HT-M弹簧钢轴承
HT-M SPRING BEARINGS

产品介绍
Product introduction

HT-M弹簧钢卷制轴承是以弹簧钢板为基材进行卷制,然后经整体淬火内表研磨处理而成。该产品取代普通的轴承钢产品，具有硬度适中、承载能力强、耐磨性能好等优点，该产品富有本能的弹性特点，在受严重冲击时对轴有缓冲保护作用。我公司生产的产品，与国外同类产品相比，其接缝形式的设计更具有科学性，易装配、易定位、能充分发挥轴套的弹性。

产品在装配入座孔后，依靠自身的弹性固定在座孔中，产品内孔经研磨后尺寸精度高，当轴运转时，如所受摩擦力较大时，轴承会自我调整位置，与轴相容抗咬合，从而达到使用寿命长，保护设备不受损伤的作用。

HT-M Spring steel wrapped bushing is based on the spring steel plate, treated by quenching and rubbing technique. It is designed to replace the common bearing steel bushings. It has advantages as: mezzo hardness, higher capability for press load, good wear resistance performance and so on. And also, for sake of its instinctive elasticity of the material, the bushing could protect the shaft by the buffering power when enduring very serious impacts. Compared with the similar products abroad, our designing of the interface on the bushing is more scientific, easy to be assembled and fixed and also easy for the bushing to perform its advantage of elasticity adequately.

When pressed into the housing, the bushing will be fixed in the housing by its elasticity. Since the bore of the bushing is grinded, the tolerance range for it is very precise. When the shaft is working,the bushing can adjust its position if the friction force is big.The equipment can be protected from been damaged by the bushing's good anti-occlude performance with the shaft.

产品技术指标

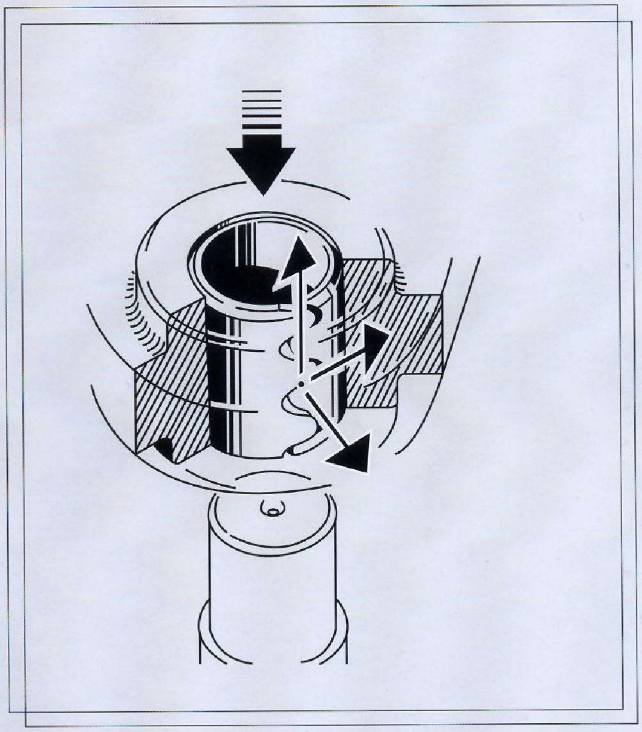
材质（Material）：65Mn

Pb-free

元素 element	C	Si	Mn	Cr	Fe
材质成分（%）composition	0.62～0.70	0.17～0.37	0.70～1.00	≤0.25	余量 Remainder

性能（Characteristics）

硬度（Hardness)	HRC42～48
最高静承载 Max. Static Load	650N/mm^2
最高动承载 Max. Dynamic Load	100N/mm^2
最大线速度 Max.Speed	0.1m/s
最高使用温度 Max.Temperature	200℃
油润滑摩擦因数 Friction Coefficient(oil)	≤0.18



产品特性

1、由于其波浪型接缝设计，轴承装配时对座孔具有自适应性，对装配座孔的尺寸要求较低，从而达到降低设备成本的目的。

2、轴承自身有一定的弹性，装配较简单。

3、由于轴承硬度较高，所以耐磨性能优异，使用寿命长。

4、轴承材料采用高强度弹簧钢，可承受较大的载荷，适用于低速重载等恶劣工况。

5、当轴运转时，如所受摩擦力较大时，轴承会自我调整位置，与轴相容抗咬合，保护设备不受损伤。

1、With wave shape split,spring steel bushing has self-adaptability for housing when assembling,low requirement for housing dimension,which can lower the equipment cost.

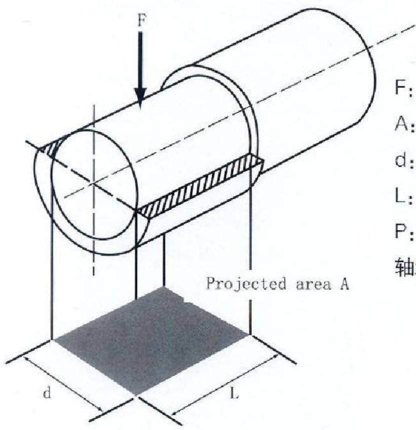
2、Easy for assembling with elasticity of bushing itself.

3、Good performance in anti-wear and long life with its high hardness.

4、Its high strength spring steel material can stand heavier load and adapt to bad working conditions including slow speed and heavy load.

5、When the shaft is working,the bushing can adjust its position if the friction force is big.The equipment can be protected from been damaged by the bushing's good anti-occlude performance with the shaft.

承载压力的计算
CALCULATION OF LOAD P



F：轴承工作压力（working load） 单位（unit）：N

A：轴承投影面积（the projected area of the bearing） 单位（unit）：mm^2

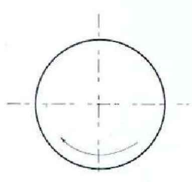
d：轴承内径（I.D. of bearing） 单位（unit）：mm

L：轴承高度（Length of Bearing） 单位（unit）：mm

P：轴承承载（Dynamic Load） 单位（unit）：N/mm^2

轴承工作载荷计算（Calculation of Load P）：$P=\frac{F}{A}=\frac{F}{d\times L}$

运动速度的计算
CALCULATION OF VELOCITY



①连续转动(Continuous Rotation)

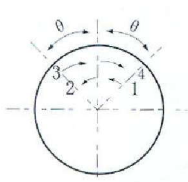
d：轴承内径（I.D. of bearing） 单位（unit）：mm

C：转速（rotate speed） 单位（unit）：r/min

V：线速度（Speed） 单位（unit）：m/s

速度计算Calculation of Speed V：

$$V=\frac{\pi\times d\times C}{60\times 1000}$$



②摇摆运动（Oscillating Movement）

d：轴承内径（I.D. of bearing） 单位（unit）：mm

C：转速（Rotate speed） 单位（unit）：cycle/min

θ：摆动角度（Angular displacement） 单位（unit）：°

V：线速度（Speed） 单位（unit）：m/s

速度计算Calculation of Speed V：

$$V=\frac{\pi\times d\times 4\theta\times C}{60\times 1000\times 360}$$

产品型号（Product Type）

HT–M1弹簧钢轴承，产品接缝采用圆滑波浪形接口，能防止装配时错位，还能保证与轴对磨时滑动自如。产品经模具成型后，内外表面不用再进行机械加工，价格优势明显，且对产品的内外表面进行了发黑处理，防锈效果很好。产品价格便宜，设计时注重弹性，在使用过程中会起到缓冲作用，对重型工程机械强冲击力的地方很适用。

HT–M1 spring bearing, with a good designing of smooth wave split on the bushing, it could avoid the split misplacement phenomenon when assembly, and also it could ensure a good sliding performance between the shaft and bushing. The inner and outer surface needs no further machining after the product is shaped with mould by pressing so it has big advantages in price. It also has good anti–rust performance with inner and outer surface blacken treatment. We pay highly attention to the elasticity of bushing during our designing so that it can act as buffer in application. It suits for applications of high compact for heavy construction machinery.

HT–M2直口薄壁型弹簧钢轴承，产品接缝为简单的直口，压入座孔后接缝处能完全闭合，可以承受较大的摇摆载荷。产品具有壁厚薄，互换性好，承载能力高，耐磨性能好，价格便宜的优点，推荐应用于重型汽车的车架关节部位等领域。

HT–M2 spring bearing with straight split, the split of the bushing can be closed after it is pressed into housing and it can stand heavy oscilating load.With the advantage of thin wall thickness, easy to be used as substitution, high load, good anti–friction, cost effective etc. it is recommended to be used in connecting part of the frame of heavy truck.

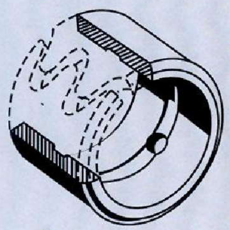
HT–M3高精度弹簧钢轴承，产品接缝采用圆滑波浪形接口，在模具成型后再进行外圆磨加工。使轴承与座孔的接触面达到最佳效果，为达到与轴精密的配合，效果，其产品的内径又进行了磨加工处理，内表面光洁度达到Ra1.6，因此，产品具有精度高、使用寿命长、装配方便等的优点，适用于注重质量的OEM市场。

HT–M3 high precision spring bearing adopts the smooth wave split designing on the bushing. After the bushing is shaped with mould by pressing, both its O.D and I.D will be fine grinded to ensure a best assembly performance together with the housing and shaft. With its I.D roughness lower than Ra1.6, the bushing has advantages of high precision, long life, easy for assembly and so on. It is most suitable for OEM market that pays much attention to high quality bushings.

油槽形式（Oil Groove Type）

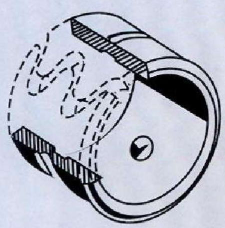
为使轴承在使用时能够得到充分的润滑，能够形成油膜润滑，同时又考虑轴承的加工性能，推荐使用以下几种润滑油槽形式。

Taking the machining and production of the bushing into consideration, the following oil groove types are recommended for fully lubrication in application and form oil film.

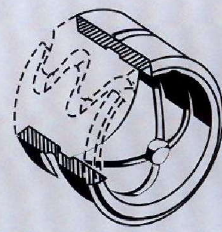


A

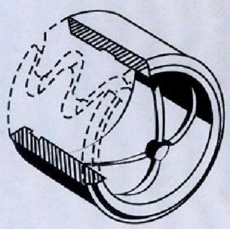
油槽形式
oil groove type



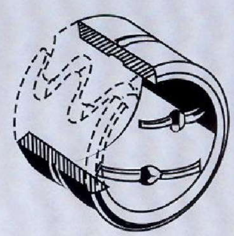
B



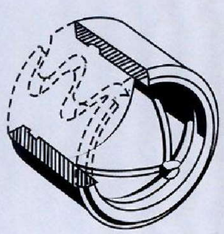
C



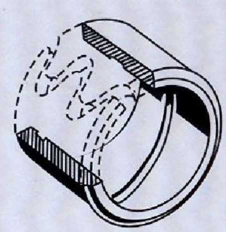
D



E



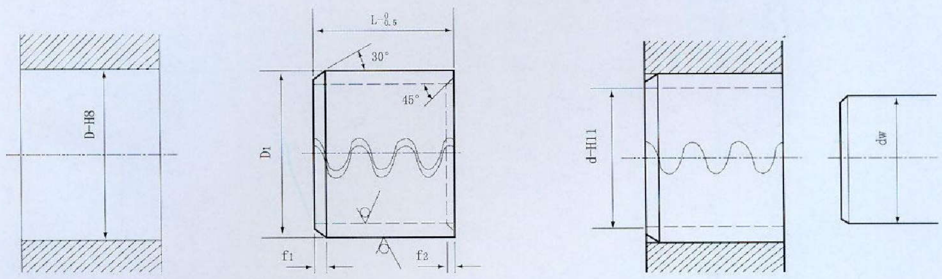
F



G

NOVIN Ball Bearing
www.novinballbearing.com

HT–M1 Bearing



座孔 Housing

安装前 Bush before insertion

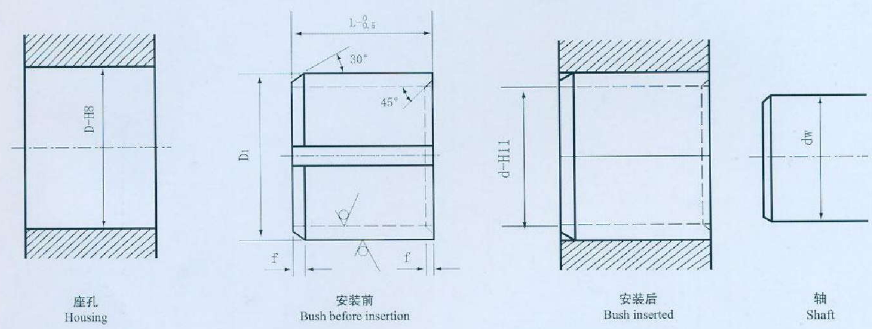
安装后 Bush inserted

轴 Shaft

d	D	D_1	外径 O.D.	内径 I.D.	座孔(H8) Housing Bore	轴(f8) Shaft	f_1	f_2	$L_{-0.50}$ 10	15	20	25	30	40	50	60	80	90	100
14	20	$20^{+1.5}_{+0.5}$	$20^{+0.052}$	$14^{+0.11}$	$20^{+0.033}$	$14^{-0.016}_{-0.043}$	2.2	1	△	△	△	△	△						
15	20	$20^{+1.5}_{+0.5}$	$20^{+0.052}$	$15^{+0.11}$	$20^{+0.033}$	$15^{-0.016}_{-0.043}$	2.2	1	△	△	△	△	△						
16	22	$22^{+1.5}_{+0.5}$	$22^{+0.052}$	$16^{+0.11}$	$22^{+0.033}$	$16^{-0.016}_{-0.043}$	2.2	1	△	△	△	△	△	△					
18	24	$24^{+1.5}_{+0.5}$	$24^{+0.052}$	$18^{+0.11}$	$24^{+0.033}$	$18^{-0.016}_{-0.043}$	2.2	1	△	△	△	△	△	△					
20	25	$25^{+1.5}_{+0.5}$	$25^{+0.052}$	$20^{+0.13}$	$25^{+0.033}$	$20^{-0.02}_{-0.053}$	2.2	1	△	△	△	△	△	△					
22	28	$28^{+1.5}_{+0.5}$	$28^{+0.052}$	$22^{+0.13}$	$28^{+0.033}$	$22^{-0.02}_{-0.053}$	2.2	1	△	△	△	△	△	△					
24	30	$30^{+1.5}_{+0.5}$	$30^{+0.052}$	$24^{+0.13}$	$30^{+0.033}$	$24^{-0.02}_{-0.053}$	2.2	1		△	△	△	△	△	△	△			
25	32	$32^{+1.5}_{+0.5}$	$32^{+0.062}$	$25^{+0.13}$	$32^{+0.039}$	$25^{-0.02}_{-0.053}$	2.2	1		△	△	△	△	△	△	△			
28	35	$35^{+1.5}_{+0.5}$	$35^{+0.062}$	$28^{+0.13}$	$35^{+0.039}$	$28^{-0.02}_{-0.053}$	2.2	1		△	△	△	△	△	△	△			
30	38	$38^{+1.5}_{+0.5}$	$38^{+0.062}$	$30^{+0.13}$	$38^{+0.039}$	$30^{-0.02}_{-0.053}$	2.2	1			△	△	△	△	△	△			

d	D	D_1	外径 O.D.	内径 I.D.	座孔(H8) Housing Bore	轴(f8) Shaft	f_1	f_2	$L_{-0.50}$										
									10	15	20	25	30	40	50	60	80	90	100
32	40	$40^{+1.5}_{+0.5}$	$40^{+0.062}$	$32^{+0.16}$	$40^{+0.039}$	$32^{-0.025}_{-0.064}$	2.2	1			△	△	△	△	△	△			
35	44	$44^{+2.3}_{+0.8}$	$44^{+0.062}$	$35^{+0.16}$	$44^{+0.039}$	$35^{-0.025}_{-0.064}$	2.2	1			△	△	△	△	△	△			
36	45	$45^{+2.3}_{+0.8}$	$45^{+0.062}$	$36^{+0.16}$	$45^{+0.039}$	$36^{-0.025}_{-0.064}$	2.2	1				△	△	△	△	△	△		
38	48	$48^{+2.3}_{+0.8}$	$48^{+0.062}$	$38^{+0.16}$	$48^{+0.039}$	$38^{-0.025}_{-0.064}$	2.2	1				△	△	△	△	△	△		
40	50	$50^{+2.3}_{+0.8}$	$50^{+0.062}$	$40^{+0.16}$	$50^{+0.039}$	$40^{-0.025}_{-0.064}$	2.6	1				△	△	△	△	△	△		
42	52	$52^{+2.3}_{+0.8}$	$52^{+0.074}$	$42^{+0.16}$	$52^{+0.046}$	$42^{-0.025}_{-0.064}$	2.6	1					△	△	△	△	△	△	
45	55	$55^{+2.3}_{+0.8}$	$55^{+0.074}$	$45^{+0.16}$	$55^{+0.046}$	$45^{-0.025}_{-0.064}$	2.6	1					△	△	△	△	△	△	
48	58	$58^{+2.3}_{+0.8}$	$58^{+0.074}$	$48^{+0.16}$	$58^{+0.046}$	$48^{-0.025}_{-0.064}$	2.6	1					△	△	△	△	△	△	
50	60	$60^{+2.3}_{+0.8}$	$60^{+0.074}$	$50^{+0.16}$	$60^{+0.046}$	$50^{-0.025}_{-0.064}$	2.6	1					△	△	△	△	△	△	
52	60	$60^{+2.3}_{+0.8}$	$60^{+0.074}$	$52^{+0.19}$	$60^{+0.046}$	$52^{-0.03}_{-0.076}$	2.6	1						△	△	△	△	△	△
55	65	$65^{+2.3}_{+0.8}$	$65^{+0.074}$	$55^{+0.19}$	$65^{+0.046}$	$55^{-0.03}_{-0.076}$	2.6	1						△	△	△	△	△	△
60	70	$70^{+2.3}_{+0.8}$	$70^{+0.074}$	$60^{+0.19}$	$70^{+0.046}$	$60^{-0.03}_{-0.076}$	2.6	1						△	△	△	△	△	△
65	75	$75^{+3.0}_{+1.0}$	$75^{+0.074}$	$65^{+0.19}$	$75^{+0.046}$	$65^{-0.03}_{-0.076}$	2.6	1						△	△	△	△	△	△
70	80	$80^{+3.0}_{+1.0}$	$80^{+0.074}$	$70^{+0.19}$	$80^{+0.046}$	$70^{-0.03}_{-0.076}$	3.2	1						△	△	△	△	△	△
75	85	$85^{+3.0}_{+1.0}$	$85^{+0.087}$	$75^{+0.19}$	$85^{+0.054}$	$75^{-0.03}_{-0.076}$	3.2	1							△	△	△	△	△
80	90	$90^{+3.0}_{+1.0}$	$90^{+0.087}$	$80^{+0.19}$	$90^{+0.054}$	$80^{-0.03}_{-0.076}$	3.2	1							△	△	△	△	△
85	95	$95^{+3.0}_{+1.0}$	$95^{+0.087}$	$85^{+0.22}$	$95^{+0.054}$	$85^{-0.036}_{-0.09}$	3.2	1							△	△	△	△	△
90	100	$100^{+3.0}_{+1.0}$	$100^{+0.087}$	$90^{+0.22}$	$100^{+0.054}$	$90^{-0.036}_{-0.09}$	3.2	1							△	△	△	△	△
95	105	$105^{+3.0}_{+1.0}$	$105^{+0.087}$	$95^{+0.22}$	$105^{+0.054}$	$95^{-0.036}_{-0.09}$	3.2	1							△	△	△	△	△
100	115	$115^{+3.0}_{+1.0}$	$115^{+0.087}$	$100^{+0.22}$	$115^{+0.054}$	$100^{-0.036}_{-0.09}$	3.2	1							△	△	△	△	△
105	115	$115^{+3.0}_{+1.0}$	$115^{+0.087}$	$105^{+0.22}$	$115^{+0.054}$	$105^{-0.036}_{-0.09}$	3.2	1							△	△	△	△	△

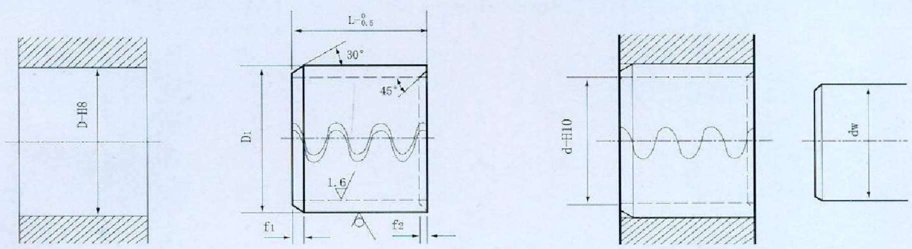
HT–M2 Bearing



d	D	D_1	外径 O.D.	内径 I.D.	座孔(H8) Housing Bore	轴(f7) Shaft	f	$L_{-0.50}$										
								10	15	20	25	30	40	50	60	80	90	100
16	20	$20^{+1.5}_{+0.5}$	$20^{+0.052}$	$16^{+0.11}$	$20^{+0.033}$	$16^{-0.016}_{-0.043}$	0.8	△	△	△	△	△						
18	22	$22^{+1.5}_{+0.5}$	$22^{+0.052}$	$18^{+0.11}$	$22^{+0.033}$	$18^{-0.016}_{-0.043}$	0.8	△	△	△	△	△						
20	24	$24^{+1.5}_{+0.5}$	$24^{+0.052}$	$20^{+0.13}$	$24^{+0.033}$	$20^{-0.02}_{-0.053}$	0.8	△	△	△	△	△						
24	28	$28^{+1.5}_{+0.5}$	$28^{+0.052}$	$24^{+0.13}$	$28^{+0.033}$	$24^{-0.02}_{-0.053}$	0.8	△	△	△	△	△						
25	29	$29^{+1.5}_{+0.5}$	$29^{+0.052}$	$25^{+0.13}$	$29^{+0.033}$	$25^{-0.02}_{-0.053}$	0.8	△	△	△	△	△						
25	30	$30^{+1.5}_{+0.5}$	$30^{+0.052}$	$25^{+0.13}$	$30^{+0.033}$	$25^{-0.02}_{-0.053}$	1.1	△	△	△	△	△						
26	30	$30^{+1.5}_{+0.5}$	$30^{+0.052}$	$26^{+0.13}$	$30^{+0.033}$	$26^{-0.02}_{-0.053}$	0.8		△	△	△	△	△	△				
28	32	$32^{+1.5}_{+0.5}$	$32^{+0.062}$	$28^{+0.13}$	$32^{+0.039}$	$28^{-0.02}_{-0.053}$	0.8		△	△	△	△	△	△				
30	34	$34^{+1.5}_{+0.5}$	$34^{+0.062}$	$30^{+0.13}$	$34^{+0.039}$	$30^{-0.02}_{-0.053}$	0.8		△	△	△	△	△	△				
30	35	$35^{+1.5}_{+0.5}$	$35^{+0.062}$	$30^{+0.13}$	$35^{+0.039}$	$30^{-0.02}_{-0.053}$	1.1			△	△	△	△	△				

d	D	D_1	外径 O.D.	内径 I.D.	座孔(H8) Housing Bore	轴(f7) Shaft	f	$L_{-0.50}$										
								10	15	20	25	30	40	50	60	80	90	100
32	36	$36^{+1.5}_{+0.5}$	$36^{+0.062}$	$32^{+0.16}$	$36^{+0.039}$	$32^{-0.025}_{-0.064}$	0.8			△	△	△	△	△				
32	37	$37^{+1.5}_{+0.5}$	$37^{+0.062}$	$32^{+0.16}$	$37^{+0.039}$	$32^{-0.025}_{-0.064}$	1.1			△	△	△	△	△				
35	39	$39^{+1.5}_{+0.5}$	$39^{+0.062}$	$35^{+0.16}$	$39^{+0.039}$	$35^{-0.025}_{-0.064}$	0.8				△	△	△	△	△			
35	40	$40^{+1.5}_{+0.5}$	$40^{+0.062}$	$35^{+0.16}$	$40^{+0.039}$	$35^{-0.025}_{-0.064}$	1.1				△	△	△	△	△			
40	44	$44^{+2.3}_{+0.8}$	$44^{+0.062}$	$40^{+0.16}$	$44^{+0.039}$	$40^{-0.025}_{-0.064}$	0.8				△	△	△	△	△			
40	45	$45^{+2.3}_{+0.8}$	$45^{+0.062}$	$40^{+0.16}$	$45^{+0.039}$	$40^{-0.025}_{-0.064}$	1.1					△	△	△	△	△		
40	46	$46^{+2.3}_{+0.8}$	$46^{+0.062}$	$40^{+0.16}$	$46^{+0.039}$	$40^{-0.025}_{-0.064}$	1.3					△	△	△	△	△		
45	49	$49^{+2.3}_{+0.8}$	$49^{+0.062}$	$45^{+0.16}$	$49^{+0.039}$	$45^{-0.025}_{-0.064}$	0.8					△	△	△	△	△		
45	50	$50^{+2.3}_{+0.8}$	$50^{+0.062}$	$45^{+0.16}$	$50^{+0.039}$	$45^{-0.025}_{-0.064}$	1.1					△	△	△	△	△		
45	51	$51^{+2.3}_{+0.8}$	$51^{+0.074}$	$45^{+0.16}$	$51^{+0.046}$	$45^{-0.025}_{-0.064}$	1.3						△	△	△	△	△	
50	54	$54^{+2.3}_{+0.8}$	$54^{+0.074}$	$50^{+0.16}$	$54^{+0.046}$	$50^{-0.025}_{-0.064}$	0.8						△	△	△	△	△	
50	55	$55^{+2.3}_{+0.8}$	$55^{+0.074}$	$50^{+0.16}$	$55^{+0.046}$	$50^{-0.025}_{-0.064}$	1.1						△	△	△	△	△	
50	56	$56^{+2.3}_{+0.8}$	$56^{+0.074}$	$50^{+0.16}$	$56^{+0.046}$	$50^{-0.025}_{-0.064}$	1.3						△	△	△	△	△	
55	59	$59^{+2.3}_{+0.8}$	$59^{+0.074}$	$55^{+0.19}$	$59^{+0.046}$	$55^{-0.03}_{-0.076}$	0.8						△	△	△	△	△	△
55	60	$60^{+2.3}_{+0.8}$	$60^{+0.074}$	$55^{+0.19}$	$60^{+0.046}$	$55^{-0.03}_{-0.076}$	1.1							△	△	△	△	△
55	61	$61^{+2.3}_{+0.8}$	$61^{+0.074}$	$55^{+0.19}$	$61^{+0.046}$	$55^{-0.03}_{-0.076}$	1.3							△	△	△	△	△
60	64	$64^{+2.3}_{+0.8}$	$64^{+0.074}$	$60^{+0.19}$	$64^{+0.046}$	$60^{-0.03}_{-0.076}$	0.8							△	△	△	△	△
60	65	$65^{+2.3}_{+0.8}$	$65^{+0.074}$	$60^{+0.19}$	$65^{+0.046}$	$60^{-0.03}_{-0.076}$	1.1							△	△	△	△	△
70	75	$75^{+2.3}_{+0.8}$	$75^{+0.074}$	$70^{+0.19}$	$75^{+0.046}$	$70^{-0.03}_{-0.076}$	1.1							△	△	△	△	△
70	76	$76^{+3.0}_{+1.0}$	$76^{+0.074}$	$70^{+0.19}$	$76^{+0.046}$	$70^{-0.03}_{-0.073}$	1.3							△	△	△	△	△
80	85	$85^{+3.0}_{+1.0}$	$85^{+0.087}$	$80^{+0.19}$	$85^{+0.054}$	$80^{-0.03}_{-0.076}$	1.1							△	△	△	△	△
80	86	$86^{+3.0}_{+1.0}$	$86^{+0.087}$	$80^{+0.19}$	$86^{+0.054}$	$80^{-0.03}_{-0.076}$	1.3							△	△	△	△	△

HT–M3 Bearing



座孔 Housing　　安装前 Bush before insertion　　安装后 Bush inserted　　轴 Shaft

d	D	D₁	外径 O.D.	内径 I.D.	座孔(H8) Housing Bore	轴(f7) Shaft	f_1	f_2	$L_{-0.50}$										
									10	15	20	25	30	40	50	60	80	90	100
14	20	$20^{+1.5}_{+0.5}$	$20^{+0.052}$	$14^{+0.07}$	$20^{+0.033}$	$14^{-0.016}_{-0.034}$	2.2	1	△	△	△	△	△						
15	20	$20^{+1.5}_{+0.5}$	$20^{+0.052}$	$15^{+0.07}$	$20^{+0.033}$	$15^{-0.016}_{-0.034}$	2.2	1	△	△	△	△	△						
16	22	$22^{+1.5}_{+0.5}$	$22^{+0.052}$	$16^{+0.07}$	$22^{+0.033}$	$16^{-0.016}_{-0.034}$	2.2	1	△	△	△	△	△	△					
18	24	$24^{+1.5}_{+0.5}$	$24^{+0.052}$	$18^{+0.07}$	$24^{+0.033}$	$18^{-0.016}_{-0.034}$	2.2	1	△	△	△	△	△	△					
20	25	$25^{+1.5}_{+0.5}$	$25^{+0.052}$	$20^{+0.084}$	$25^{+0.033}$	$20^{-0.02}_{-0.041}$	2.2	1	△	△	△	△	△	△					
22	28	$28^{+1.5}_{+0.5}$	$28^{+0.052}$	$22^{+0.084}$	$28^{+0.033}$	$22^{-0.02}_{-0.041}$	2.2	1	△	△	△	△	△	△					
24	30	$30^{+1.5}_{+0.5}$	$30^{+0.052}$	$24^{+0.084}$	$30^{+0.033}$	$24^{-0.02}_{-0.041}$	2.2	1		△	△	△	△	△	△	△			
25	32	$32^{+1.5}_{+0.5}$	$32^{+0.062}$	$25^{+0.084}$	$32^{+0.039}$	$25^{-0.02}_{-0.041}$	2.2	1		△	△	△	△	△	△	△			
28	35	$35^{+1.5}_{+0.5}$	$35^{+0.062}$	$28^{+0.084}$	$35^{+0.039}$	$28^{-0.02}_{-0.041}$	2.2	1		△	△	△	△	△	△	△			
30	38	$38^{+1.5}_{+0.5}$	$38^{+0.062}$	$30^{+0.084}$	$38^{+0.039}$	$30^{-0.02}_{-0.041}$	2.2	1			△	△	△	△	△	△			

d	D	D_1	外径 O.D.	内径 I.D.	座孔(H8) Housing Bore	轴(f7) Shaft	f_1	f_2	$L_{-0.50}$										
									10	15	20	25	30	40	50	60	80	90	100
32	40	$40^{+1.5}_{+0.5}$	$40^{+0.062}$	$32^{+0.10}$	$40^{+0.039}$	$32^{-0.025}_{-0.05}$	2.2	1			△	△	△	△	△	△			
35	44	$44^{+2.3}_{+0.8}$	$44^{+0.062}$	$35^{+0.10}$	$44^{+0.039}$	$35^{-0.025}_{-0.05}$	2.2	1			△	△	△	△	△	△			
36	45	$45^{+2.3}_{+0.8}$	$45^{+0.062}$	$36^{+0.10}$	$45^{+0.039}$	$36^{-0.025}_{-0.05}$	2.2	1				△	△	△	△	△	△		
38	48	$48^{+2.3}_{+0.8}$	$48^{+0.062}$	$38^{+0.10}$	$48^{+0.039}$	$38^{-0.025}_{-0.05}$	2.2	1				△	△	△	△	△	△		
40	50	$50^{+2.3}_{+0.8}$	$50^{+0.062}$	$40^{+0.10}$	$50^{+0.039}$	$40^{-0.025}_{-0.05}$	2.6	1				△	△	△	△	△	△		
42	52	$52^{+2.3}_{+0.8}$	$52^{+0.074}$	$42^{+0.10}$	$52^{+0.046}$	$42^{-0.025}_{-0.05}$	2.6	1					△	△	△	△	△	△	
45	55	$55^{+2.3}_{+0.8}$	$55^{+0.074}$	$45^{+0.10}$	$55^{+0.046}$	$45^{-0.025}_{-0.05}$	2.6	1					△	△	△	△	△	△	
48	58	$58^{+2.3}_{+0.8}$	$58^{+0.074}$	$48^{+0.10}$	$58^{+0.046}$	$48^{-0.025}_{-0.05}$	2.6	1					△	△	△	△	△	△	
50	60	$60^{+2.3}_{+0.8}$	$60^{+0.074}$	$50^{+0.10}$	$60^{+0.046}$	$50^{-0.025}_{-0.05}$	2.6	1					△	△	△	△	△	△	
52	60	$60^{+2.3}_{+0.8}$	$60^{+0.074}$	$52^{+0.12}$	$60^{+0.046}$	$52^{-0.03}_{-0.06}$	2.6	1						△	△	△	△	△	△
55	65	$65^{+2.3}_{+0.8}$	$65^{+0.074}$	$55^{+0.12}$	$65^{+0.046}$	$55^{-0.03}_{-0.06}$	2.6	1						△	△	△	△	△	△
60	70	$70^{+2.3}_{+0.8}$	$70^{+0.074}$	$60^{+0.12}$	$70^{+0.046}$	$60^{-0.03}_{-0.06}$	2.6	1						△	△	△	△	△	△
65	75	$75^{+3.0}_{+1.0}$	$75^{+0.074}$	$65^{+0.12}$	$75^{+0.046}$	$65^{-0.03}_{-0.06}$	2.6	1						△	△	△	△	△	△
70	80	$80^{+3.0}_{+1.0}$	$80^{+0.074}$	$70^{+0.12}$	$80^{+0.046}$	$70^{-0.03}_{-0.06}$	3.2	1						△	△	△	△	△	△
75	85	$85^{+3.0}_{+1.0}$	$85^{+0.087}$	$75^{+0.12}$	$85^{+0.054}$	$75^{-0.03}_{-0.06}$	3.2	1							△	△	△	△	△
80	90	$90^{+3.0}_{+1.0}$	$90^{+0.087}$	$80^{+0.12}$	$90^{+0.054}$	$80^{-0.03}_{-0.06}$	3.2	1							△	△	△	△	△
85	95	$95^{+3.0}_{+1.0}$	$95^{+0.087}$	$85^{+0.14}$	$95^{+0.054}$	$85^{-0.036}_{-0.071}$	3.2	1							△	△	△	△	△
90	100	$100^{+3.0}_{+1.0}$	$100^{+0.087}$	$90^{+0.14}$	$100^{+0.054}$	$90^{-0.036}_{-0.071}$	3.2	1							△	△	△	△	△
95	105	$105^{+3.0}_{+1.0}$	$105^{+0.087}$	$95^{+0.14}$	$105^{+0.054}$	$95^{-0.036}_{-0.071}$	3.2	1							△	△	△	△	△
100	115	$115^{+3.0}_{+1.0}$	$115^{+0.087}$	$100^{+0.14}$	$115^{+0.054}$	$100^{-0.036}_{-0.071}$	3.2	1							△	△	△	△	△
105	115	$115^{+3.0}_{+1.0}$	$115^{+0.087}$	$105^{+0.14}$	$115^{+0.054}$	$105^{-0.036}_{-0.071}$	3.2	1							△	△	△	△	△

一、HT-M轴套外径检测方法

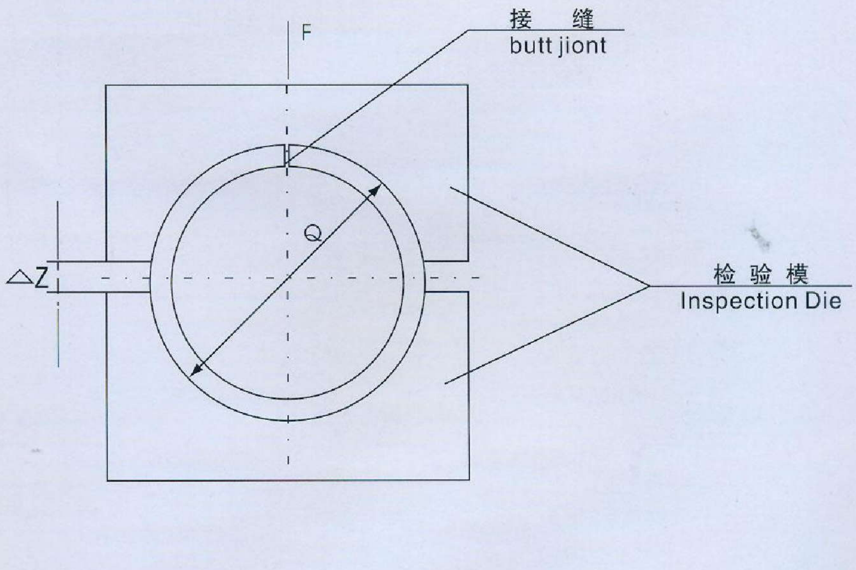
O.D.Inspecting method of HT-M beating’s

外径采用ISO3547-2 第一种方式检验，其步骤如下：

In accordance to ISO3547-2-A;the method is described as follows:

1、设定测量外径装置(如图所示)。先把一个直径与检测模内径一样的调节芯轴Q放在检验模之间，然后施加一定的试验力F，在检验模之间出现间隙Z，做为最初调整值。

1、Set the measuring device(see figure).Fist a core bar Q with the same diameter as the inside diameter of inspecting mould is put into the mould,then load F is given until clearance Z appears on the mould,which is logged as the reference parameter.



2、取出调节芯轴，将被测轴套开口上，放入检孔中，并施加同样试验力F，记录Z的变化值△Z。

2、Get the mandril out of the mould,then put the bush with the spilt upward into the inspecting bore, and the load F is given.Mean while a changed value △Z is logged.

3、芯轴Q和实验力F的取值和计算方法

3、Inspection and Caculation for the dimension of Q and F

D(mm)	≤6	>6~12	>12~80	>80~180
Q(mm)	$D_{max-0.003}$	$D_{max-0.006}$	$D_{max-0.013}$	$D_{max-0.025}$
F(N)	3750・A/Q 取100倍数值 (100fold' s value)	7500・A/Q 取250倍数值 (250fold)	15000・A/Q 取500倍数值 (500fold)	30000・A/Q 取500倍数值 (500fold)

A=L・S

L为轴套宽度，S为壁厚

L：Bush Width S:Bush thickness

△Z上极限值0，下极限值－π/2×△D △Z extremum:upper 0,lower:－π/2×△D

△D为轴套外径公差值△D：Bush Outside Diameter Tolerance

4、测定数据的举例Example For inspecting Date

轴套(Bush)Φ30×Φ38×30,轴套宽(Width)L=30

外径(O.D.)D=$38^{+0.062}$ 壁厚(Thickness)S=4

(1)调节芯轴外径(Adjusting Mandril' S O.D.) Q=Dmax−0.013=38.062−0.013=38.049

(2)试验力芯轴外径(Load)F=15000×120/38.049=47307,取整后(After modulatd)F=47500(N) 其中

(Here)A=L・S=30×4=120

(3)△Z极限值△Zextremeum 上极限值(Upper)0

下极限值(Lower)−π/2・△D=−π/2×0.062=−0.0974

取整数后(After modulated)−0.097

(即被轴套外径在检验模中的允许变化值为0~−0.097)

(That' s to say,the permitted vatiable of O.D is 0~−0.097 when bush in the inspecting guauge).

二、HT−M轴套内径测量方法

HT−M轴套的内径测量方法可参照ISO3547−2中的第三种方法检测，对于产品内径小于120mm的产品，测量方法是将轴承压入一个检验孔中，然后用塞规测量轴套内径。在手的压力作用下(最大值为250N)，"通"塞规应能通过轴套内孔，"止"塞规不能通过轴套内径。"通"塞规的外径等于轴套的最小理论内径，"止"塞规的外径应等于轴套的最大理论内径。但因本方法为破坏性测验，产品经测量后外径尺寸会发生变化，产品经检测后不得再次使用，所以本测量方法只适用于批量产品的抽检。内径大于120mm的产品，测方法由供需双方协定确定。

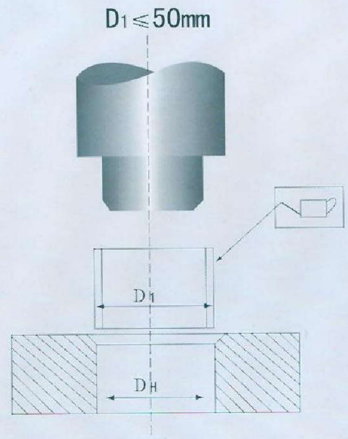
The inspecting method of HT−M bush inside diameter

To check the inside diameter,the bush is to be pressed into a ring gage,The inside diameter shall be checked with a GO and NO GO plug gauge.The plug gauge diameters are determined empirically based on the maxinmum and minimum values of bush' s outside diameter.The GO plug gauge shall enter the bush with minimum force; the NO GO plug gauge shall not enter the bush manually(mximum force 250N) The test is appropriate for inside diameters up to 120mm.When the bush is pressed into the ring gauge it is possible that there will be permanent reduction in the outside diameter.For inside diameters overs 120mm,the test shall be argeed between supplier and user.

产品装配 The Installation of Bushing

(1) 对于外径≤50mm的轴承，可按图A所示，利用一个带有手柄的压头轴芯，小心操作，轻轻压入座孔中。

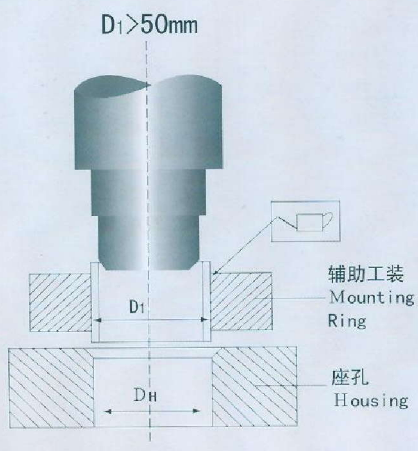
For bush (outer diameter ≤50mm), press the bush into the housing gently and carefully using an core axle with a handle FigA.



图A

(2) 当轴承外径＞50mm时，可按图B所示，利用带台肩的手柄以及辅助工装小心操作，轻轻压入座孔中。

For bush (outer diameter >50mm), press the bush into the housing gently and carefully using a handle with a shoulder, an "O" ring and an assisting circle FigB.



图B

产品应用 Application