TMB® 运转无忧 Running Smoothly

TMB Extra®

长寿命高速圆柱滚子轴承

High-speed & long lifetime cylindrical roller bearing

注：图片轴承的结构及外观仅供参考
picture for reference only

长寿命高速圆柱滚子轴承 High-speed & long lifetime cylindrical roller bearing

Extra系列低噪音、长寿命圆柱滚子轴承(E系列)，是为了高转速长寿命、低噪音要求而研发的一种标准型系列超级性能轴承。

Etra series cylindrical roller bearing is a kind of bearing with low noise and long lifetime,which is designed on standard to meet the requirement in the application of high running speed ,low noise and long lifetime.

Extra轴承
Extra bearing

长寿命
高载荷容量设计 设计寿命长
Long life
High load capacity design

高转速
温升小、低摩擦设计
High speed
Small temperature rise, low friction design

低噪音
表面强化处理
low noise design
Surface hardening treatment

与传统轴承相比，寿命提高3倍
Lifetime increase 3 times compare with olo/mode/

特性：Characteristics:

用于承受高径向载荷不同的应用场合
It’ s able to support high ridial loads and used in different applica tion fields.

N, NU: 只承受径向载荷
N.NU:only support ridial load

NJ : 径向载荷+单向轴向载荷
NJ: radial load and single way axial load

NUP : 径向载荷和双向轴向载荷
NUP:radial load and two-way axial load

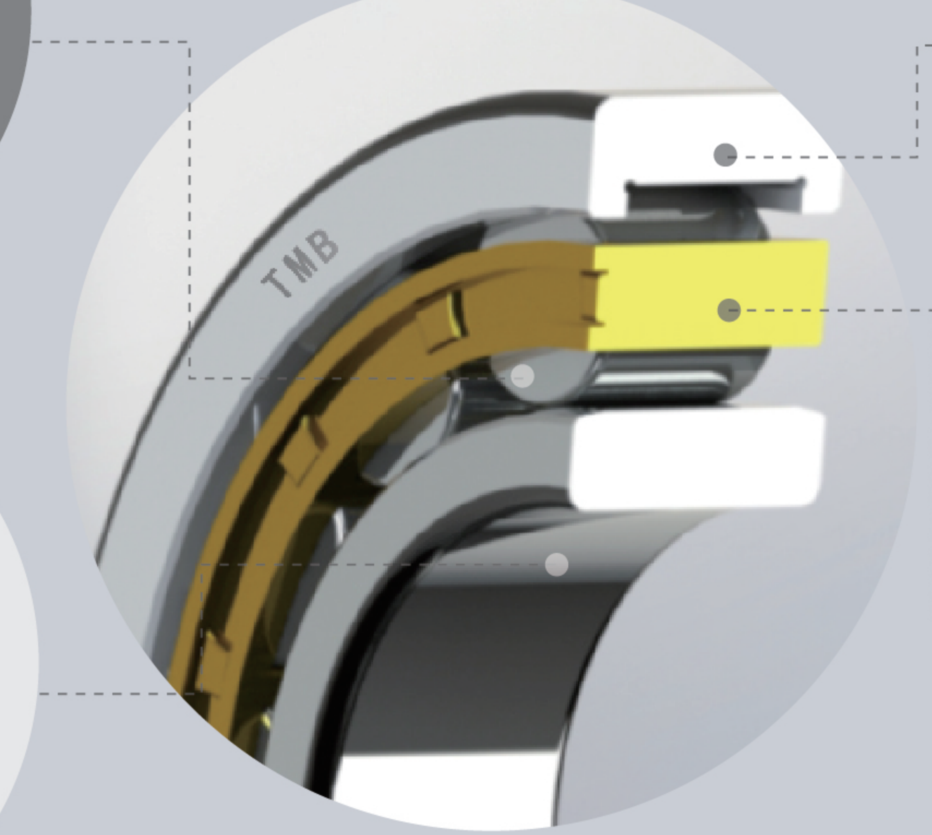
圆柱滚子轴承从内径15mm到外径700mm
Size range of bearing from ID 15mm to OD 700mm.

滚子 Roller

- 特殊新材料
  Special & new bearing steel material
- 表面特殊修型设计
  Special modified surface design
- 严格的滚动体分选载荷分布更均匀
  Rigid rolling element sorting, symmetrical load distribution

内圈 Inner ring

- 特殊新材料
  Special&new bearing steel material
- 优化的滚道形状
  Optimized raceway profile
- 滚道表面形貌设计
  Optimized surface morphology design
- 滚道减磨降噪设计
  Optimized friction & noise reduction design
- 互换性设计
  Interconvertibility design



外圈 Outer ring

- 特殊新材料
  Special&new bearing steel material
- 优化的滚道形状
  Optimized raceway profile
- 滚道表面形貌设计
  Optimized design to surface morphology
- 挡边引导面的特殊设计
  Special design to rib-guided

保持架 Cage

- 保持架低噪音优化设计
  Optimized low-noise design
- 保持架特殊引导设计
  Special cage-guided design
- 保持架自润滑设计
  Self-lubricating design
- 保持架防断裂设计
  Preventing fracture design

实体铜保持架优势 Advantages of solid brass cage

- 保持架强度提高50% Cage’ s intensity is increased by 50%
- 特殊的设计保证低温升 Special design meet the reuqirements of temperature rise
- 保持架的稳定性增强 Cage’ s stability is strengthened
- 增大润滑油的填充面积，改善润滑 Increase the filling space of grease, improve the lubrication.

通过特殊兜孔设计，滚子引导精度提高，良好接触保证应力降低
Improve the level of roller-guided precision and make sure the stress reducing by special pocket hole design.

公称型号 Nominal item

E- | NU320 E TVP2 | /P6 | /CM | /V2

- Extra系列轴承 Extra series bearing
- 轴承类型代号 Bearing type code
- 轴承尺寸系列代号 Bearing dimension series code
- 内径尺寸代号ID ID dimension code
- 轴承振动要求 Bearing vibration requirement
- Bearing clearance 轴承游隙
- Precision level 精度等级
- Plastic cage 工程塑料保持架

轴承类型 Bearing type	轴承用圆柱滚子轴承 NU / N / NJ / NUP Applied cylindrical roller bearing NU/N/NJ/NUP
轴承系列 Bearing series	10 / 2 / 3 / 4 / 22 / 23 / 18 / 19
内径范围 Range of ID	10—400

轴承代号 Bearing code	代号说明 Code instruction	
E(前置代号preposition code)	超级性能轴承	super-performance bearing
E	加强型设计	Enhanced design
N	外圈带止动槽	Snap ring in outer ring
M	铜保持架	Brass cage
ML	整体车制保持架	One-piece machined brass cage
MA 、MB	外圈或内圈引导保持架	Cage with OR or IR guided
TVP2	塑钢保持架	Plastic cage
CM	电机轴承专用游隙	Motor-dedicated bearing clearance

如有需求可提供其他设计
If need, can offer other design.

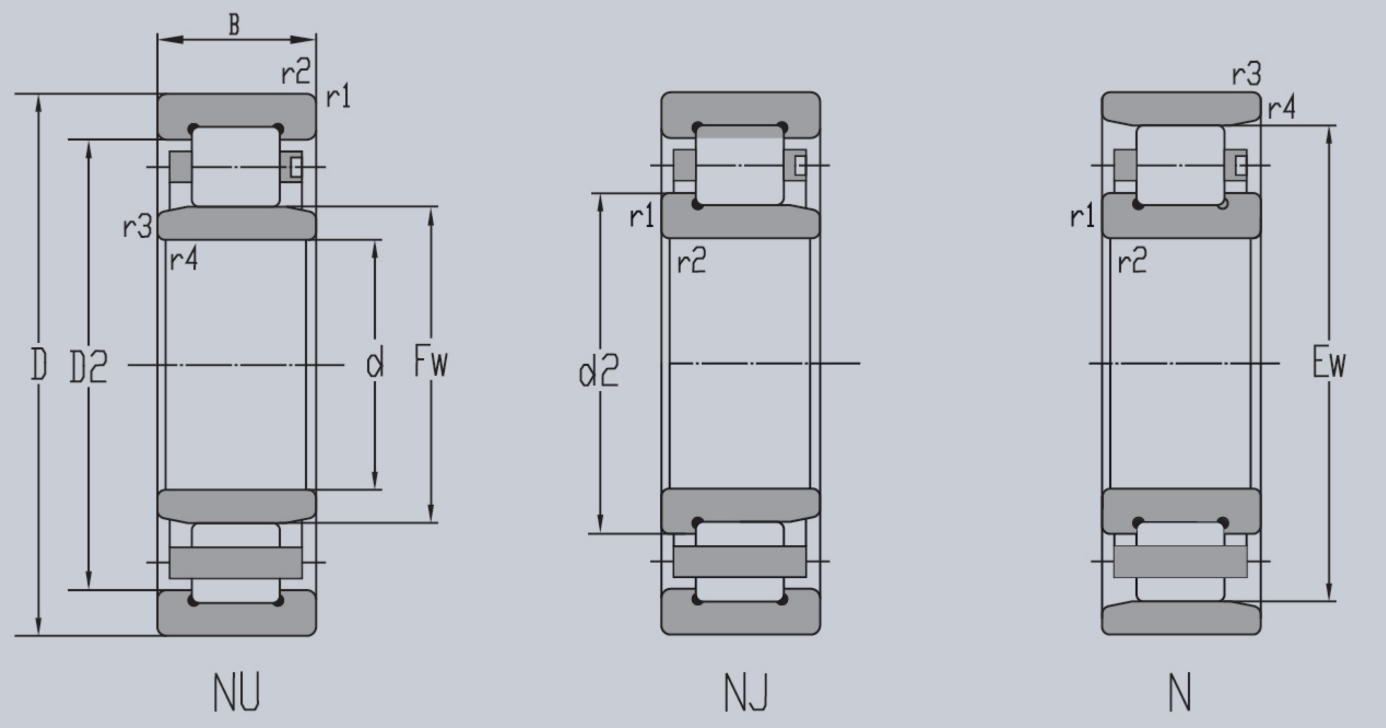
设备优势 Advantages

游隙 Clearance

轴承游隙 单位：μm

公称内径		C0		CM		C3		C4	
超过	到	min	max	min	max	min	max	min	max
—	10	25	45	35	55	40	60	55	75
10	24	25	45	35	55	40	60	55	75
24	30	25	45	35	55	40	60	55	75
30	40	30	50	45	65	50	70	65	85
40	50	35	60	45	70	55	80	75	100
50	65	45	70	55	80	65	90	85	110
65	80	50	75	60	85	75	100	95	125
80	100	60	85	65	95	80	110	110	140
100	120	60	90	70	100	95	125	135	165
120	140	75	105	85	115	110	145	155	190
140	160	85	120	100	135	130	165	180	215
160	180	90	125	105	140	135	170	185	220
180	200	105	145	130	170	155	195	210	250
200	225	125	165	150	190	180	220	235	275
225	250	125	170	155	200	190	235	250	295
250	280	140	190	175	225	205	255	275	325
280	315	150	200	190	240	215	270	290	345
315	355	165	220	210	265	245	300	325	380
355	400	215	275	260	320	300	365	390	455
400	450	240	305	290	355	335	405	435	505
450	500	255	325	310	380	360	430	480	540

尺寸表 Measurement Chart



基本尺寸 Basic rated load			基本预定载荷 Referenced rotate speed		参考转速 Bearing Item	轴承型号 Referenced dimension	保持架类型 Cage type	参考尺寸 Basic dimension					质量/ Kg Weight
d	D	B	Cr	Cor				d2~	D2~	Ew(Fw)	r1,2min	r3,4min	
40	80	18	58.9	56.0	7100	E-NJ208EM	TVP2\J	54	67.9	49.5	1.1	1.1	0.437
	80	18	58.9	56.0	7100	E-N208EM	TVP2\J	54		71.5	1.1	1.1	0.428
	90	23	88.4	83.9	6200	E-NU308EM	TVP2\J		75.6	52	1.5	1.5	0.77
	90	23	88.4	83.9	6200	E-NJ308EM	TVP2\J	57.5	75.6	52	1.5	1.5	0.785
	90	23	88.4	83.9	6200	E-N308EM	TVP2\J	57.5		80	1.5	1.5	0.766
45	85	19	66.0	62.7	6600	E-NU209EM	TVP2\J		73	54.5	1.1	1.1	0.513
	85	19	66.0	62.7	6600	E-NJ209EM	TVP2\J	59	73	54.5	1.1	1.1	0.524
	85	19	66.0	62.7	6600	E-N209EM	TVP2\J	59		76.5	1.1	1.1	0.508
	100	25	106.4	101.1	5700	E-NU309EM	TVP2\J		83.8	58.5	1.5	1.5	1.01
	100	25	106.4	101.1	5700	E-NJ309EM	TVP2\J	64.4	83.8	58.5	1.5	1.5	1.08
	100	25	106.4	101.1	5700	E-N309EM	TVP2\J	64.4		88.5	1.5	1.5	0.98
50	90	20	69.8	66.3	6700	E-NU210EM	TVP2\J		78	59.5	1.1	1.1	0.575
	90	20	69.8	66.3	6700	E-NJ210EM	TVP2\J	64	78	59.5	1.1	1.1	0.739
	90	20	69.8	66.3	6700	E-N210EM	TVP2\J	64		81.5	1.1	1.1	0.572
	110	27	120.7	114.6	4800	E-NU310EM	TVP2\J		92.1	65	2	2	1.3
	110	27	120.7	114.6	4750	E-NJ310EM	TVP2\J	71.2	92.1	65	2	2	1.33
	110	27	120.7	114.6	4750	E-N310EM	TVP2\J	71.2		97	2	2	1.27
55	100	21	91.7	87.1	5700	E-NU211EM	TVP2		86.3	66	1.5	1.1	0.763
	100	21	91.7	87.1	5700	E-NJ211EM	TVP2	70.8	86.3	66	1.5	1.1	0.768
	100	21	91.7	91.7	5700	E-NU2211EM	TVP2		86.3	66	1.5	1.1	0.894
	100	21	91.7	91.7	5700	E-NJ2211EM	TVP2	70.8	86.3	66	1.5	1.1	0.914
	100	21	91.7	91.7	5700	E-N2211EM	TVP2	70.8		90	1.5	1.1	0.886
	120	29	148.2	148.2	5200	E-NU311EM	TVP2		101	70.5	2	2	1.66
	120	29	148.2	148.2	5200	E-NJ311EM	TVP2	77.5	101	70.5	2	2	1.71
	120	29	148.2	148.2	5200	E-N311EM	TVP2	77.5		106.5	2	2	1.63
	120	43	220.4	220.4	5200	E-NU2311EM	TVP2		101	70.5	2	2	3.69
	120	43	220.4	220.4	5200	E-NJ2311EM	TVP2	77.5	101	70.5	2	2	3.73
	120	43	220.4	220.4	5200	E-N2311EM	TVP2	77.5		106.5	2	2	3.67
60	110	22	102.6	102.6	5700	E-NU212EM	TVP2		95.7	72	1.5	1.5	0.943
	110	22	102.6	102.6	5700	E-NJ212EM	TVP2	77.5	95.7	72	1.5	1.5	0.966
	110	22	102.6	102.6	5700	E-N212EM	TVP2	77.5		100	1.5	1.5	0.939
	110	28	138.7	138.7	5700	E-NU2212EM	TVP2		95.7	72	1.5	1.5	1.24
	110	28	138.7	138.7	5700	E-NJ2212EM	TVP2	77.5	95.7	72	1.5	1.5	1.35
	130	31	164.4	164.4	5000	E-NU312EM	TVP2		110	77	2.1	2.1	2.06
	130	31	164.4	164.4	5000	E-NJ312EM	TVP2	84.3	110	77	2.1	2.1	2.1
	130	31	164.4	164.4	5000	E-N 312 EM	TVP2	84.3		115	2.1	2.1	2.03
	130	46	247.0	247.0	5000	E-NU2312EM	TVP2		110	77	2.1	2.1	3.08
	130	46	247.0	247.0	5000	E-NJ2312EM	TVP2	84.3	110	77	2.1	2.1	3.14
65	120	23	115.9	115.9	5200	E-NU213EM	TVP2		104	78.5	1.5	1.5	1.19
	120	23	115.9	115.9	5200	E-NJ213EM	TVP2	84.4	104	78.5	1.5	1.5	1.24
	120	23	115.9	115.9	5200	E-N213EM	TVP2	84.4		108.5	1.5	1.5	1.17
	120	31	161.5	161.5	5200	E-NU2213EM	TVP2		104	78.5	1.5	1.5	1.62
	120	31	161.5	161.5	5200	E-NJ2213EM	TVP2	84.4	104	78.5	1.5	1.5	1.66
	140	33	201.4	201.4	4800	E-NU313EM	TVP2		119	82.5	2.1	2.1	2.45
	140	33	201.4	201.4	4800	E-NJ313EM	TVP2	90.5	119	82.5	2.1	2.1	2.58
	140	33	201.4	201.4	4800	E-N313EM	TVP2	90.5		124.5	2.1	2.1	2.41
	140	48	270.8	270.8	4800	E-NU2313EM	TVP2		119	82.5	2.1	2.1	3.77
	140	48	270.8	270.8	4800	E-NJ2313EM	TVP2	90.5	119	82.5	2.1	2.1	3.85
70	125	24	130.2	130.2	4800	E-NU214EM	TVP2		109	83.5	1.5	1.5	1.32
	125	24	130.2	130.2	4800	E-NJ214EM	TVP2	89.4	109	83.5	1.5	1.5	1.38
	125	24	130.2	130.2	4800	E-N214EM	TVP2	89.4	109	83.5	1.5	1.5	1.29
	125	31	171.0	171.0	4800	E-NU2214EM	TVP2		109	83.5	1.5	1.5	1.72
	125	31	171.0	171.0	4800	E-NJ2214EM	TVP2	89.4	109	83.5	1.5	1.5	1.76
	150	35	224.2	224.2	4275	E-NU314EM	TVP2		127	89	2.1	2.1	3.14
	150	35	224.2	224.2	4275	E-NJ314EM	TVP2	97.3	127	89	2.1	2.1	3.17

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基本尺寸 Basic rated load			基本预定载荷 Referenced rotate speed		参考转速 Bearing Item	轴承型号 Referenced dimension	保持架类型 Cage type	参考尺寸 Basic dimension					质量/ Kg Weight
d	D	B	Cr	Cor				d2~	D2~	Ew(Fw)	r1,2min	r3,4min	
70	150	35	224.2	224.2	4300	E-N314EM	TVP2	97.3		133	2.1	2.1	3.11
	150	51	299.3	299.3	4300	E-NU2314EM	TVP2		127	89	2.1	2.1	4.49
	150	51	299.3	299.3	4300	E-NJ2314EM	TVP2	97.3	127	89	2.1	2.1	4.54
75	130	25	142.5	142.5	4600	E-NU215EM	TVP2		114	88.5	1.5	1.5	1.44
	130	25	142.5	142.5	4600	E-NJ215EM	TVP2	94.3	114	88.5	1.5	1.5	1.47
	130	25	142.5	142.5	4600	E-N215EM	TVP2	94.3		118.5	1.5	1.5	1.42
	130	31	176.7	176.7	4600	E-NU2215EM	TVP2		114	88.5	1.5	1.5	2.82
	130	31	176.7	176.7	4600	E-NJ2215EM	TVP2	94.3	114	88.5	1.5	1.5	2.86
	160	37	266.0	266.0	4300	E-NU315EM	TVP2		136	95	2.1	2.1	3.72
	160	37	266.0	266.0	4300	E-NJ315EM	TVP2	104	136	95	2.1	2.1	3.78
	160	37	266.0	266.0	4300	E-N315EM	TVP2	104		143	2.1	2.1	3.68
	160	37	266.0	266.0	4300	E-NU2315EM	TVP2		136	95	2.1	2.1	5.57
	160	37	266.0	266.0	4300	E-NJ2315EM	TVP2	104	136	95	2.1	2.1	5.66
80	140	26	152.0	152.0	4600	E-NU216EM	ML/TVP2		123	95.3	2	2	1.72
	140	26	152.0	152.0	4600	E-NJ216EM	ML/TVP2	101	123	95.3	2	2	1.76
	140	26	152.0	152.0	4600	E-N216EM	ML/TVP2	101		127.3	2	2	1.69
	140	33	201.4	201.4	4600	E-NU2216EM	ML/TVP2		123	95.3	2	2	3.56
	140	33	201.4	201.4	4600	E-NJ2216EM	ML/TVP2	101	123	95.3	2	2	3.6
	170	39	285.0	285.0	4000	E-NU316EM	ML/TVP2		144	101	2.1	2.1	4.39
	170	39	285.0	285.0	4000	E-NJ316EM	ML/TVP2	110	144	101	2.1	2.1	4.47
	170	39	285.0	285.0	4000	E-N316EM	ML/TVP2	110		151	2.1	2.1	4.35
	170	58	394.3	394.3	4000	E-NU2316EM	ML/TVP2		144	101	2.1	2.1	6.66
	170	58	394.3	394.3	4000	E-NJ2316EM	ML/TVP2	110	144	101	2.1	2.1	6.8
	170	39	394.3	394.3	4000	E-N2316EM	ML/TVP2	110		151	2.1	2.1	6.59
85	150	28	180.5	180.5	4300	E-NU217EM	ML/TVP2		131	100.5	2	2	2.13
	150	28	180.5	180.5	4300	E-NJ217EM	ML/TVP2	107	131	100.5	2	2	2.19
	150	28	180.5	180.5	4300	E-N217EM	ML/TVP2	107		136.5	2	2	2.11
	150	36	237.5	237.5	4300	E-NU2217EM	ML/TVP2		131	100.5	2	2	3.42
	150	36	237.5	225.6	4300	E-NU2217EM	ML/TVP2	107	131	100.5	2	2	3.42
	180	41	323.0	306.9	4300	E-NJ2217EM	ML/TVP2		153	108	3	3	3.46
	180	41	323.0	306.9	3800	E-NU317EM	ML/TVP2	117	153	108	3	3	5.12
	180	41	323.0	306.9	3800	E-NJ317EM	ML/TVP2	117		160	3	3	5.32
	180	60	432.3	410.6	3800	E-N317EM	ML/TVP2		153	108	3	3	5.04
	180	60	432.3	410.6	3800	E-NU2317M	ML/TVP2	117	153	108	3	3	7.42
	160	30	197.6	187.7	3800	E-NJ2317M	ML/TVP2		140	107	2	2	7.56
90	160	30	197.6	187.7	4300	E-NU218EM	ML/TVP2	114	140	107	2	2	2.57
	160	30	197.6	187.7	4300	E-NJ218EM	ML/TVP2	114		145	2	2	2.68
	160	40	266.0	252.7	4300	E-N218EM	ML/TVP2		140	107	2	2	2.55
	160	40	266.0	252.7	4300	E-NU2218EM	ML/TVP2	114	140	107	2	2	3.55
	190	43	346.8	329.4	4300	E-NJ2218EM	ML/TVP2		162	113.5	3	3	3.64
	190	43	346.8	329.4	3600	E-NU318EM	ML/TVP2	124	162	113.5	3	3	6.11
	190	43	346.8	329.4	3600	E-NJ318EM	ML/TVP2	124	162	169.5	3	3	6.21
	190	64	475.0	451.3	3600	E-N318EM	ML/TVP2		162	113.5	3	3	6.03
	190	64	475.0	451.3	3600	E-NU2318EM	ML/TVP2	124	162	113.5	3	3	8.99
	170	32	242.3	230.1	3600	E-NJ2318EM	ML/TVP2		149	112.5	2.1	2.1	9.15
95	170	32	242.3	230.1	4100	E-NU219EM	ML/TVP2	120	149	112.5	2.1	2.1	3.26
	170	32	242.3	230.1	4100	E-NJ219EM	ML/TVP2	120		154.5	2.1	2.1	3.32
	170	43	308.8	293.3	4100	E-N219EM	ML/TVP2		149	112.5	2.1	2.1	3.23
	170	43	308.8	293.3	4100	E-NU2219EM	ML/TVP2	120	149	112.5	2.1	2.1	4.38
	200	45	370.5	352.0	4100	E-NJ2219EM	ML/TVP2		170	121.5	3	3	4.45
	200	45	370.5	352.0	3400	E-NU319EM	ML/TVP2	132	170	121.5	3	3	7.02
	200	45	370.5	352.0	3400	E-NJ319EM	ML/TVP2	132		177.5	3	3	7.14
	200	67	503.5	478.3	3400	E-N319EM	ML/TVP2		170	121.5	3	3	6.97
	200	67	503.5	478.3	3400	E-NU2319EM	ML/TVP2	132	170	121.5	3	3	10.4
	180	34	270.8	257.2	3400	E-NJ2319EM	ML/TVP2		157	119	2.1	2.1	10.6
100	180	34	270.8	257.2	3800	E-NU220EM	ML/TVP2	127	157	119	2.1	2.1	3.91
	180	34	270.8	257.2	3800	E-NJ220EM	ML/TVP2	127		163	2.1	2.1	3.97
	180	46	361.0	343.0	3800	E-N220EM	ML/TVP2		157	119	2.1	2.1	3.87
	180	46	361.0	343.0	3800	E-NU2220EM	ML/TVP2	127	157	119	2.1	2.1	5.36
	215	47	427.5	406.1	3800	E-NJ2220EM	ML/TVP2		182	127.5	3	3	5.43
	215	47	427.5	406.1	3000	E-NU320EM	ML/TVP2	139	182	127.5	3	3	8.55
	215	47	427.5	406.1	3000	E-NJ320EM	ML/TVP2	139		191.5	3	3	8.8
	215	73	636.5	604.7	3000	E-N320EM	ML/TVP2		182	127.5	3	3	8.42
	215	73	636.5	604.7	3000	E-NU2320EM	ML/TVP2	139	182	127.5	3	3	12.2
	190	36	285.0	270.8	3000	E-NJ2320EM	ML/TVP2		164	125	2.1	2.1	12.4
105	190	36	285.0	270.8	3600	E-NU221EM	ML/TVP2	134	164	125	2.1	2.1	4.36
	190	36	285.0	270.8	3600	E-NJ221EM	ML/TVP2	134		173	2.1	2.1	4.45
	225	49	475.0	451.3	3600	E-N221EM	ML/TVP2		190	133	3	3	4.32
	225	49	475.0	451.3	3000	E-NU321EM	ML/TVP2	145	190	133	3	3	9.83
	225	49	475.0	451.3	3000	E-NJ321EM	ML/TVP2	145		201	3	3	9.97
	200	38	318.3	302.3	3000	E-N321EM	ML/TVP2		174	132.5	2.1	2.1	9.78
110	200	38	318.3	302.3	3300	E-NU222EM	ML/TVP2	141	174	132.5	2.1	2.1	5.4
	200	38	318.3	302.3	3300	E-NJ222EM	ML/TVP2	141		180.5	2.1	2.1	5.46
	200	53	418.0	397.1	3300	E-N222EM	ML/TVP2		174	132.5	2.1	2.1	5.37
	200	53	418.0	397.1	3300	E-NU2222EM	ML/TVP2	141	174	132.5	2.1	2.1	8.31

TMB® 运转无忧 Running Smoothly

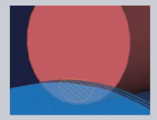
基本尺寸 Basic rated load			基本预定载荷 Referenced rotate speed		参考转速 Bearing Item	轴承型号 Referenced dimension	保持架类型 Cage type	参考尺寸 Basic dimension					质量/ Kg Weight
d	D	B	Cr	Cor				d2~	D2~	Ew(Fw)	r1,2min	r3,4min	
110	240	50	503.5	478.3	3300	E-NJ2222EM	ML/TVP2		201	143	3	3	8.43
	240	50	503.5	478.3	2900	E-NU322EM	ML/TVP2	155	201	143	3	3	11.5
	240	50	503.5	478.3	2900	E-NJ322EM	ML/TVP2	155		211	3	3	11.8
	240	80	741.0	704.0	2900	E-N322EM	ML/TVP2		201	143	3	3	11.3
	240	50	741.0	704.0	2900	E-NU2322EM	ML/TVP2	155	201	143	3	3	18.7
	215	40	370.5	352.0	2900	E-NJ2322EM	ML/TVP2		188	143.5	2.1	2.1	19
120	215	40	370.5	352.0	3000	E-NU224EM	ML/TVP2	153	188	143.5	2.1	2.1	6.31
	215	40	370.5	352.0	3000	E-NJ224EM	ML/TVP2	153		195.5	2.1	2.1	6.59
	215	58	494.0	469.3	3000	E-N224EM	ML/TVP2		188	143.5	2.1	2.1	6.27
	215	58	494.0	469.3	3000	E-NU2224EM	ML/TVP2	153	188	143.5	2.1	2.1	9.38
	260	55	579.5	550.5	3000	E-NJ2224EM	ML/TVP2		219	154	3	3	9.53
	260	55	579.5	550.5	2700	E-NU324EM	ML/TVP2	168	219	154	3	3	15
	260	55	579.5	550.5	2700	E-NJ324EM	ML/TVP2	168		230	3	3	15.3
	260	86	869.3	825.8	2700	E-N324EM	ML/TVP2		219	154	3	3	14.8
	260	55	869.3	825.8	2700	E-NU2324EM	ML/TVP2	168	219	154	3	3	23.5
130	230	40	394.3	374.5	2900	E-NJ226EM	ML/TVP2		202	153.5	3	3	11.7
	230	40	394.3	374.5	2900	E-N226EM	ML/TVP2	164	202	209.5	3	3	11.9
	230	40	394.3	374.5	2900	E-NU2226EM	ML/TVP2	164		153.5	3	3	18.2
	230	40	394.3	374.5	2900	E-NJ2226EM	ML/TVP2		202	153.5	3	3	18.5
	230	40	394.3	374.5	2300	E-NU326EM	ML/TVP2	164	202	167	4	4	18
	280	58	684.0	649.8	2300	E-NJ326EM	ML/TVP2		236	167	4	4	29.3
	280	58	684.0	649.8	2300	E-N326EM	ML/TVP2	181	236	247	4	4	29.7
	280	58	684.0	649.8	2300	E-NU2326EM	ML/TVP2	181		167	4	4	9.32
	280	58	684.0	649.8	2300	E-NJ2326EM	ML/TVP2		236	167	4	4	9.45
140	280	58	684.0	649.8	2700	E-NU228EM	ML/TVP2	181	236	169	3	3	9.26
	250	42	427.5	406.1	2700	E-NU228EM	ML/TVP2		217	169	3	3	9.32
	250	42	427.5	406.1	2700	E-NJ228EM	ML/TVP2	179	217	169	3	3	9.45
	250	42	427.5	406.1	2700	E-N228EM	ML/TVP2	179		225	3	3	9.26
	250	68	622.3	591.1	2700	E-NU2228EM	ML/TVP2		217	169	3	3	14.7
	250	42	622.3	591.1	2700	E-NJ2228EM	ML/TVP2	179	217	169	3	3	15.4
	250	42	622.3	591.1	2700	E-N2228EM	ML/TVP2	179		225	3	3	14.5
	300	62	741.0	704.0	2300	E-NU328EM	ML/TVP2		252	180	4	4	22.3
	300	62	741.0	704.0	2300	E-NJ328EM	ML/TVP2	195	252	180	4	4	22.6
	300	102	1140.0	1083.0	2300	E-NU2328EM	ML/TVP2		252	180	4	4	36.8
	300	102	1140.0	1083.0	2300	E-NJ2328EM	ML/TVP2	195	252	180	4	4	37.3
150	270	45	484.5	460.3	2300	E-NU230EM	ML		234	182	3	3	11.6
	270	45	484.5	460.3	2300	E-NJ230EM	ML	193	234	182	3	3	11.8
	270	45	484.5	460.3	2300	E-N230EM	ML	193		242	3	3	11.5
	270	73	698.3	663.3	2300	E-NU2230EM	ML		234	182	3	3	18.6
	270	73	698.3	663.3	2300	E-NJ2230EM	ML	193	234	182	3	3	19
	320	65	855.0	812.3	2100	E-NU330EM	ML		270	193	4	4	26.6
	320	65	855.0	812.3	2100	E-NJ330EM	ML	209	270	193	4	4	27
	320	65	855.0	812.3	2100	E-N330EM	ML	209		283	4	4	26.4
	320	108	1301.5	1236.4	2100	E-NU2330EM	ML		270	193	4	4	44.2
	320	108	1301.5	1236.4	2100	E-NJ2330EM	ML	209	270	193	4	4	44.9
160	290	48	555.8	528.0	2100	E-NU232EM	ML		250	195	3	3	14.4
	290	48	555.8	528.0	2100	E-NJ232EM	ML	206	250	195	3	3	14.6
	290	48	555.8	528.0	2100	E-N232EM	ML	206		259	3	3	14.2
	290	80	883.5	839.3	2100	E-NU2232EM	ML		252	193	3	3	23.9
	290	80	883.5	839.3	2100	E-NJ2232EM	ML	205	252	193	3	3	24.3
	290	80	883.5	839.3	2100	E-N2232EM	ML	205		259	3	3	23.7
	340	68	950.0	902.5	1900	E-NU332EM	ML		286	204	4	4	31.5
	340	68	950.0	902.5	1900	E-NJ332EM	ML	221	286	204	4	4	32
	340	68	950.0	902.5	1900	E-N332EM	ML	221		300	4	4	31.2
	340	114	1187.5	1128.1	1900	E-NU2332EM	ML		286	204	4	4	52.8
	340	114	1187.5	1128.1	1900	E-NJ2332EM	ML	221	286	204	4	4	53.5
	340	114	1187.5	1128.1	1900	E-N2332EM	ML	221		261	4	4	52.6
170	310	52	660.3	627.2	1900	E-NU234EM	ML		268	207	4	4	17.8
	310	52	660.3	627.2	1900	E-NJ234EM	ML	220	268	207	4	4	18.1
	310	52	660.3	627.2	1900	E-N234EM	ML	220		279	4	4	17.6
	310	86	1007.0	956.7	1900	E-NU2234EM	ML		270	205	4	4	28
	310	52	1007.0	956.7	1900	E-NJ2234EM	ML	218	270	205	4	4	28.7
	360	72	904.4	859.2	1600	E-NU334EM	ML		303	218	4	4	36.7
	360	72	904.4	859.2	1600	E-NJ334EM	ML	236	303	218	4	4	37.3
	360	72	904.4	859.2	1600	E-N334EM	ML	236		318	4	4	36.4
	360	120	1377.5	1308.6	1600	E-NU2334EM	ML		301	216	4	4	61.5
	360	120	1377.5	1308.6	1600	E-NJ2334EM	ML	234	301	216	4	4	61.9
180	320	52	684.0	649.8	2700	E-NU236EM	ML		279	217	4	4	18.6
	320	52	684.0	649.8	2700	E-NJ236EM	ML	230	279	217	4	4	18.9
	320	86	1045.0	992.8	2700	E-NU2236EM	ML		280	215	4	4	30.5
	320	86	1045.0	992.8	2700	E-NJ2236EM	ML	229	280	215	4	4	31.2
	380	75	969.0	920.6	1700	E-NU336EM	ML		319	231	4	4	42.4
	380	75	969.0	920.6	1700	E-NJ336EM	ML	249.7	319	231	4	4	43
	380	126	1529.5	1453.0	1700	E-NU2336EM	ML		320	231	4	4	70.8
	380	75	1529.5	1453.0	1700	E-NJ2336EM	ML	249.7	320	231	4	4	71.7

表格数据仅供参考

技术优势 Advantages

1 结构设计先进性 1 Advanced strutural design

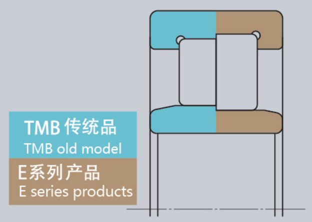
- 特殊优质轴承钢轴承使用寿命更长
- 优化滚道和滚动体结构提高承载能力
- 滚道表面超精加工减少摩擦和降低温度
- 严格的滚动体分选载荷分布更均匀
- 改进挡边引导面设计可承受较高的轴向载荷
- 先进凸度设计模型保证应力均匀分布和补偿对中误差



- Bearing was made of excellent bearing steel will has a longer lifetime
- Optimize structure of raceway and roller can increase its supporting capacity
- Superfinishing surface of raceway can reduce friction and temperature
- Strict rolling elements sorting can promise load distribute well
- Improve the design of flange-guided can increase higher axial load
- Advanced crown design model can promise stress ditribute well and make-up to error of centralization

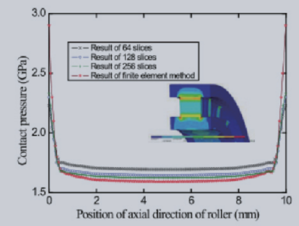
E系列轴承增大了滚子直径，增加了滚子数量，
提高轴承的承载能力和使用寿命。
1）额定动载荷较传统产品提高了45%
2）基本额定静载荷较传统产品提高了25%
3）设计寿命3倍于传统的产品寿命

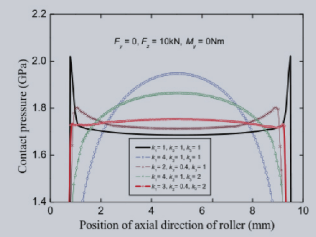
E series bearing by increased in roller's diameter andquantity, which help to increase bearing's loading capacity and lifetime. compares with old model
1) Rated dynamic load increased 45%
2) Basic rated static load increased 25%
3) Designed lifetime increase 3 times



2 滚道优化设计 Raceway optimization design

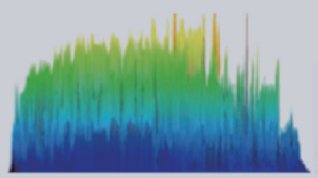
采用三参数对数凸度设计模型，保证合理的应力分布。
Adapt the logarithmic crown design model with three parameters and ensure the suitable stress distribution.



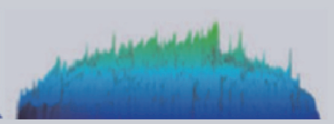


3 高速低摩擦、低振动设计 High-speed, low friction&vibration design

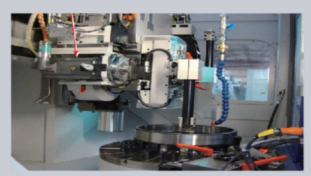
滚道采用超精密加工技术，表面形貌控制在合理范围，降低轴承振动和噪音。
Use the precision microfinish technology,control the surface morphology within the tolerance and reduce the bearing vibration and noise.



普通超精机加工的滚道表面形貌
Raceway surface morphology machined by normal microfinish machine



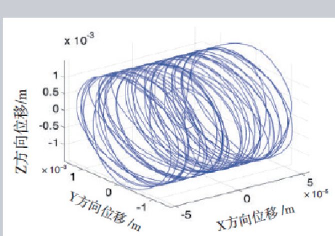
进口超精机加工的滚道表面形貌
Raceway surface morphology machined by imported microfinish machine

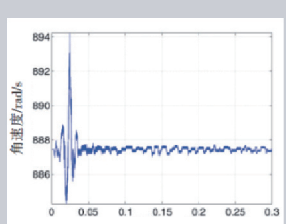


采用国际先进的超精设备加工滚子轴承的内外圈，提高轴承套圈微观、宏观几何精度，提高轴承的承载力。
Use the international advanced microfinish machine for OR&IR of roller bearings to improve the micro and macro geometric accuracy and increase the bearing load capacity.

采用凸度超精导辊的模拟仿真等先进工艺，在滚子表面形成对数曲线，使滚子轴承寿命提高2~3倍。
Use crown microfinish guiding roller simulation and other advanced technology and form the logarithmic curve on the roller surface. The roller bearing life can be raised by 2-3times.

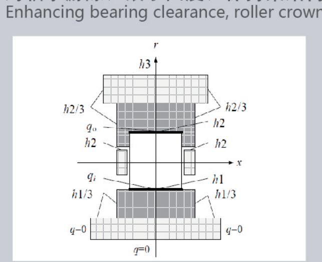
4 动力学仿真与分析 Dynamics simulation and analysis

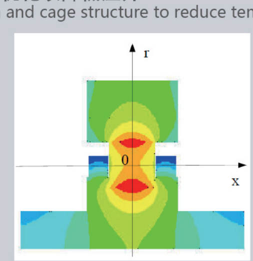




5 温度场分析与设计 Temperature field analysis and design

对轴承游隙、滚子凸度、保持架结构优化以降低温升
Enhancing bearing clearance, roller crown and cage structure to reduce temperature rise





6 试验分析与验证 Test analysis and verification

2018.8 制

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