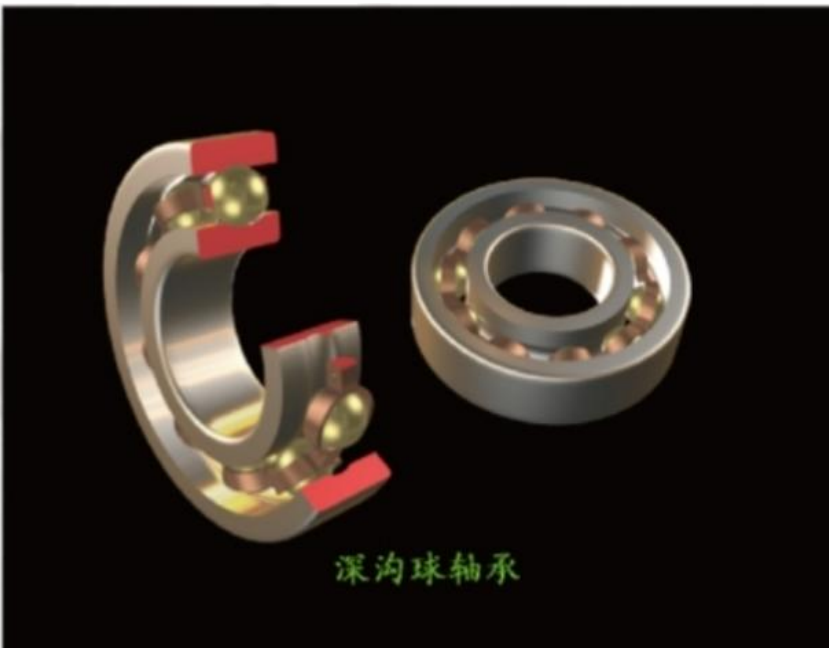
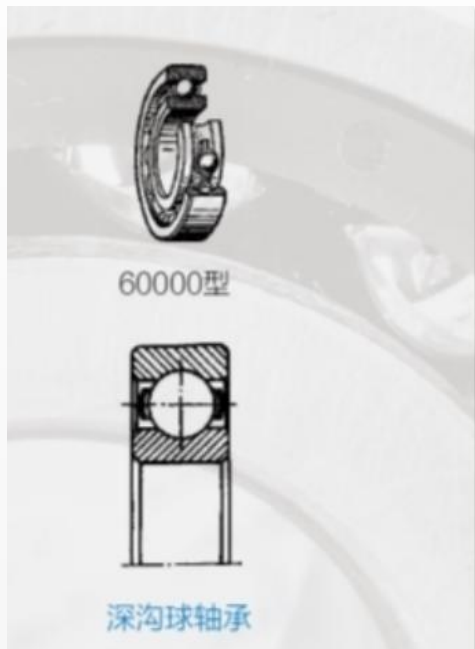
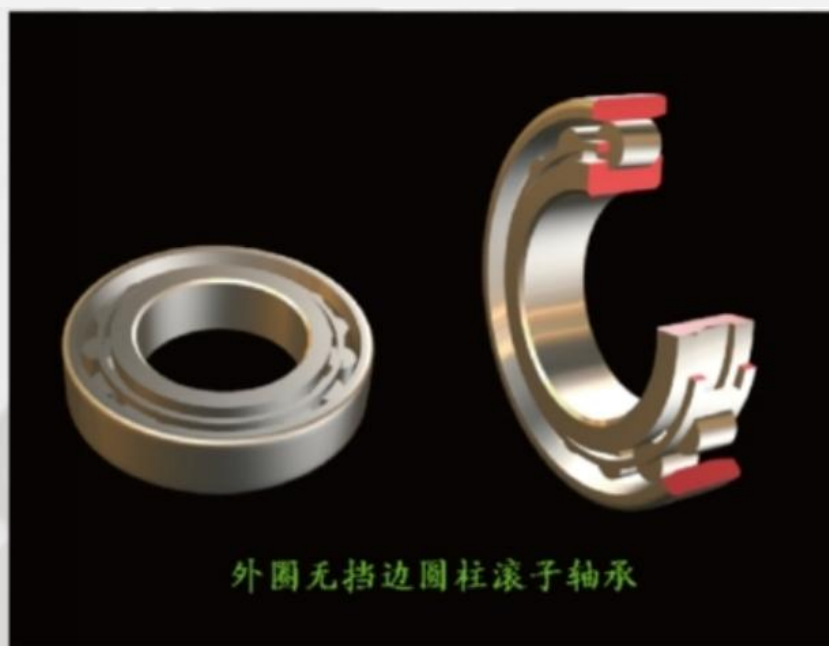


FIG. 2

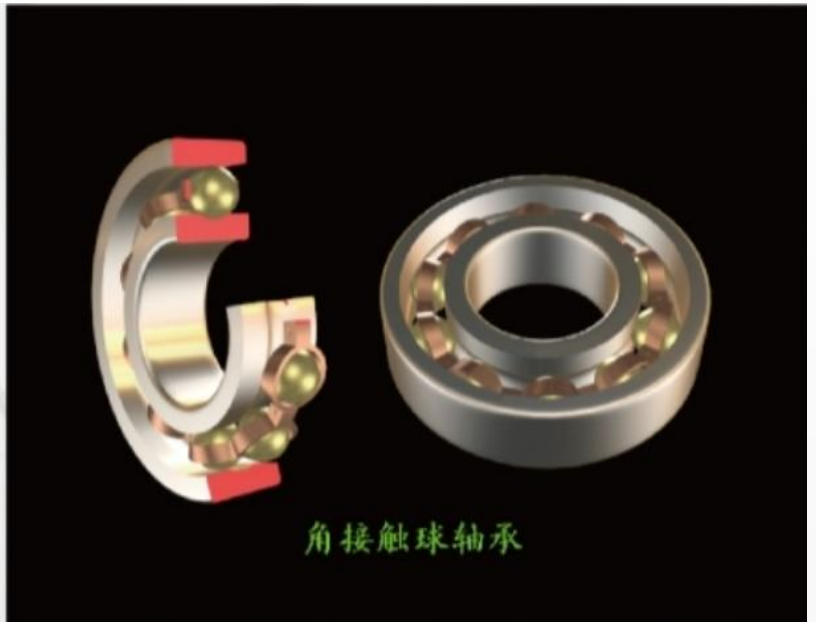
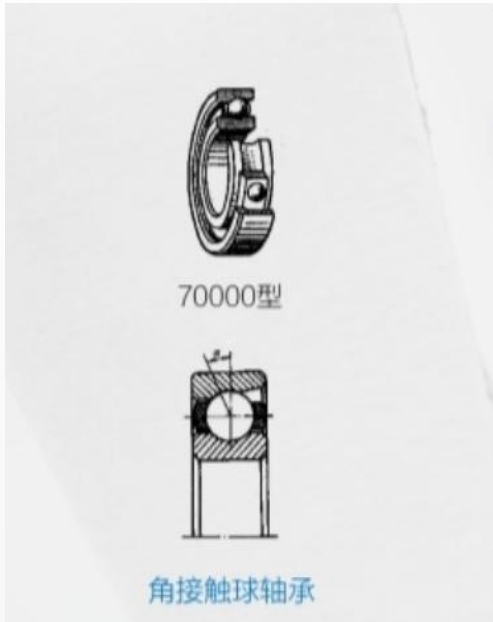
The main types of rolling bearings:



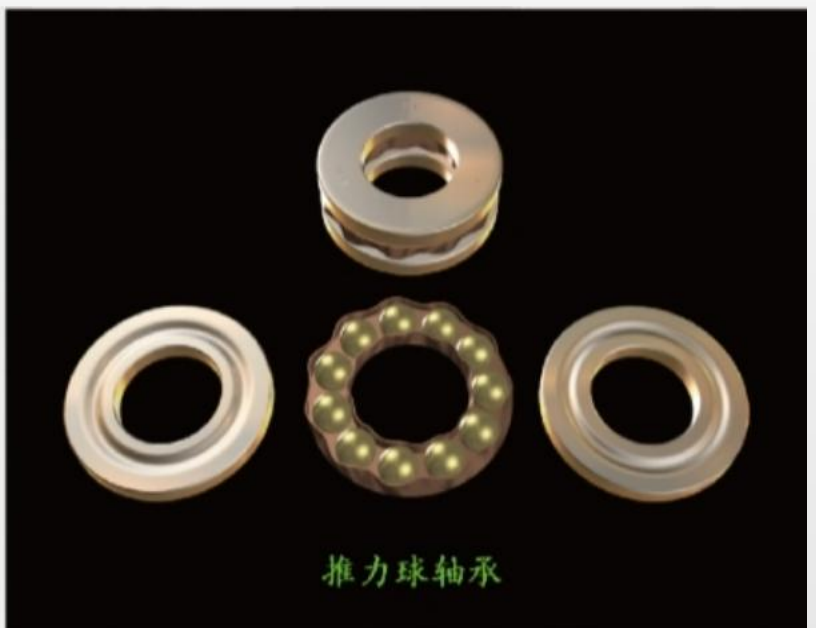
60000 TYPE: Deep groove ball bearing



N0000 TYPE: Cylindrical roller bearing



70000 TYPE: Angular contact ball bearing



51000 TYPE: Thrust ball bearing

Material code

Bearing as precision parts, the quality of its material directly affects the service life of bearings. The common code and meaning of bearing ring materials are shown in the following table:

Code	Implication	Sample
/HE	The rings and rolling body are made of ZGCr15 (armor steel)	6203/HE
/HA	The rings and roller are made of GCr15 (vacuum smelted bearing steel)	6203/HA
/HU	The rings and rolling body are manufactured from unquenchable stainless steel 1Cr18Ni9Ti	6203/HU
/HV	The rings and rolling body are manufactured from hardened stainless steel 9Cr18	6203/HV
/HN	The rings and rolling body are made of heat-resistant steel Cr4Mo4V	NU203/HN
/HC	The ring and rolling body are made of carburized steel 20Cr2Ni4A	
/HP	The rings and rollers are made of beryllium bronze or non-magnetic materials	

Common cage material code and meaning are as follows:

- F - Steel, ductile iron or powder metallurgy solid cages
- Q - Bronze solid cage
- M - Brass solid cage
- L - Light alloy solid cage
- T - Phenolic laminate solid cage
- J - Steel plate stamping cage
- Y - Brass plate stamping cage
- TH- Glass fiber reinforced phenolic resin cage
- TN- Engineering plastic molding cage
- ZA- Zinc-aluminum alloy cage
- SZ- Cage made of spring or spring wire

Bearing ring materials commonly used in military industry are stainless steel and high temperature steel, stainless steel code has three kinds, in addition to HV means 9Cr18 stainless steel material, HV1 means 9Cr18Mo material, HV2 means GCr18Mo material. Conventional bearing materials are recommended to work at a temperature below 120°C. If the working temperature is higher than 120°C, it needs to be treated by special heat treatment process, and the highest working temperature after treatment is 250°C. If the working temperature of bearings is above 250°C for a long time, heat-resistant steel is recommended.



Product research and development capability

Product design and analysis

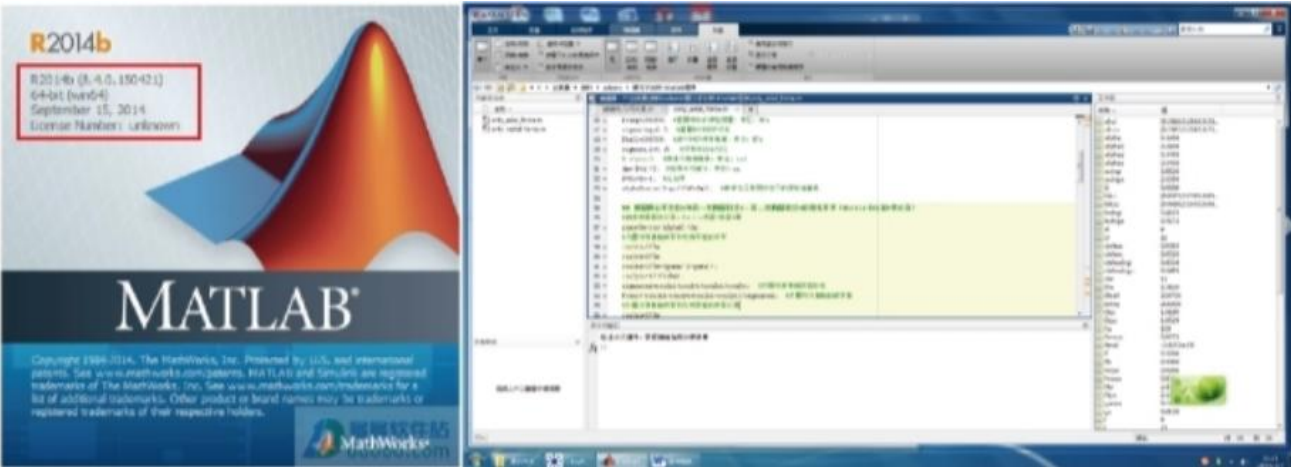
Special Bearing

The Special Bearing Division has the first-class bearing design technology in China. In the aspect of bearing performance analysis and bearing optimization design, it has specially developed the pseudo-dynamic performance analysis and optimization software of bearings and the dynamic simulation analysis software of cage centroid motion trajectory of high-speed bearings. Three-dimensional solid modeling analysis software combined with finite element analysis software was used to realize the performance simulation and analysis of bearings. In the absence of bearing samples, three-dimensional modeling of bearings was carried out based on CATIA and ABAQUS finite element analysis platform using CATIA software, the built model is seamlessly connected with ABAQUS software to complete the finite element analysis of bearings and their parts, and provide effective simulation analysis results for solving practical problems.

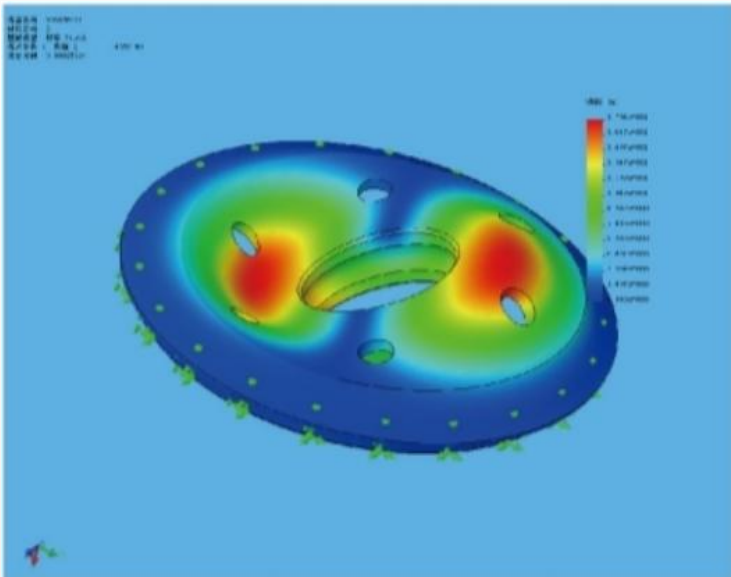
Cage dynamics analysis software based on MSC ADAMS This software can analyze the stability of cage with different hole shapes and different clearance under the condition of considering the influence factors such as temperature and gravity. The analysis results have been verified by experiments. ANSYS finite element software can be used to analyze the stress field of bearing components. The pseudo-dynamic analysis of bearings was carried out by using COBAR software to simulate the motion state of actual working conditions. At present, the company adopts international advanced ROMAX DESIGNER software to simulate and analyze the whole bearing system closer to the actual working conditions.

Special bearing Division has a multi-CPU high-performance computer center including 5 computing modules to support a maximum of 10 octa-core processors using high-performance network and Gigabit Ethernet interconnection and has good scalability 0.1 second performance calculation often reach hundreds of millions of times can effectively run a variety of bearing finite element analysis and simulation analysis software. By using a variety of software to simulate and analyze the weak links of bearings, the timely optimization of bearing design can lay a good foundation for ensuring the performance of bearing products and greatly shorten the development cycle of bearings

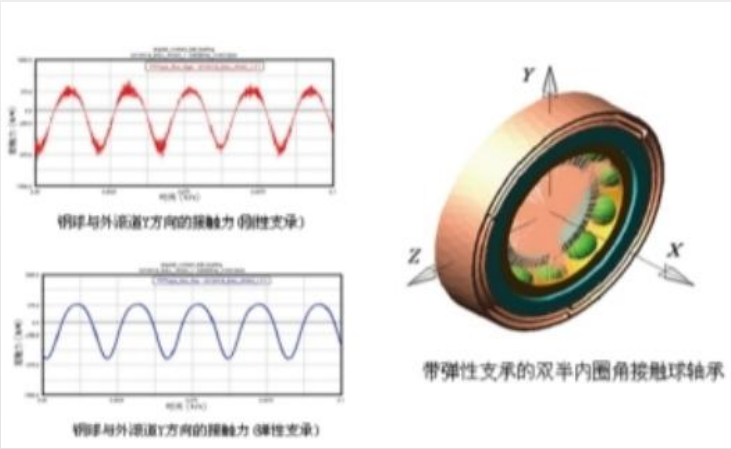




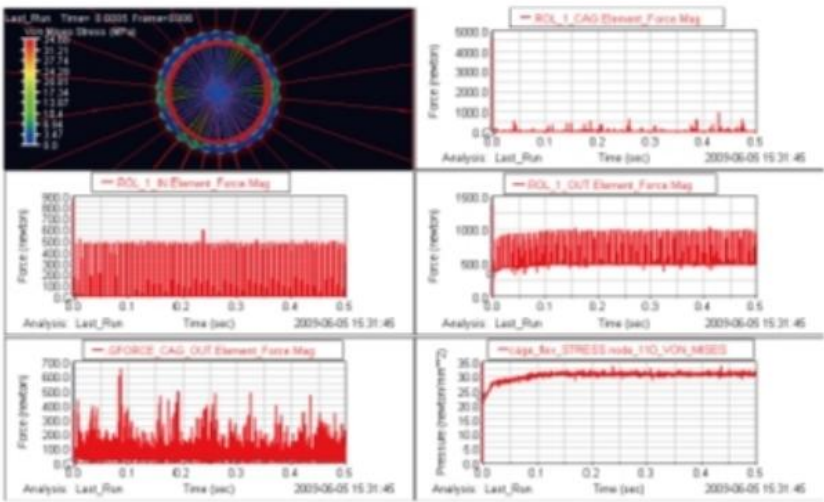
Bearing set analysis program based on MATLAB



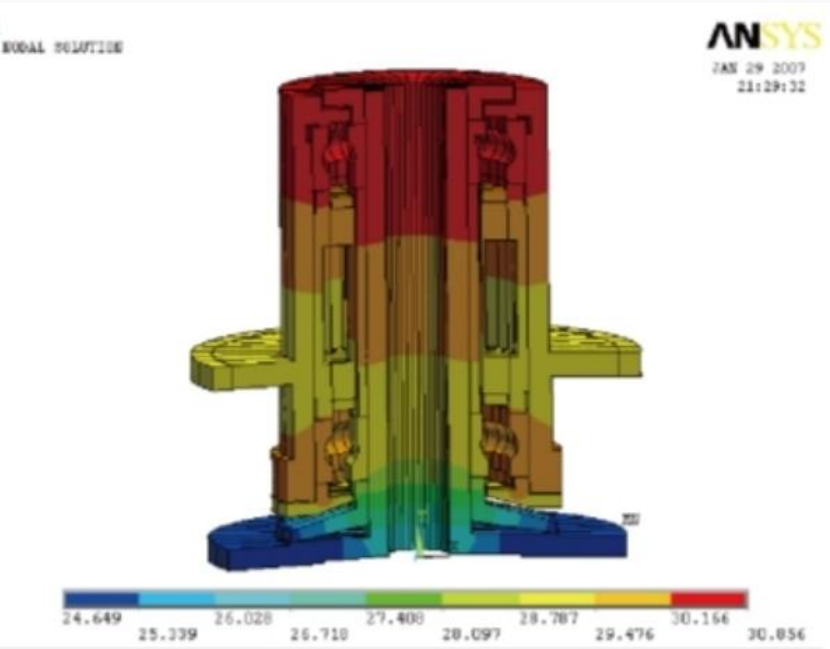
Modal analysis of end cap bearing outer ring



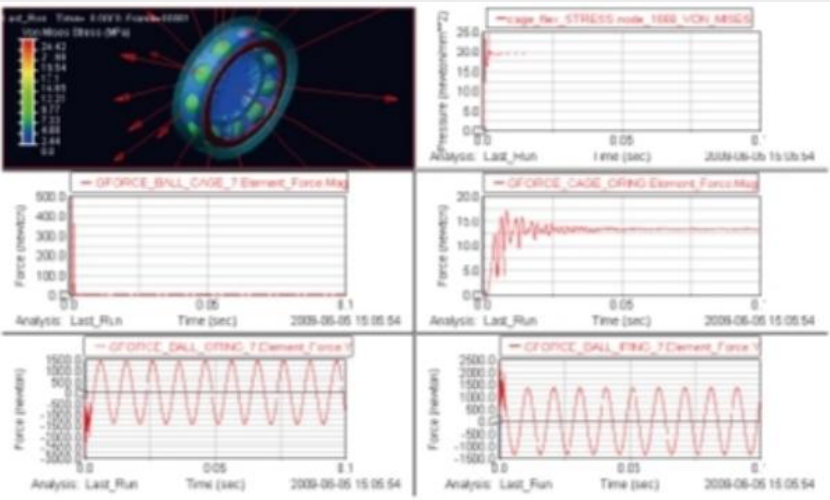
Simulation of shaft track performance of aeroengine bearing system



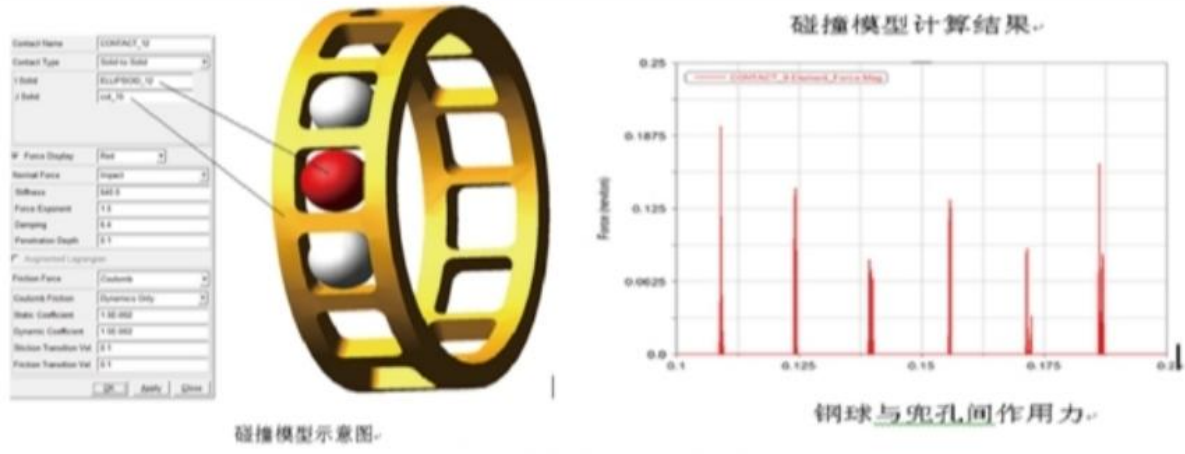
Simulation analysis of dynamic performance of cylindrical bearing



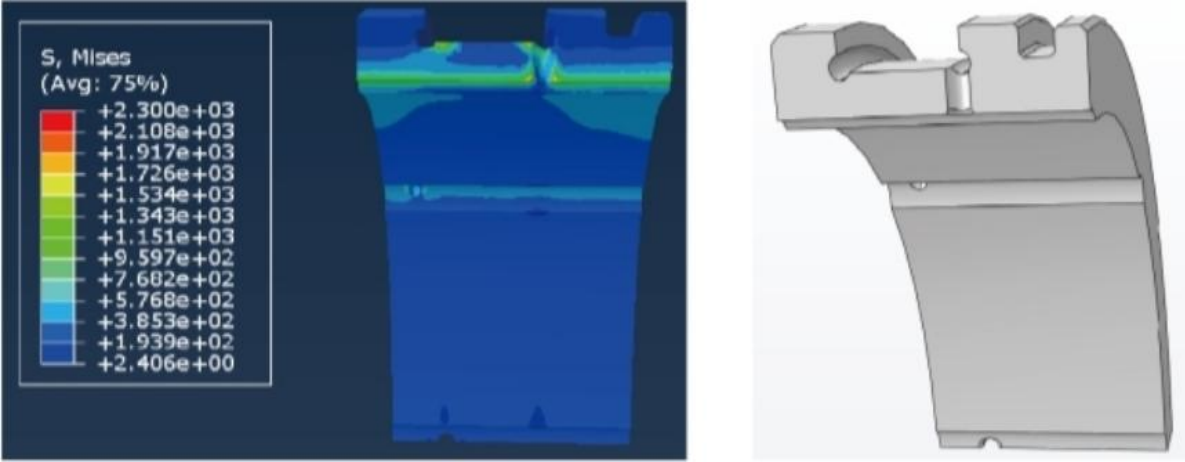
Temperature field analysis of bearing assembly



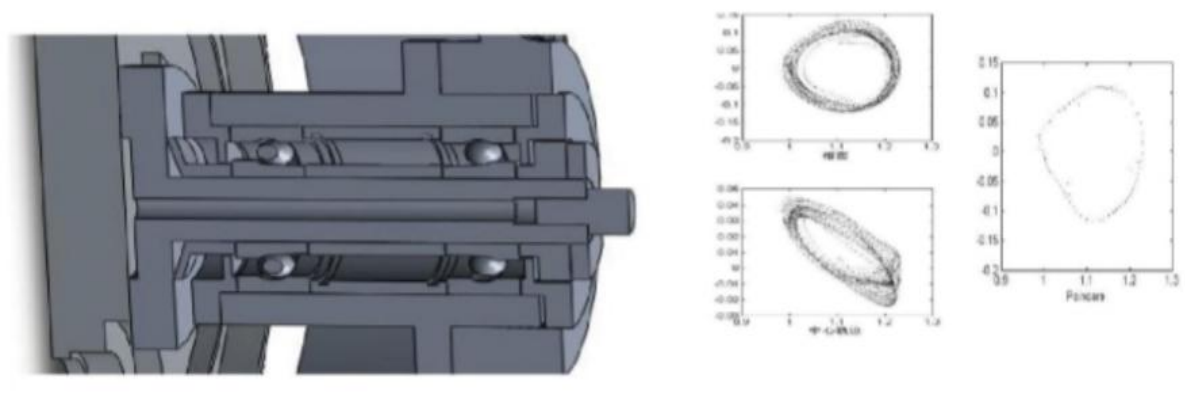
Dynamic simulation analysis of four point contact bearing



Dynamic simulation analysis of bearing cage



Mechanical simulation analysis of special structure bearing



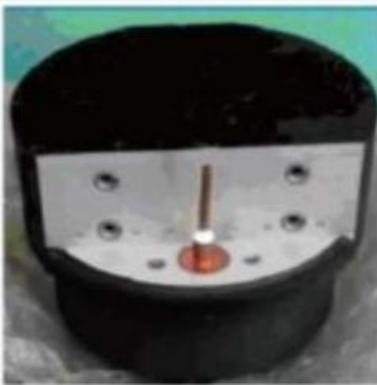
Simulation of Rolling bearing-single rotor system

Momentum turbine bearing assembly

The momentum wheel is the key component of the satellite attitude control system. The bearing assembly is the core component of the momentum wheel. The life, accuracy and reliability of the momentum wheel and bearing assembly of the satellite are directly affected by the reaction torque caused by the change of gyroscope's fixed axis and speed. The main structure of momentum wheel is plate type and spoke type structure. The built-in micro oil supply system and damping system can effectively improve the bearing capacity and life of momentum wheel. The angular momentum range of the product is 0.05Nms to 200Nms. The applicable speed range is 1000rpm to 12000 rpm. The external size is 60mm to 350mm, The minimum steady state power consumption is 1W. At present, the control torque gyroscope of large aircraft with angular momentum up to 200nm has been developed, and it has the research and development capability of 1500NM and micro control torque gyroscope. Bearing accuracy has been improved from precision level (P4) to super precision level (P2), and product maturity has reached six levels.



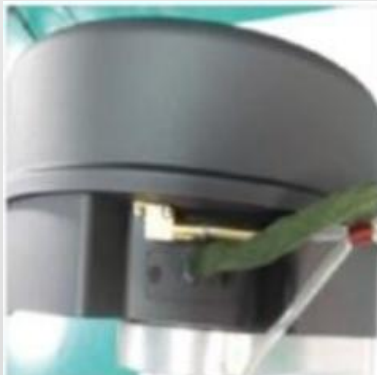
0.25Nms balances the momentum wheel



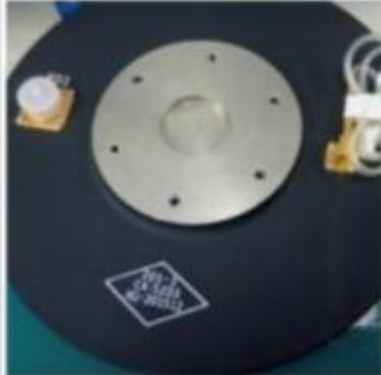
0.5Nms offset momentum wheel



5Nms momentum wheel



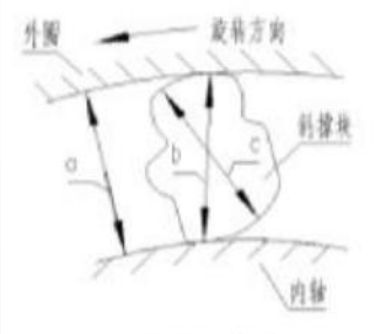
12Nms momentum wheel



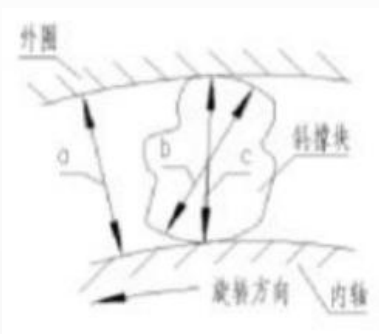
45Nms momentum wheel

Overrunning clutch and components

Overrunning clutch is a clutch that automatically engages or disengages by the change of the relative speed of the main and driven parts or the change of rotation direction. Overrunning clutch can only transfer torque in one direction and automatically disengages when the speed of the driven part exceeds the speed of the active part or the active part rotates in reverse. The working principle is as follows:



a)Contact transfer torsional state



b)Out of transcendental state

a) When the rotation speed of the outer ring is greater than the rotation speed of the inner shaft, the inclined brace will rotate around its center in the counterclockwise direction. Since the size of the inclined brace b is greater than the radial size a between the inner shaft and the outer ring, the inclined brace will cut into the inner shaft and the outer ring and rotate together. At this time, the overrunning clutch is in the state of contact transfer torque.

b) When the rotational speed of the inner shaft in the counterclockwise direction is greater than the rotational speed of the outer ring, the skew stay block will rotate around its center in the clockwise direction. Because the size of the skew stay block c is less than the radial size a between the inner shaft and the outer ring, the skew stay block and the outer ring of the inner shaft are disengaged and fit. At this time, the overrunning clutch is in the state of disengaged and overrunning.

The main products are inclined stay type overrunning clutch roller type overrunning clutch and overrunning clutch assembly, which are widely used in the fields of aerospace weapons automobile and engineering machinery, etc. In recent years, it has provided supporting products for a variety of new national aircraft transmission system starting system and auxiliary power device system



Product processing and manufacturing

Through the continuous efforts of the company, it has now built a new workshop of 16800 square meters, forming a specialized special bearing and clutch assembly production base.



Product testing and quality

The quality management system of the company conforms to GB/T 19001-2008 , JGB 9001B-2009. The system is suitable for bearing space aircraft momentum wheel and assembly clutch assembly weapon equipment special engineering plastic composite materials (polyimide phenolic resin polytetrafluoroethylene) and bearing parts Special powder materials (ceramic materials) and bearing parts design, development, production and service.

Currently, the laboratory's authorized testing scope includes: rolling bearings, joint bearings, linear motion, rolling supports, rolling bearing parts, precision machinery parts, metal materials. Laboratory authorized calibration ranges include: smooth limit gauge, standard ring gauge, radial clearance standard, vibration standard, piezoelectric accelerometer, working vibrator meter, roundedness standard, surface roughness measuring instrument, surface roughness comparison sample, indicator, torsional spring comparator, universal caliper, micrometer, Lever micrometer, special instrument for bearing. The laboratory has authorized 157 testing standards and 31 calibration specifications.

The Special Bearing Division has 47 professional inspection personnel for military products production. They have rich inspection experience and strictly control the quality of parts and finished products in each process. At present, there are more than 3588 sets of monitoring and measuring equipment used for military products production, including all kinds of special bearing testing instruments such as: three-coordinate detector, turbine flaw detection machine, clearance instrument, vibration measuring instrument, dynamic stiffness instrument, bearing preload tester, friction torque tester, protrusion measuring instrument, life testing machine, MPTB moment of inertia measuring instrument and other traditional machinery and electrical monitoring, measuring equipment.

Some special high-precision test equipment is as follows:

T6904 projection measuring instrument

Application scope: Measuring micro bearing protrusion.
Measuring range: Inner diameter is 1.2~10 mm.
Axial force range :1~60 N loading force resolution is 0.1N
Measurement resolution : 0.00005mm.



It is an important instrument in the matching process of miniature bearings that can accurately and stably measure the protrusion value below the axial bearing.

CPJ-6020V floor projector

The equipment can be used for 5 times to 100 times projection lens, projection clearer, more clear details, is a leading level in China

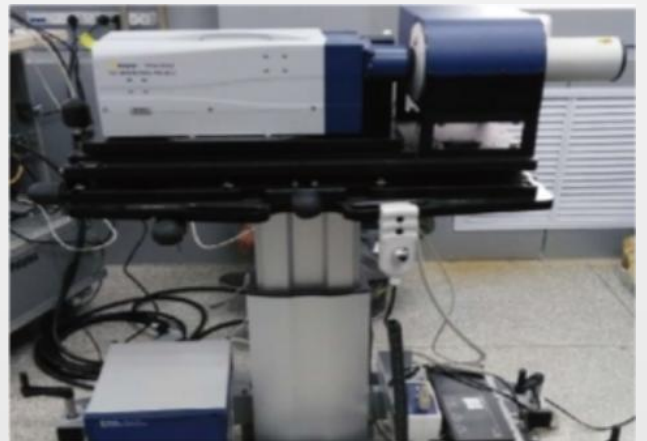


Three-dimensional image measuring instrument

Hexagon 3D image measuring instrument, also known as precision image mapping instrument, overcomes the shortcomings of traditional projectors. It is a new type of high precision and high-tech measuring instrument integrating optical, mechanical and electrical computer image technology. High rate optical magnification imaging is carried out by the optical microscope on the measured object. After the image of the enlarged object is sent to the computer by the CCD camera system, the contour and surface shape size, Angle and position of various complex workpiece can be detected efficiently, especially the microscopic measurement and quality control of precision parts.

Laser vibration test system

German POLITEC company's laser vibration test system, using the world's top optical and signal processing technology, the use of laser Doppler vibration measurement technology (LDV), can be non-contact measurement of object surface vibration speed. The instrument sends out a beam of laser, according to the vibration object surface reflected back laser frequency change (that is, Doppler shift), the frequency shift is proportional to the speed of the object, thus measured Doppler shift, and then calculate the vibration speed of the object, vibration test.



Contour surface measuring instrument

Profile surface measuring instrument is a kind of surface roughness, waviness and surface profile measurement as one, and has a reliable, accurate and flexible high precision measuring instrument, suitable for small to large bearing workpiece measurement, such as shape error analysis, radius, Angle, size, radian, bearing profile, special measurement can also be programmed. Its configuration mainly includes Taylor patent phase grating interference sensor and a complete set of analysis software including Gothic arc



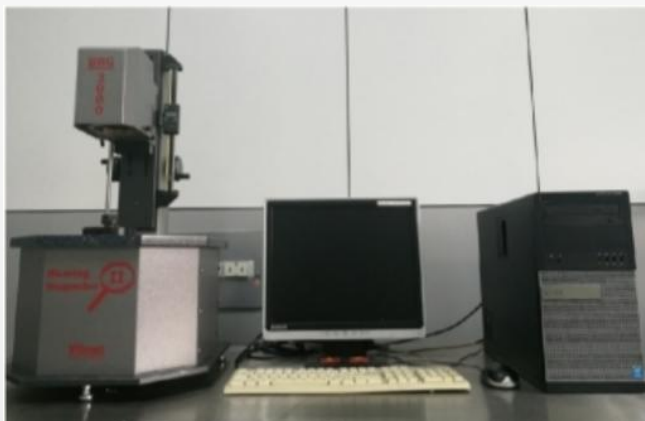
Vacuum high and low temperature universal friction and wear testing machine

American Rtec's vacuum universal friction and wear testing machine can test the tribological properties of aerospace bearing materials under environmental simulation conditions and fully meet the requirements of various aerospace materials under complex conditions such as high temperature and low temperature vacuum. At the same time, the equipment is equipped with the simulation of bearing high temperature working environment, low temperature and vacuum working environment at high flight altitude. The equipment adds the high temperature environment and vacuum environment control devices respectively on the basis of two standard friction and wear testing machines, forming a set of vacuum high temperature bearing friction test system. And can simulate the friction and wear test under complex working conditions such as liquid environment, humidity environment, low temperature environment.



Dynamic friction torque tester

By using high-precision grating torque sensor, the friction torque and its fluctuation of various aviation bearings can be accurately measured. At the same time, the special data acquisition and analysis software can be used to analyze the measured data, and can distinguish the contaminated bearings, pits in the raceway, bearing components have defects and other bearing defects



High speed digital camera analysis system

High speed digital camera analysis system Phantom V710 is produced by an American company Vision Research. At present, there is no domestic manufacturer capable of producing such equipment. The system has the following functions:

1. Analyze the image sequence shot by high-speed camera and automatically track the feature points and marked points and automatic tracking calculator displacement velocity acceleration.
2. It can conduct 2D, 3D and 6D analysis on image sequences taken by multiple cameras from different angles to form reports.
3. Can process a variety of high-speed camera input image data compatible with a variety of general image formats.
4. A variety of automatic tracking algorithms can be used to analyze the motion parameters of infinite points such as displacement, velocity and acceleration.



Product testing

Typical testing machine product



Aircraft shafting bearing testing machine



Aviation over clutch dynamic performance testing machine



Aeroengine intershaft bearing testing machine



Robot RV reducer bearing testing machine

Technical services

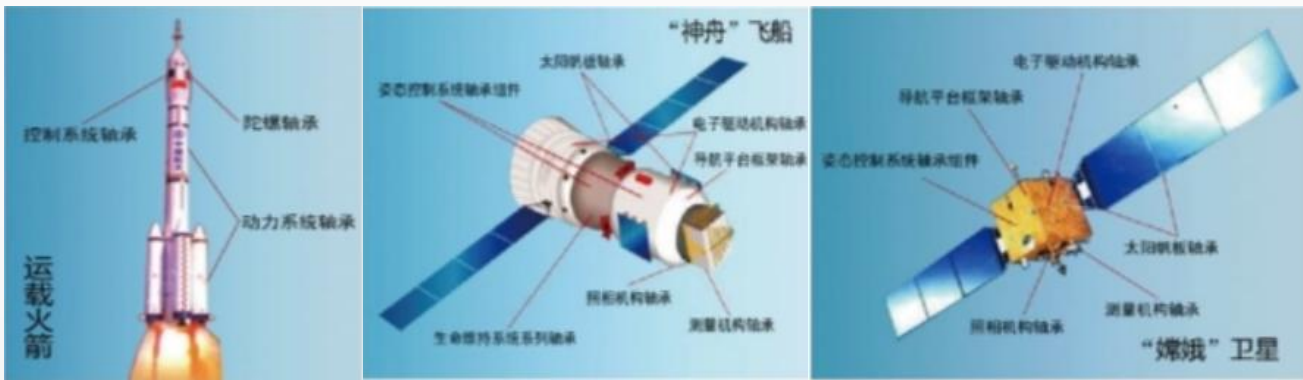
We provide comprehensive solutions for special precision bearings to meet the needs of different customers.

1. According to the system requirements of the host unit, provide technical consultation service of bearing selection
2. To provide metal, non-metal materials bearing parts, oil testing and analysis services.
3. Provide bearing test and failure bearing analysis services.
4. In order to ensure that customers better use bearings, we track and visit the use of all the company's military products.
5. Visit special users regularly every year to understand the latest needs of users.
6. Invite users for technical exchange from time to time.

Typical product application

Aerospace field

The main product structure has amplitude plate structure and spoke structure. The angular momentum range is 0.05Nms ~ 68 Nms, the applicable speed range is 10rpm ~ 9500rpm, and the overall dimension is 60mm~ 350mm. The minimum capacity of 1W, with a trace oil supply system. At present, a large aircraft with an angular momentum of 200 Nms has been developed. With 1000 Nms and micro control moment gyro development ability.



Rocket engine turbo pump bearing

Application condition: applied to large thrust rocket turbine pump.

Main technical:

ID Sizes: 15mm-120mm
OD Sizes: 32mm-215mm
Working environment: low temperature liquid hydrogen, liquid oxygen, liquid nitrogen medium
Operating temperature: -253°C ~ -150°C
Working Speed : 0~60,000r/min
Radial load: 50~30,000 N
Special process: special treatment of roller path surface



Space radiation resistant bearing

Application condition: space station

Technical parameter:

ID Sizes: 5mm-200mm
OD Sizes: 12mm-232mm
Working environment: vacuum
Operating temperature: -55°C ~ +125°C
mechanical life: ≥Start, Stop, 120,000 times
Working life: ≥15 years
Radiation tolerance does: ≥50Mrad(Si)
Friction coefficient: ≤0.005



Bearing for the Mars exploration mechanism

Application condition: Mars atmosphere (N₂, CO₂)

Technical parameter:

ID Size: 15mm~80mm

OD Size: 28mm~125mm

Operating temperature: -40°C ~ +80°C

Storage temperature: -60°C ~ +100°C

Axial load: gradually increase in work, with a range of between 4000N ~ 12000N.



Space communication bearings

Application condition: space communication.

Technical parameter:

ID Size: 3mm ~ 7mm

OD Size: 8mm ~ 15mm

Working environment: Vacuum environment
pressure $\leq 1.3 \times 10^{-3}$ Pa

Operating temperature: -103°C ~ +116°C

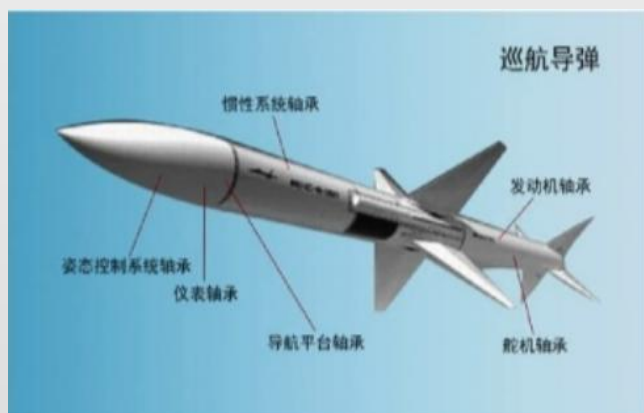
Radial load: 0~15N Working speed : 100 r/min

Working life: 500,000 RPM

Aviation field

The company main products are inclined support type surpassing clutch, roller type surpassing clutch and surpassing clutch components, which are widely used in attack Helicopter and ship-based aircraft series.

The company develops and produces nearly 100 kinds of aviation bearing products, mainly including engine spindle bearing, transmissionshaft bearing, motor bearing, instrument bearing, aircraft landing gear bearing, etc. The accuracy level is mainly P5, P4 and P2 class.





High temperature high speed bearing

Application condition: Operating temperature up to 300°C. The highest speed of ball bearing is 60000r / mm, the highest speed of cylindrical bearing is 50000r / min, oil injection lubrication, mainly used in gas turbine engine.

Technical parameter:

ID Size: 50mm ~170mm
 OD Size: 10mm ~200mm
 Precision level: P4
 Speed: 10000r /min ~60000r /min
 Working temperature: -50° C ~300° C
 Load: axial load ≤ 5000N, radial load ≤ 2000N.
 Radial load of cylindrical roller bearing: ≤ 4000N



Frame sensitive bearing

Application condition: low speed, minimal friction torque requirements, bearing accuracy P4 level or above.

Technical parameter:

ID Size: 5mm ~300mm
 OD Size: 8mm ~360mm
 Working environment: ultra-clean working environment.
 Operating temperature: -55° C ~ + 80° C
 Working speed: ≤ 10r / min
 Friction coefficient: ≤ 0. 0015 (oil lubrication)
 Features: high bearing precision, generally P4 level or above.

Aviation conductive slip ring bearing

Application condition: Applied to aviation conductive slip ring.

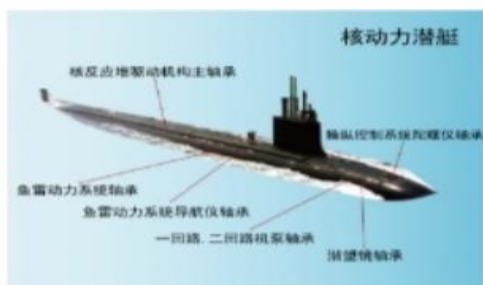
Technical parameter:

ID Size:3mm ~315mm.
 OD Size: 8mm~345mm
 Precision level: P4
 Working temperature: -55° C ~ +80° C
 Vibration acceleration: axial and radial
 Impact test acceleration: axial and radial
 Fall impact test acceleration: axial and radial
 Working life: ≥ 1x10⁷ rpm



Ship field

The company is committed to the research and development of nuclear power submarine bearings. Mainly including warship wedding bearing, inertial navigation platform bearing, turbine booster bearing, etc. The accuracy levels aremainly P5, P4 and P2.



High-precision navigation platform bearing

Application conditions: high precision, high reliability, corrosion resistance, withstand a certain vibration impact load. Operating at low speed and swing conditions with an operating and storage temperature of $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$. Bearing characteristics: using diagonal contact ball bearing or deep groove ball bearing, thin wall, series, lubrication using special material retention frame to achieve its lubrication, bearing rubbing, healing moment is small and uniform, small coefficient of friction, pair take antenna difference is less than 0.5° , bearing internal and external diameter size difference is strict, installation of preload on bearing.

Technical parameter:

ID Size: 5mm ~ 260mm

OD Size: 30mm ~ 310mm

Precision level: P5、P4、P2、P2A

Speed: Low speed or swing



Weapons field

Guidance bearing

Application condition: for firing final guided shells. By the guide to ensure the hit rate of the bullet. And the tracking Of the target by the seeker depends on the gyro-stable photoelectric system.

Technical parameter:

ID Size: 1.5mm ~ 50mm

OD Size: 3mm ~ 70mm

Precision level: P4

Speed: 0 ~ 7200 r/min

Working temperature: $-60^{\circ}\text{C} \sim +70^{\circ}\text{C}$

Friction coefficient: < 0.0015 (oil lubrication)



Nuclear industry field

Nuclear device drive mechanism bearing

Application condition: Corrosion, strong radiation, strong magnetic environment.

Technical parameter:

ID Size: 45mm ~ 80mm

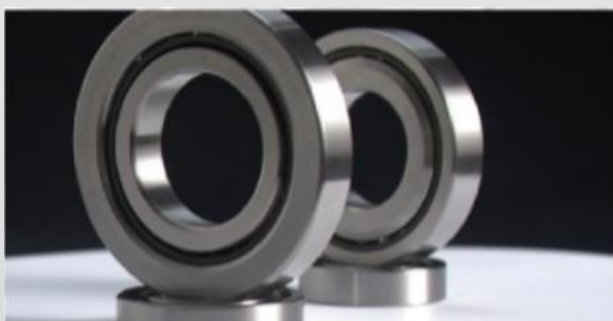
OD Size: 75mm ~ 125mm

Working environment: magnetic resistance, corrosion resistance.

Bearing characteristics: bearing parts are made of special materials, cages are special self-lubricating materials, with corrosion resistance, high temperature resistance, strong radiation resistance, wear resistance, no magnetic and other characteristics.

Axial load: $\leq 6000\text{N}$

Bearing life: $\geq 2.0 \times 10^6$ rpm



Product summary

Special bearing

DEEP GROOVE BALL BEARING					
No.	ITEM NAME	SIZE (d×D×B)	No.	ITEM NAME	SIZE (d×D×B)
1	FDA-068	0.8×4×1.8	43	66/3.175-ZTN3/HVP4	3.175×5.98/6.35×2.78
2	FDA-067	1.2×4/4.7×1.4	44	6X3/3.175VHV/P5/C9	3.175×6.35×2.38
3	FDA-053	1.2×4/5.2×1.6	45	6/3.175V/HVP59	3.175×6.35×2.38
4	069(619/1.2Y1V/HVP4)	1.2×4×1.6	46	S418MCK	3.175×6.35×2.381
5	FDA-054	1.2×4×1.6	47	C93KXA2	3.175×6.35×2.381
6	619/1.2Y1V/HVP4	1.2×4×1.6	48	C93KXA6	3.175×6.35×2.381
7	F628/1.5/HPP5T88YB2	1.5×4/5×1.6	49	S418FMCKW	3.175×6.35/7.5×2.78
8	F628/1.5X2J/HPSPYA	1.5×4×1.6	50	S418CHH	3.175×6.35×2.78
9	F628/1.5X2J/HPSP	1.5×4×1.6	51	S418MCKHH	3.175×6.35×2.78
10	619/2TN3/HVP4YB1YA8	2×6×2.3	52	S418FMCKHH	3.175×6.35/7.5×2.78
11	618/2.35x3/P5	2.35×5.5×2	53	66/3.175TN3/P4YB1	3.175×6.35×2.78
12	66/2.38-ZTN3/HVHQ1P5	2.381×4.0762×2.78	54	406/3175-2ZTN3/HVP4	3.175×6.35×5.56
13	6/2.381J1/HVP59	2.381×7.938×2.78	55	406/3.175-2ZTN3/HVP4YB1	3.175×6.35×5.56
14	F618/2.5TN3/HPP4T	2.5×6×1.8	56	F6/3.175J1/HVP5	3.175×9.525/11.176×3.969
15	66/2.5J1/HVP5CNMS2	2.5×7.938×1.8	57	6/3.175J1/HVP54	3.175×9.525×3.967
16	618/3X3/TN1P4	3×6×2.38	58	F66/3.2WBJ/HVP59S0	3.2×10/11.6×3
17	618/3TN3/HVP4YB1	3×7×2	59	627/4-2ZHVP5	4×7×2.5
18	618/3TN3/HVP4	3×7×2	60	618/4TN3/HVP4YB1	4×9×2.5
19	FDA-062X	3×7×2	61	618/4TN3/HVP4YB1YC	4×9×2.5
20	618/3/P5	3×7×2	62	628/4TN3/HVP4YB1	4×9×3.5
21	618/3TN3/P4YA1	3×7×2.5	63	628/4-2ZT3/HVP4LHT	4×9×3.5
22	F618/3TN3/P5	3×7/8.2×2.15	64	628/4TN3/HVP4YB1YA	4×9×3.5
23	F618/3TN6/HPP4CU	3×7/8.2×2	65	628/4TN3/HVP4	4×9×3.5
24	F628/3/HVP5S1	3×7/8.2×2.5	66	619/4TN3/HVHQ1P4	4×11×4
25	F628/3TN6/HPP4CU/T88YB2	3×7/8.1×2.5	67	619/4TN3/HVP4YB1	4×11×4
26	F6253-2ZMP52	3×7/8.1×2.5	68	F619/4X3V/HVP5C2S2	4×11/12.2×4
27	618/3x2-Z/P5	3×7×3	69	624TN3/HVP4YB1	4×13×5
28	638/3TN3/HVHQ1P4	3×7×3	70	FDA-051(FDA-052)	4.7×8/9.2×3.2
29	638/3TN3/HV P4YB1	3×7×3	71	FDA-059	4.763×7.938×2.78
30	649/3SWB-2Z	3×8×6	72	R3V/HVP5S2	4.763×12.7×3.969
31	F619/3HVP5S1	3×8/9.5×3	73	66/4.821VWB-2Z/P59S1YB1	4.821×15.867×6.35
32	619/3/HVP5S1	3×8×3	74	66/4.821VWB-2Z/P59S1YB1	4.821×15.867×6.35
33	619/3TN3/HV P4YB1	3×8×3	75	66/4.821VWB-2Z/P59S1YAYB1	4.821×15.867×6.35
34	C23XY1M88	3×10×4	76	617/5-ZX2TN3/HVHQ1P5	5×8×2.8
35	FDA-066(D960023XY1)	3×10×4	77	D1000085XJ	5×11×3
36	D960023XY1	3×10×4	78	D1000085XA2	5×11×3
37	4D23XY2T5	3×10×4	79	618/5TN3/HVP4YB1	5×11×3
38	2E23X	3×10×4	80	618/5TN3/HPP4T88	5×11×3
39	623/HVP5S1	3×10×4	81	618/5TN3/HVHQ1P4	5×11×3
40	623/HPP4	3×10×4	82	618/5TN3/HVP4YB1YA	5×11×3
41	623-ZX2TN3/HQ1P5	3×10×4.3	83	618/5TN3/HVP4YB1YC	5×11×3
42	66/3.175-ZTN3/HVP4	3.175×5.97/6.35×2.78	84	628/5X2TN3/HVP4YB1	5×11×3

No.	ITEM NAME	SIZE (d×D×B)	No.	ITEM NAME	SIZE (d×D×B)
85	628/5X2TN3/HVP4	5×11×3.4	136	618/7TN3/HVHPP4T87	7×14×3.5
86	628/5-ZTN3HVP4DFLHT	5×11×4	137	628/7/HVP5S1	7×14×4
87	F638/5/X2WBJ1/HEP59S0	5×11/12.6×4.8	138	627TN3/HVP4YB1	7×22×7
88	F619/5HVP5S1	5×13/15×4	139	F66/7,938J1/HVP5S2	7.938×12.7/13.89×3.969
89	619/5-Z/HVP5S1	5×13×4	140	F66/7.938V/H/P5S2	7.938×12.7/13.89×3.969
90	619/5TN3/HVVP4YB1	5×13×4	141	2D840088KXJ	8×13/15×4
91	D2080095T	5×13×5	142	618/8TN3/HEP5CUYB1	8×16×4
92	625TN3/HVP4YB1	5×16×5	143	618/8/HNP5	8×16×4
93	625X2-2RZWBV/HVP6	5×16×5	144	618/8/HNP4	8×16×4
94	F625TN3/HVP4T	5×16/18×5	145	618/8TN3/HVP5TYB1	8×16×4
95	E35KN3	5×19×6	146	618/8TN3/HVP4TYB1	8×16×4
96	617/6X2TN3/HVP5	6×10×2	147	628/8TN3/HVP4YB1	8×16×5
97	628/6TN3/HVP5YB1	6×13×5	148	619/8TN3/HVP4YB1	8×19×6
98	618/6TN3/HEP5CUYB1	6×13×3.5	149	D80018X	8×22×7
99	618/6TN3/HVP4YB1	6×13×3.5	150	608TN3/HVP4YB1	8×22×7
100	618/6TN3/HVP5TYB1	6×13×3.5	151	608X2-2RZWBV/HVP6	8×22×7
101	618/6TN3/HVP5YB1YC	6×13×3.5	152	608TN3/HVP4YB1YC	8×22×7
102	618/6TN3/HVP5YB1	6×13×3.5	153	608TN3/P4CU	8×22×7
103	D1000096XAM	6×15×5	154	E340026KN3	8.526×19×6
104	619/6TN3/HVP5YB1	6×15×5	155	66/9TN3/HVP4	9×12.2×2.4
105	619/6TN7/HV3HQ1P4CU	6×15×5	156	F66/9TN3/HVP4	9×12.2/13.4×2.8
106	619/6TN6/HVP5	6×15×5	157	618/9TN3/HVP4YB1	9×17×4
107	619/6-2ZTN3/HVHQ1P4	6×15×5	158	628/9TN3/HVP4YB1	9×17×5
108	619/6-2ZTN3/HVP5	6×15×5	159	619/9TN3/HVP4CU/YA5	9×20×6
109	619/6TN3/HVHQ1P4	6×15×5	160	619/9/HNP4	9×20×6
110	619/6TN3/HVP4YB1	6×15×5	161	619/9TN3/HVP4YB1	9×20×6
111	619/6TN3/HVP5YB1YC	6×15×5	162	619/9-2ZTN3/HVHQ1P4	9×20×6
112	619/6TN3/HVP4S0YB1	6×15×5	163	619/9/HPP4	9×20×6
113	619/6TN3/HVP5	6×15×5	164	619/9X1TN3/HVHQ1P4	9×22×6
114	626TN3/HVP49YB1	6×19×6	165	619/9X1TN6/HVHQ1P4/CU	9×22×6
115	E26N3Y (E26N3Y1)	6×19×6	166	609-2ZTN3/HPP4	9×24×7
116	E26N3Y2	6×19×6	167	66/9.525-2ZQ1C1/HNP5	9.525×22.225×7.142
117	E410026N3Y	6×19×6	168	61700X2-2ZTN3/HVP4YB1	10×15×4
118	626TN6/HVP49	6×19×6	169	61800TN3/HVP4YB1	10×19×5
119	E26N3Y3	6×19×6	170	61800TN3/HVP4YB1YC1	10×19×5
120	626/HN3/P6/YB1	6×19×6	171	61900TN3/HVP4TYB1	10×22×6
121	626X2-2ZWBV/P6	6×19×6	172	61900-2TN3/HVHQ1P4CU	10×22×6
122	626X2-2RZWBV/HVP6	6×19×6	173	61900-ZTN3/HPP4	10×22×6
123	626TN3/HVP4TYB1YC	6×19×6	174	61900/HVP6S1	10×22×6
124	626X2-2Z/HV	6×19×7	175	D160100XK	10×26×8
125	FR168J1/HVP5S2	6.35×9.525/10.716×3.175	176	6000TN6/HVP4	10×26×8
126	FR188WBJ1/HVP5S2	6.35×12.7/13.89×3.969	177	6000TN3/HVP4S1	10×26×8
127	66/6.35-2ZQ1C1/HNP5	6.35×12.7×4.76	178	6000TN3/HVHQ1P4CU	10×26×8
128	66/6.35Y/HEP59S0	6.35×19.04×5.56	179	6000TN3/HEP4CUYB1	10×26×8
129	66/6.4TN3/HVP4	6.4×10×3	180	6000Q1C1/HNP4	10×26×8
130	F66/6.4TN3/HVP4	6.4×10/11.2×3	181	6000-ZTN3/HVHQ1P4CU	10×26×8
131	618/7TN3/HP2YB1	7×14×3.5	182	6200TN3/HQ1P5	10×30×9
132	D1000087XJ	7×14×3.5	183	6200TN6/HVP5	10×30×9
133	F618/7TN3/P4T87	7×14/16×3.5	184	6200-2ZV/HVP5	10×30×9
134	618/7-ZTN3/HVP5YB1	7×14×3.5	185	6200TN3/HVHQ1P4CU	10×30×9
135	618/7TN3/HVP4YB1	7×14×3.5	186	6200TN3/HVHQ1P4CUYBDT	10×30×9

No.	ITEM NAME	SIZE (d×D×B)	No.	ITEM NAME	SIZE (d×D×B)
187	617/11TN3/HVHQ1P4	11×14.8×3	238	6202X2-27/HVP6	15×35×14(11)
188	61701X3TN3/HVHQ1P4	12×17×3.5	239	16002-2Z/HVP5	15×32×8
189	61801TN3/HVP4YB1	12×21×5	240	6002TN3/HVP4TYB1	15×32×9
190	61801TN3/HVP4YB1YC1	12×21×5	241	66/15.875/Q4/HV1/YA/P59	15.875×26.988×6.35
191	61801/HNP5YB	12×21×5	242	66/15.875VWB-2ZP59S1YB1	15.875×34.917×10.317
192	61801/HNP5	12×21×5	243	66/15.875VWB-2ZP59S1YB1	15.875×34.917×10.317
193	61801TN3/HVP4S0YB1	12×21×5	244	66/15.875VWB-2ZP59S1YB1	15.875×34.917×10.317
194	61819TN3/HVP4YB1	95×120×13	245	66/15.875VWB-2ZP59S1YAYB1	15.875×34.917×10.317
195	61901/HV	12×24×6	246	FDA-018	16×27×7
196	61901Q1/HNP4	12×24×6	247	61803/HVP4	17×26×5
197	61901-ZTN3/HPP4	12×24×6	248	61803TN3/HVP4YB1	17×26×5
198	61901TN3/HVHQ1P4	12×24×6	249	61803TN3/HVP4YB1YC1	17×26×5
199	61901TN3/HVP4YB1	12×24×6	250	61803/HVP6S1	17×26×5
200	61901TN3/HVP4YB1YC1	12×24×6	251	61903/HVP4	17×30×7
201	61901Q1/HNP5Y8	12×24×6	252	61903TN6/HVHQ1P5	17×30×7
202	6001TN3/HVP5YB1	12×28×8	253	61903/HVP8S1	17×30×7
203	6001TN3/HVP4S1	12×28×8	254	61903TN3/HQ1P5	17×30×7
204	6001-2ZTN3/HPP4	12×28×8	255	61903TN3/HVP4YB1	17×30×7
205	6001TN3/HVP40BT	12×28×8	256	61903TN3/HPHQ1P5	17×30×7
206	6001-2ZTN3/HPP4	12×28×10	257	FDA-103X	17×35×10
207	6001-2RZV/HV1P6C2	12×28×8/10	258	3C180103QT2R3	17×35×10
208	6001-2RZV/HV1P6	12×28×8/10	259	6003TN3/HVP5S0YB1	17×35×10
209	6201-RS/HV	12×32×10	260	6003-2ZTN3/HVP4	17×35×10
210	6201TN3/HVP4S1	12×32×10	261	6003C1/HNP4	17×35×10
211	6201TN3/HVP4TYB1	12×32×10	262	6003C1/HNP4YC	17×35×10
212	66/12.7J2/HEP59S0	27×28.567×6.35	263	6203-2Z/HVP6	17×40×12
213	60/12.7-2Z/HEP5	12.7×28×8	264	66/17.85-2ZC1/HEHQIP5S1	17.85×33.57×10
214	FDA-027	13×24×6	265	66/17.85-2ZC1/HNHQ1P4	17.85×33.57×10
215	61805M/HNP5	15×24×5	266	F66/19TN3/HVHQ1P4	19×22.6/24×2.6
216	61802M/HNP4	15×24×5	267	68/19TN3/HVHQ1P4	19×22.6×2.2
217	61802M/HEP6	15×24×5	268	61704X3TN3/HVHQ1P4	20×26×3
218	61802M/HNP5YB	15×24×5	269	60804M/HNP4	20×32×4
219	61802TN3/HVP4YB1	15×24×5	270	61804T/HVP4	20×32×7
220	61802TNN3/HVP4YB1YC	15×24×5	271	61804/HVP2	20×32×7
221	61902/HVP6S1	15×28×7	272	61804-Z/HVP4	20×32×7
222	61902TN3/HQ1P5	15×28×7	273	61804/HVP8S1	20×32×7
223	61902X3TN3/HV1P4	15×28×8	274	61804TN3/HVP4YB1	20×32×7
224	61902TN3/HVP5YB1	15×28×7	275	61804TN3/HVP4YB1YC	20×32×7
225	61902TN3/HVP5TYB1	15×28×7	276	61904-2RSQ1/P63	20×37×9
226	6202TN3/HQ1P5	15×35×11	277	61904TN3/HQ1P5	20×37×9
227	6202TN3/HVP4YB1	15×35×11	278	61904TN6/HVHQ1P5	20×37×9
228	6202-2ZQ1/HEP5	15×35×11	279	61904Q1/HEP4S1	20×37×9
229	6202TN6/HVHQ1P4	15×35×11	280	61904Q1/HEP4S1YC	20×37×9
230	6202TN6A/HVHQ1P4	15×35×11	281	61904TN3/HVP5TYB1	20×37×9
231	6202TN6A/HVP4	15×35×11	282	61904TN3/HPHQ1P5	20×37×9
232	6202TN6/HVP4	15×35×11	283	61904/HVP6S1	20×37×9
233	6202TN6/HVP4YB1	15×35×11	284	3C180104QT2R3	20×42×12
234	6202TN3/HVP4YB1YC	15×35×11	285	6004T13/HVP5S0YB1	20×42×12
235	6202TN3/HVP4S1	15×35×11	286	63004-2Z/HVP5	20×42×16
236	62027N3/HPHQ1P4	15×35×11	287	6204Q1/HVP5CU	20×47×14
237	6202X2-2Z/HVP6	15×35×14	288	6204TF/HVP5CU	20×47×14

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289	6204TN6/HVHQ1P5	20×47×14	340	6000TN3/HVP4	30×55×13
290	GE/6204TN6/HVP4	20×55×18	341	6006/HVP6S1	30×55×13
291	62047TN6/HVP4YB1	20×47×14	342	6006TN3/HVP4YB1	30×55×13
292	2E3040	20×52×15	343	6206Q1/HVP5CU	30×62×16
293	66/22.225/Q4/HV1/YA/P59	22.225×33.338×6.35	344	6206TF/HVP5CU	30×62×16
294	66/23TN6/HVP4T	23×40×8.5	345	6206TN6/HVP5	30×62×16
295	C1000805XAU	25×37×7	346	6206TN6/HVP5YB1	30×62×16
296	61805-2RZV/HV1P6	25×37×7	347	6206TN6/HVP5YB	30×62×16
297	61805TN3/HVP4YB1	25×37×7	348	C400206XA	30×62×16
298	61805TN3/HVP4YB1	25×37×7	349	61807TN3/HVHQ1P4	35×47×7
299	61805TN3/HVP4YB1YC1	25×37×7	350	61807TN3/HVP4YB1YC1	35×47×7
300	61905TN3/HVP4YB1	25×42×9	351	61907TN3/HVP5S0YB1YC	35×55×10
301	61905TN3/HV1P4DBT	25×42×9	352	61907Q1C1/HNP4	35×55×10
302	61905TN3/HVP4YB1YC	25×42×9	353	61907TN3/HVP5S0YB1	35×55×10
303	61905/HVP6S1	25×42×9	354	61907TN6/HVP4S0	35×55×10
304	61905TN3/HV1P4	25×42×9	355	61907/HVP6S1	35×55×10
305	16005TN3/HVP4YB1	25×47×8	356	61907/HEP4	×35×55×10
306	6005Q1/HEP43	25×47×12	357	FDA-107X	35×82×14
307	6005/HVP6S1	25×47×12	358	6007/HV	35×82×14
308	60005TN3/HVP5S0YB1	25×47×12	359	60C7TN3/HVP4YB1	35×82×14
309	6005-2ZV/HV1P6C2	25×47×12/14	360	66/38.1TN6/HVP4T	38.1×47.625×4.782
310	6205TF/HVP5CU	25×52×15	361	66/39.688/Q4/HV1/YA/P59	39.668×50.8×6.35
311	6205-2ZQ1/HVPS0	25×52×15	362	61806TN3/HEP5S0YB1	40×52×7
312	6205TN6/HVP5YA	25×52×15	363	61808TN3/HVP5YB1	40×52×7
313	6205TN6/HVP5	25×52×15	364	61808TN3/HVP5TYB1	40×52×7
314	6205TN6/HVP5YC	25×52×15	365	61808TN3/HVHQ1P4	40×52×7
315	6205-2ZQ1/HVP5S0	25×52×15	365	61908TN3/HVP5S0YB1	40×62×12
316	6205-2RZQ1/HVP5	25×52×15	367	61908/HEP4	40×62×12
317	6205TF/HVP5CUYAYB1	25×52×15	368	61908/HVP6S1	40×62×12
318	6205TF/HVP5CUYA	25×52×15	369	61908TN3/HVP5	40×62×12
319	6205TN3/HVP4S1YB1	25×52×15	370	6208TF/HVP5CUYB1	40×80×18
320	6206Q1/HEP4S1	25×52×15	371	6208TF/HVP5CU	40×80×18
321	6205Q1/HEP4S1YC	25×52×15	372	6208X2-2RZQ1/P5S0	40×80×20
322	66/25.4-2RSWBV/P6	25.4×50.8×11.13	373	6208X2-2RZQ1/P5S0YA6	40×80×20
323	FDA-013	27×38×6	374	6308/HVIP6	40×90×23
324	FDA-005	27×38×7	375	61809TN3/HVP5S0YB1	45×58×7
325	FDA-005	27×38×7	376	61809X1TN3/HVP4	45×62×7
326	61806/HVP4	30×42×7	377	62809X3TN3/HVP69YB1	45×60×9
327	61806TN3/HVHQ1P4	30×42×7	378	62809X3TN3/P6YB1	45×60×9
328	61806TN3/HVP5S0YB1	30×42×7	379	FDA-016	45×68×12
329	61906Q1/HNP4	30×47×9	380	61909TN3/HVP4YB1S0	45×68×12
330	61906 Q1/HNP4YC	30×47×9	381	61909/HVP6S1	45×68×12
331	61906/HEP4CU	30×47×9	382	6009/HVP6S1	45×75×16
332	61906Q1/HNP4YB	30×47×9	383	6009/HVP6S1YC	45×75×16
333	61906Q1/HNHQ1P4	30×47×9	384	6009/HVHQIP6	45×75×16
334	61906TN3/HVP5TYB1	30×47×9	385	6009V/HP2P5YB	45×75×16
335	61906/HVP6S1	30×47×9	386	6009F4/HP2P5YB	45×75×16
336	16006/HVP4	30×55×9	387	6209 TM6/HVP4YB1	45×85×19
337	16006TN3/HVP5YB1	30×55×9	388	66/49V/HP1HQ1P6	49×94.3×16
338	D106QT2	30×55×13	389	66/49V/HP2P6	49×94.3×16
339	6006/HVP4	30×55×13	390	66/49V/HP2P6YC1	49×94.45×16

No.	ITEM NAME	SIZE (d×D×B)	No.	ITEM NAME	SIZE (d×D×B)
391	66/49V/HP2P6YC2	49×94.5×16	436	6214TF/HVHQ1P5YCYB1	70×125×24
392	66/49V/HP2P5	49×94.5×16	437	6214TF/HVP5YC2YE2	70×125×24
393	66/49V/HP2P5YC	49×94.5×16	438	6214TF/HVP5YB1	70×125×24
394	66/49F4/HP2P5	49×94.5×16	439	6214TF/HVP5YC	70×125×24
395	61810TN3/HVP5S0YB1	50×65×7	440	6KB128125TN6/HVP4ADF300H47	71.4375×88.9×7.9375
396	61910TN3/HPHQ1P5	50×72×12	441	66/73/HEP4	73×113×13
397	61910TN3/HQ1P5	50×72×12	442	61815-2ZQ1/HVP5	75×95×10
398	61910TN3/HQ1P5YC	50×72×12	443	6015TN3/HVP5S0YB1	75×115×20
399	6010/HVS0	50×80×16	444	6KA3TN6/HVP4ADF30H47	76.2×88.9×6.35
400	6010TN3/HVP5TYB1	50×80×16	445	61916TN3/HVP4YB1	80×110×16
401	6210TF/HVP5	50×90×20	446	61816/HVP5	80×100×10
402	6210TF/HVP5YC	50×90×20	447	61816TF/HVP5	80×100×10
403	66/50.8TN6/HVP4T	50.8×60.325×4.762	448	61816TN3/HVP4	80×100×10
404	61811/HV	55×72×9	449	61916TN6/HVP4	80×110×16
405	61811TN3/HVP4YB1	55×72×9	450	6017/HVS0	85×130×22
406	61811X3TN3/HVP5S0	55×74×11	451	6017/HVS0	85×130×22
407	61911TN3/HPHQ1P5	55×80×13	452	6017/HVP6S1	85×130×22
408	61911TN3/HQ1P5	55×80×13	453	6217TN6/HVP4	85×150×28
409	6011/HVS1P5	55×90×18	454	6018TF/HVP5	90×140×24
410	6211TF/HVP5	55×100×21	455	6018/HVP5	90×140×24
411	6211TF/HVP5YC	55×100×21	456	61918TN3/HVP5S0YB1	90×125×18
412	61712X3TN6/HQ1P4	60×75×8	457	61719TN3/HVP4YB1	95×115×10
413	61712X3TN3/HVP4	60×75×8	458	61819TN3/HVP4YB1	95×120×13
414	61812TN3/HEP5S0YB1	60×78×10	459	61819/HVP6S1	95×120×13
415	61812TN3/HVP5YB1	60×78×10	460	61919/HVP6S1	95×130×18
416	61812TN3/HVP5TY81	60×78×10	461	6019/HVP6S1	95×145×24
417	61812TN3/HVP4	60×78×10	462	6219TN6/HVP4YB1	95×170×32
418	60127N3/HVP5TYB1	60×95×18	463	E7000120Q	100×150×16
419	61813X3TN/HVP5	65×80×7.158	464	6021/HV/P6	105×160×26
420	61813TN3/HVP5S0YB1	65×85×10	465	61823X3MHB/P5	115×130×9
421	61813TN3/HVP4S0YB1	65×85×10	466	61823X3MHB/P4	115×130×9
422	61913/HEP4	65×90×13	467	61924/HV/P6	120×165×22
423	61913/HEP4CU	65×100×11	468	66/127TN3/HVP4	127×142.875×8
424	16013TN3/HVP5S0YB1	65×100×11	469	FDA-017	130×160×15
425	10013/HVP4	65×100×11	470	16026/HVP6S1	130×200×22
426	16013TN3/HVP4	65×100×11	471	61828TN3/HVP5TYB1	140×175×18
427	6013TN3/HVP5S0YB1	65×100×18	472	61928/HVP6S1	140×190×24
428	6213TN6/HVP4	65×120×23	473	61830TN3/HVP5TYB1	150×190×20
429	6613TN3/HVUPYA	65×136×10/14	474	61832TN3/HVP5TYB1	160×200×20
430	61814TN3/UV4YB1	70×90×10	475	66/152/HEP5CU	152×172×13
431	6014TN6/HVP6CU	70×110×20	476	60844X3TN6/HVP4	220×239×8
432	6014TN6/HVP6	70×110×20	477	60844X3TN6/HVP4YC	220×239×8
433	6015/HVP6S1	75×115×20	478	60844X3TN6/HVP4YC1	220×239×8
434	6214TF/HVP5YCYB1	70×125×24	479	60844X3Q1/HVP4	220×239×8
435	6214TF/HVP5YC1YB1	70×125×24	480	6663/HEP5CUS0	315×345×18

ANGULAR CONTACT BALL BEARING					
No.	ITEM NAME	SIZE (d×D×B)	No.	ITEM NAME	SIZE (d×D×B)
481	S76/1.2TN3/HVSP	1.2×4×1.6	530	C106076A2	6×16×5
482	SN719/1.5TN3/P4	1.5×5×2	531	FSN717/6TN3/P4	6×16/17.8×5
483	T-906092TN3/P4	2×15.9/17×3.6	532	SN717/6TN3/P4	6×16×5
484	T-906092TN3/P4YA1	2×16.5/21.74×3.5	533	S706CTN3/HVP4YB1	6×17×6
485	T-906072TN3/P4YA	2×16/17.2×3.6	534	S76026Q4/P4	6×19×6
486	C906072A2	2×16/17.2×3.6	535	726V/HV3HQ1P4	6×19×6
487	T-906092TN3/P4YA	2×16.5/17.6×3.5	536	726CTN6/HVP5	6×19×6
488	S728/3TN3/P4	3×7×2.5	537	B726CQ4C1/HNP4	6×19×6
489	C106093A2	3×8×3	538	S726CTN3/HVP4YB1	6×19×6
490	C1036093XA2	3×8×3	539	726CTN3/HVP4YB1	6×19×6
491	SN719/3TN3/P4	3×8×3	540	T-906076TN3/P4YA	6×42×46×5
492	C36023XA5	3×10×4	541	T-906076TN3/P4	6×42/49×8
493	C36023XA2	3×10×4	542	719/7CTN6/HVP4	7×17×5
494	723CTN6/HVP5	3×10×4	543	719/7CTN6/HVP2YB1	7×17×5
495	S723C/P2	3×10×4	544	D36017XJ	7×19×6
496	S723TN3/P4	3×10×4	545	S707CTN3/HVP4YB1	7×19×6
497	C906073A2	3×22/28×6.3	546	S727CTN3/HVP4YB1	7×22×7
493	C906073A2	3×22/28×6.3	547	B728/8ACTN3/HVP4YB1	8×16×5
499	T-906073TN3/P4	3×22/28×6.3	548	B728/8TN3/HVP4T	8×16×5
500	76/3.175TN3/HVP4	3.175×6.35×2.38	549	S719/8CTN3/HVP4YB1	8×19×6
501	76/3.175TN3/HVP4	3.175×6.35×2.38	550	FDA-623	8×22×6.35
502	F76/3175TN3/HVP4	3.175×6.35/7.5×2.78	551	C36018XA5	8×22×7
503	F76/3175TN3/HVP4	3.175×6.35/7.5×2.78	552	C106018XA2	8×22×7
504	FDA-060	3.175×7.938/9.12×2.78	553	C106018KA2	8×22×7
505	SN718/4TN3/P4	4×9×2.5	554	C106018A2	8×22×7
506	C2206094KJ	4×11×5	555	C36018XQ	8×22×7
507	C2200094KA2	4×11×5	556	FDA-630	8×22×7
508	S719/4/P4	4×11×4	557	SN708C/HEP4	8×22×7
509	T-906094TN3/P4	4×24/27.8×5.35	558	C106018XA5	8×22×7
510	SN76/4.4TN3/P4	4.4×9×2.5	559	708CTN3/HVP4TYB1	8×22×7
511	C1106092A2	5×13×4	560	S708CTN3/HVP4YB1	8×22×7
512	C1106095KA2	5×13×4	561	S708C/HVP4YB1	8×22×7
513	S719/5/P4	5×13×4	562	709CTA/HEP4DTA	9×24×7
514	SN719/5TN3/P4YA4	5×13×4	563	F76/9.525M/P5	9.525×22.225/23.9×7.74
515	S705CTN3/HVP4YB1	5×14×5	564	B71700X2TN6/HPP4T	10×15×2.5
516	D6025KJM37	5×16×5	565	B71700X2TN6/HPP4T88	10×15×2.5
517	C106025A2	5×16×5	566	B71700X2TN6/HVHPP4T	10×15×2.5
518	725ACTN6/HVP5YB1	5×16×5	567	B71700X2TN6/HPP4T88	10×15×2.5
519	S725CQ4/HVP2	5×16×5	568	4600TN6/HVHPP4YA	10×15×5
520	S725CQ4/HVP2	5×16×5	569	4600TN6/HVHPP4	10×15×5.6
521	S725CTN3/HVP4	5×16×5	570	71800ACTN3/HVP4YB1	10×19×5
522	SN725TN3/P4	5×16×5	571	71900CTN3/HVP4	10×22×6
523	SN725TN3/P4YC1	5×16×5	572	C2036900XKA	10×22×8
524	SN725TN3/P4YC2	5×16×5	573	C2036900XA5	10×22×8
525	SN725TN3/HEHQ1P4	5×16×5	574	C36100N	10×26×8
526	FDA-064	5.5×13×5	575	C36100JK	10×26×8
527	S71957MP4YA5	6×15×5	576	C36100JK1	10×26×8
528	S719/6CTN3/HVP4YB1	6×15×5	577	C36100J	10×26×8
529	C606076A2	6×16/17.8×5	578	C36100NQ	10×26×8

No.	ITEM NAME	SIZE (d×D×B)	No.	ITEM NAME	SIZE (d×D×B)
579	C136100N	10×26×8	630	B7202ACQ1C1/P4S1	15×35×11
580	7000CVHV3HQ1P4YA	10×26×8	631	7202CTN3/HVP4	15×35×11
581	B7000CTN6/HVP4YC	10×26×8	632	7302ACQ1/P4DBYC	15×42×13
582	C106100A2	10×26×8	633	3302X3ACTN3/HVP5TYB1	15×48×25
583	B7000CTN3/HVP4AYA5	10×26×8	634	5302X3ACTN3/HVP5TYB1	15×48×39
584	7000CT1N3/HVP4DBTYB1	10×26×8	635	C30103J	17×35×10
585	7000CVHVHQ1P4	10×26×8	636	C36103JK	17×35×10
586	7000ACTN3/HVP4DBT	10×26×8	637	C36103N	17×35×10
587	7000ACTN3/P4DFT	10×26×8	638	C36103NQ	17×35×10
588	S7000CTN3/HVP4YB1	10×26×8	639	7003TN3/HVP4TYB1	17×35×10
589	87000CTN3/HVIUPYC	10×26×8	640	B7003-2ZTN3/HVP4	17×35×10
590	B7000-2ZQ1HQ1P4	10×26×8	641	C136203NQ	17×40×12
591	SN7000TN3P4	10×26×8	642	C3203J	17×40×12
592	S7000CTN6/HVP4	10×26×8	643	C362030QK	17×40×12
593	S7000CTM.P4	10×26×8	644	B7203C1/HNP4	17×40×12
594	B70CTN3H/HQ1UPYC	10×26×8	645	B7203C1/HNP4YC	17×40×12
595	7200CTN3/HVP4YB1	10×30×9	646	46/18CTN/HVP5	18×26×8
596	B72000CQ1C1/HNP4	10×30×9	647	717341P481	20×26×4
597	7300CTN6/HVHQ1P5	10×35×11	648	71804ACTNP4DBYB1	20×32×7
598	76/11VHVP4S0YB1	11×51×9.56	649	71304ACTN3H,P4YB1	20×32×7
599	76/11VHVP4S0YB1YC	11×51×6.45	650	71904CTHEPSSOYB1	20×37×9
600	71801CC1/HVP4DB	12×21×5	651	71904CTN3M94	20×37×9
601	71901ACTN3/HVP4YB1	12×24×6	652	71904CTNHP2181	20×37×9
602	B70010CQ1C1/HVP4	12×28×8	653	71904CTNHJP5YB1	20×37×9
603	7001BQ1/P4DFYC	12×28×8	654	71904CTNHP5TYB1	20×37×9
604	7201X2ACTN3/HVP4SOYB1	12×32×8	655	71904CTN3/HVP5	20×37×9
605	B7201AC-2R2Q1/HVP5S1	12×32×10	656	71904CTN3HVP5TYB1DB	20×37×9
606	7201BQ1P4/DBYC	12×32×10	657	B146104Y	20×42×12
607	7201BQ1P4/DFYC	12×32×10	658	C46104XA5	20×42×12
608	46/14.2CQ1/HNHQ1P4	14.2×34.2×71.6	659	C136104QX	20×42×12
609	71902CTN3/HPHQ1P4	15×28×7	660	C130104A2	20×42×12
610	B71902AC-2ZTV3/HVP4	15×28×7	661	C136104XJM	20×42×12
611	FSN71902X1TN3/HVP2	15×30/39×15	662	B7004CTN3/HVP4	20×42×12
612	FSN71902X1TN3/HVP2YC	15×30/39×15	663	B7004CTN/HVP4	20×42×12
613	D136102XA	15×32×9	664	FDA-636	20×42×12
614	CM102J	15×32×9	665	B7004CTN3/HVP1P2	20×42×12
615	C3102N	15×32×9	666	B7004CTN3/HVP1P4	20×42×12
616	C136102NQ	15×32×9	667	B7004CHV1P4YB	20×42×12
617	B7002CTN3/HV1UP	15×32×9	668	B7004CTN3/HV1P4YB	20×42×12
618	7002CV/HV3HQ1P4	15×32×9	669	B7004CTN3/HV1P4YB1	20×42×12
619	7002ACTN3/HVP4SOYB1	15×32×9	670	87004CTN3/HVP2	20×42×12
620	7002ACTN3HVP4S0YB1YC	15×32×9	671	87004CTN3/HVP2YC2	20×42×12
621	C1361021QK	15×32×9	672	B7004CHV1P4YC	20×42×12
622	C36102NQ1	15×32×9	673	B7004AC-2ZTN3/HVP4	20×42×12
623	7002CTN3/P5YB1	15×32×9	674	7004ACTN3/HVP4DBYB1	20×42×12
624	S7002CTN3/HVP4YB1	15×32×9	675	C36204JK (C36204J)	20×47×14
625	S78202CTN3.HNP4YB1	15×35×8	676	C36204QK1	20×47×14
626	CM202J	15×35×11	677	D46204XA5K	20×47×14
627	7202CQ1/P4	15×35×11	678	C36204QK1	20×47×14
628	7202CV/HVHQ1P4	15×35×11	679	C36204QT2	20×47×14
629	B7202CQ1C1/HVP4	15×35×11	680	76/21CQ1/HPP5	21×28×3

No.	ITEM NAME	SIZE (d ×D ×B)	No.	ITEM NAME	SIZE (d ×D ×B)
681	FDA-615	22.225×28.575×3.97	732	7006AC/HVP4TYC	30×55×13
682	76/22.225TN3/HVP4	22.225×28.575×3.97	733	7006CTN3/HVP4S0YB1	30×55×13
683	76/23AC/HVP4DFT	23×34×7	734	7006CTN3/HVP4DBT	30×55×13
684	76/23AC/HVP2DFT	23×34×7	735	7006ACTN3/HVP4YB1	30×55×13
685	76/23ACTN3/HVP4DF	23×34×7	736	7006ACTN3/HVP4DBT	30×55×13
686	76/23ACTN3/HVP2DF	23×34×7	737	7006ACTN3/HVP4S0YB1	30×55×13
687	76/23ACTN6/HVP4DBT	23×40×8.5	738	7006ACTN3/HVP4YB1YC	30×55×13
688	46/24.4CTN3/HVP2DF	24.5×30.5×4.4	739	7006ACTN3/HVP4YB1YC1	30×55×13
689	71806ACTN3/HVP4YB1SO	25×37×7	740	7006ACTN3/HVP4DBTYB1	30×55×13
690	C1246805XA	25×37×14	741	7006HVP4	30×55×13
691	71805TN6.HVP4DB	25×37×14	742	7006TN3/HVP4	30×55×13
692	71905ACTN3/HVP4DFYB1	25×42×9	743	B7006CTN3/HV1P2Z3YC2	30×55×13
693	C136105QK1	25×47×12	744	7004CNT3HVP4S0YB1	30×55×13
694	B7005CTN3/HVP4AYA5	25×47×12	745	C130206JK	30×62×16
695	B7005CTN3/HVP4Z2YC2	25×47×12	746	C46206XA	30×62×16
696	7005ACTN3/HVP4YB1	25×47×12	747	B7206CTFA/P	30×62×16
697	B7005CTN3M/HVP2Z3YC2	25×47×12	748	B7206CTF/HVP5	30×62×16
698	C6205XA	25×52×15	749	B7206TF/HVP5YC	30×62×16
699	D46205XA5K	25×52×15	750	B7206TF/HVP5YC	30×62×16
700	C6205XA	25×52×15	751	B7206TF/HVP5YC1	30×62×16
701	7206C/HEP4	25×52×15	752	B7206TF/HVP5YC1	30×62×16
702	B7205TN6/HVP4	25×52×15	753	B7206TF/HVP5YC1	30×62×16
703	7205CTN6/HVHQ1P5	25×52×15	754	B7206TN6/HV1HQQP4YB1	30×62×16
704	S7205ACTN/HVP4DBS1YB1	25×52×15	755	B7206TN6/HV1HQQP4YB1YC	30×62×16
705	7205ACTN3/HVP4DBS1YBI	25×52×15	756	7206ACTN3/HVP4DBYB1	30×62×16
706	7306CQ1/P5S1	25×62×17	757	3206X2ATN/HVP5YA1	30×62×19
707	B71905AC-2Z/HVP5	25×42×9	758	CFDA-61IY	33.3×44.4×6.4
708	B71905AC-2Z/HVP5DB	25×42×9	759	B71807X2TN3/HVHPP4S0	35×47×4
709	B71905AC-2ZTN3HVP450YB1	25×47×9	760	B71807X2TF/HVHPP4S0	35×47×4
710	B7005CTN3/HV1UPYC2	25×47×12	761	C1136807XAM	35×47×7
711	7305CQ1/P5S1VC1	25×62.2×17.3	762	C1136807XJM	35×47×7
712	7305CQ1/P5S1VC2	25×62.4×17.6	763	B7180TN/HVP4	35×47×7
713	76/27CTN3/HVP4YB1	27×33.4×4	764	B7180TF/HVP4	35×47×7
714	76/27CTN3/HVP4YB1C9	27×33.4×4	765	C1136807XAMY	35×47×7
715	FDA-629	27×47×12	766	70907ACTN3/HPP4DBT	35×55×5
716	76/27ACT/P2DFT	27×47×12	767	71907AC/HVP4DB	35×55×10
717	76/28AC/HVP2DFT	28×46×10	768	71907AC/HVP2DB	35×55×10
718	FDA-629	28×46×10	769	71907ACTN6/HVP4	35×55×10
719	FDA-614	28×46×10	770	71907ACTN3/HVP4DBYB1	35×55×10
720	FDA-608	28×46×18	771	B71907AC-2ZTN3/HVP4S0YB1	35×55×10
721	C1036806XJM	30×42×7	772	7007ACTN3/HVP4	35×62×14
722	71806CTN3/HVP4YB1	30×42×7	773	7007ACTN3/HVP4YB1	35×62×14
723	71806CTN3/HVP4YC	30×42×7	774	7007ACTN3/HVP4YB1YC	35×62×14
724	71806CTN6/HVP4DBT	30×42×7	775	B7207TF/HVP5YB1	35×72×17
725	70906X3TN3/HVP4S0YB1	30×45×8	776	B7207TF/HVP5YC	35×72×17
726	C1246906XJM	30×47×9	777	B7207TF/HVHQ1P5	35×72×17
727	71906ACT/HVP4DBT	30×47×9	778	B7207TN6/HVHQ1PZYB1	35×72×17
728	71906AC/HVP2	30×47×9	779	B7207TN6/HV3HQ1PZYB1	35×72×17
729	71906ACTN3/HVP4SOYB1	30×47×9	780	7207ACTN3P2T	35×72×17
730	17006C/HVP4DBT	30×55×9	781	7207ACTN3/P2DBT	35×72×17
731	S70006CTN/HVP5YB1	30×55×9	782	7207ACTN3/HVP4YB1	35×72×17

No.	ITEM NAME	SIZE (d ×D ×B)	No.	ITEM NAME	SIZE (d ×D ×B)
783	7207ACTN3/HVP4DBYB1	35×72×38	834	B7210TN6/HVHQ1P4YB1YC1	50×90×20
784	76/36TN3/HVP4YB1	36×58×10	835	70811TN3/HVP4DBT	55×72×7
785	71808ACTN3/HVP5YB1	40×52×7	836	71811CTN3/HVP4YC	55×72×9
786	71808CTN3/HVP4YB1	40×52×7	837	71911ACTN3/HVP4S0YB1YC	55×80×13
787	71808ACTN3/HPV5YB1DB	40×52×7	838	71911ACTN3/HVP4S0YB1	55×80×10
788	71808ACTN3/HVP4YB1	40×52×7	839	4611ACTN3HVP4	55×80×25
789	71908CTN3/HVP4DBYB1	40×62×12	840	B7211CTN6/HVP4	55×100×21
790	C136108QK	40×68×15	841	71712X3ACTN3/HVP4YB1	60×76×8
791	B7008CTN3/HV1P2	40×68×15	842	71812CTN3/HVP4YC	60×78×10
792	B7008CTN3/HV1P2Z2YC2	40×68×15	843	71812CTN3/HVP4S0YB1	60×78×10
793	C136208JK	40×80×18	844	71912ACTN3/HVP4YB1	30×55×13
794	B7208TN6/HVP4	40×80×18	845	71912AC/HVP2	60×85×13
795	B7208TF/HVP5YB1	40×80×18	846	71912ACTN3/HVP4D8	60×85×13
796	B7208TF/HVP5YC	40×80×18	847	71912ACTN3/HVP4S0YB1	60×85×13
797	B7208TF/HVHQ1P5	40×80×18	848	C7046112XJM	60×95×11
798	B7208Q4C1/HQ1	40×80×18	849	70012ACTN6/HVP4	60×95×11
799	76/44.45ACTN3/HVP0DBS0YB1	44.45×53.975×4.762	850	70012AC/HVP4RT	60×95×11
800	C1136809JM	45×58×7	851	70012ACTN3/HVP4YB1	60×95×11
801	B71809T/HVP4	45×58×7	852	70012ACTN3/HVP4D8YB1	60×95×11
802	71809 ACTN3/HVP4YB1	45×58×7	853	7012ACTN3/HVP4YB1	60×95×18
803	71809ACTN3/HVP2	45×58×7	854	7012ACTN3/HVP4TYB1	60×95×18
804	71809X1T/HVP4	45×62×7	855	B7012TN6/HVP4	60×95×18
805	71809X1TN3/HVP43	45×62×7	856	7212ACTN3/HVP4YB1	60×110×22
806	B71909CTN3/HVP4	45×68×12	857	B7212CTN6/HVP4	60×110×22
807	71909ACTN3/HVP4YB1S0	45×68×12	858	B7212CT6/HVP4YC	60×110×22
808	71909ACTN3/HV1P4DBT	45×68×12	859	B7212TN6/HVHQ1P4YB1YC1	60×110×22
809	7009ACF4/HV2P4DB	45×75×16	860	7212ACTN3/HVP4DBYB1	60×110×48
810	7009ACF4/HVP4D8S1	45×75×16	861	FDA-619K	65×85×9
811	B7209TF/HVP5YB1	45×85×19	862	71813AC/HVP2ADBT	65×85×10
812	B7209TF/HVP5YC	45×85×19	863	71813TN3/HVP4DB	65×85×10
813	B7209TF/HVP5YC	45×85×19	864	71813TN3/HVP4DBYB1	65×85×10
814	B7209TF/HVP5YC1	45×85×19	865	70013ACQ1/HVP4	65×100×11
815	B71810TN7/HVHQ1P4	50×65×7	866	70013ACTN6/HVP4	65×100×11
816	B71810TN3/HVHQ1P4	50×65×7	867	7013ACTN6/HVP4	65×100×18
817	B71810C-2ZQ1/HEHQ1P4	50×65×7	868	7013ACTN3/HVP4	65×100×18
818	B71810C-2ZQ1/HEP4	50×65×7	869	B7213TN6/HVHQ1P4YB1	65×120×23
819	71810ACTN3/HVP4YB1S0	50×65×7	870	B7213TN6/HVHQ1P4YB1YC	65×120×23
820	71810CTN3/HVP4DFYB1	50×65×7	871	71814TN3/HVP4DBS0YB1	70×90×10
821	71810CTN3/HVP4DFFB1YC	50×65×7	872	71814CTN3/HVP4DBYB1	70×90×10
822	7010ACTN6/HVP4YB1	50×80×16	873	71914TN3/HVP4DBS0	70×100×16
823	S7010ACTN3/HVP4	50×80×16	874	71914TN3/HVP4DBS0YB1	70×100×16
824	S7010ACTN3/HVP4TYB1	50×80×16	875	B7214TN6/HVP4	70×125×24
825	7010ACTN3/HVP4YB1YC1	50×80×16	876	76/71.437CTN3/HVP4DFT	71.437×88.9×7.937
826	7010ACTN3/HVP4TYB1YC	50×80×16	877	71815CTN3/HVP4S0YB1	75×95×10
827	7010 CTN3/HVP4S0YB1	50×80×16	878	71815ACTN3/HVP4	75×95×10
828	7010AC/TN3/HVP4YB1YC2	50×80×16	879	C46115XJM	75×115×20
529	B7010CTN3/HVP4	50×80×16	880	SN71816C/HVP4T	80×100×10
830	B7210TN6/HVP4	50×90×20	B81	71816C/HVP4	80×100×10
831	B7210TN6/HVHQ1P4YB1	50×90×20	882	71816CTN3/HVP4DBYB1	80×100×10
832	B7210TN6/HVHQ1P4YB1YC	50×90×20	883	71916AC/HVP2	80×110×16
833	B7210TN6/HVHQ1P4YB1YC1	50×90×20	884	71916C/HVP4DBT	80×110×16

No.	ITEM NAME	SIZE (d ×D ×B)	No.	ITEM NAME	SIZE (d ×D ×B)
885	71916C/HVP4DBTYC	80×110×16	912	76/114.3ACTN3/HVP5DBSOYB1	114.3×127×6
886	71916ACTN3/HVP4DBS0YB1	80×110×16	913	71924ACTN3/HVP4YB1S0	120×165×22
637	71916ACTN3/HVP4DBS0	80×110×16	914	70824X2CTN3/HVP4DBYB1	120×150×8
888	7016ACTPA/P2AQBCB	80×125×22	915	71826X3C/HVP5	130×150×10
839	7016ACTPA/P4QBCB	80×125×22	916	71928CTN3/HVP4DBS0YB1	140×190×72
890	B7216CTN6/HVP4	80×140×26	917	71928CTN3/HVP5TYB1	140×190×24
891	B7216CTN6/HVP4YC	80×140×26	918	71928ACTN3/HVP4S0VB1	140×190×24
892	B7216CTN6/HVP4YC1	80×140×26	919	FDA-605	145×195×45
893	B7216TN6/HVHQ1P4YB1	80×140×26	920	71730X2ACQ1/P5	150×180×13
894	B71817C/HVP4	85×110×13	921	71732X3ACQ1/P4	160×186×13
895	71718X3TN3/HVP4S0YB1	90×106×8	922	76//165.1CTN3/HVP4S0YB1	165.1×184.15×9.525
896	71918ACTN3/HVP5YB1	90×125×18	923	76/177.8CTN3/HVP4S0YB1	177.8×196.85×9.525
897	71918ACTN3/HVP4DBYB1	90×125×18	924	846/177.8CTN3/HVP4S0YB1	177.8×196.85×19.05
898	71918ACTN3/HVP4S0YB1	90×125×18	925	846/177.8CTN3/HVP4S0YB1YC	177.8×196.85×19.05
899	B7218TN6/HVHQ1P4YB1	90×160×30	926	76/190.5CTN3/HVP4S0YB1	190.5×209.55×9.525
900	B7218TN6/HVHQ1P4YB1YC	90×160×30	927	76/190.5CTN3/HVP4S0YB1YC	190.5×209.55×9.525
901	71719ACTN3/HVP4YB1	95×115×10	928	76/190.5CTN3/HVP4S0YB1YC1	190.5×206.5×8
902	71819CTN3/HVP4	95×120×13	929	76/203.2CTN3/HVP4S0YB1	203.2×222.25×9.525
903	71919/HVP4	95×130×18	930	71736X3TN3/HVP4YB1	180×206×13
904	71919TN3/HVP4	95×130×18	931	B76/188.5CTN3/HVP4S0YB1	188.5×204.3×7.938
905	71919TN3/HVP4YC	95×130×18	932	71938ACTN3/HVP4S0VB1	190×260×33
906	76/98CQ1/HVP4D8	98×110.7×6.35	933	46/230CTN3/HVP5	230×260/288×28
907	71720X3ACTN3/HVP4DBYB1	110×116×6	934	46/230CTN3/HV P5YC	230×260/288×28
908	71820ACTN3/HVP4YB1S0	100×125×13	935	B70851X3AC-Z/HV	255×285×17
909	71920ACTN3/HVP4YB1S0	100×140×20	936	B70851X3AC/HVP5	255×285×17
910	7022X2ACTN3/HVP5DBTYB1	110×170×26	937	B71852ACTN3/HVP4T	260×310×20
911	7022X2ACTN3/HVP4DBTYB1	110×170×26	938	46/350C	330/350×392/416×38

THREE POINT ANGULAR CONTACT BALL BEARING					
No.	ITEM NAME	SIZE (d ×D ×B)	No.	ITEM NAME	SIZE (d ×D ×B)
939	QJS26CQ4C1/HNP4	6×19×6	959	D276205XA5K4	25×52×15
940	QJS1002TN6/HvP4	15×32×9	960	QJS205 TN6/HVP5YC	25×52×15
941	C276100NQ	10×26×8	961	QJS305/HEP4S1	25×62×17
942	C276201NQ	12×32×10	962	QJS305F1/HV1P4	25×62×17
943	QJS1002CTN6/HV1P4	15×32×9	963	QJS305F1/HVP4S0	25×62×17
944	QJS203TN7/HVHQ1P4	17×40×12	964	D216206XAK1	30×62×16
945	QJS203TN6/HVHQ1P4	17×40×12	965	QJS206C1/HNP5	30×62×16
946	QJS203TN7/HVP4	17×40×12	966	QJS206FC1/HNP4	30×62×16
947	QJS203TN6/HVP4	17×40×12	967	QJS206C1/HNP5YB	30×62×16
948	QJS203TN3/HVP4S1	17×40×12	968	QJS206TN6/HVP4YB1	30×62×16
949	QJS22/17.85-2ZC1/HNHQ1P5	17.85×40.71×16.4	969	QJS207TN6/HVP5	35×72×17
950	QJS22/17.85-2ZC1/HNHQ1P4	17.85×40.71×16.4	970	QJS207ACQ4C1/HNP4	35×72×17
951	D276204XAK	20×47×14	971	QS207TN6/HVP5YC	35×72×17
952	D276205XAK	25×52×15	972	QJS208ACQ4C1/HNP4	40×80×18
953	D276205XAK1	25×52×15	973	QJS208TN6/HVP5	40×80×18
954	D216205XA5K1	25×52×15	974	QJS208TN6/HVP5YA	40×80×18
955	D276205XA5K2	25×52×15	975	QJS208TN6/HVP5YB1	40×80×18
956	D216205XA5K2	25×52×15	976	QJS208ACQ4C1/HNHQ1P4	40×80×18
957	D276205XA5K3	25×52×15	977	QJS208ACQ4C1/HNP4YB	40×80.015×18
958	D216205XA5K3	25×52×15	978	QJS208ACC1/HNP4	40×80×18

No.	ITEM NAME	SIZE (d ×D ×B)	No.	ITEM NAME	SIZE (d ×D ×B)
979	QJS208TN6/HVP5YA1	40×80×18	997	QJS7214TF/HVP5YC1	70.2×125×24
980	QJS208TN6/HVP5YA2	40×80×26	998	QJS7214TF/HVP5YC2	70.2×125×24
981	QJS209TN6/HVP4	45×85×19	999	QJS7214TF/HVP5YC2YB1	70.2×125×24
982	QJS30/42.9C1/HNP4YA	42.9×74.17×23.25/24/27.5	1000	QJS7214TF/HVP5YC3YB1	70.2×125×24
983	QJS10/44.63C1/HNP4YA	44.63×76.8×15.65/19.2	1001	QJS7214TF/HVP5YC2YB2	70.2×125×24
984	QJS7210TF/HVP5	50×90×20	1002	QJS7214TF/HVHQ1P5YC3YB1	70.2×125×24
985	QJS7210TF/HVP5YC	50×90×20	1003	QJS217TN6/HVP4	85×150×28
986	QJS7210TF/HVP5YC1	50×90×20	1004	QJS218TN6/HVP4	90×160×30
987	QJS6/53.238C1/HNP4	53.238×90.173×18.03	1005	QJS219CFC1/HNP4YB	95×170×32
988	QJS6/53.238C1/HNP4YC	53.238×90.173×18.03	1006	QJS219CFC1HNP4YB	95×170×32
989	QJS1011X3C1/HNP4YA	55×87.24×15.95/18.3	1007	QJS320Q1/P680	100×215×47
990	E276213XA	65×120×23	1008	QJS221X3FC1/HNP4YB	105×180×32/38
991	QJS213TN6/HVP4	65.2×125×23	1009	QJS224TN6/HVP4YB1	120×215×40
992	QJS6/70.002C1/HNP4	70.002×109.84×20.3/26.5	1010	QJS224TN6/HVP4YCYB1	120×215×40
993	QJS6/70.002C1/HNP4YC	70.002×109.84×20.3/26.5	1011	QJS224TN6/HVP4YC2YB1	120×215×40
994	QJS6/70.002C1/HC3P4	70.002×109.84×20.3/26.5	1012	QJS224TN6/HVP4YC3YB1	120×215×40
995	QJS7214TF/HVP5YB1	70.2×125×24	1013	QJS224TN6/HVP4YC4YB1	120×215×40
996	QJS7214TF/HVP5YC	70.2×125×24	1014	QJS6/133.35F1C1/HC3HQ1P4	133.35×201.725×39.4

FOUR POINT ANGULAR CONTACT BALL BEARING					
No.	ITEM NAME	SIZE (d ×D ×B)	No.	ITEM NAME	SIZE(d×D×B)
1015	QJ6/204V/HVP6	20.4×38×8	1027	QJ1018F4HP2P5	90×140×24
1016	QJ205/HV1P4	25×52×15	1028	FDA-624	100×118×10
1017	QJ6/34X1V/HVP6YA	34×58×10	1029	QJ1824TN3HP4YB1	120×150×16
1018	QJ6/34XIV/HVP6	34×58×10/18.5	1030	FDA-601	140×154×7
1019	QJ610/HEP5	50×68×9	1031	QJ1830TN6/HVP4	150×190×20
1020	E176116VYY3	80×125×22	1032	QU6/152/HEP5	152×172×13
1021	QJ1016F4/HP2P5	80×125×22	1033	FDA-628	204×288×22
1022	QJ1016F4/HP2P5YB	80×125×22	1034	QJ6258/HEP580	258×290×20
1023	QJ1016F4/HP2P5YB1	80×125×22	1035	QU6271V/HNP6YA	271×327.5×18
1024	QJ1018F4/HP1HQ1P6	90×140×24	1036	QJ6297V/HNP6YA	297×361.5×18
1025	QJ1018F4/HP1P6	90×140×24	1037	QJ6263V/HNP6YA	263×328.5×18
1026	QJ1018F4/HP2P6	90×140×24			

THRUST BALL BEARING					
No.	ITEM NAME	SIZE (d ×D ×B)	No.	ITEM NAME	SIZE (d ×D ×B)
1038	51100TN3/HVP5YB1	10×24×9	1047	FDA-812	43×55×3.15
1039	51101TN3/HVP5YB1	12×26×9	1048	FDA-812Y	43×55×3.65
1040	51102X3/HV	15×26×5	1049	51109/HVS1	45/47×65×14
1041	51103TN3/HVP5YB1	17×30×9	1050	51112/HVP6S1	60×85×17
1042	FDA-811	21×34×4.7	1051	51018/HV1P5S1YB1	90×105×10
1043	51304/HVP5	22×47×18	1052	51224/HVS0	120×170×39
1044	51106/HVS1	30/32×47×11	1053	51224/HV1P6S1	120×170×39
1045	FDA-801	40×93.5×34.5	1054	567226X3DV/HEP5	130×161.45×26.1
1046	51108/HVS1	40×60×13	1055	51040/P5	200×225×17

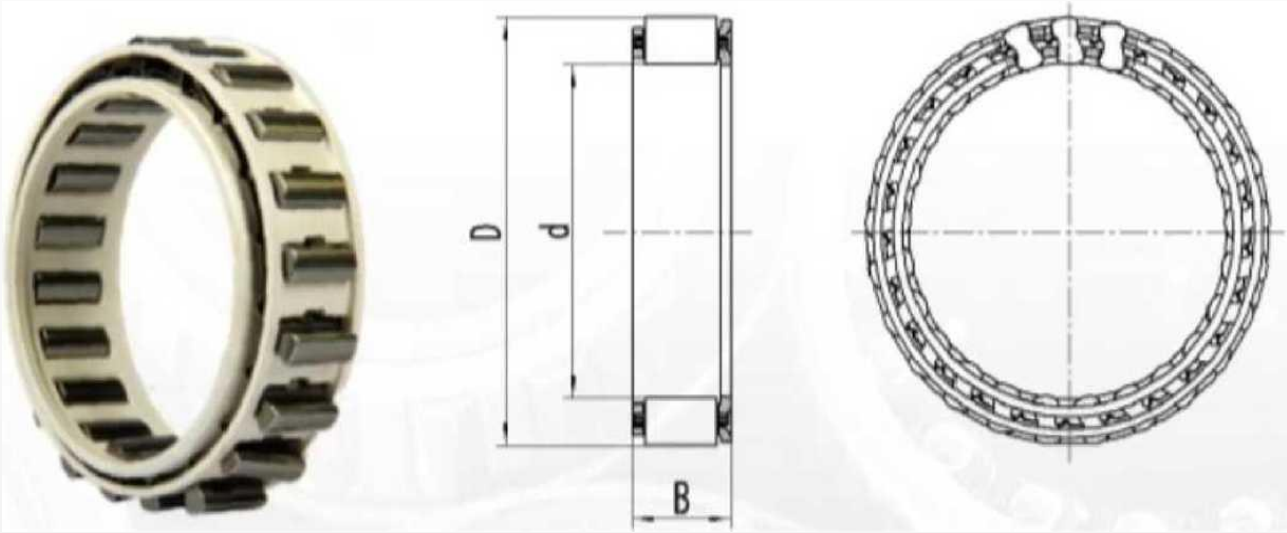
CYLINDRICAL ROLLER BEARING					
No.	ITEM NAME	SIZE (d × D × B)	No.	ITEM NAME	SIZE (d × D × B)
1056	NJ202/HV1P4	15×35×11	1073	RMU20804C1/HNP5	40×80×18
1057	N10/19C1/HNP4YA	19×42×17/19.7	1074	NU1944.238C1/HNP4YC	44.238×68×12
1058	NF1904X2C1/HNP4	50×37/41.4×9.7	1075	RNU208Q4C1/HNP5YB	50×80.015×18
1059	NF1904X2C1/HNP4YC	50×37/41.4×9.7	1076	NU208C1/HNP4	40×80×18
1060	RNU203Q1/HNP5YB	22.922×40×12	1077	NU1944238C1/HNP4	44.238×68×12
1061	NJ1005-2Z/HVP6	25×47×12	1078	NU1909X2C1/HNP4	45.001×68×12
1062	RNU204Q1/HEP5	27×47×14	1079	NU1909X2C1/HNP4YC	45.001×68×12
1063	RNU204Q1C1/HNP5	27×47×14	1080	N6/52.322C1/HNP4	52.322×75.692×16
1064	NU1006Q1/HNP5	30×55×13	1081	N6/52.322C1/HNP4YC	52.322×75.692×16
1065	NU1006FC1/HNP4	30×55×13	1082	N19/61.75C1/HNP4YA	61.75×87.9×18.6/21.2
1066	NU1006Q1C1/HNP5YB	30×55×13	1083	NU1016FC1/HNP4	80×125×22
1067	NJ1006/HVP5	30×55×13	1084	NU1016X1FC1/HNP4	80×122×22
1068	NU1007Q1C1/HNP5	35×64×14	1085	NU1017X3FC1/HNP4	85×125×22/26.5
1069	NJ1008/HVP5	40×68×15	1086	NU218X1FC1/HNP4	90×156×30
1070	NU208Q4C1/HNP5	40×80×18	1087	RNU48/145TN/HEP4	144.885×168.92×34.3
1071	NU208Q4C1/HNHQ1P5	40×80×18	1088	N1932X1F1C1/HC3HNP4	160×210×28
1072	NU20804C1/HNP5YB	40×80.015×18			

TAPPERED ROLLER BEARING					
No.	ITEM NAME	SIZE (d × D × B)	No.	ITEM NAME	SIZE (d × D × B)
1089	30203C1/HVP5YB1		1094	F2007115FS	75×115×25
1090	32010E/HV	50×80×24	1095	32018FQ1/HEP5	90×140×32
1091	33010E/HV	50×80×24	1096	32018E/HEP5	90×140×32
1092	32012E/HV	60×95×23	1097	306/127DTH/HCHEP5YA1	127×174.64×38.85
1093	E2007112ES	60×95×23			

Overrunning clutch

CKS all-phase diagonal brace overrunning clutch

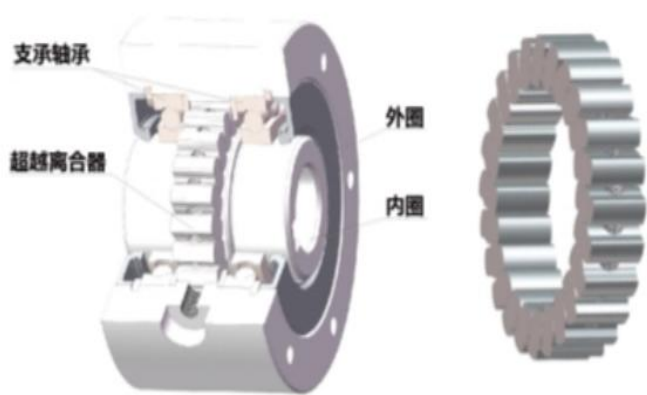
The CKS series diagonal support beyond the clutch consists of inclined support block, inner cage, outer holder and waveform spring, excluding inner ring and outer ring. In use, coordinated bearings are required to withstand radial and axial loads. The features of this series are that the double cages structure ensures the angular and axial orientation of all oblique thick blocks. Often used in aviation engine starting system and aircraft auxiliary power plant.



ITEM NAME	OVERALL DIMENSIONS(mm)			Rated torque T(N • m)	ITEM NAME	OVERALL DIMENSIONS(mm)			Rated torque T(N • m)
	d +0.008 0.005	D ±0.013	B Min mounting height			d +0.008 0.005	D ±0.013	B Min mounting height	
CKS1836	18.36	30.94	12.5	38	CKS4445	44.45	61.112	13.5	225
CKS 1942	19.42	32.01	18.5	42	CKS4740	47.408	64.075	22.3	666
CKS2034	20.345	37.008	10.0	49	CKS4972	49.72	66.375	21.5	640
CKS2222	22.225	38.887	10.0	74.5	CKS5457	54.572	71.211	20.5	798
CKS2776	27.762	44.425	19.1	233	CKS5476	54.765	71.427	15.9	568
CKS3188	31.881	48.548	13.5	153	CKS5770	57.708	74.427	15.9	429
CKS3500	35.00	18.291	19.3	130	CKS5953	59.538	76.2	25.4	1352
CKS3731	37.317	53.98	15.9	308	CKS7221	72.217	88.882	21.0	1510
CKS3809	38.092	54.75	15.9	323	CKS8359	83.506	102.555	25.4	3038
CKS3856	38.568	55.207	20.5	421	CKS8577	85.776	104.775	25.4	3087
CKS2034	40.485	57.15	22.3	534	CKS10323	103.231	122.23	25.4	4410
CKS4127	41.275	57.937	17.4	343	CKS11739	117.391	136.39	15.9	1999
CKS4357	43.571	60.233	25.4	695	CKS12388	123.881	142.88	25.4	5733

Sprag clutch assembly

The sprag clutch assembly is usually customized according to the interface size and working strip provided by the user, and the parts, which are generally composed of inner ring, outer ring, beyond clutch, supporting bearing and other parts. Among them, the surpassing clutch can be inclined selection and wave column clutch.



The transmission box is applied to the special vehicle whose function is to realize the engine and motor dual power independent or joint drive load work with power automatic switching independent operation will not produce interference and energy loss and other advantages.



The overrunning clutch assembly is used in the automatic transmission of heavy vehicles. The alien wheel ball clutch is used to realize the automatic transmission of heavy vehicles.



The overrunning clutch assembly is applied in the starting motor. The alien wheel roller clutch is used to realize the transmission and separation of power and has the overload torque protection function to protect the motor shaft from torsion.



The overrunning clutch assembly applied in the dual power drive system can realize the automatic switching of engine and motor two-way power alone or jointly driving load.



The bidirectional check is used in the bidirectional self-locking mechanism. When one end of the drive shaft rotates clockwise or counterclockwise, the driven shaft also rotates synchronously. When one end of the driven shaft is subjected to the external torque, the drive shaft does not rotate clockwise or counterclockwise to realize the two-way reverse system. The overrunning clutch assembly is applied to the aircraft engine pump to realize the switch between the engine drive pump operation and the DC motor drive pump operation.



The rotating shafting component applied to the drilling mechanism of lunar rover can simultaneously realize linear reciprocating motion and transfer torque.



The two-axis assembly is installed in the gearbox of the loader. Diagonal brace clutch is adopted to realize the loader's walking and working state switch. It has the advantages of large transfer torque and long service life.



Momentum wheel



Commodity Name: 0.05Nms momentum wheel

Main features: the use of non-sealed structure, with small size, light weight, low power consumption characteristics, Suitable for micro/nano satellite platform.

Application: It is mainly used in attitude control system of small satellite.

Boundary dimension:	54mm*54mm*32mm
Range of speed:	5000 ±1000 r/min
Angular momentum:	0.05Nms
Max Moment:	0.6mNm
Rotational inertia:	4.38 X 10 ⁻⁵ kg·m ²
Startup time:	≤ 2s
Rated power consumption:	0.8W
Peak power consumption:	1.2W
Weight:	≤ 400g
Operating temperature:	-20°C ~ +50°C



Commodity Name: 0.25Nms balance wheel

Main features: Motor rotor and flywheel body integrated design, has the corresponding high speed characteristics.

Application: The 0.25Nms balance wheel has been successfully applied in the subsystem of Innovation 3 satellite turntable, and successfully completed the flight mission.

Boundary dimension:	145mm*81mm
Range of speed:	±1500 r/min
Max angular momentum:	0.25Nms
Min angular momentum:	0.01Nms
Max Moment:	0.14Nm
Peak current:	1.2A
Weight:	2.2kgs
Life:	2Years
Operating temperature:	-10°C ~ +50°C



Commodity Name: 0.5Nms bias momentum wheel

Main features: Adopt the integrated structure, the upper part is the wheel body, the lower part is the control line; It has the characteristics of compact structure, light weight and low power consumption.

Application: The 0.5Nms offset momentum wheel has been successfully applied in the Shenzhou-7 companion satellite, Tianxun 1 satellite and Tiangong-2 companion satellite, successfully completing the flight mission.

Boundary dimension:	140mm*105mm
Range of speed:	3000±800 r/min
Central angular momentum:	0.5Nms
Max angular momentum:	0.7Nms
Max Moment:	0.015Nm
Quiescent dissipation:	1.7W
Full voltage start time:	< 3min
Weight:	2.4kgs
Life:	2Years
Operating temperature:	-15°C ~ +45°C
Storage temperature:	-30°C ~ +55°C



Commodity Name: 0.84Nms balance wheel
Main features: Adopt 6 hall 16 polar permanent magnet brushless DC motor, motor rotor and flywheel body integration structure, has the characteristics of large reaction force distance, fast acceleration, high control precision.

Application: It is applied in XX-5A satellite two - dimensional tracking turntable subsystem.

Boundary dimension: 206mm*76.5mm
Range of speed: ± 1000 r/min
Max angular momentum: 0.84Nms
Min angular momentum: 0.02Nms
Maximum reaction distance: 0.56Nm
Peak power consumption: 60W
Average power consumption: 150W
Weight: 4kgs
Life: 5Years
Operating temperature: $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$



Commodity Name: 2.01Nms balance wheel
Main features: Adopt 6 hall 16 polar permanent magnet brushless DC motor, motor rotor and flywheel body integration structure, has the characteristics of large reaction force distance, fast acceleration, high control precision.

Application: It is applied in XX-5A satellite two - dimensional tracking turntable subsystem.

Boundary dimension: 234mm*90mm
Range of speed: ± 1000 r/min
Max angular momentum: 2.01Nms
Min angular momentum: 0.04Nms
Maximum reaction distance: 1.33Nm
Peak power consumption: 60W
Average power consumption: 195W
Weight: 5.8kgs
Life: 5Years
Operating temperature: $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$



Commodity Name: Innovation I satellite offset momentum wheel

Main features: It has been used in the innovative satellite attitude orbit control system for more than 5 years.

Application: It has been used in the innovative satellite attitude orbit control system for more than 5 years.

Boundary dimension: 215mm*90mm
Range of speed: 0 ~ 5000 r/min
Rated angular momentum(3000rpm): 3.75Nms
Steady-state power consumption: $\leq 4\text{W}$ (normal temperature)
Dynamic unbalance value: $< 5\text{gcm}^2$
Starting friction moment: $\leq 0.002\text{N}\cdot\text{m}$
Loss torque at rated speed: $\leq 0.015\text{N}\cdot\text{m}$
Weight: $\leq 3.75\text{kgs}$
Life: $> 5\text{Years}$
Operating temperature: $-10^{\circ}\text{C} \sim +45^{\circ}\text{C}$



Commodity Name: TTK9-1 Wheel body assembly

Main features: Using titanium alloy flywheel body and high strength aluminum alloy shell structure, and installed with calibration plane mirror, with light weight, high installation precision.

Application: The Tiankun 1 satellite has been in operation for more than a year.

Boundary dimension: 244mm*88mm $\pm$ 1
 Range of speed: $\pm$ 6000 r/min
 Angular momentum: 6Nms
 rotational inertia: $\leq$ 0.001N·m
 Power dissipation: < 18W
 Static unbalance value: < 1.1gcm²
 Dynamic unbalance value: < 5gcm²
 Weight: 3.4kgs $\pm$ 0.03
 Life: 1.5Years
 Operating temperature: -10°C ~ +45°C



Commodity Name: 0.5Nms bias momentum wheel

Main features: Mixed ceramic ball bearing technology, titanium alloy flywheel body and high strength aluminum alloy shell structure.

Application: Beijing 206 Institute.

Boundary dimension: 244mm*88mm $\pm$ 1
 Range of speed: $\pm$ 6000 r/min
 Angular momentum: 6Nms
 rotational inertia: $\leq$ 0.001N·m
 Power dissipation: < 18W
 Static unbalance value: < 1.1gcm²
 Dynamic unbalance value: < 5gcm²
 Weight: 3.4kgs $\pm$ 0.03
 Life: 1.5Years
 Operating temperature: -10°C ~ +45°C



Commodity Name: 8NMS Reaction Flywheel

Main features: Hybrid ceramic ball bearing technology is adopted for the first time, which has the advantages of good wear resistance and small friction coefficient. The flywheel body adopts the whole spoke structure with large inertia and mass ratio.

Application: The FY-3 series satellites have an in-orbit life of more than 8 years.

Boundary dimension: 230mm*110mm
 Range of speed: $\pm$ 6000 r/min
 Rated speed: $\pm$ 4800 r/min
 Rated angular momentum: 8Nms
 Rated torque of motor: 0.075N·m
 Steady-state power consumption: $\leq$ 15W
 Peak power consumption: $\leq$ 70W
 Weight: 5.5kgs $\pm$ 0.02
 Life: > 3Years
 Operating temperature: -5°C ~ +55°C



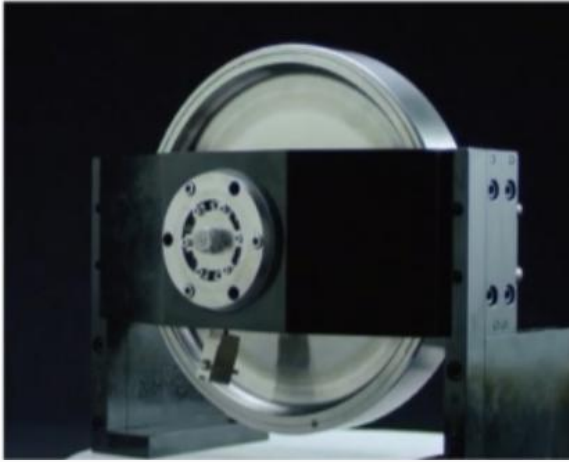
Commodity Name: 12Nms balance wheel
Main features: Adopt the integrated structure, the upper part is the wheel body, the lower part is the control line; It has the characteristics of compact structure, light weight consumption.
Application:The FY-3 series satellites have an in-orbit life of more than 8 years.
Boundary dimension: 270mm*115mm
Range of speed: 0~4000 r/min
Rated angular momentum(3500rpm): 12Nms
Max effective output torque: 0.075N·m
Max loss moment: ≤0.02N·m
Static unbalance value: < 0.5gcm²
Dynamic unbalance value: < 2.0gcm²
Starting friction moment: ≤ 0.005N·m
Weight: < 7.5kgs
Life: > 5Years
Operating temperature: -10°C ~ +50°C



Commodity Name: 45Nms balance wheel
Main features: It has the characteristics of compact structure and wide coverage of angular momentum.
Application:It is applied to the remote sensing 30 satellite turntable subsystem, and the product runs well in orbit.
Boundary dimension: 332mm*120mm
Range of speed: 0~5000 r/min
Max output angular momentum: ≥45Nms
Max reaction moment: ≥0.1Nm
Average power consumption: ≤ 30W
Peak consumption: ≤ 80W
Dynamic unbalance value: < 20mg
Weight: ≤10.2kgs
Life: > 5Years
Operating temperature: -10°C ~ +45°C
Storage temperature: -25°C ~ +70°C



Commodity Name: 68Nms bias momentum wheel
Main features: The overall structure is modular for the first time. The flywheel group is a composite welded spoke structure, and the seal cover is an S-shaped shallow dish structure. It has the advantages of light weight, high inertia/mass ratio, and wide speed range, reaching the level of similar products from TEDIX, Germany.
Application:FY-3 series satellite pre-research flywheel.
Boundary dimension: 345mm*118mm
Range of speed: 0~12000 r/min
Rated speed: 6000rpm
Rated angular momentum: 68Nms
Max torque of motor: 0.075N·m
Starting friction moment: ≤0.02N·m
Weight: ≤6.8kgs
Life: > 5Years
Operating temperature: -10°C ~ +45°C



Commodity Name: 200Nms control torque gyro high speed rotor

Main features: It has the characteristics of large angular momentum and high rotation accuracy.

Application:The Tiangong-1 and Tiangong-2 spacecraft have successfully completed their missions after seven years in orbit.

Boundary dimension: 320mm*224mm

Range of speed: 0~12000 r/min

Rated speed: 9500rpm

Rated angular momentum: 200Nms

Dynamic unbalance value: < 0.6gm²

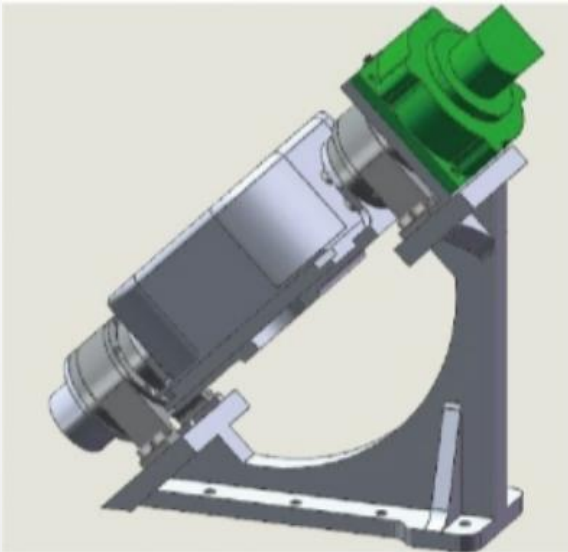
Starting friction moment: ≤0.02N·m

Friction torque at rated speed: ≤0.035N·m

Weight: ≤15.3kgs

Life: > 5Years

Operating temperature: -20°C ~ +60°C



Commodity Name: Miniature CMG

Main features: Compact structure and light weight.

Application:Shanghai small satellite.

Boundary dimension: 174mm*66mm*235mm

Output torque: ≥0.05Nm

Maximum frame speed: 1rad/s

Frame acceleration time(0→1rad/s): ≤50ms

Weight: ≤3.5kgs

In-orbit life: > 2000h



Commodity Name: ZDBI-05B-YZ Driving Component

Main features:Non-sealed structure, permanent magnet synchronous motor drive, rotation sampling, low speed (±100rpm) grease mixed lubrication driving mechanism.

Application:Applied to satellite extravehicular payloads (detectors, scanners, etc.).

Boundary dimension: 256mm*131mm

Range of speed: ±70 r/min

Rated moment: 0.4N·m

Rotational inertia: ≤0.011kg·m²

Starting friction moment: ≤0.08N·m

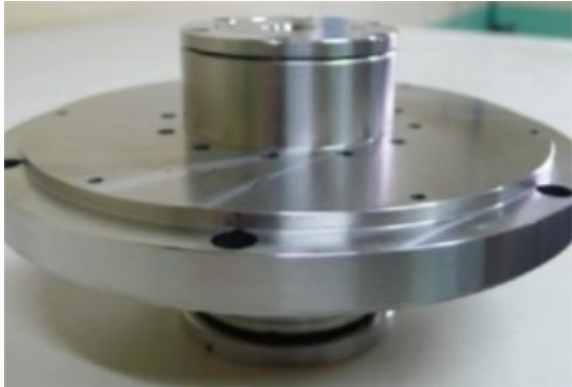
Maximum working friction torque: ≤0.02N·m (-10°C)

Lubrication method: grease mixing lubrication

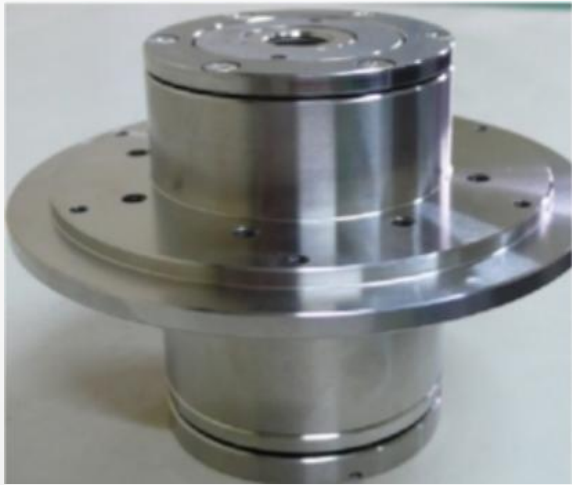
Weight: ≤6.2kgs

Life: ≥8Years

Operating temperature: -10°C ~ +55°C



Commodity Name: ZC-25 Reaction flywheel bearing set
Application:It is applied to XX-5 series satellites and has an in-orbit life of more than 5 years.
Bearing ID: 20mm
Working speed: ± 3000 r/min
The angular momentum range: 25Nms
Starting friction moment: $0.005\text{N}\cdot\text{m}$
OD of main shaft flange: 60mm
OD of Shaft seat flange: 148.5mm
Total height: 77mm
Weight: 2.1 ± 0.105 kgs
Life: ≥ 5 Years



Commodity Name: ZC-15 Reaction flywheel bearing set
Application:It is applied to XX-7 , XX-9 series satellites and has an in-orbit life of more than 5 years.
Bearing ID: 20mm
Working speed: ± 3500 r/min
The angular momentum range: 15 ± 3 Nms
Starting friction moment: $0.005\text{N}\cdot\text{m}$
OD of main shaft flange: 53mm
OD of Shaft seat flange: 103.5mm
Total height: 73mm
Weight: 1.3 kgs
Life: ≥ 5 Years



Commodity Name: 10-58A bearing set
Application:It is applied to many series satellites and has an in-orbit life of more than 5 years.
Bearing ID: 10mm
Working speed: 6000 r/min
The angular momentum range: $0 \sim 3$ Nms
Starting friction moment: $< 0.001\text{N}\cdot\text{m}$
OD of main shaft flange: 52mm
OD of Shaft seat flange: 51.8mm
Total height: 58.5mm
Weight: < 0.8 kgs
Life: ≥ 4 Years



Commodity Name: 1Nm compensation wheel bearing assembly

Application:It is applied to high orbit early warning satellites with an on-orbit life of more than 8 years.

Bearing ID:	20mm
Working speed:	± 3500 r/min
The angular momentum range:	5~12Nms
Starting friction moment:	$< 0.004\text{N}\cdot\text{m}$
OD of main shaft flange:	163mm
OD of Shaft seat flange:	43mm
Total height:	63mm
Weight:	1.95 kgs
Life:	≥ 8 Years



Commodity Name: ZC-5 Reaction flywheel bearing set

Application:It is applied to KX series satellites and has an in-orbit life of more than 5 years.

Bearing ID:	15mm
Working speed:	6000 r/min
The angular momentum range:	5Nms
Starting friction moment:	$< 0.003\text{N}\cdot\text{m}$
OD of main shaft flange:	43mm
OD of Shaft seat flange:	53mm
Total height:	52mm
Weight:	0.5 kgs
Life:	≥ 8 Years



Commodity Name: 50-92A bearing set

Application:It is applied to control torque gyro and has an in-orbit life of more than 5 years.

Bearing ID:	25mm
Working speed:	6000 r/min
The angular momentum range:	25~68Nms
Starting friction moment:	$< 0.0065\text{N}\cdot\text{m}$
OD of main shaft flange:	123mm
OD of Shaft seat flange:	82mm
Total height:	92mm
Weight:	2.1 kgs
Life:	≥ 5 Years



Commodity Name: 50-92B bearing set
Application:It is applied to control torque gyro and has an in-orbit life of more than 8 years.

Bearing ID:	25mm
Working speed:	6000 r/min
The angular momentum range:	25~68Nms
Starting friction moment:	< 0.008N·m
OD of main shaft flange:	123mm
OD of Shaft seat flange:	82mm
Total height:	92mm
Weight:	2.1 kgs
Life:	≥8Years



Commodity Name: ZC-25 Reaction flywheel bearing set
Application:Applied to the second generation navigation satellite series and has an in-orbit life of more than 8 years.

Bearing ID:	20mm
Working speed:	±6000 r/min
The angular momentum range:	25Nms
Starting friction moment:	< 0.005N·m
OD of main shaft flange:	76mm
OD of Shaft seat flange:	78mm
Total height:	82mm
Weight:	1.3 kgs
Life:	≥8Years



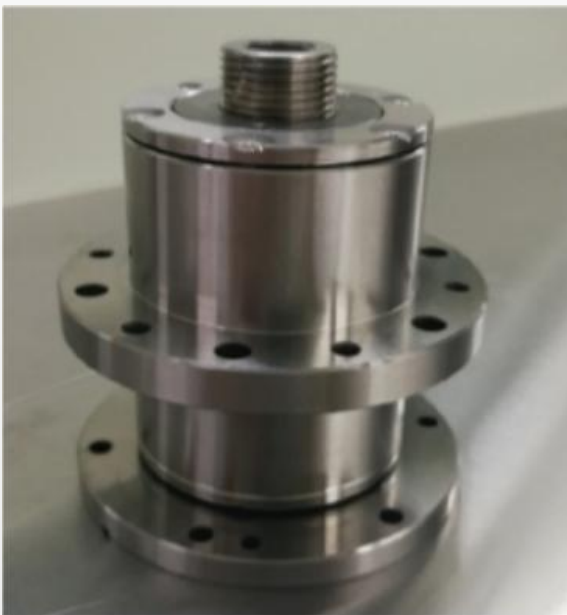
Commodity Name: 20-82A bearing set
Application:It is applied to many series satellites and has an in-orbit life of more than 5 years.

Bearing ID:	20mm
Working speed:	2500~5100 r/min
The angular momentum range:	15~25Nms
Starting friction moment:	< 0.004N·m
OD of main shaft flange:	76mm
OD of Shaft seat flange:	78mm
Total height:	82mm
Weight:	1.2 kgs
Life:	≥8Years



Commodity Name: 20-88C bearing set
Application:It is applied to many series satellites and has an in-orbit life of more than 5 years.

Bearing ID:	20mm
Working speed:	3600~4600 r/min
The angular momentum range:	15~25Nms
Starting friction moment:	0.003N·m
OD of main shaft flange:	78mm
OD of Shaft seat flange:	76mm
Total height:	88mm
Weight:	1.3 kgs
Life:	≥8Years



Commodity Name: ZC-25C bearing set
Application:It is applied to the attitude and orbit control subsystem of Remote sensing No.30 satellite and has an in-orbit life of more than 2 years.

Bearing ID:	20mm
Working speed:	±6000 r/min
The angular momentum range:	25Nms
Starting friction moment:	< 0.005N·m
OD of main shaft flange:	76mm
OD of Shaft seat flange:	78mm
Total height:	82mm
Weight:	1.3 kgs
Life:	≥8Years

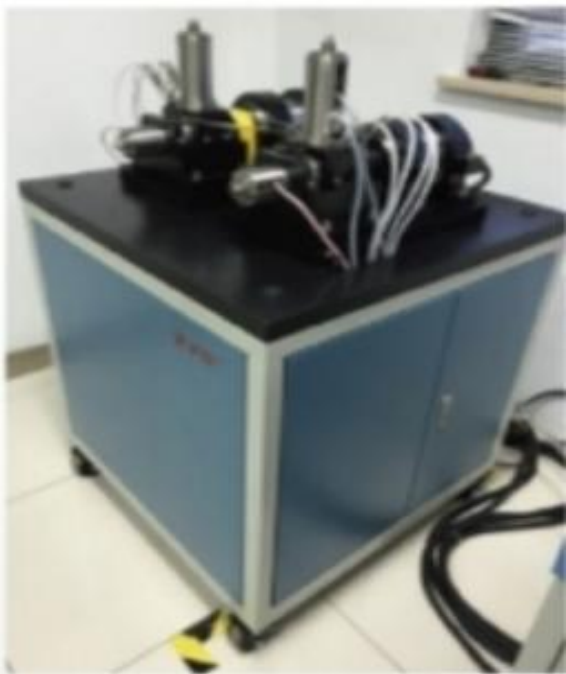


Commodity Name: ZC-11 bearing set
Application:Applied to a certain type of satellite and has an in-orbit life of more than 5 years.

Bearing ID:	20mm
Working speed:	±1200 r/min
The angular momentum range:	11Nms
Starting friction moment:	< 0.005N·m
OD of main shaft flange:	53mm
OD of Shaft seat flange:	163mm
Total height:	73mm
Weight:	1.7 kgs
Life:	≥5Years

Testing machine

Normal testing machine

T2-7N BEARING TESTING MACHINE		Application:It is mainly used for performance and life test of micro bearing with inner diameter of 2~7mm	
	Testing Type	Deep groove ball bearing, Angular contact ball bearing	
	Test ID range	2mm~7mm	
	Testing QTY	2/4/8	
	Max radial load	2kN	
	Max axial load	1kN	
	Max test speed	48000r/min	
	Measurement and control mode	Manual spring loading, computer automatic control, detection and recording	
	Measuring parameter	Speed、Load、Temperature、Vibration、 Main engine current, etc	
T8-30NF BEARING TESTING MACHINE		Application:It is mainly used for performance and life test of Conventional bearing with inner diameter of 8~30mm	
	Testing Type	Deep groove ball bearing, Angular contact ball bearing, Cylindrical roller bearing, Tapered roller bearing	
	Test ID range	8mm~30mm	
	Testing QTY	2/4	
	Max radial load	10kN	
	Max axial load	5kN	
	Max test speed	24000r/min	
	Measurement and control mode	computer automatic control, detection and recording	
	Measuring parameter	Speed、Load、Temperature、Vibration、 Main engine current, etc	

T20-60NF BEARING TESTING MACHINE	Application:It is mainly used for performance and life test of Conventional bearing with inner diameter of 20~60mm	
	Testing Type	Deep groove ball bearing, Angular contact ball bearing, Cylindrical roller bearing, Tapered roller bearing
	Test ID range	20mm~60mm
	Testing QTY	2/4
	Max radial load	100kN
	Max axial load	50kN
	Max test speed	10000r/min
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、 Vibration、 Main engine current, etc
T40-80F BEARING TESTING MACHINE	Application:It is mainly used for performance and life test of Conventional bearing with inner diameter of 40~80mm	
	Testing Type	Deep groove ball bearing, Angular contact ball bearing, Cylindrical roller bearing, Tapered roller bearing
	Test ID range	40mm~80mm
	Testing QTY	2/4
	Max radial load	200kN
	Max axial load	100kN
	Max test speed	5000r/min
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、 Vibration、 Main engine current, etc
T60-120F BEARING TESTING MACHINE	Application:It is mainly used for performance and life test of Conventional bearing with inner diameter of 60~120mm	
	Testing Type	Deep groove ball bearing, Angular contact ball bearing, Cylindrical roller bearing, Tapered roller bearing
	Test ID range	60mm~120mm
	Testing QTY	2/4
	Max radial load	300kN
	Max axial load	200kN
	Max test speed	5000r/min
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、 Vibration、 Main engine current, etc

T120-180F BEARING TESTING MACHINE		Application:It is mainly used for performance and life test of Conventional bearing with inner diameter of 120~180mm
	Testing Type	Deep groove ball bearing, Angular contact ball bearing, Cylindrical roller bearing, Tapered roller bearing
	Test ID range	120mm~180mm
	Testing QTY	2/4
	Max radial load	500kN
	Max axial load	300kN
	Max test speed	3000r/min
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc
TSMo10-45n Sealing bearing grease leakage temperature rise dust proof testing machine		Application:It is mainly used for the test of grease leakage temperature rise and dustproof performance of sealed bearing with inner diameter of 10~45mm
	Testing Type	Sealed deep groove ball bearings, etc
	Test ID range	10mm~45mm
	Testing QTY	1/2
	Max radial load	1kN
	Dust box speed	50r/min
	Max test speed	10000r/min
	Measurement and control mode	Manual spring loading, computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc
TSL10-45n Sealing bearing anti-liquid performance testing machine		Application:It is mainly used for anti-liquid (water, oil and other liquid media) performance test of sealed bearings in the inner diameter range of 10~45mm
	Testing Type	Sealed deep groove ball bearings, etc
	Test ID range	10mm~45mm
	Testing QTY	2
	Max radial load	1kN
	Media	Water, oil and mud, etc
	Max test speed	10000r/min
	Measurement and control mode	Manual spring loading, computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc

T8-30NT Sealed bearing high temperature and high speed testing machine		Application: Mainly used for high temperature and high speed performance and durability test of sealed bearing with inner diameter of 8~30mm	
	Testing Type	Deep groove ball bearing, Angular contact ball bearing	
	Test ID range	8mm~30mm	
	Testing QTY	2	
	Max load	Radial 5kN, Axial 2kN	
	Max heating temperature	300°C	
	Max test speed	60000r/min	
	Measurement and control mode	computer automatic control, detection and recording	
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc	
T10-30nT Bearing grease testing machine		Application: Mainly used for high temperature and high speed test of bearing greases (DIN51521 standard)	
	Testing Type	Angular contact ball bearing (7206)	
	Test ID range	10mm~30mm	
	Testing QTY	5	
	Testing load	1.5/ 3.0/4.5 kN	
	Max test speed	3000/6000/10000 r/min	
	Heating temperature	Indoor temperature~ 250°C	
	Measurement and control mode	Manual spring loading, computer automatic control, detection and recording	
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc	

Aerospace bearing testing machines

TDR-75-210nTf Aero-engine bearing double ring rotary testing machine

Application: It is mainly used for the test study of the life and performance of the bearing between the shafts of the aeroengine with an inner diameter of 75 ~ 210mm. The inner and outer rings of the bearing rotate at the same time. It can also be used for the general spindle bearing test of the aeroengine



Testing Type	Intershaft bearing
Test ID range	75mm~180mm
Testing QTY	1
Max Radial load	30kN
Max test speed	18000 r/min
Fuel supply temperature	Indoor temperature~ 200°C
Measurement and control mode	computer automatic control, detection and recording
Measuring parameter	Speed、Load、Temperature、Vibration、 Main engine current, etc

TAvAs40-80NT Aerospace bearing testing machine

Application: It is mainly used for the performance and durability test of medium high speed aviation and aerospace bearings with inner diameter of 40-80mm, such as overspeed, overload, light load skid, oil break and so on



Testing Type	Aerospace bearings
Test ID range	40mm~100mm
Testing QTY	1/2
Testing load	Radial 20kN, Axial 10kN
Max test speed	36000 r/min
Fuel supply temperature	Indoor temperature~ 200°C
Measurement and control mode	computer automatic control, detection and recording
Measuring parameter	Speed、Load、 Temperature、Vibration etc

TAvE70-180nTf Aeroengine engine spindle bearing testing machine

Application: The testing machine adopts simple beam cargo cantilever type main structure, mainly used for the performance and durability test of medium and large aero engine spindle bearing with inner diameter of 70-180mm



Testing Type	Aeroengine spindle bearing
Test ID range	70mm~180mm
Testing QTY	1/2
Testing load	Radial 100kN, Axial 50kN
Max test speed	20000 r/min
Fuel supply temperature	Indoor temperature~ 200°C
Measurement and control mode	computer automatic control, detection and recording
Measuring parameter	Speed、 Load、 Temperature、Vibration Main、 engine current, etc

TAvE50-180nTF Aeroengine shafting bearing testing machine	Application: The testing machine adopts the main structure of double shafting, which can simultaneously test the performance and durability of 5 sets of engine high and low pressure rotor bearings	
	Testing Type	Aeroengine shafting bearings
	Test ID range	50mm~180mm
	Testing QTY	5
	Testing load	Radial 100kN, Axial 50kN
	Max test speed	18000 r/min
	Fuel supply temperature	Indoor temperature~ 200℃
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、 Load、 Temperature、 Vibration、 Main engine current, etc
TAvAs80-200nTf Aircraft shaft bearing fault simulation and analysis testing machine	Application: The testing machine is an aircraft engine main bearing test system with complete turbine support and outer casing, which can be used for accelerated life test, preset fault test, performance test and durability test.	
	Testing Type	Aeroengine bearings and casing
	Test ID range	80mm~200mm
	Testing QTY	1
	Testing load	Radial 20kN
	Max test speed	18000 r/min
	Fuel supply temperature	Indoor temperature~ 200℃
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、 Load、 Temperature、 Vibration、 Main engine current, etc
TAvAsG8-30NfT Aerospace high temperature and high speed testing machine for grease lubricated bearings	Application: It is mainly used for the performance and durability test of small aerospace grease lubricated bearings with inner diameter of 8-30mm at high temperature and high speed.	
	Testing Type	Aerospace grease lubricated bearings
	Test ID range	8mm~30mm
	Testing QTY	2
	Testing load	Radial 10kN, Axial 2kN
	Max test speed	60000 r/min
	Fuel supply temperature	Indoor temperature~ 300℃
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、 Load、 Temperature、 Vibration Main、 engine current, etc

TAvAs8-30nTF Low temperature and high speed testing machine for aerospace bearing	Application: It is mainly used for high-speed start-up performance and durability test of aviation and aerospace bearings with inner diameter of 8 ~ 30mm at low temperature.	
	Testing Type	Aerospace bearings
	Test ID range	8mm~30mm
	Testing QTY	2
	Testing load	Radial 5kN, Axial 5kN
	Max test speed	60000 r/min
	Fuel supply temperature	Indoor temperature~ -50℃
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc
TAs2-7NT Ultra-high speed aerospace micro bearing testing machine	Application: It is mainly used for the performance and durability test of aerospace miniature bearings with inner diameter of 2~7mm.	
	Testing Type	Aerospace miniature bearing
	Test ID range	2mm~7mm
	Testing QTY	1
	Testing load	Radial 50kN, Axial 50kN
	Max test speed	120000 r/min
	Fuel supply temperature	Indoor temperature~ 100℃
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc
TAsAf8-25N Space gyro gas dynamic pressure bearing testing machine	Application: It is mainly used to test the performance and durability of the bearing of space weather satellite scanning mechanism with inner diameter of 30-80mm in vacuum environment.	
	Testing Type	Space gas dynamic pressure bearings
	Test ID range	8mm~25mm
	Testing QTY	1
	Testing load	Axial 25kN
	Max test speed	±40000 r/min
	Displacement measurement error	≤0.0001mm
	Measurement and control mode	computer automatic control, detection and recording
	Measuring parameter	Speed、Load、Temperature、Vibration Main、engine current, etc

TAsV30-80 Space weather satellite scanning mechanism bearing vacuum simulation experiment		Application: It is used to test the performance and durability of the bearing of space weather satellite scanning mechanism with inner diameter of 30-80mm in vacuum environment.	
	Testing Type	Deep groove ball bearing, Angular contact ball bearing	
	Test ID range	30mm~80mm	
	Testing QTY	16	
	Testing load	Axial preload 0~500N	
	Motion condition	Turn 300 r/min, swing 0.1°/s~ 20°/s, tilt angle - 20°~+20°	
	Environmental conditions	Vacuum degree 1*10 ⁻⁴ Pa Indoor temperature~ 50°C	
	Friction moment test	Range ability ≤0.5Nm, sensitivity ≤0.005Nm	
	Measurement and control mode	computer automatic control, detection and recording	
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc	
TAsNm8-30N Non-magnetic bearing testing machine for aerospace guidance system		Application: Used for performance and durability test of non-magnetic bearings in space guidance system with inner diameter of 8-30mm.	
	Testing Type	Aerospace bearings	
	Test ID range	8mm~30mm	
	Testing QTY	2	
	Testing load	Radial 1kN, Axial 1kN	
	Max test speed	36000 r/min	
	Measurement and control mode	Spring loading , computer automatic control, detection and recording	
	Measuring parameter	Speed、Load、Temperature、Vibration、Main engine current, etc	

Rolling Body

ZGCr15 High carbon chromium armor bearing steel ball specification

Nominal diameter			Nominal diameter		
No.	millimeter (mm)	Inch (in)	No.	millimeter (mm)	Inch (in)
1	0.5		27	7.1438	9/32
2	0.6		28	7.5	
3	0.7938	1/32	29	7.9375	5/16
4	0.8		30	8	
5	1		31	8.5	
6	1.5875	1/16	32	9	
7	2		33	9.525	3/8
8	2.3812	3/32	34	10	
9	2.5		35	11.1125	7/16
10	2.7781	7/64	36	12	
11	3		37	12.3031	31/64
12	3.175	1/8	38	12.7	1/2
13	3.5		39	13.4938	17/32
14	3.9688	5/32	40	14.2875	9/16
15	4		41	15.0812	19/32
16	4.5		42	15.875	5/8
17	4.7625	3/16	43	16.6688	21/32
18	5		44	17.4625	11/16
19	5.1594	13/64	45	18.2562	23/32
20	5.5		46	19.05	3/4
21	5.9531	15/64	47	19.8438	25/32
22	6		48	1820.6375	13/16
23	6.35	1/4	49	21.4312	27/32
24	6.5		50	22.225	7/8
25	6.7469	17/64	51	28.575	11/8
26	7		52	31.75	11/4

9Cr18, 9Cr18Mo high carbon chromium stainless steel ball specifications

Nominal diameter			Nominal diameter		
No.	millimeter (mm)	Inch (in)	No.	millimeter (mm)	Inch (in)
1	0.5		25	6.7469	17/64
2	0.6		26	7	
3	0.7938	1/32	27	7.1438	9/32
4	0.8		28	7.5	
5	1		29	7.9375	5/16
6	1.5875	1/16	30	8	
7	2		31	8.5	
8	2.3812	3/32	32	9	
9	2.5		33	9.525	3/8
10	2.7781	7/64	34	10	
11	3		35	11.1125	7/16
12	3.175	1/8	36	12	
13	3.5		37	12.3031	31/64
14	3.9688	5/32	38	12.7	1/2
15	4		39	13.4938	17/32
16	4.5		40	14.2875	9/16
17	4.7625	3/16	41	15.0812	19/32
18	5		42	15.875	5/8
19	5.1594	13/64	43	16.6688	21/32
20	5.5		44	17.4625	11/16
21	5.9531	15/64	45	18.2562	23/32
22	6		46	19.05	3/4
23	6.35	1/4	47	20.6375	13/16
24	6.5		48	22.225	7/8

Cr4Mo4V High temperature bearing steel ball specification

Nominal diameter			Nominal diameter		
No.	millimeter (mm)	Inch (in)	No.	millimeter (mm)	Inch (in)
1	1.5875	1/16	23	7.5	
2	2		24	7.9375	5/16
3	2.3812	3/32	25	8	
4	2.5		26	8.5	
5	2.7781	7/64	27	9	
6	3		28	9.525	3/8
7	3.175	1/8	29	10	
8	3.5		30	11.1125	7/16
9	3.9688	5/32	31	12	
10	4		32	12.3031	31/64
11	4.5		33	12.7	1/2
12	4.7625	3/16	34	13.4938	17/32
13	5		35	14.288	9/16
14	5.1594	13/64	36	15.0812	19/32
15	5.5		37	15.875	5/8
16	5.9531	15/64	38	16.6688	21/32
17	6		39	17.4625	11/16
18	6.35	1/4	40	18.2562	23/32
19	6.5		41	19.05	3/4
20	6.7469	17/64	42	20.6375	13/16
21	7		43	22.225	7/8
22	7.1438	9/32			

Si₃N₄ Silicon nitride ceramic ball specification

Nominal diameter			Nominal diameter		
No.	millimeter (mm)	Inch (in)	No.	millimeter (mm)	Inch (in)
1	0.7938	1/32	19	6.5	
2	0.8		20	6.7469	17/64
3	1		21	7	
4	1.5875	1/16	22	7.1438	9/32
5	2		23	7.5	
6	2.3812	3/32	24	7.9375	5/16
7	2.5		25	8.7312	11/32
8	3		26	9.525	3/8
9	3.9688	5/32	27	11.1125	7/16
10	4		28	12.3031	31/64
11	4.5		29	12.7	1/2
12	4.7625	3/16	30	13.4938	17/32
13	5		31	14.2875	9/16
14	5.5	7/32	32	15.0812	19/32
15	5.5562		33	15.875	5/8
16	5.9531	15/64	34	19.05	3/4
17	6		35	25.4	1
18	6.35	1/4	36	31.75	1 1/4

ZrO₂ Zirconia ceramic ball specification

Nominal diameter			Nominal diameter		
No.	millimeter (mm)	Inch (in)	No.	millimeter (mm)	Inch (in)
1	0.5		21	7	
2	0.6		22	7.1438	9/32
3	0.7938	1/32	23	7.5	
4	0.8		24	7.9375	5/16
5	1.5875		25	8.5	11/32
6	2.3812	3/32	26	9.525	3/8
7	2.5		27	11.1125	7/16
8	2.7781		28	12.3031	31/64
9	3.9688	5/32	29	12.7	1/2
10	4		30	13.4938	17/32
11	4.5		31	14.2875	9/16
12	4.7625	3/16	32	15.0812	19/32
13	5		33	15.875	5/8
14	5.1594	13/64	34	16.6688	21/32
15	5.5		35	17.4625	11/16
16	5.9531	15/64	36	19.05	3/4
17	6		37	20.6375	13/16
18	6.35	1/4	38	22.225	7/8
19	6.5		39	28.575	11/8
20	6.7469	17/64	40	31.75	11/4



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