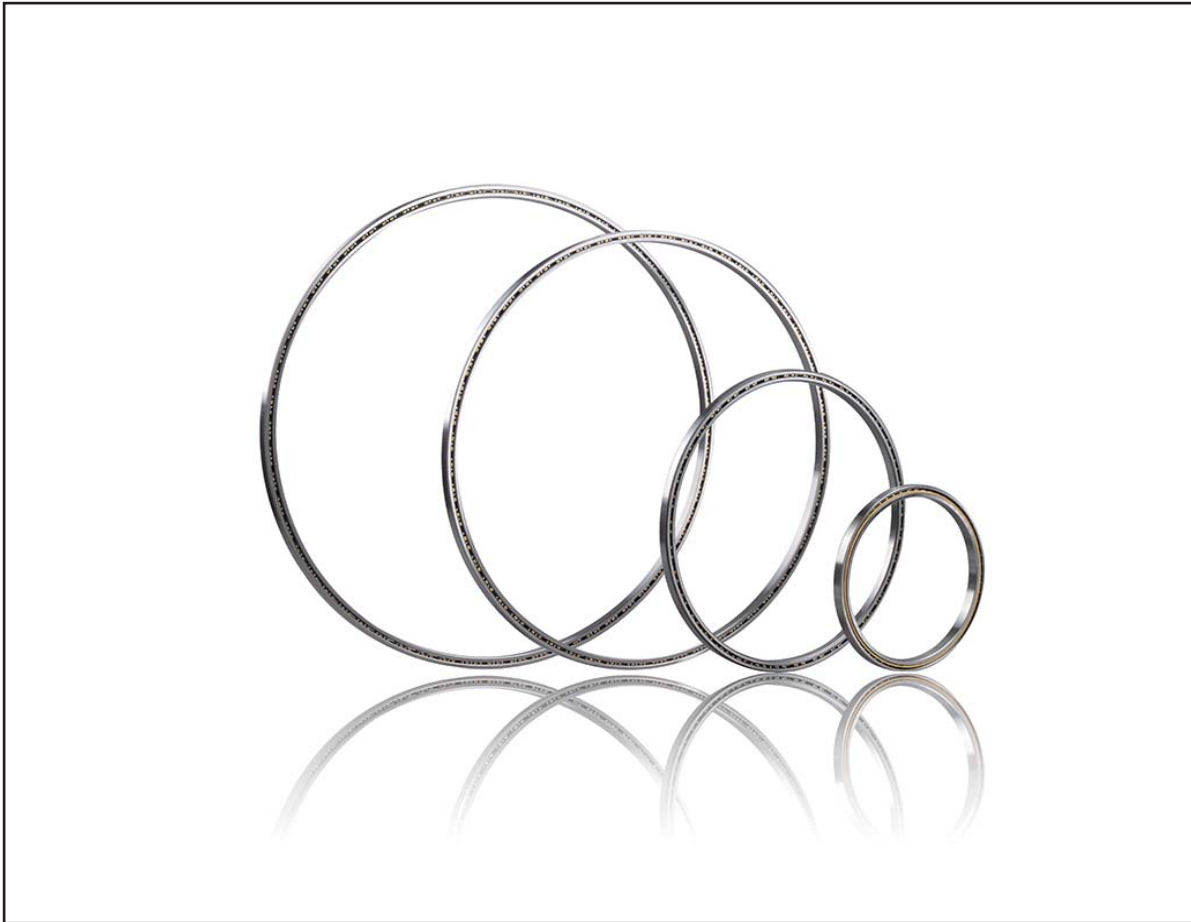


Radial, Angular, and 4-point Contact

Thin Section Ball Bearings



MONTON[®]

**Luoyang Monton Bearing
Science & Technology Co., Ltd.**

About us

Monton bearing is mainly engaged in the production of the angular contact ball bearing, precision cross roller bearing, the section ball bearing, cylindrical roller bearing, spherical roller bearing, thrust roller and ball bearings and the customer made non-standard bearings. Our products have been widely used for machine tools, weapon, mining, metallurgy, port machinery, medical treatment, cement, oil drilling, textile, industrial robots, paper making machinery, concrete mixer truck, rolling mill and the national defense industry field.

Bearing Quality

Depending on the complete testing technology and advanced equipment, Monton can guarantee the quality and precision of the products. Our technical department can efficiently complete the design of quality bearing according to customers' demand. Customers requiring large bearings can also enjoy customized service and also requirements from demanding customers for non-standard products can also be met here. Our quality system routinely monitors the various production facilities and compliance with the stringent quality demands. All the material certificates and the certification reports are kept on file and are made available on request. So we have confidence that we can give the best solution to our customers all over the world.

Bearing Price

Monton bearing has its own factory, we can supply the high quality products with reasonable price, and the bearing buyer can gain the high quality bearings with the less cost who purchase from the bearing manufacturer directly, of course our quality bearings can help their machine to work more steadily and more efficiently.

Bearing Delivery

Monton's production capacity and large storehouse can ensure that our quality bearing can deliver to our customers within the shortest time. For the normal bearings, we can finish within 35 days, and the large quantity and more different size our usual delivery date will be within 45~60 days upon specific situation.

Bearing Service

Monton's perfect service can earn customers' trust and make sure the customers have no risk to do business with us. Before place an order, we make sure the customer know the details about the quality, the price, the delivery, and also we will be work strictly according to our agreement, after the customers received our quality bearings, we accepted return back the bearing goods if the customers was not pleased the bearing quality.

Main Market

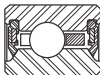
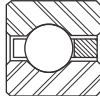
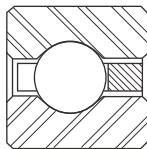
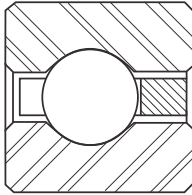
Most of our export market is based on Germany, Italy, Spain, UK, Japan and the USA. We are innovative and have the drive and courage to give the necessary solutions to our customers and our management and staff are ready to provide the professional and individual service to our customers.

We sincerely invite you to cooperate with us to make use of our substantial product know-how as well as our extensive bearing knowledge to supply the best bearing for you. As many companies have done before you, we trust that we can also become your most **RELIABLE** bearing supplier in China.

TABLE OF CONTENTS

Part Number Designation	4
Selection Guide	5
Separator Selection Guide	6
Seals, Shields, Lubricants	7
Bearing Material Comparison	9
K-Series 52100 Steel	10-27
J-Series Elastomer Molded Sealed Bearings	28-47
G-Series PTFE/300SS Sealed Bearings	48-63
N-Series Thin Dense Chrome Coated	64-81
P-Series 17-4PH	82-99
S-Series 440C Stainless Steel	100-117
Simplex™ Series	118-119
Y-PWI Series	120
Thermal-Comp™	121
Tolerance Tables	122-127
Engineering Data	128-135
Typical Applications	136-150
Availability Chart	151
Notes	152
Data Fax	153

CROSS SECTIONS OF THIN SECTION BALL BEARINGS

Cross Section	3/16"	1/4"	5/16"	3/8"	3/8"	1/2"	3/4"	1"
								
Series:	KAA	KA	KB	KC	JU	KD	KF	KG
Bore Size:	1.0 - 1.5"	2.0 - 12.0"	2.0 - 20.0"	4.0 - 30.0"	4.0 - 12.0"	4.0 - 30.0"	4.0 - 40.0"	4.0 - 40.0"

THIN SECTION BALL BEARINGS PART NUMBER DESIGNATION

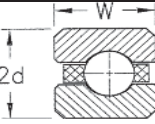
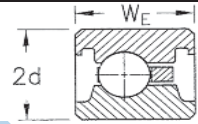
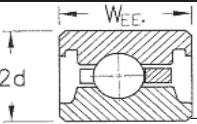
EXAMPLE	K	A	1	2	0	X	P	0	M*	
NOMENCLATURE POSITION	Material 1	Series 2	3	Size 4	5	Type 6	Separator 7	Precision 8	Radial Play 9**	

POSITION 1: Material (& seal/shield options)			
	Material		Seals, Shields
	Rings	Balls	
A	52100		1 seal - PTFE
B	52100		2 seals - PTFE
D	52100		1 shield
E	52100		2 shields
F	52100		1 combo - PTFE seal & shield
G	52100		2 combo - PTFE seal & shield
H	52100		1 seal - molded rubber
J	52100		2 seals - molder rubber
K	52100		No seals or shields
L	52100	440C	2 combo - PTFE seal & shield
M	M-50		No seals or shields
N	52100	440C	No seals or shields
P	17-4 PH	Ceramic	No seals or shields
Q	52100		No seals or shields
R	52100	440C	No seals or shields
S	440C		No seals or shields
T	440C		1 seal - PTFE
U	440C		2 seals - PTFE
V	440C		2 shields
W	440C		2 seals - molded rubber
X	52100	Ceramic	No seals or shields
Y	440C	Ceramic	Ceramic balls
Z	OTHER		

POSITION 6: Type
SEE PAGE 5

POSITION 7: Ball Separators
SEE PAGE 6

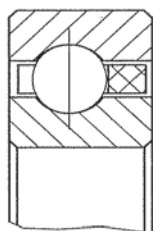
POSITION 8: Precision Class	
CLASS	DESCRIPTION
0	ABEC 1F
3	ABEC 3F
4	ABEC 5F
6	ABEC 7F
REFERENCE: ANSI/ABMA STD 26.2	

POSITION 2: Series							POSITION 3, 4, 5: Size
BEARING CROSS SECTION							 B BORE SIZE (INCHES) MULTIPLIED BY 10 EXAMPLES: 030 = 3.00" BORE 075 = 7.50" BORE 250 = 25.00" BORE
BALL DIA (d)	STANDARD WIDTH	W (=2d)	EXTENDED WIDTH (5)	W _E (>2d)	EXTRA EXTENDED WIDTH (5)	W _{EE} (>2d)	
3/32	AA	.1875	HA	.2500	SA	.3125	
1/8	A	.2500	H	.3125	S	.3750	
5/32	B	.3125	I	.3750	T	.4375	
3/16	C	.3750	J	.4375	U	.5000	
1/4	D	.5000	K	.5781	V	.6563	
3/8	F	.7500	M	.8750	X	1.0000	
1/2	G	1.0000	N	1.1875	Y	1.3750	

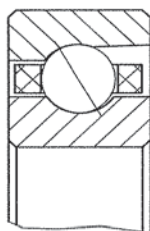
POSITION 9: Bearing Assembly Clearance or Tightness					
DIAMETRICAL CLEARANCE (POSITIVE RADIAL PLAY)		RADIAL PRELOAD TIGHTNESS (NEGATIVE RADIAL PLAY)		AXIAL PRELOAD GAP (DUPLEX BRG)	
A	+0.0000 TO +.0005	K	-.0000 TO -.0005	K	+0.0000 TO +.0005
B	+0.0000 TO +.0010	L	-.0000 TO -.0010	L	+0.0000 TO +.0010
C	+0.0005 TO +.0010	M	-.0005 TO -.0010	M	+0.0005 TO +.0010
D	+0.0005 TO +.0015	N	-.0005 TO -.0015	N	+0.0005 TO +.0015
E	+0.0010 TO +.0020	P	-.0010 TO -.0020	P	+0.0010 TO +.0020
F	+0.0015 TO +.0025	R	-.0015 TO -.0025	R	+0.0015 TO +.0025
G	+0.0020 TO +.0030	S	-.0020 TO -.0030	S	+0.0020 TO +.0030
H	+0.0030 TO +.0040	T	-.0030 TO -.0040	T	+0.0030 TO +.0040
I	+0.0040 TO +.0050	U	-.0040 TO -.0050	U	+0.0040 TO +.0050
J	+0.0050 TO +.0060	Z	PER VARIATION LOG	Z	PER VARIATION LOG
O	MATCH FOR NORMAL RADIAL PLAY				

THIN SECTION BALL BEARING SELECTION

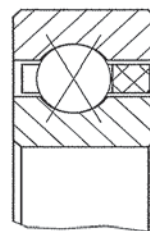
POSITION 6 TYPE						
Bearing Type	Ball Contact	LOAD CONDITION				
		Radial	Axial	Moment	Reversing Axial	Combined Radial, Axial & Moment
C	Radial	Good	Fair	Poor	Fair	Poor
A	Angular	Good	Very Good	Do not use	Do not use	Do not use
X	4-Point	Fair	Good	Good	Good	Fair
B	Double Angular	Very Good	Very Good	Very Good	Very Good	Good
F	Double Angular	Very Good	Very Good	Very Good	Very Good	Good
T	Double Angular	Very Good	Excellent	Do not use	Do not use	Do not use
M	Double Angular	Excellent	Excellent	Excellent	Excellent	Excellent
W	Double Angular	Excellent	Excellent	Excellent	Excellent	Excellent



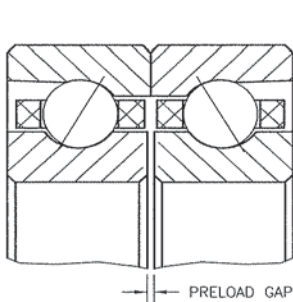
C-TYPE
(RADIAL CONTACT)



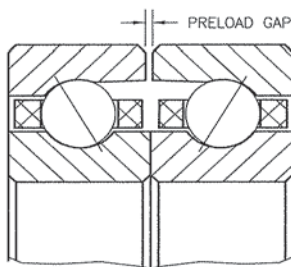
A-TYPE
(ANGULAR CONTACT)



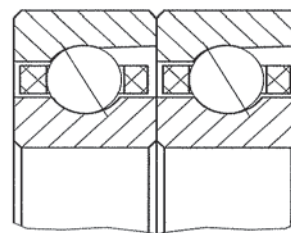
X-TYPE
(4-POINT CONTACT)



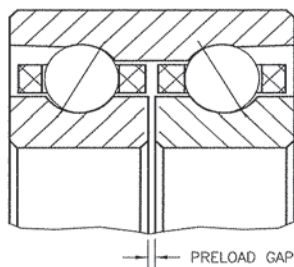
B-TYPE
DUPLEX BACK-TO-BACK (DB)



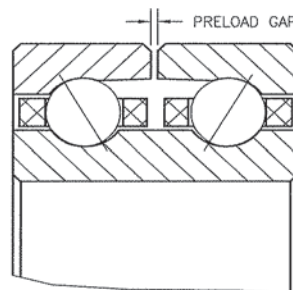
F-TYPE
DUPLEX FACE-TO-FACE (DF)



T-TYPE
DUPLEX TANDEM (DT)

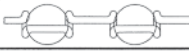


M-TYPE
SUPERDUPLEX™ BACK-TO-BACK



W-TYPE
SUPERDUPLEX™ FACE-TO-FACE

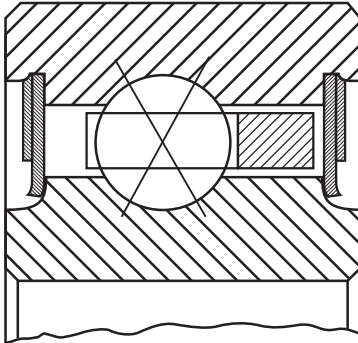
THIN SECTION BALL BEARING SELECTION

POSTION 7: Separators						
BRG TYPE	CLOSED RING			ONE STRIP OR SEGMENTS		
	C-TYPE & X-TYPE		A-TYPE	C-TYPE & X-TYPE	A-TYPE	
C-TYPE & X-TYPE	SHAPE	FABRICATION METHOD	POCKET RETENTION	ADVANTAGE LIMITATIONS	MATL/TYPE CODE	
	ONE STRIP or SEGMENTS	MOLDED		Higher ball count. Available for all diameters over 4". Recommended for operating temperature range: -40° to 210°F	N Nylon P12 C Composite	
	CLOSED RING	MACHINED		Low torque and light weight applications. Can be oil impregnated as required. Not recommended for high speed or high temperatures.	D Phenolic	
		MOLDED		Low torque and light weight applications. High speed limits. Not recommended for temperatures outside -65° to 250°F range. Exellent for applications in a vacuum environment. Limited availability	L GFR Nylon Q PEEK	
	SEGMENTS	STAMPED, FORMED and BRAZED		Ideal for commercial applications with moderate torque and speed requirements. Not recommended for low torque applications	E Brass	
	CLOSED RING			Ideal for commercial applications with moderate torque and speed requirements. Not recommended for low torque applications	P Brass or (Composite)	
				ONE-PIECE DIE-FORMED	High strength, improved corrosion resistance. High temperature capabilities. Not recommended for low torque applications Ideal for applications with moderate torque and high speed. Limited availability	U CRES V Brass
	1 STRIP or SEGMENTS	FORMED WIRE		High torque, low speed, and light weight applications. Not intended for use in high speed applications	W Spring Steel or CRES	
	A-TYPE	ONE STRIP or SEGMENTS	MOLDED		Higher ball count. Available for all diameters over 4". Recommended for operating temperature range: -40° to 210°F Higher ball count. Available for all diameters over 4". Recommended for operating temperature range: -40° to 210°F	J Nylon P12 C Composite
		CLOSED RING	MACHINED		Low torque and light weight applications. Can be oil impregnated as required. Not recommended for temperatures above 250°F	H Phenolic
MOLDED			Low torque and light weight applications. High speed limits. Not recommended for temperatures outside of -65° to 250°F range. Exellent for applications in a vacuum environment. Limited availability		G GFR Nylon Q Peek	
SEGMENTS		STAMPED, FORMED and BRAZED		Ideal for commercial applications with moderate torque and speed requirements. Not recommended for low torque applications	E Brass	
CLOSED RING				Ideal for commercial applications with moderate torque and speed requirements. Not recommended for low torque applications	R Brass or (Composite)	
				ONE-PIECE DIE-FORMED	High strength, improved corrosion resistance. High temperature capabilities. Not recommended for low torque applications Ideal for applications with moderate torque and high speed. Limited availability	U CRES V Brass
1 STRIP or SEGMENTS		FORMED WIRE		High torque, low speed, and light weight applications. Not intended for use in high speed applications	M Spring Steel or CRES	
A-TYPE, C-TYPE or X-TYPE		PER PIECE	SLUGS; MOLD or MACHINED TUBES		Low torque applications, higher capacity than standard bearing. Not intended for use in high speed applications. Material may have temperature limitations.	S PTFE/PFA K PEEK
	SPACER BALLS			High temperature applications, offers higher resistance to wear. Lower load capacity in A-type bearings	Z Various	
	TOROIDS			Low torque applications, higher capacity than standard bearing. Not intended for use in high speed applications. Material may have temperature limitations.	T PTFE/PFA	
	N/A	FULL COMP		Highest loading capacity and maximum stiffness. Higher torque and lower speedlimits. Not recommended for low torque and/or high speed.	F N/A	

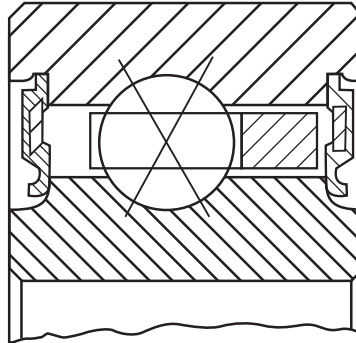
ITB DOES NOT SUPPLY "ONE-PIECE" CLOSED MOLDED (P & R) CAGES. WE SELL STRIP N-CAGES AS P-CAGES, AND J-CAGES AS R-CAGES.

PTFE/300SS SEALS VS. ELASTOMER MOLDED SEALS

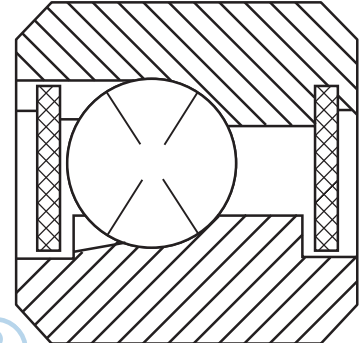
Typical PTFE/300SS Design



Typical Elastomer Molded Design

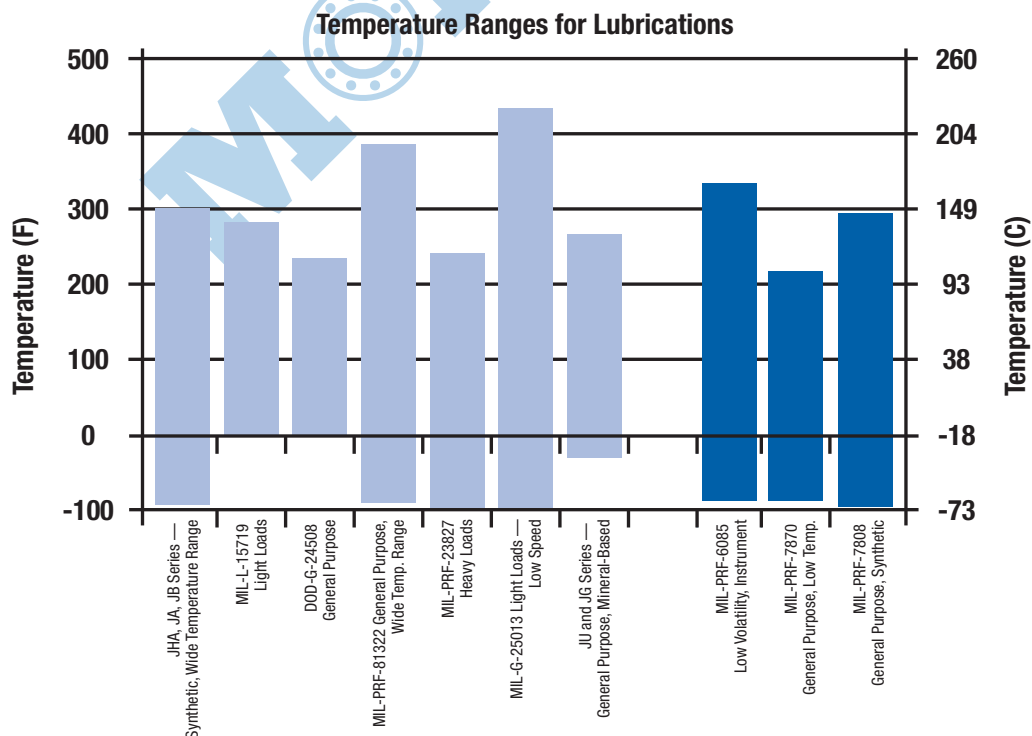


Separable Shields



Many molded seals used in bearings are made out of nitrile (molded rubber per MIL-R-6855). The material has a relatively high coefficient of friction. In order to meet low torque bearing requirements, seal fit-up during installation must be adjusted to minimize contact pressure on the sealing surfaces - reducing torque by reducing sealing effectiveness. The inherent variability in the seal molding process can further aggravate these issues. Over time, torque fluctuations are nearly inevitable since seals may reset or the amount of lube between the seal and the sealing surface may change. Based on these performance characteristics, molded seals are often marginal and unreliable solutions for torque sensitive applications.

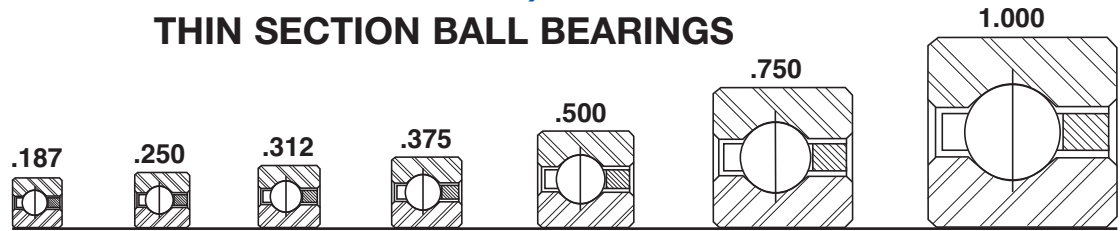
our solution is a combination seal-shield design. The seal is made from either pure PTFE (Teflon®) or glass fiber reinforced PTFE (Armalon®). PTFE is chemically inert, has a very low coefficient of friction (inherent lubricity), and provides the widest operating temperature range of any sealing material. The seal is held in place and shielded with a stainless steel (300 series) flat ring. The seal drag torque in this design is minimal, predictable, and consistent over time. invariably recommends this design for all low torque or torque sensitive applications that require sealing. we can readily retrofit problematic molded seal designs with a PTFE/300SS optimized solution. For versions that cannot allow a seal, we offer a shield in its place.



BEARING MATERIAL COMPARISON					
		K	N	P	S
Material Type	Rings	52100	52100 + TDC	17-4 PH	440C
	Balls		440C	Si3N4	
Typical Hardness		HRc 58 - 66	HRc 70 - 72	H900	HRc 58 - 64
Corrosion Resistance Material		Poor	Good	Very Good	Good
Fatigue Resistance		Good	Good	Poor	Good
Fretting Resistance		Good	Very Good	Poor	Very Good
Perservative		Yes	May be supplied with or without preservative		

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

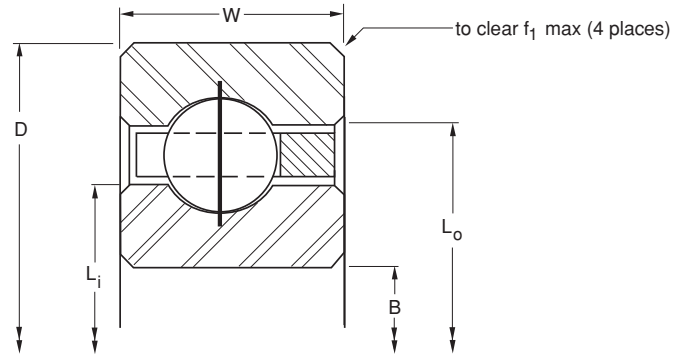


Series:	KAA	KA	KB	KC	KD	KF	KG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS													
	B Bore		D Outside Diameter		W Width		Land Diameter					f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring					
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
KAA10CLO	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	0.015	0.38	3/32	
KAA15CLO	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	0.015	0.38	3/32	
KAA17CLO	1.7500	44.450	2.1250	53.975	0.1875	4.763	1.890	48.00	1.985	50.42	0.015	0.38	3/32	
KA020CP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	0.025	0.64	1/8	
KB020CP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	0.032	0.81	5/32	
KA025CP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	0.025	0.64	1/8	
KB025CP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	0.032	0.81	5/32	
KA030CP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	0.025	0.64	1/8	
KB030CP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	0.032	0.81	5/32	
KA035CP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	0.025	0.64	1/8	
KB035CP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.897	98.98	0.032	0.81	5/32	
KA040CP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	0.025	0.64	1/8	
KB040CP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	0.032	0.81	5/32	
KC040CP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	0.040	1.02	3/16	
KD040CP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	0.060	1.52	1/4	
KF040CP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	0.080	2.03	3/8	
KG040CP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	0.080	2.03	1/2	
KA042CP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	0.025	0.64	1/8	
KB042CP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	0.032	0.81	5/32	
KC042CP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	0.040	1.02	3/16	
KD042CP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	0.060	1.52	1/4	
KF042CP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	0.080	2.03	3/8	
KG042CP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	0.080	2.03	1/2	
KA045CP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	0.025	0.64	1/8	
KB045CP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	0.032	0.81	5/32	
KC045CP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	0.040	1.02	3/16	
KD045CP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	0.060	1.52	1/4	
KF045CP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	0.080	2.03	3/8	
KG045CP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	0.080	2.03	1/2	
KA047CP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	0.025	0.64	1/8	
KB047CP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	0.032	0.81	5/32	
KC047CP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	0.040	1.02	3/16	
KD047CP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	0.060	1.52	1/4	
KF047CP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	0.080	2.03	3/8	
KG047CP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	0.080	2.03	1/2	
KA050CP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	0.025	0.64	1/8	
KB050CP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	0.032	0.81	5/32	
KC050CP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	0.040	1.02	3/16	
KD050CP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	0.060	1.52	1/4	
KF050CP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	0.080	2.03	3/8	
KG050CP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	0.080	2.03	1/2	
KA055CP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	0.025	0.64	1/8	
KB055CP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	0.032	0.81	5/32	
KC055CP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	0.040	1.02	3/16	



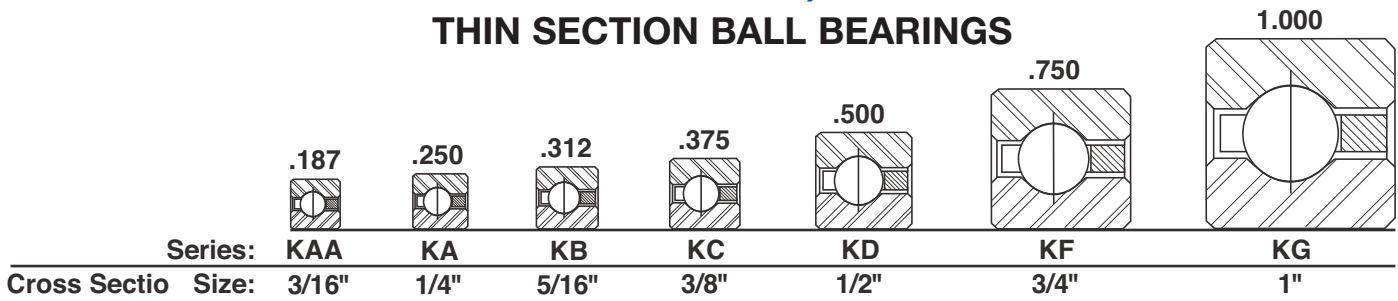
- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	21	0.03	0.014	290	1,290	300	1,330	480	2,140	880	3,910	110	10	210	25	16,840
	29	0.04	0.018	400	1,780	350	1,560	650	2,890	1,020	4,540	220	25	350	40	11,850
	33	0.06	0.027	540	2,402	455	2,033	865	3,847	1,330	5,916	355	40	545	62	10,320
	27	0.10	0.045	680	3,020	560	2,490	1,080	4,800	1,640	7,300	490	55	740	80	8,890
	23	0.16	0.073	930	4,140	800	3,560	1,460	6,490	2,320	10,320	680	80	1,070	120	8,650
	33	0.13	0.059	830	3,690	610	2,710	1,310	5,830	1,770	7,870	720	80	970	110	7,270
	28	0.20	0.091	1,140	5,070	860	3,830	1,750	7,780	2,510	11,170	990	110	1,410	160	7,110
	39	0.15	0.068	990	4,400	650	2,890	1,530	6,810	1,880	8,360	990	110	1,220	140	6,150
	33	0.24	0.109	1,340	5,960	920	4,090	2,050	9,120	2,680	11,920	1,360	150	1,770	200	6,040
	45	0.18	0.082	1,140	5,070	690	3,070	1,750	7,780	1,990	8,850	1,320	150	1,490	170	5,330
	38	0.27	0.122	1,540	6,850	970	4,310	2,340	10,410	2,810	12,500	1,780	200	2,140	240	5,250
	51	0.19	0.086	1,290	5,740	720	3,200	1,980	8,810	2,080	9,250	1,680	190	1,770	200	4,710
	43	0.30	0.136	1,750	7,780	1,020	4,540	2,630	11,700	2,950	13,120	2,270	260	2,550	290	4,640
	35	0.45	0.204	2,100	9,340	1,290	5,740	3,110	13,830	3,740	16,640	2,720	310	3,280	370	4,570
	27	0.78	0.354	3,080	13,700	2,250	10,010	4,950	22,020	6,520	29,000	4,450	500	5,870	660	4,440
	19	1.90	0.862	5,360	23,840	3,940	17,530	7,980	35,500	11,420	50,800	7,580	860	10,850	1,230	4,210
	15	3.60	1.633	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	12,960	1,460	19,440	2,200	4,000
	54	0.20	0.091	1,370	6,090	730	3,250	2,090	9,300	2,110	9,390	1,880	210	1,900	210	4,440
	45	0.31	0.141	1,830	8,140	1,030	4,580	2,740	12,190	3,000	13,340	2,500	280	2,730	310	4,380
	37	0.47	0.213	2,220	9,880	1,320	5,870	3,270	14,550	3,830	17,040	3,030	340	3,550	400	4,320
	28	0.83	0.376	3,190	14,190	2,270	10,100	5,110	22,730	6,580	29,270	4,860	550	6,250	710	4,210
	20	2.00	0.907	5,640	25,090	4,070	18,100	8,400	37,370	11,810	52,530	8,400	950	11,810	1,330	4,000
	15	3.80	1.724	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	13,600	1,540	20,410	2,310	3,810
	57	0.22	0.100	1,440	6,410	750	3,340	2,200	9,790	2,170	9,650	2,090	240	2,060	230	4,210
	48	0.33	0.150	1,950	8,670	1,060	4,720	2,920	12,990	3,080	13,700	2,810	320	2,960	330	4,160
	39	0.48	0.218	2,340	10,410	1,350	6,010	3,440	15,300	3,910	17,390	3,360	380	3,810	430	4,100
	30	0.88	0.399	3,420	15,210	2,350	10,450	5,460	24,290	6,820	30,340	5,460	620	6,820	770	4,000
	21	2.10	0.953	5,930	26,380	4,210	18,730	8,820	39,230	12,200	54,270	9,270	1,050	12,810	1,450	3,810
	16	4.00	1.814	8,760	38,970	7,000	31,140	13,820	61,470	20,290	90,250	15,200	1,720	22,320	2,520	3,640
	60	0.23	0.104	1,520	6,760	760	3,380	2,310	10,280	2,220	9,880	2,310	260	2,220	250	4,000
	50	0.34	0.154	2,030	9,030	1,070	4,760	3,030	13,480	3,110	13,830	3,070	350	3,140	350	3,950
	41	0.50	0.227	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	4,070	460	3,900
	31	0.94	0.426	3,530	15,700	2,360	10,500	5,620	25,000	6,840	30,430	5,910	670	7,180	810	3,810
	22	2.20	0.998	6,210	27,620	4,310	19,170	9,220	41,010	12,490	55,560	10,140	1,150	13,740	1,550	3,640
	17	4.10	1.860	9,300	41,370	7,290	32,430	14,680	65,300	21,130	93,990	16,890	1,910	24,300	2,750	3,480
	63	0.24	0.109	1,590	7,070	770	3,430	2,420	10,760	2,240	9,960	2,540	290	2,350	270	3,810
	53	0.38	0.172	2,150	9,560	1,100	4,890	3,210	14,280	3,190	14,190	3,410	390	3,390	380	3,760
	43	0.58	0.263	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	4,340	490	3,720
	33	1.00	0.454	3,760	16,730	2,430	10,810	5,970	26,560	7,040	31,320	6,570	740	7,740	870	3,640
	23	2.30	1.043	6,490	28,870	4,380	19,480	9,600	42,700	12,710	56,540	11,050	1,250	14,620	1,650	3,480
	18	4.30	1.950	9,850	43,810	7,570	33,670	15,550	69,170	21,950	97,640	18,660	2,110	26,340	2,980	3,330
	69	0.25	0.113	1,750	7,780	800	3,560	2,650	11,790	2,320	10,320	3,040	340	2,660	300	3,480
	58	0.41	0.186	2,360	10,500	1,130	5,030	3,500	15,570	3,280	14,590	4,070	460	3,810	430	3,440
	47	0.59	0.268	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	4,900	550	3,400

RADIAL CONTACT, C-TYPE

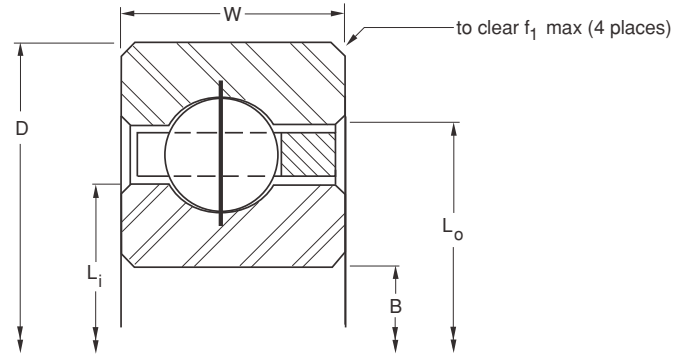
THIN SECTION BALL BEARINGS



PART NUMBER*	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
KD055CP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	1/4
KF055CP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	3/8
KG055CP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	1/2
KA060CP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	1/8
KB060CP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	5/32
KC060CP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	3/16
KD060CP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	1/4
KF060CP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	3/8
KG060CP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	1/2
KA065CP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	1/8
KB065CP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	5/32
KC065CP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	3/16
KD065CP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	1/4
KF065CP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	3/8
KG065CP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	1/2
KA070CP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	1/8
KB070CP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	5/32
KC070CP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	3/16
KD070CP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	1/4
KF070CP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	3/8
KG070CP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	1/2
KA075CP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	1/8
KB075CP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	5/32
KC075CP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	3/16
KD075CP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	1/4
KF075CP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	3/8
KG075CP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	1/2
KA080CP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	1/8
KB080CP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	5/32
KC080CP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	3/16
KD080CP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	1/4
KF080CP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	3/8
KG080CP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	1/2
KA090CP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	1/8
KB090CP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	5/32
KC090CP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	3/16
KD090CP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	1/4
KF090CP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	3/8
KG090CP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	1/2
KA100CP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	1/8
KB100CP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	5/32
KC100CP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	3/16
KD100CP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	1/4
KF100CP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	3/8
KG100CP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	1/2



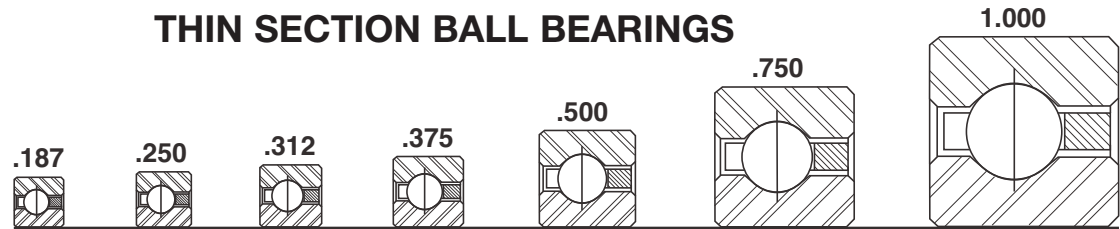
- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	36	1.06	0.481	4,100	18,240	2,510	11,170	6,480	28,820	7,270	32,340	7,780	880	8,720	990	3,330
	25	2.50	1.134	7,050	31,360	4,540	20,190	10,370	46,130	13,170	58,580	12,970	1,470	16,460	1,860	3,200
	19	4.70	2.132	10,400	46,260	7,850	34,920	16,410	73,000	22,750	101,200	21,330	2,410	29,580	3,340	3,080
	75	0.28	0.127	1,900	8,450	830	3,690	2,870	12,770	2,420	10,760	3,590	410	3,020	340	3,200
	63	0.44	0.200	2,560	11,390	1,170	5,200	3,790	16,860	3,380	15,030	4,790	540	4,270	480	3,170
	51	0.63	0.286	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	5,510	620	3,140
	39	1.16	0.526	4,450	19,790	2,580	11,480	6,990	31,090	7,500	33,360	9,090	1,030	9,740	1,100	3,080
	27	2.70	1.225	7,620	33,900	4,660	20,730	11,130	49,510	13,530	60,180	15,030	1,700	18,260	2,060	2,960
	21	5.10	2.313	11,490	51,110	8,390	37,320	18,140	80,690	24,320	108,180	25,390	2,870	34,050	3,850	2,860
	81	0.30	0.136	2,050	9,120	850	3,780	3,100	13,790	2,450	10,900	4,180	470	3,310	370	2,960
	68	0.47	0.213	2,760	12,280	1,200	5,340	4,080	18,150	3,470	15,440	5,560	630	4,730	530	2,940
	55	0.68	0.308	3,310	14,720	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	6,110	690	2,910
	42	1.22	0.553	4,790	21,310	2,650	11,790	7,500	33,360	7,680	34,160	10,500	1,190	10,760	1,220	2,860
	29	2.90	1.315	8,180	36,390	4,790	21,310	11,900	52,930	13,900	61,830	17,250	1,950	20,160	2,280	2,760
	22	5.40	2.449	12,040	53,560	8,520	37,900	18,910	84,120	24,700	109,870	28,360	3,200	37,050	4,190	2,670
	87	0.31	0.141	2,200	9,790	870	3,870	3,320	14,770	2,520	11,210	4,810	540	3,660	410	2,760
	73	0.50	0.227	2,970	13,210	1,240	5,520	4,380	19,480	3,600	16,010	6,400	720	5,260	590	2,740
	59	0.73	0.331	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	6,710	760	2,710
	45	1.31	0.594	5,130	22,820	2,730	12,140	8,020	35,670	7,910	35,190	12,030	1,360	11,870	1,340	2,670
	31	3.20	1.451	8,750	38,920	4,920	21,890	12,670	56,360	14,280	63,520	19,640	2,220	22,130	2,500	2,580
	24	5.80	2.631	13,130	58,410	8,880	39,500	20,520	91,280	25,750	114,540	32,840	3,710	41,210	4,660	2,500
	93	0.34	0.154	2,350	10,450	890	3,960	3,540	15,750	2,580	11,480	5,490	620	4,000	450	2,580
	78	0.53	0.240	3,170	14,100	1,280	5,690	4,670	20,770	3,710	16,500	7,300	820	5,800	660	2,560
	63	0.78	0.354	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	7,300	820	2,540
	48	1.41	0.640	5,470	24,330	2,800	12,460	8,530	37,940	8,120	36,120	13,650	1,540	12,990	1,470	2,500
	33	3.40	1.542	9,310	41,410	5,040	22,420	13,440	59,780	14,610	64,990	22,170	2,500	24,100	2,720	2,420
	25	6.10	2.767	10,640	47,330	8,960	39,860	21,270	94,610	25,990	115,610	36,160	4,090	44,190	4,990	2,350
	99	0.38	0.172	2,500	11,120	910	4,050	3,770	16,770	2,640	11,740	6,220	700	4,350	490	2,420
	83	0.57	0.259	3,370	14,990	1,280	5,690	4,960	22,060	3,720	16,550	8,240	930	6,190	700	2,410
	67	0.84	0.381	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	7,990	900	2,390
	51	1.53	0.694	5,810	25,840	2,860	12,720	9,040	40,210	8,290	36,880	15,370	1,740	14,090	1,590	2,350
	35	3.50	1.588	9,880	43,950	5,140	22,860	14,200	63,160	14,900	66,280	24,840	2,810	26,070	2,950	2,290
	27	6.50	2.948	14,770	65,700	9,300	41,370	22,890	101,820	26,960	119,920	41,200	4,650	48,520	5,480	2,220
	111	0.44	0.200	2,810	12,500	940	4,180	4,210	18,730	2,730	12,140	7,800	880	5,050	570	2,160
	93	0.66	0.299	3,780	16,810	1,330	5,920	5,540	24,640	3,860	17,170	10,320	1,170	7,190	810	2,150
	75	0.94	0.426	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	9,410	1,060	2,130
	57	1.72	0.780	6,500	28,910	2,970	13,210	10,060	44,750	8,620	38,340	19,120	2,160	16,390	1,850	2,110
	39	3.90	1.769	11,000	48,930	5,360	23,840	15,740	70,020	15,550	69,170	30,690	3,470	30,320	3,430	2,050
	30	7.20	3.266	16,420	73,040	9,720	43,240	25,270	112,410	28,200	125,440	50,540	5,710	56,390	6,370	2,000
	123	0.50	0.227	3,110	13,830	990	4,400	4,660	20,730	2,860	12,720	9,560	1,080	5,860	660	1,950
	103	0.73	0.331	4,190	18,640	1,400	6,230	6,130	27,270	4,050	18,020	12,630	1,430	8,350	940	1,940
	83	1.06	0.481	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	10,730	1,210	1,930
	63	1.88	0.853	7,180	31,940	3,070	13,660	11,080	49,290	8,900	39,590	23,270	2,630	18,680	2,110	1,900
	43	4.30	1.950	12,130	53,960	5,550	24,690	17,260	76,780	16,060	71,440	37,110	4,190	34,530	3,900	1,860
	33	7.90	3.583	18,060	80,330	10,040	44,660	27,620	122,860	29,110	129,490	60,760	6,860	64,040	7,240	1,820

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

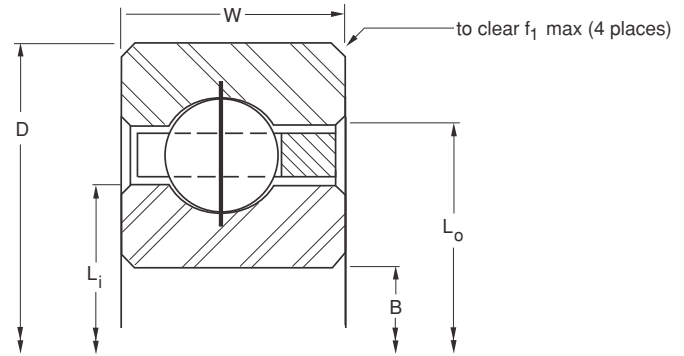


Series:	KAA	KA	KB	KC	KD	KF	KG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
KA110CP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	11.313	287.35	0.025	0.64	1/8
KB110CP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	11.391	289.33	0.032	0.81	5/32
KC110CP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	11.469	291.31	0.040	1.02	3/16
KD110CP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	11.625	295.28	0.060	1.52	1/4
KF110CP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	11.938	303.23	0.080	2.03	3/8
KG110CP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	12.250	311.15	0.080	2.03	1/2
KA120CP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	12.313	312.75	0.025	0.64	1/8
KB120CP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	12.391	314.73	0.032	0.81	5/32
KC120CP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	12.469	316.71	0.040	1.02	3/16
KD120CP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	12.625	320.68	0.060	1.52	1/4
KF120CP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	12.938	328.63	0.080	2.03	3/8
KG120CP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	13.250	336.55	0.080	2.03	1/2
KB140CP0	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	14.391	365.53	0.032	0.81	5/32
KC140CP0	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	14.469	367.51	0.040	1.02	3/16
KD140CP0	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	14.625	371.48	0.060	1.52	1/4
KF140CP0	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	14.938	379.43	0.080	2.03	3/8
KG140CP0	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	15.250	387.35	0.080	2.03	1/2
KB160CP0	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	16.391	416.33	0.032	0.81	5/32
KC160CP0	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	16.469	418.31	0.040	1.02	3/16
KD160CP0	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	16.625	422.28	0.060	1.52	1/4
KF160CP0	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	16.938	430.23	0.080	2.03	3/8
KG160CP0	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	17.250	438.15	0.080	2.03	1/2
KB180CP0	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	18.391	467.13	0.032	0.81	5/32
KC180CP0	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	18.469	469.11	0.040	1.02	3/16
KD180CP0	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	18.625	473.08	0.060	1.52	1/4
KF180CP0	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	18.938	481.03	0.080	2.03	3/8
KG180CP0	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	19.250	488.95	0.080	2.03	1/2
KB200CP0	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	20.391	517.93	0.032	0.81	5/32
KC200CP0	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	20.469	519.91	0.040	1.02	3/16
KD200CP0	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	20.625	523.88	0.060	1.52	1/4
KF200CP0	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	20.938	531.83	0.080	2.03	3/8
KG200CP0	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	21.250	539.75	0.080	2.03	1/2
KC250CP0	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	25.469	646.91	0.040	1.02	3/16
KD250CP0	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	25.625	650.88	0.060	1.52	1/4
KF250CP0	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	25.938	658.83	0.080	2.03	3/8
KG250CP0	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	26.250	666.75	0.080	2.03	1/2
KC300CP0	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	30.469	773.91	0.040	1.02	3/16
KD300CP0	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	30.625	777.88	0.060	1.52	1/4
KF300CP0	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	30.938	785.83	0.080	2.03	3/8
KG300CP0	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	31.250	793.75	0.080	2.03	1/2
KF350CP0	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	35.938	912.83	0.080	2.03	3/8
KG350CP0	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	36.250	920.75	0.080	2.03	1/2
KF400CP0	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	40.938	1039.83	0.080	2.03	3/8
KG400CP0	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	41.250	1047.75	0.080	2.03	1/2



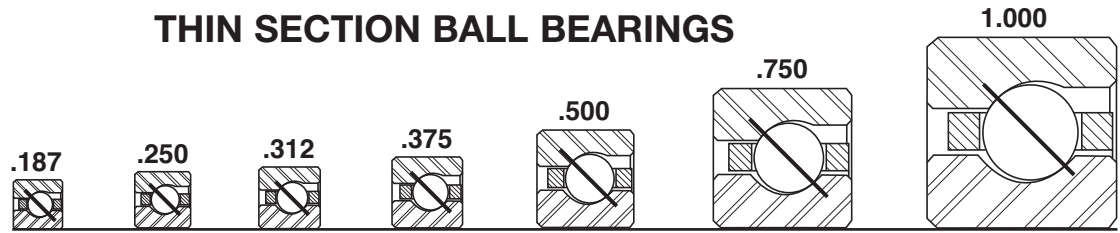
- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)	
				Radial				Thrust				Moment					
				Static		Dynamic		Static		Dynamic		Static		Dynamic			
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm		
	135	0.52	0.236	3,410	15,170	1,030	4,580	5,110	22,730	2,980	13,260	11,500	1,300	6,700	760	1,780	
	113	0.75	0.340	4,590	20,420	1,464	6,510	6,700	29,800	4,130	18,370	15,160	1,710	9,340	1,060	1,770	
	91	1.16	0.526	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,760	
	69	2.06	0.934	7,870	35,010	3,180	14,150	12,100	53,820	9,220	41,010	27,830	3,140	21,210	2,400	1,740	
	47	4.80	2.177	13,260	58,980	5,833	25,950	18,790	83,580	16,610	73,880	44,160	4,990	39,040	4,410	1,700	
	36	8.60	3.901	19,700	87,630	10,360	46,080	29,980	133,360	30,060	133,710	71,940	8,130	72,140	8,150	1,670	
	147	0.56	0.254	3,720	16,550	1,078	4,800	5,560	24,730	3,080	13,700	13,620	1,540	7,550	850	1,630	
	123	0.83	0.376	5,000	22,240	1,539	6,850	7,290	32,430	4,270	18,990	17,940	2,030	10,530	1,190	1,620	
	99	1.25	0.567	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,620	
	75	2.25	1.021	8,550	38,030	3,320	14,770	13,140	58,450	9,630	42,840	32,840	3,710	24,070	2,720	1,600	
	51	5.20	2.359	14,390	64,010	6,105	27,160	20,340	90,480	17,200	76,510	51,860	5,860	43,850	4,950	1,570	
	39	9.30	4.218	21,340	94,930	10,690	47,550	32,350	143,900	30,990	137,850	84,100	9,500	80,580	9,100	1,540	
	143	1.05	0.476	5,810	25,840	1,680	7,470	8,450	37,590	4,520	20,110	24,180	2,730	12,930	1,460	1,400	
	115	1.52	0.689	6,910	30,740	2,154	9,580	9,820	43,680	5,800	25,800	28,240	3,190	16,680	1,880	1,390	
	87	2.73	1.238	9,920	44,130	3,460	15,390	15,180	67,520	10,030	44,620	44,020	4,970	29,100	3,290	1,380	
	59	6.00	2.722	16,650	74,060	6,620	29,450	23,410	104,130	18,090	80,470	69,050	7,800	53,380	6,030	1,360	
	45	10.80	4.899	24,620	109,520	11,280	50,180	37,080	164,940	32,710	145,500	111,250	12,570	98,140	11,090	1,330	
	163	1.20	0.544	6,620	29,450	1,812	8,060	9,620	42,790	4,800	21,350	31,370	3,540	15,670	1,770	1,230	
	131	1.73	0.785	7,880	35,050	2,321	10,320	11,160	49,640	6,050	26,910	36,550	4,130	19,830	2,240	1,220	
	99	3.10	1.406	11,290	50,220	3,688	16,410	17,230	76,640	10,500	46,710	56,850	6,420	34,660	3,920	1,210	
	67	7.10	3.221	18,900	84,070	7,104	31,600	26,480	117,790	19,000	84,520	88,690	10,020	63,630	7,190	1,190	
	51	12.30	5.579	27,910	124,150	11,820	52,580	41,810	185,980	34,270	152,440	142,150	16,060	116,530	13,170	1,180	
	183	1.35	0.612	7,440	33,090	1,936	8,610	10,780	47,950	5,050	22,460	39,490	4,460	18,490	2,090	1,090	
	147	1.94	0.880	8,840	39,320	2,478	11,020	12,510	55,650	6,390	28,420	45,960	5,190	23,480	2,650	1,090	
	111	3.48	1.579	12,650	56,270	3,933	17,490	19,260	85,670	10,870	48,350	71,270	8,050	40,200	4,540	1,080	
	75	7.90	3.583	21,160	94,120	7,557	33,620	29,560	131,490	19,980	88,880	110,840	12,520	74,910	8,460	1,070	
	57	13.70	6.214	31,190	138,740	12,367	55,010	46,540	207,020	35,660	158,620	176,870	19,980	135,510	15,310	1,050	
	203	1.50	0.680	8,250	36,700	2,053	9,130	11,940	53,110	5,260	23,400	48,520	5,480	21,370	2,410	980	
	163	2.16	0.980	9,800	43,590	2,626	11,680	13,850	61,610	6,670	29,670	56,430	6,380	27,170	3,070	980	
	123	3.85	1.746	14,020	62,360	4,164	18,520	21,320	94,840	11,380	50,620	87,400	9,870	46,680	5,270	980	
	83	8.90	4.037	23,420	104,180	7,986	35,520	32,620	145,100	20,570	91,500	135,390	15,300	85,380	9,650	960	
	63	15.80	7.167	34,470	153,330	13,044	58,020	51,240	227,930	36,780	163,610	215,210	24,320	154,490	17,460	950	
	203	2.69	1.220	12,200	54,270	2,962	13,180	17,200	76,510	7,300	32,470	87,290	9,860	37,070	4,190	790	
	153	4.79	2.173	17,440	77,580	4,689	20,860	26,410	117,480	12,260	54,540	134,690	15,220	62,530	7,060	780	
	103	10.90	4.944	29,060	129,270	8,963	39,870	40,270	179,130	21,910	97,460	207,390	23,430	112,830	12,750	780	
	78	19.50	8.845	42,680	189,850	14,591	64,900	63,110	280,730	40,100	178,370	328,150	37,080	208,540	23,560	770	
	243	3.21	1.456	14,610	64,990	3,260	14,500	20,560	91,460	8,000	35,590	124,910	14,110	48,610	5,490	660	
	183	5.73	2.599	20,860	92,790	5,153	22,920	31,540	140,300	13,440	59,780	192,420	21,740	82,010	9,270	660	
	123	13.00	5.897	34,700	154,350	9,828	43,720	47,960	213,340	23,620	105,070	294,970	33,330	145,270	16,410	650	
	93	23.30	10.569	50,890	226,370	15,963	71,010	74,940	333,350	42,510	189,090	464,640	52,500	263,580	29,780	650	
	143	15.10	6.849	40,350	179,490	10,603	47,160	55,610	247,370	24,970	111,070	397,620	44,930	178,510	20,170	560	
	108	27.10	12.292	59,100	262,890	17,195	76,490	86,680	385,570	44,120	196,260	624,100	70,510	317,650	35,890	560	
	163	17.20	7.802	45,990	204,570	11,302	50,270	63,300	281,570	26,530	118,010	515,930	58,290	216,240	24,430	490	
	123	30.80	13.971	67,310	299,410	18,307	81,430	98,590	438,550	47,080	209,420	808,420	91,340	386,040	43,620	490	

ANGULAR CONTACT, A-TYPE

THIN SECTION BALL BEARINGS

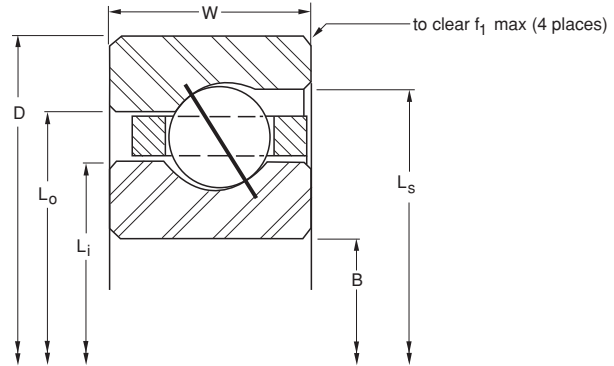


Series:	KAA	KA	KB	KC	KD	KF	KG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter						f ₁ Housing Fillet	Ball Diameter	
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring		L _o -Outer Ring		L _s -Counter Bore		in.	mm	in.
KAA10AGO	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	1.235	31.37	0.015	0.38	3/32
KAA15AGO	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	1.735	44.07	0.015	0.38	3/32
KAA17AGO	1.7500	44.450	2.1250	53.975	0.1875	4.763	1.890	48.01	1.985	50.42	2.024	51.41	0.015	0.38	3/32
KA020ARO	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	2.375	60.33	0.025	0.64	1/8
KB020ARO	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	2.469	62.71	0.032	0.81	5/32
KA025ARO	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	2.875	73.03	0.025	0.64	1/8
KB025ARO	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	2.969	75.41	0.032	0.81	5/32
KA030ARO	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	3.375	85.73	0.025	0.64	1/8
KB030ARO	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	3.469	88.11	0.032	0.81	5/32
KA035ARO	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	3.875	98.43	0.025	0.64	1/8
KB035ARO	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.891	98.83	3.969	100.81	0.032	0.81	5/32
KA040ARO	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	4.375	111.13	0.025	0.64	1/8
KB040ARO	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	4.469	113.51	0.032	0.81	5/32
KC040ARO	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	4.563	115.90	0.040	1.02	3/16
KD040ARO	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	4.750	120.65	0.060	1.52	1/4
KF040ARO	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	5.125	130.18	0.080	2.03	3/8
KG040ARO	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	5.500	139.70	0.080	2.03	1/2
KA042ARO	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	4.625	117.48	0.025	0.64	1/8
KB042ARO	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	4.719	119.86	0.032	0.81	5/32
KC042ARO	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	4.813	122.25	0.040	1.02	3/16
KD042ARO	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	5.000	127.00	0.060	1.52	1/4
KF042ARO	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	5.375	136.53	0.080	2.03	3/8
KG042ARO	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	5.750	146.05	0.080	2.03	1/2
KA045ARO	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	4.875	123.83	0.025	0.64	1/8
KB045ARO	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	4.969	126.21	0.032	0.81	5/32
KC045ARO	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	5.063	128.60	0.040	1.02	3/16
KD045ARO	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	5.250	133.35	0.060	1.52	1/4
KF045ARO	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	5.625	142.88	0.080	2.03	3/8
KG045ARO	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	6.000	152.40	0.080	2.03	1/2
KA047ARO	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	5.125	130.18	0.025	0.64	1/8
KB047ARO	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	5.219	132.56	0.032	0.81	5/32
KC047ARO	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	5.313	134.95	0.040	1.02	3/16
KD047ARO	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	5.500	139.70	0.060	1.52	1/4
KF047ARO	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	5.875	149.23	0.080	2.03	3/8
KG047ARO	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	6.250	158.75	0.080	2.03	1/2
KA050ARO	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	5.375	136.53	0.025	0.64	1/8
KB050ARO	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	5.469	138.91	0.032	0.81	5/32
KC050ARO	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	5.563	141.30	0.040	1.02	3/16
KD050ARO	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	5.750	146.05	0.060	1.52	1/4
KF050ARO	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	6.125	155.58	0.080	2.03	3/8
KG050ARO	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	6.500	165.10	0.080	2.03	1/2
KA055ARO	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	5.875	149.23	0.025	0.64	1/8
KB055ARO	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	5.969	151.61	0.032	0.81	5/32
KC055ARO	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	6.063	154.00	0.040	1.02	3/16
KD055ARO	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	6.250	158.75	0.060	1.52	1/4
KF055ARO	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	6.625	168.28	0.080	2.03	3/8



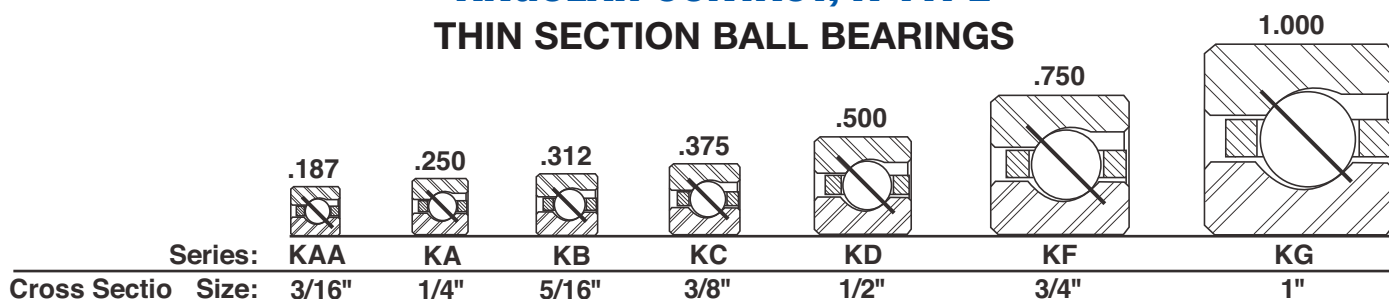
- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	28	0.03	0.014	340	1,510	330	1,470	970	4,310	960	4,270	N/A	N/A	N/A	N/A	16,840
	40	0.04	0.018	480	2,140	380	1,690	1,380	6,140	1,100	4,890	N/A	N/A	N/A	N/A	11,850
	44	0.06	0.027	635	2,824	520	2,313	1,830	8,140	1,415	6,294	N/A	N/A	N/A	N/A	10,320
	36	0.10	0.045	790	3,510	600	2,670	2,280	10,140	1,730	7,700	N/A	N/A	N/A	N/A	8,890
	31	0.16	0.073	1,090	4,850	850	3,780	3,150	14,010	2,460	10,940	N/A	N/A	N/A	N/A	8,650
	44	0.13	0.059	960	4,270	640	2,850	2,780	12,370	1,860	8,270	N/A	N/A	N/A	N/A	7,270
	38	0.20	0.091	1,340	5,960	920	4,090	3,860	17,170	2,680	11,920	N/A	N/A	N/A	N/A	7,110
	52	0.15	0.068	1,140	5,070	680	3,020	3,290	14,630	1,980	8,810	N/A	N/A	N/A	N/A	6,150
	44	0.24	0.109	1,550	6,890	970	4,310	4,470	19,880	2,800	12,460	N/A	N/A	N/A	N/A	6,040
	60	0.18	0.082	1,310	5,830	720	3,200	3,790	16,860	2,070	9,210	N/A	N/A	N/A	N/A	5,330
	51	0.27	0.122	1,790	7,960	1,020	4,540	5,180	23,040	2,970	13,210	N/A	N/A	N/A	N/A	5,250
	68	0.19	0.086	1,490	6,630	750	3,340	4,300	19,130	2,180	9,700	N/A	N/A	N/A	N/A	4,710
	58	0.30	0.136	2,040	9,070	1,080	4,800	5,890	26,200	3,130	13,920	N/A	N/A	N/A	N/A	4,640
	49	0.45	0.204	2,550	11,340	1,410	6,270	7,360	32,740	4,080	18,150	N/A	N/A	N/A	N/A	4,570
	36	0.78	0.354	3,550	15,790	2,070	9,210	10,260	45,640	6,020	26,780	N/A	N/A	N/A	N/A	4,440
	26	1.90	0.862	6,350	28,250	4,350	19,350	18,340	81,580	12,620	56,140	N/A	N/A	N/A	N/A	4,210
	20	3.60	1.633	9,480	42,170	7,340	32,650	27,360	121,700	21,290	94,700	N/A	N/A	N/A	N/A	4,000
	72	0.20	0.091	1,580	7,030	770	3,430	4,550	20,240	2,240	9,960	N/A	N/A	N/A	N/A	4,440
	61	0.31	0.141	2,150	9,560	1,090	4,850	6,200	27,580	3,170	14,100	N/A	N/A	N/A	N/A	4,380
	52	0.47	0.213	2,710	12,050	1,440	6,410	7,820	34,790	4,180	18,590	N/A	N/A	N/A	N/A	4,320
	38	0.83	0.376	3,750	16,680	2,410	10,720	10,830	48,170	6,990	31,090	N/A	N/A	N/A	N/A	4,210
	27	2.00	0.907	6,600	29,360	4,390	19,530	19,050	84,740	12,740	56,670	N/A	N/A	N/A	N/A	4,000
	21	3.80	1.724	9,950	44,260	7,580	33,720	28,730	127,800	21,990	97,820	N/A	N/A	N/A	N/A	3,810
	76	0.22	0.100	1,660	7,380	780	3,470	4,810	21,400	2,260	10,050	N/A	N/A	N/A	N/A	4,210
	64	0.33	0.150	16,801	74,730	1,120	4,980	6,500	28,910	3,240	14,410	N/A	N/A	N/A	N/A	4,160
	55	0.48	0.218	2,860	12,720	1,470	6,540	8,270	36,790	4,260	18,950	N/A	N/A	N/A	N/A	4,100
	40	0.88	0.399	3,950	17,570	2,460	10,940	11,400	50,710	7,140	31,760	N/A	N/A	N/A	N/A	4,000
	29	2.10	0.953	7,090	31,540	4,550	20,240	20,460	91,010	13,200	58,720	N/A	N/A	N/A	N/A	3,810
	22	4.00	1.814	10,430	46,390	7,820	34,790	30,100	133,890	22,690	100,930	N/A	N/A	N/A	N/A	3,640
	80	0.23	0.104	1,750	7,780	800	3,560	5,060	22,510	2,310	10,280	N/A	N/A	N/A	N/A	4,000
	68	0.34	0.154	2,390	10,630	1,140	5,070	6,910	30,740	3,290	14,630	N/A	N/A	N/A	N/A	3,950
	58	0.50	0.227	3,020	13,430	1,500	6,670	8,720	38,790	4,340	19,310	N/A	N/A	N/A	N/A	3,900
	42	0.94	0.426	4,150	18,460	2,510	11,170	11,970	53,250	7,280	32,380	N/A	N/A	N/A	N/A	3,810
	30	2.20	0.998	7,330	32,610	4,610	20,510	21,160	94,120	13,380	59,520	N/A	N/A	N/A	N/A	3,640
	23	4.10	1.860	10,900	48,490	8,060	35,850	31,460	139,940	23,370	103,950	N/A	N/A	N/A	N/A	3,480
	84	0.24	0.109	1,840	8,180	810	3,600	5,310	23,620	2,360	10,500	N/A	N/A	N/A	N/A	3,810
	71	0.38	0.172	2,500	11,120	1,160	5,160	7,210	32,070	3,350	14,900	N/A	N/A	N/A	N/A	3,760
	61	0.58	0.263	3,180	14,150	1,540	6,850	9,170	40,790	4,450	19,790	N/A	N/A	N/A	N/A	3,720
	44	1.00	0.454	4,340	19,310	2,550	11,340	12,540	55,780	7,400	32,920	N/A	N/A	N/A	N/A	3,640
	31	2.30	1.043	7,570	33,670	4,650	20,680	21,870	97,280	13,480	59,960	N/A	N/A	N/A	N/A	3,480
	24	4.30	1.950	11,370	50,580	8,290	36,880	32,830	146,040	24,040	106,940	N/A	N/A	N/A	N/A	3,330
	92	0.25	0.113	2,020	8,990	830	3,690	5,820	25,890	2,410	10,720	N/A	N/A	N/A	N/A	3,480
	78	0.41	0.186	2,740	12,190	1,200	5,340	7,920	35,230	3,480	15,480	N/A	N/A	N/A	N/A	3,440
	66	0.59	0.268	3,440	15,300	1,560	6,940	9,920	44,130	4,540	20,190	N/A	N/A	N/A	N/A	3,400
	48	1.06	0.481	4,740	21,080	2,640	11,740	13,680	60,850	7,660	34,070	N/A	N/A	N/A	N/A	3,330
	34	2.50	1.134	8,310	36,960	4,820	21,440	23,980	106,670	13,980	62,190	N/A	N/A	N/A	N/A	3,200

ANGULAR CONTACT, A-TYPE

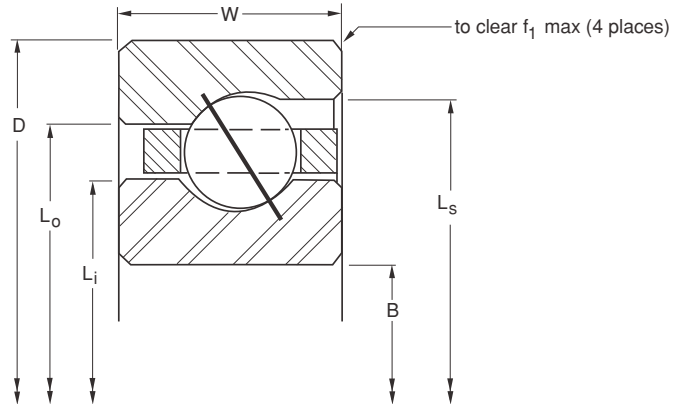
THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter		
							L _i -Inner Ring	L _o -Outer Ring	L _s -Counter Bore						
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		
KG055AR0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	7.000	177.80	0.080	2.03	1/2
KA060AR0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	6.375	161.93	0.025	0.64	1/8
KB060AR0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	6.469	164.31	0.032	0.81	5/32
KC060AR0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	6.563	166.70	0.040	1.02	3/16
KD060AR0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	6.750	171.45	0.060	1.52	1/4
KF060AR0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	7.125	180.98	0.080	2.03	3/8
KG060AR0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	7.500	190.50	0.080	2.03	1/2
KA065AR0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	6.875	174.63	0.025	0.64	1/8
KB065AR0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	6.969	177.01	0.032	0.81	5/32
KC065AR0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	7.063	179.40	0.040	1.02	3/16
KD065AR0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	7.250	184.15	0.060	1.52	1/4
KF065AR0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	7.625	193.68	0.080	2.03	3/8
KG065AR0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	8.000	203.20	0.080	2.03	1/2
KA070AR0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	7.375	187.33	0.025	0.64	1/8
KB070AR0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	7.469	189.71	0.032	0.81	5/32
KC070AR0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	7.563	192.10	0.040	1.02	3/16
KD070AR0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	7.750	196.85	0.060	1.52	1/4
KF070AR0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	8.125	206.38	0.080	2.03	3/8
KG070AR0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	8.500	215.90	0.080	2.03	1/2
KA075AR0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	7.875	200.03	0.025	0.64	1/8
KB075AR0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	7.969	202.41	0.032	0.81	5/32
KC075AR0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	8.063	204.80	0.040	1.02	3/16
KD075AR0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	8.250	209.55	0.060	1.52	1/4
KF075AR0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	8.625	219.08	0.080	2.03	3/8
KG075AR0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	9.000	228.60	0.080	2.03	1/2
KA080AR0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	8.375	212.73	0.025	0.64	1/8
KB080AR0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	8.469	215.11	0.032	0.81	5/32
KC080AR0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	8.563	217.50	0.040	1.02	3/16
KD080AR0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	8.750	222.25	0.060	1.52	1/4
KF080AR0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	9.125	231.78	0.080	2.03	3/8
KG080AR0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	9.500	241.30	0.080	2.03	1/2
KA090AR0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	9.375	238.13	0.025	0.64	1/8
KB090AR0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	9.469	240.51	0.032	0.81	5/32
KC090AR0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	9.563	242.90	0.040	1.02	3/16
KD090AR0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	9.750	247.65	0.060	1.52	1/4
KF090AR0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	10.125	257.18	0.080	2.03	3/8
KG090AR0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	10.500	266.70	0.080	2.03	1/2
KA100AR0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	10.375	263.53	0.025	0.64	1/8
KB100AR0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	10.469	265.91	0.032	0.81	5/32
KC100AR0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	10.563	268.30	0.040	1.02	3/16
KD100AR0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	10.750	273.05	0.060	1.52	1/4
KF100AR0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	11.125	282.58	0.080	2.03	3/8
KG100AR0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	11.500	292.10	0.080	2.03	1/2

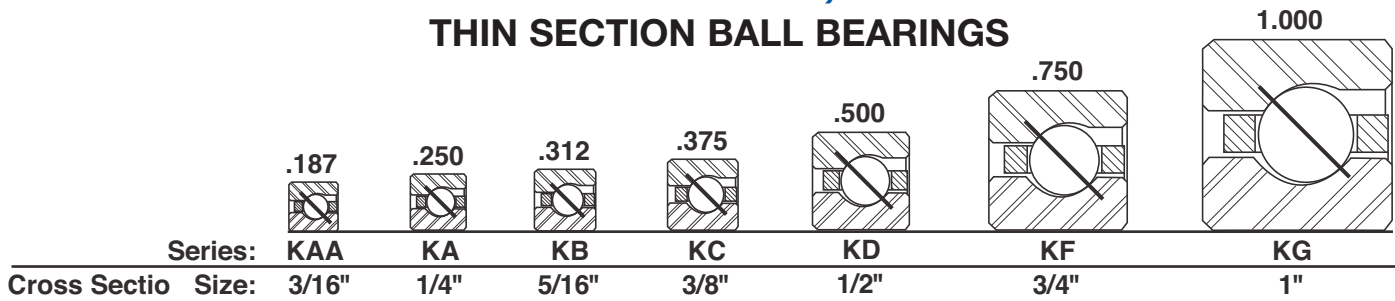


- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	26	4.70	2.132	12,320	54,800	8,610	38,300	35,570	158,220	24,960	111,030	N/A	N/A	N/A	N/A	3,080
	100	0.28	0.127	2,190	9,740	860	3,830	6,320	28,110	2,500	11,120	N/A	N/A	N/A	N/A	3,200
	85	0.44	0.200	2,990	13,300	1,240	5,520	8,630	38,390	3,600	16,010	N/A	N/A	N/A	N/A	3,170
	72	0.63	0.286	3,750	16,680	1,620	7,210	10,820	48,130	4,690	20,860	N/A	N/A	N/A	N/A	3,140
	52	1.16	0.526	5,130	22,820	2,720	12,100	14,820	65,920	7,880	35,050	N/A	N/A	N/A	N/A	3,080
	37	2.70	1.225	9,040	40,210	5,010	22,290	26,100	116,100	14,530	64,630	N/A	N/A	N/A	N/A	2,960
	28	5.10	2.313	13,270	59,030	8,860	39,410	38,300	170,370	25,700	114,320	N/A	N/A	N/A	N/A	2,860
	108	0.30	0.136	2,370	10,540	890	3,960	6,830	30,380	2,580	11,480	N/A	N/A	N/A	N/A	2,960
	91	0.47	0.213	3,200	14,230	1,260	5,600	9,240	41,100	3,650	16,240	N/A	N/A	N/A	N/A	2,940
	78	0.68	0.308	4,060	18,060	1,670	7,430	11,720	52,130	4,830	21,480	N/A	N/A	N/A	N/A	2,910
	56	1.22	0.553	5,530	24,600	2,780	12,370	15,960	70,990	8,070	35,900	N/A	N/A	N/A	N/A	2,860
	40	2.90	1.315	9,770	43,460	5,140	22,860	28,220	125,530	14,920	66,370	N/A	N/A	N/A	N/A	2,760
	30	5.40	2.449	14,220	63,250	9,110	40,520	41,040	182,560	26,410	117,480	N/A	N/A	N/A	N/A	2,670
	116	0.31	0.141	2,540	11,300	900	4,000	7,340	32,650	2,600	11,570	N/A	N/A	N/A	N/A	2,760
	98	0.50	0.227	3,450	15,350	1,300	5,780	9,960	44,300	3,760	16,730	N/A	N/A	N/A	N/A	2,740
	83	0.73	0.331	4,320	19,220	1,720	7,650	12,470	55,470	4,980	22,150	N/A	N/A	N/A	N/A	2,710
	60	1.31	0.594	5,920	26,330	2,850	12,680	17,100	76,060	8,260	36,740	N/A	N/A	N/A	N/A	2,670
	43	3.20	1.451	10,510	46,750	5,290	23,530	30,330	134,910	15,350	68,280	N/A	N/A	N/A	N/A	2,580
	32	5.80	2.631	15,160	67,440	9,370	41,680	43,780	194,740	27,160	120,810	N/A	N/A	N/A	N/A	2,500
	124	0.34	0.154	2,720	12,100	920	4,090	7,840	34,870	2,660	11,830	N/A	N/A	N/A	N/A	2,580
	105	0.53	0.240	3,700	16,460	1,330	5,920	10,670	47,460	3,860	17,170	N/A	N/A	N/A	N/A	2,560
	89	0.78	0.354	4,630	20,600	1,750	7,780	13,380	59,520	5,090	22,640	N/A	N/A	N/A	N/A	2,540
	64	1.41	0.640	6,320	28,110	2,940	13,080	18,240	81,140	8,520	37,900	N/A	N/A	N/A	N/A	2,500
	45	3.40	1.542	11,000	48,930	5,380	23,930	31,740	141,190	15,590	69,350	N/A	N/A	N/A	N/A	2,420
	34	6.10	2.767	16,110	71,660	9,560	42,530	46,510	206,890	27,710	123,260	N/A	N/A	N/A	N/A	2,350
	132	0.38	0.172	2,890	12,860	960	4,270	8,350	37,140	2,770	12,320	N/A	N/A	N/A	N/A	2,420
	112	0.57	0.259	3,940	17,530	1,360	6,050	11,380	50,620	3,950	17,570	N/A	N/A	N/A	N/A	2,410
	95	0.84	0.381	4,950	22,020	1,800	8,010	14,280	63,520	5,210	23,180	N/A	N/A	N/A	N/A	2,390
	68	1.53	0.694	6,710	29,850	2,990	13,300	19,380	86,210	8,670	38,570	N/A	N/A	N/A	N/A	2,350
	48	3.50	1.588	11,730	52,180	5,520	24,550	33,860	150,620	16,020	71,260	N/A	N/A	N/A	N/A	2,290
	36	6.50	2.948	17,060	75,890	9,800	43,590	49,250	219,070	28,430	126,460	N/A	N/A	N/A	N/A	2,220
	148	0.44	0.200	3,240	14,410	990	4,400	9,360	41,640	2,860	12,720	N/A	N/A	N/A	N/A	2,160
	125	0.66	0.299	4,400	19,570	1,410	6,270	12,700	56,490	4,080	18,150	N/A	N/A	N/A	N/A	2,150
	106	0.94	0.426	5,520	24,550	1,860	8,270	15,930	70,860	5,400	24,020	N/A	N/A	N/A	N/A	2,130
	76	1.72	0.780	7,500	33,360	3,100	13,790	21,660	96,350	9,000	40,030	N/A	N/A	N/A	N/A	2,110
	54	3.90	1.769	13,190	58,670	5,780	25,710	38,090	169,430	16,760	74,550	N/A	N/A	N/A	N/A	2,050
	40	7.20	3.266	18,960	84,340	10,190	45,330	54,720	243,410	29,540	131,400	N/A	N/A	N/A	N/A	2,000
	164	0.50	0.227	3,590	15,970	1,030	4,580	10,370	46,130	3,000	13,340	N/A	N/A	N/A	N/A	1,950
	139	0.73	0.331	4,890	21,750	1,480	6,580	14,120	62,810	4,290	19,080	N/A	N/A	N/A	N/A	1,940
	118	1.06	0.481	6,140	27,310	1,942	8,640	17,730	78,870	5,570	24,780	N/A	N/A	N/A	N/A	1,930
	84	1.88	0.853	8,290	36,880	3,240	14,410	23,940	106,490	9,390	41,770	N/A	N/A	N/A	N/A	1,900
	59	4.30	1.950	14,420	64,140	5,980	26,600	41,620	185,130	17,330	77,090	N/A	N/A	N/A	N/A	1,860
	44	7.90	3.583	20,850	92,750	10,560	46,970	60,190	267,740	30,620	136,200	N/A	N/A	N/A	N/A	1,820

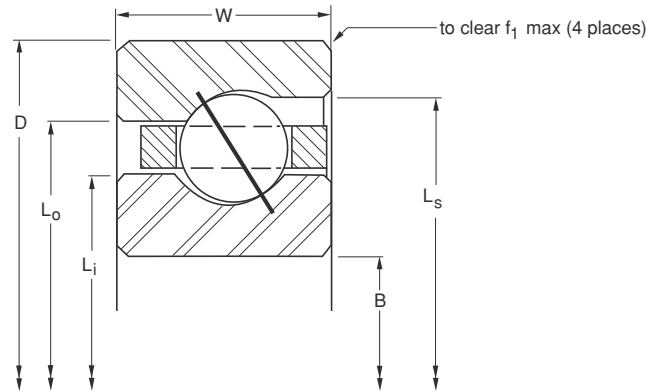
ANGULAR CONTACT, A-TYPE THIN SECTION BALL BEARINGS



PART NUMBER*	NOMINAL DIMENSIONS											
	B Bore		D Outside Diameter		W Width		Land Diameter			f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	L _s -Counter Bore	in.	mm	in.
KA110ARO	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188 284.18	11.313 287.35	11.375 288.93	0.025 0.64		1/8
KB110ARO	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234 285.34	11.391 289.33	11.469 291.31	0.032 0.81		5/32
KC110ARO	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281 286.54	11.469 291.31	11.563 293.70	0.040 1.02		3/16
KD110ARO	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375 288.93	11.625 295.28	11.750 298.45	0.060 1.52		1/4
KF110ARO	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563 293.70	11.938 303.23	12.125 307.98	0.080 2.03		3/8
KG110ARO	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750 298.45	12.250 311.15	12.500 317.50	0.080 2.03		1/2
KA120ARO	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188 309.58	12.313 312.75	12.375 314.33	0.025 0.64		1/8
KB120ARO	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234 310.74	12.391 314.73	12.469 316.71	0.032 0.81		5/32
KC120ARO	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281 311.94	12.469 316.71	12.563 319.10	0.040 1.02		3/16
KD120ARO	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375 314.33	12.625 320.68	12.750 323.85	0.060 1.52		1/4
KF120ARO	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563 319.10	12.938 328.63	13.125 333.38	0.080 2.03		3/8
KG120ARO	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750 323.85	13.250 336.55	13.500 342.90	0.080 2.03		1/2
KB140ARO	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234 361.54	14.391 365.53	14.469 367.51	0.032 0.81		5/32
KC140ARO	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281 362.74	14.469 367.51	14.563 369.90	0.040 1.02		3/16
KD140ARO	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375 365.13	14.625 371.48	14.750 374.65	0.060 1.52		1/4
KF140ARO	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563 369.90	14.938 379.43	15.125 384.18	0.080 2.03		3/8
KG140ARO	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750 374.65	15.250 387.35	15.500 393.70	0.080 2.03		1/2
KB160ARO	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234 412.34	16.391 416.33	16.469 418.31	0.032 0.81		5/32
KC160ARO	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281 413.54	16.469 418.31	16.563 420.70	0.040 1.02		3/16
KD160ARO	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375 415.93	16.625 422.28	16.750 425.45	0.060 1.52		1/4
KF160ARO	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563 420.70	16.938 430.23	17.125 434.98	0.080 2.03		3/8
KG160ARO	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750 425.45	17.250 438.15	17.500 444.50	0.080 2.03		1/2
KB180ARO	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234 463.14	18.391 467.13	18.469 469.11	0.032 0.81		5/32
KC180ARO	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281 464.34	18.469 469.11	18.563 471.50	0.040 1.02		3/16
KD180ARO	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375 466.73	18.625 473.08	18.750 476.25	0.060 1.52		1/4
KF180ARO	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563 471.50	18.938 481.03	19.125 485.78	0.080 2.03		3/8
KG180ARO	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750 476.25	19.250 488.95	19.500 495.30	0.080 2.03		1/2
KB200ARO	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234 513.94	20.391 517.93	20.469 519.91	0.032 0.81		5/32
KC200ARO	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281 515.14	20.469 519.91	20.563 522.30	0.040 1.02		3/16
KD200ARO	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375 517.53	20.625 523.88	20.750 527.05	0.060 1.52		1/4
KF200ARO	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563 522.30	20.938 531.83	21.125 536.58	0.080 2.03		3/8
KG200ARO	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750 527.05	21.250 539.75	21.500 546.10	0.080 2.03		1/2
KC250ARO	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281 642.14	25.469 646.91	25.563 649.30	0.040 1.02		3/16
KD250ARO	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375 644.53	25.625 650.88	25.750 654.05	0.060 1.52		1/4
KF250ARO	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563 649.30	25.938 658.83	26.125 663.58	0.080 2.03		3/8
KG250ARO	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750 654.05	26.250 666.75	26.500 673.10	0.080 2.03		1/2
KC300ARO	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281 769.14	30.469 773.91	30.563 776.30	0.040 1.02		3/16
KD300ARO	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375 771.53	30.625 777.88	30.750 781.05	0.060 1.52		1/4
KF300ARO	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563 776.30	30.938 785.83	31.125 790.58	0.080 2.03		3/8
KG300ARO	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750 781.05	31.250 793.75	31.500 800.10	0.080 2.03		1/2
KF350ARO	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563 903.30	35.938 912.83	36.125 917.58	0.080 2.03		3/8
KG350ARO	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750 908.05	36.250 920.75	36.500 927.10	0.080 2.03		1/2
KF400ARO	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563 1030.30	40.938 1039.83	41.125 1044.58	0.080 2.03		3/8
KG400ARO	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750 1035.05	41.250 1047.75	41.500 1054.10	0.080 2.03		1/2



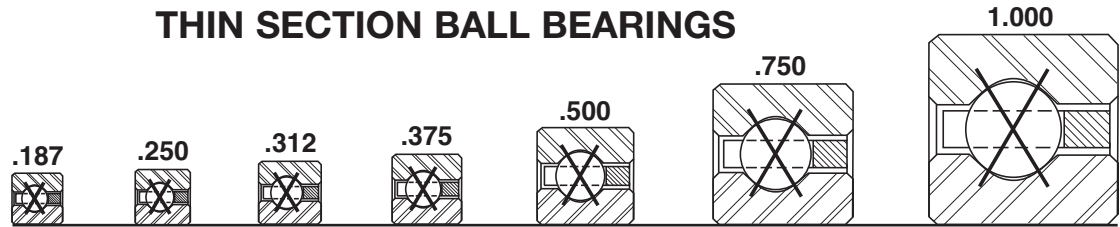
- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	180	0.52	0.236	3,940	17,530	1,072	4,770	11,380	50,620	3,100	13,790	N/A	N/A	N/A	N/A	1,780
	152	0.75	0.340	5,350	23,800	1,540	6,850	15,440	68,680	4,350	19,350	N/A	N/A	N/A	N/A	1,770
	129	1.16	0.526	6,720	29,890	2,047	9,110	19,390	86,250	5,780	25,710	N/A	N/A	N/A	N/A	1,760
	92	2.06	0.934	9,080	40,390	3,310	14,720	26,220	116,630	9,600	42,700	N/A	N/A	N/A	N/A	1,740
	65	4.80	2.177	15,880	70,640	6,227	27,700	45,850	203,950	17,870	79,490	N/A	N/A	N/A	N/A	1,700
	48	8.60	3.901	22,750	101,200	10,920	48,570	65,660	292,070	31,660	140,830	N/A	N/A	N/A	N/A	1,670
	196	0.56	0.254	4,290	19,080	1,128	5,020	12,390	55,110	3,200	14,230	N/A	N/A	N/A	N/A	1,630
	166	0.83	0.376	5,840	25,980	1,623	7,220	16,860	75,000	4,510	20,060	N/A	N/A	N/A	N/A	1,620
	140	1.25	0.567	7,290	32,430	2,147	9,550	21,040	93,590	5,980	26,600	N/A	N/A	N/A	N/A	1,620
	100	2.25	1.021	9,870	43,900	3,430	15,260	28,500	126,770	9,950	44,260	N/A	N/A	N/A	N/A	1,600
	70	5.20	2.359	17,100	76,060	6,487	28,860	49,380	219,650	18,340	81,580	N/A	N/A	N/A	N/A	1,570
	52	9.30	4.218	24,640	109,600	11,230	49,950	71,140	316,450	32,570	144,880	N/A	N/A	N/A	N/A	1,540
	192	1.05	0.476	6,760	30,070	1,767	7,860	19,500	86,740	4,840	21,530	N/A	N/A	N/A	N/A	1,400
	163	1.52	0.689	8,490	37,770	2,347	10,440	24,500	108,980	6,330	28,160	N/A	N/A	N/A	N/A	1,390
	116	2.73	1.238	11,450	50,930	3,582	15,930	33,060	147,060	10,340	45,990	N/A	N/A	N/A	N/A	1,380
	81	6.00	2.722	19,790	88,030	7,043	31,330	57,140	254,170	19,490	86,700	N/A	N/A	N/A	N/A	1,360
	60	10.80	4.899	28,430	126,460	11,770	52,360	82,080	365,110	34,150	151,910	N/A	N/A	N/A	N/A	1,330
	219	1.20	0.544	7,710	34,300	1,907	8,480	22,250	98,970	5,150	22,910	N/A	N/A	N/A	N/A	1,230
	186	1.73	0.785	9,680	43,060	2,533	11,270	27,950	124,330	6,730	29,940	N/A	N/A	N/A	N/A	1,220
	132	3.10	1.406	13,030	57,960	3,856	17,150	37,620	167,340	11,030	49,060	N/A	N/A	N/A	N/A	1,210
	92	7.10	3.221	22,480	100,000	7,563	33,640	64,890	288,650	20,310	90,340	N/A	N/A	N/A	N/A	1,190
	68	12.30	5.579	32,220	143,320	12,360	54,980	93,020	413,770	35,850	159,470	N/A	N/A	N/A	N/A	1,180
	246	1.35	0.612	8,660	38,520	2,038	9,070	24,990	111,160	5,510	24,510	N/A	N/A	N/A	N/A	1,090
	209	1.94	0.880	10,880	48,400	2,707	12,040	31,410	139,720	7,280	32,380	N/A	N/A	N/A	N/A	1,090
	148	3.48	1.579	14,610	64,990	4,113	18,300	42,180	187,630	11,390	50,670	N/A	N/A	N/A	N/A	1,080
	104	7.90	3.583	25,410	113,030	8,103	36,040	73,360	326,320	21,210	94,350	N/A	N/A	N/A	N/A	1,070
	76	13.70	6.214	36,020	160,220	12,898	57,370	104,000	462,620	37,230	165,610	N/A	N/A	N/A	N/A	1,050
	273	1.50	0.680	9,610	42,750	2,162	9,620	27,730	123,350	5,900	26,240	N/A	N/A	N/A	N/A	980
	231	2.16	0.980	12,030	53,510	2,863	12,740	34,720	154,440	7,780	34,610	N/A	N/A	N/A	N/A	980
	164	3.85	1.746	16,190	72,020	4,356	19,380	46,740	207,910	11,920	53,020	N/A	N/A	N/A	N/A	980
	115	8.90	4.037	28,100	125,000	8,562	38,090	81,120	360,840	22,680	100,890	N/A	N/A	N/A	N/A	960
	84	15.80	7.167	39,810	177,080	13,612	60,550	114,900	511,100	38,830	172,720	N/A	N/A	N/A	N/A	950
	288	2.69	1.220	14,900	66,280	3,233	14,380	43,280	192,520	9,010	40,080	N/A	N/A	N/A	N/A	790
	204	4.79	2.173	20,140	89,590	4,908	21,830	58,140	258,620	13,540	60,230	N/A	N/A	N/A	N/A	780
	142	10.90	4.944	34,700	154,350	9,585	42,640	100,200	445,710	26,100	116,100	N/A	N/A	N/A	N/A	780
	104	19.50	8.845	49,280	219,210	15,239	67,790	142,300	632,980	41,420	184,250	N/A	N/A	N/A	N/A	770
	345	3.21	1.456	17,960	79,890	3,561	15,840	51,850	230,640	10,160	45,190	N/A	N/A	N/A	N/A	660
	244	5.73	2.599	24,090	107,160	5,397	24,010	69,540	309,330	15,260	67,880	N/A	N/A	N/A	N/A	660
	170	13.00	5.897	41,540	184,780	10,533	46,850	119,900	533,340	29,430	130,910	N/A	N/A	N/A	N/A	650
	124	23.30	10.569	58,760	261,380	16,687	74,230	169,600	754,420	46,020	204,710	N/A	N/A	N/A	N/A	650
	198	15.10	6.849	48,380	215,200	11,382	50,630	139,700	621,420	32,580	144,920	N/A	N/A	N/A	N/A	560
	144	27.10	12.292	68,240	303,550	17,982	79,990	197,000	876,300	50,840	226,150	N/A	N/A	N/A	N/A	560
	226	17.20	7.802	55,220	245,630	12,147	54,030	159,400	709,050	35,580	158,270	N/A	N/A	N/A	N/A	490
	164	30.80	13.971	77,720	345,720	19,153	85,200	224,400	998,180	55,440	246,610	N/A	N/A	N/A	N/A	490

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

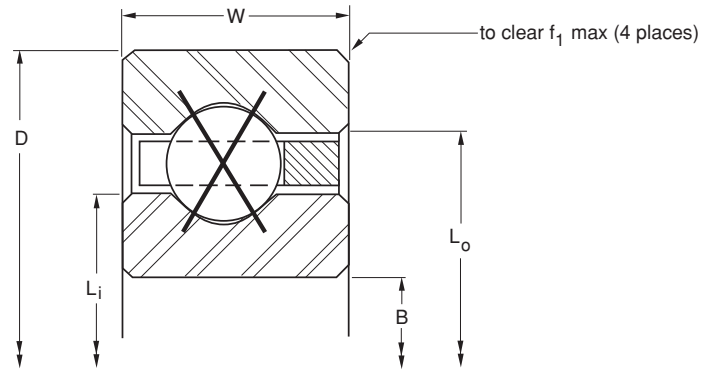


Series:	KAA	KA	KB	KC	KD	KF	KG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
KAA10XL0	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	3/32
KAA15XL0	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	3/32
KAA17XL0	1.7500	50.800	2.1250	53.975	0.1875	4.763	1.890	48.01	1.985	50.42	3/32
KA020XP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	1/8
KB020XP0	2.0000	63.500	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	5/32
KA025XP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	1/8
KB025XP0	2.5000	76.200	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	5/32
KA030XP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	1/8
KB030XP0	3.0000	88.900	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	5/32
KA035XP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	1/8
KB035XP0	3.5000	101.600	4.1250	104.775	0.3125	7.938	3.734	94.84	3.891	98.83	5/32
KA040XP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	1/8
KB040XP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	5/32
KC040XP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	3/16
KD040XP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	1/4
KF040XP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	3/8
KG040XP0	4.0000	107.950	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	1/2
KA042XP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	1/8
KB042XP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	5/32
KC042XP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	3/16
KD042XP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	1/4
KF042XP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	3/8
KG042XP0	4.2500	114.300	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	1/2
KA045XP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	1/8
KB045XP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	5/32
KC045XP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	3/16
KD045XP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	1/4
KF045XP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	3/8
KG045XP0	4.5000	120.650	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	1/2
KA047XP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	1/8
KB047XP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	5/32
KC047XP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	3/16
KD047XP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	1/4
KF047XP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	3/8
KG047XP0	4.7500	127.000	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	1/2
KA050XP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	1/8
KB050XP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	5/32
KC050XP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	3/16
KD050XP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	1/4
KF050XP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	3/8
KG050XP0	5.0000	139.700	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	1/2
KA055XP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	1/8
KB055XP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	5/32
KC055XP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	3/16
KD055XP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	1/4
KF055XP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	3/8



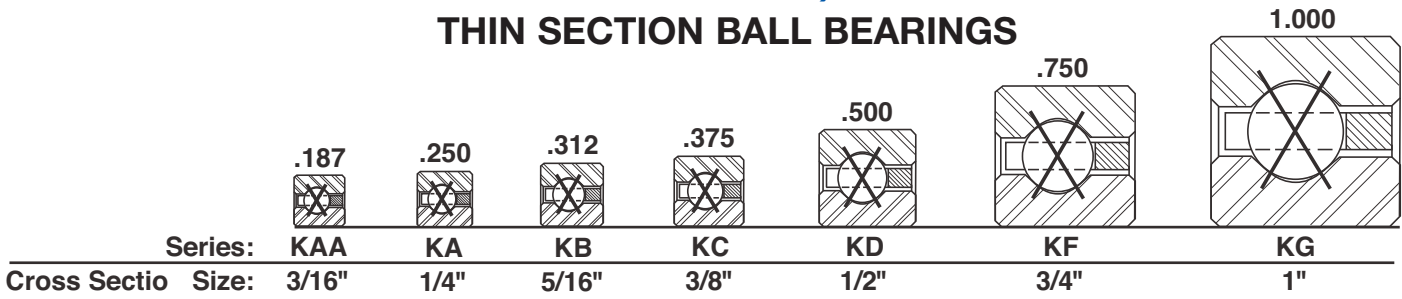
- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)	
				Radial				Thrust				Moment					
				Static		Dynamic		Static		Dynamic		Static		Dynamic			
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm		
	21	0.03	0.014	290	1,290	270	1,200	730	3,250	680	3,020	170	20	160	20	10,110	
	29	0.04	0.018	400	1,780	310	1,380	1,000	4,450	770	3,430	340	40	260	30	7,110	
	33	0.06	0.027	540	2,402	412	1,832	1,355	6,027	1,000	4,448	555	63	405	46	6,190	
	27	0.10	0.045	680	3,020	514	2,290	1,710	7,610	1,230	5,470	770	90	550	60	5,330	
	23	0.16	0.073	930	4,140	758	3,370	2,340	10,410	1,740	7,740	1,080	120	800	90	5,190	
	33	0.13	0.059	830	3,690	583	2,590	2,090	9,300	1,320	5,870	1,150	130	730	80	4,360	
	28	0.20	0.091	1,140	5,070	848	3,770	2,840	12,630	1,880	8,360	1,600	180	1,060	120	4,270	
	39	0.15	0.068	990	4,400	643	2,860	2,470	10,990	1,410	6,270	1,600	180	920	100	3,690	
	33	0.24	0.109	1,340	5,960	933	4,150	3,350	14,900	1,990	8,850	2,220	250	1,320	150	3,620	
	45	0.18	0.082	1,140	5,070	701	3,120	2,850	12,680	1,480	6,580	2,130	240	1,110	130	3,200	
	38	0.27	0.122	1,540	6,850	1,014	4,510	3,860	17,170	2,100	9,340	2,940	330	1,600	180	3,150	
	51	0.19	0.086	1,290	5,740	756	3,360	3,220	14,320	1,550	6,890	2,740	310	1,320	150	2,820	
	43	0.30	0.136	1,750	7,780	1,091	4,850	4,370	19,440	2,210	9,830	3,770	430	1,900	210	2,780	
	35	0.45	0.204	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,740	
	27	0.78	0.354	3,080	13,700	2,311	10,280	7,700	34,250	4,890	21,750	6,930	780	4,400	500	2,670	
	19	1.90	0.862	5,360	23,840	4,665	20,750	13,400	59,610	8,830	39,280	12,730	1,440	8,390	950	2,530	
	15	3.60	1.633	8,210	36,520	7,979	35,490	20,520	91,280	15,150	67,390	20,520	2,320	15,150	1,710	2,400	
	54	0.20	0.091	1,370	6,090	783	3,480	3,410	15,170	1,590	7,070	3,070	350	1,430	160	2,670	
	45	0.31	0.141	1,830	8,140	1,120	4,980	4,570	20,330	2,230	9,920	4,170	470	2,040	230	2,630	
	37	0.47	0.213	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,590	
	28	0.83	0.376	3,190	14,190	2,355	10,480	7,980	35,500	4,920	21,890	7,580	860	4,670	530	2,530	
	20	2.00	0.907	5,640	25,090	4,795	21,330	14,110	62,760	8,990	39,990	14,110	1,590	8,993	1,020	2,400	
	15	3.80	1.724	8,210	36,520	7,917	35,220	20,520	91,280	15,150	67,390	21,550	2,430	15,910	1,800	2,290	
	57	0.22	0.100	1,440	6,410	809	3,600	3,600	16,010	1,610	7,160	3,420	390	1,530	170	2,530	
	48	0.33	0.150	1,950	8,670	1,165	5,180	4,880	21,710	2,300	10,230	4,690	530	2,220	250	2,490	
	39	0.48	0.218	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,460	
	30	0.88	0.399	3,420	15,210	2,454	10,920	8,550	38,030	5,080	22,600	8,550	970	5,080	570	2,400	
	21	2.10	0.953	5,930	26,380	4,923	21,900	14,810	65,880	9,180	40,830	15,550	1,760	9,695	1,100	2,290	
	16	4.00	1.814	8,760	38,970	8,205	36,500	21,890	97,370	15,820	70,370	24,080	2,720	17,400	1,970	2,180	
	60	0.23	0.104	1,520	6,760	834	3,710	3,790	16,860	1,650	7,340	3,790	430	1,650	190	2,400	
	50	0.34	0.154	2,030	9,030	1,193	5,310	5,080	22,600	2,310	10,280	5,140	580	2,340	260	2,370	
	41	0.50	0.227	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	2,340	
	31	0.94	0.426	3,530	15,700	2,496	11,100	8,840	39,320	5,130	22,820	9,280	1,050	5,380	610	2,290	
	22	2.20	0.998	6,210	27,620	5,048	22,450	15,520	69,040	9,380	41,720	17,070	1,930	10,416	1,180	2,180	
	17	4.10	1.860	9,300	41,370	8,487	37,750	23,260	103,470	16,470	73,260	26,740	3,020	18,940	2,140	2,090	
	63	0.24	0.109	1,590	7,070	859	3,820	3,980	17,700	1,680	7,470	4,180	470	1,760	200	2,290	
	53	0.38	0.172	2,150	9,560	1,236	5,500	5,380	23,930	2,380	10,590	5,720	650	2,520	280	2,260	
	43	0.58	0.263	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	2,230	
	33	1.00	0.454	3,760	16,730	2,592	11,530	9,410	41,860	5,270	23,440	10,350	1,170	5,800	660	2,180	
	23	2.30	1.043	6,490	28,870	5,172	23,010	16,220	72,150	9,520	42,350	18,660	2,110	11,157	1,260	2,090	
	18	4.30	1.950	9,850	43,810	8,762	38,980	24,620	109,520	17,110	76,110	29,550	3,340	20,530	2,320	2,000	
	69	0.25	0.113	1,750	7,780	908	4,040	4,360	19,390	1,720	7,650	5,020	570	1,970	220	2,090	
	58	0.41	0.186	2,360	10,500	1,304	5,800	5,890	26,200	2,460	10,940	6,850	770	2,860	320	2,060	
	47	0.59	0.268	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	2,040	
	36	1.06	0.481	4,100	18,240	2,725	12,120	10,260	45,640	5,450	24,240	12,310	1,390	6,540	740	2,000	
	25	2.50	1.134	7,050	31,360	5,415	24,090	17,630	78,420	9,820	43,680	22,040	2,490	12,696	1,430	1,920	

4-POINT CONTACT, X-TYPE

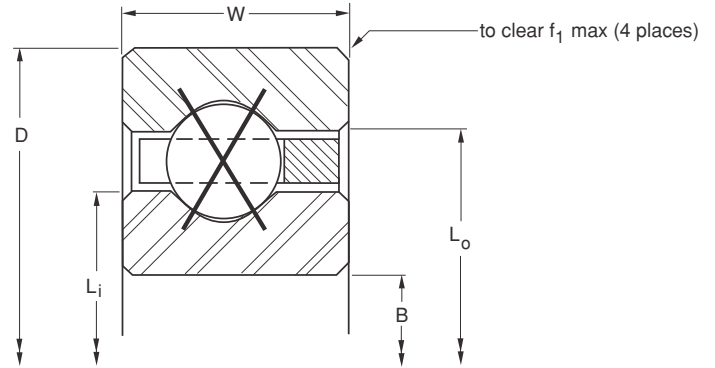
THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring	L _o -Outer Ring			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
KG055XP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	1/2
KA060XP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	1/8
KB060XP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	5/32
KC060XP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	3/16
KD060XP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	1/4
KF060XP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	3/8
KG060XP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	1/2
KA065XP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	1/8
KB065XP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	5/32
KC065XP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	3/16
KD065XP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	1/4
KF065XP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	3/8
KG065XP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	1/2
KA070XP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	1/8
KB070XP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	5/32
KC070XP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	3/16
KD070XP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	1/4
KF070XP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	3/8
KG070XP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	1/2
KA075XP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	1/8
KB075XP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	5/32
KC075XP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	3/16
KD075XP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	1/4
KF075XP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	3/8
KG075XP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	1/2
KA080XP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	1/8
KB080XP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	5/32
KC080XP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	3/16
KD080XP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	1/4
KF080XP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	3/8
KG080XP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	1/2
KA090XP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	1/8
KB090XP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	5/32
KC090XP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	3/16
KD090XP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	1/4
KF090XP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	3/8
KG090XP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	1/2
KA100XP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	1/8
KB100XP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	5/32
KC100XP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	3/16
KD100XP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	1/4
KF100XP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	3/8
KG100XP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	1/2



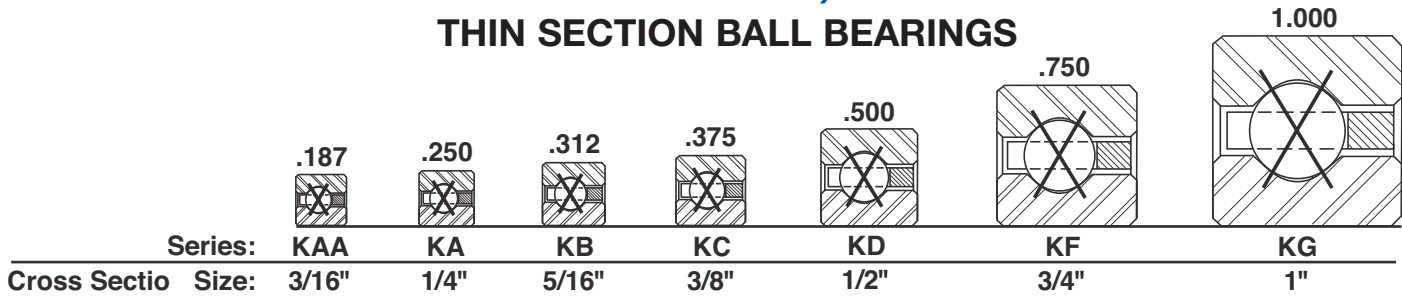
- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)	
				Radial				Thrust				Moment					
				Static		Dynamic		Static		Dynamic		Static		Dynamic			
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm		
	19	4.70	2.132	10,400	46,260	8,979	39,940	25,990	115,610	17,460	77,670	33,790	3,820	22,700	2,560	1,850	
	75	0.28	0.127	1,900	8,450	955	4,250	4,740	21,080	1,780	7,920	5,930	670	2,240	250	1,920	
	63	0.44	0.200	2,560	11,390	1,371	6,100	6,400	28,470	2,540	11,300	8,080	910	3,247	370	1,900	
	51	0.63	0.286	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,880	
	39	1.16	0.526	4,450	19,790	2,855	12,700	11,120	49,460	5,610	24,950	14,450	1,630	7,290	820	1,850	
	27	2.70	1.225	7,620	33,900	5,651	25,140	19,050	84,740	10,150	45,150	25,710	2,900	14,311	1,620	1,780	
	21	5.10	2.313	11,490	51,110	9,503	42,270	28,730	127,800	18,290	81,360	40,220	4,540	25,610	2,890	1,710	
	81	0.30	0.136	2,050	9,120	1,001	4,450	5,120	22,770	1,840	8,180	6,910	780	2,535	290	1,780	
	68	0.47	0.213	2,760	12,280	1,435	6,380	6,910	30,740	2,590	11,520	9,410	1,060	3,668	410	1,760	
	55	0.68	0.308	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,750	
	42	1.22	0.553	4,790	21,310	2,980	13,260	11,970	53,250	5,740	25,530	16,760	1,890	8,040	910	1,710	
	29	2.90	1.315	8,180	36,390	5,880	26,160	20,460	91,010	10,380	46,170	29,660	3,350	15,993	1,810	1,660	
	22	5.40	2.449	12,040	53,560	9,713	43,210	30,100	133,890	18,520	82,380	45,140	5,100	27,770	3,140	1,600	
	87	0.31	0.141	2,200	9,790	1,046	4,650	5,500	24,470	1,850	8,230	7,980	900	2,844	320	1,660	
	73	0.50	0.227	2,970	13,210	1,498	6,660	7,420	33,010	2,660	11,830	10,850	1,230	4,109	460	1,640	
	59	0.73	0.331	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,630	
	45	1.31	0.594	5,130	22,820	3,103	13,800	12,830	57,070	5,880	26,160	19,240	2,170	8,810	1,000	1,600	
	31	3.20	1.451	8,750	38,920	6,103	27,150	21,870	97,280	10,640	47,330	33,890	3,830	17,744	2,000	1,550	
	24	5.80	2.631	13,130	58,410	10,208	45,410	32,830	146,040	19,330	85,980	52,530	5,940	30,930	3,490	1,500	
	93	0.34	0.154	2,350	10,450	1,089	4,840	5,880	26,160	1,890	8,410	9,120	1,030	3,165	360	1,550	
	78	0.53	0.240	3,170	14,100	1,559	6,930	7,920	35,230	2,730	12,140	12,380	1,400	4,568	520	1,540	
	63	0.78	0.354	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,520	
	48	1.41	0.640	5,470	24,330	3,222	14,330	13,680	60,850	6,060	26,960	21,890	2,470	9,700	1,100	1,500	
	33	3.40	1.542	9,310	41,410	6,323	28,130	23,280	103,550	10,930	48,620	38,410	4,340	19,568	2,210	1,450	
	25	6.10	2.767	13,680	60,850	10,410	46,310	34,200	152,130	19,460	86,560	58,140	6,570	33,196	3,750	1,410	
	99	0.38	0.172	2,500	11,120	1,131	5,030	6,260	27,850	1,970	8,760	10,330	1,170	3,499	400	1,450	
	83	0.57	0.259	3,370	14,990	1,618	7,200	8,430	37,500	2,790	12,410	14,020	1,580	5,045	570	1,440	
	67	0.84	0.381	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,430	
	51	1.53	0.694	5,810	25,840	3,338	14,850	14,540	64,680	6,170	27,450	24,710	2,790	10,643	1,200	1,410	
	35	3.50	1.588	9,880	43,950	6,535	29,070	24,690	109,830	11,190	49,780	43,200	4,880	21,453	2,420	1,370	
	27	6.50	2.948	14,770	65,700	10,882	48,410	36,940	164,320	20,230	89,990	66,480	7,510	36,743	4,150	1,330	
	111	0.44	0.200	2,810	12,500	1,212	5,390	7,020	31,230	2,040	9,070	12,990	1,470	4,204	470	1,300	
	93	0.66	0.299	3,780	16,810	1,732	7,700	9,450	42,040	2,890	12,860	17,600	1,990	6,050	680	1,290	
	75	0.94	0.426	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,280	
	57	1.72	0.780	6,500	28,910	3,561	15,840	16,250	72,280	6,410	28,510	30,870	3,490	12,693	1,430	1,260	
	39	3.90	1.769	11,000	48,930	6,947	30,900	27,510	122,370	11,630	51,730	53,640	6,060	25,410	2,870	1,230	
	30	7.20	3.266	16,420	73,040	11,526	51,270	41,040	182,560	21,020	93,500	82,080	9,270	43,240	4,890	1,200	
	123	0.50	0.227	3,110	13,830	1,289	5,730	7,780	34,610	2,180	9,700	15,940	1,800	4,956	560	1,170	
	103	0.73	0.331	4,190	18,640	1,841	8,190	10,460	46,530	3,080	13,700	21,580	2,440	7,121	800	1,160	
	83	1.06	0.481	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	1,160	
	63	1.88	0.853	7,180	31,940	3,776	16,800	17,960	79,890	6,680	29,710	37,710	4,260	14,872	1,680	1,140	
	43	4.30	1.950	12,130	53,960	7,342	32,660	30,330	134,910	12,100	53,820	65,210	7,370	29,608	3,350	1,120	
	33	7.90	3.583	18,060	80,330	12,147	54,030	45,140	200,790	21,790	96,930	99,320	11,220	50,124	5,660	1,090	

4-POINT CONTACT, X-TYPE

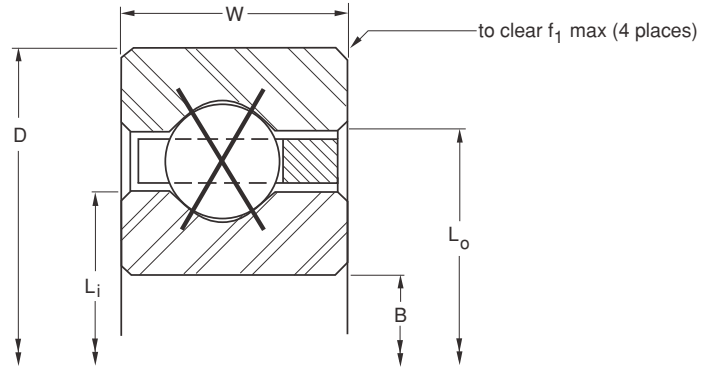
THIN SECTION BALL BEARINGS



PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
KA110XP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	11.313	287.35	0.025	0.64	1/8
KB110XP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	11.391	289.33	0.032	0.81	5/32
KC110XP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	11.469	291.31	0.040	1.02	3/16
KD110XP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	11.625	295.28	0.060	1.52	1/4
KF110XP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	11.938	303.23	0.080	2.03	3/8
KG110XP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	12.250	311.15	0.080	2.03	1/2
KA120XP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	12.313	312.75	0.025	0.64	1/8
KB120XP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	12.391	314.73	0.032	0.81	5/32
KC120XP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	12.469	316.71	0.040	1.02	3/16
KD120XP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	12.625	320.68	0.060	1.52	1/4
KF120XP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	12.938	328.63	0.080	2.03	3/8
KG120XP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	13.250	336.55	0.080	2.03	1/2
KB140XP0	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	14.391	365.53	0.032	0.81	5/32
KC140XP0	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	14.469	367.51	0.040	1.02	3/16
KD140XP0	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	14.625	371.48	0.060	1.52	1/4
KF140XP0	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	14.938	379.43	0.080	2.03	3/8
KG140XP0	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	15.250	387.35	0.080	2.03	1/2
KB160XP0	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	16.391	416.33	0.032	0.81	5/32
KC160XP0	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	16.469	418.31	0.040	1.02	3/16
KD160XP0	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	16.625	422.28	0.060	1.52	1/4
KF160XP0	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	16.938	430.23	0.080	2.03	3/8
KG160XP0	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	17.250	438.15	0.080	2.03	1/2
KB180XP0	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	18.391	467.13	0.032	0.81	5/32
KC180XP0	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	18.469	469.11	0.040	1.02	3/16
KD180XP0	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	18.625	473.08	0.060	1.52	1/4
KF180XP0	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	18.938	481.03	0.080	2.03	3/8
KG180XP0	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	19.250	488.95	0.080	2.03	1/2
KB200XP0	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	20.391	517.93	0.032	0.81	5/32
KC200XP0	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	20.469	519.91	0.040	1.02	3/16
KD200XP0	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	20.625	523.88	0.060	1.52	1/4
KF200XP0	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	20.938	531.83	0.080	2.03	3/8
KG200XP0	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	21.250	539.75	0.080	2.03	1/2
KC250XP0	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	25.469	646.91	0.040	1.02	3/16
KD250XP0	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	25.625	650.88	0.060	1.52	1/4
KF250XP0	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	25.938	658.83	0.080	2.03	3/8
KG250XP0	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	26.250	666.75	0.080	2.03	1/2
KC300XP0	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	30.469	773.91	0.040	1.02	3/16
KD300XP0	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	30.625	777.88	0.060	1.52	1/4
KF300XP0	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	30.938	785.83	0.080	2.03	3/8
KG300XP0	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	31.250	793.75	0.080	2.03	1/2
KF350XP0	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	35.938	912.83	0.080	2.03	3/8
KG350XP0	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	36.250	920.75	0.080	2.03	1/2
KF400XP0	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	40.938	1039.83	0.080	2.03	3/8
KG400XP0	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	41.250	1047.75	0.080	2.03	1/2

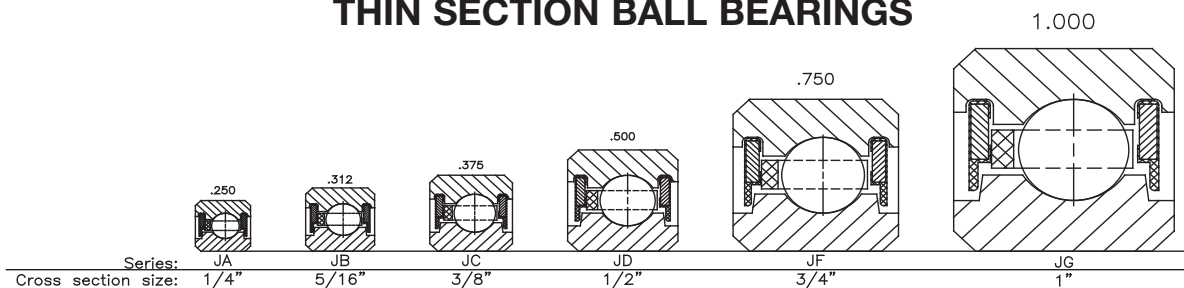


- 52100 Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator

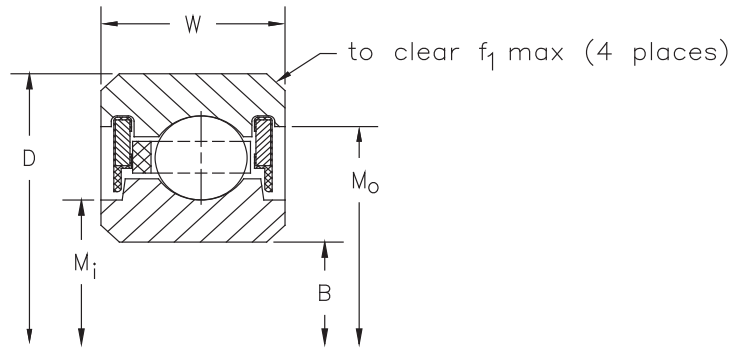


	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	135	0.52	0.236	3,410	15,170	1,362	6,060	8,540	37,990	2,320	10,320	19,210	2,170	5,750	650	1,070
	113	0.75	0.340	4,590	20,420	1,945	8,650	11,480	51,070	3,280	14,590	25,970	2,930	8,254	930	1,060
	91	1.16	0.526	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	1,050
	69	2.06	0.934	7,870	35,010	3,981	17,710	19,670	87,500	6,830	30,380	45,230	5,110	17,173	1,940	1,040
	47	4.80	2.177	13,260	58,980	7,721	34,340	33,150	147,460	12,490	55,560	77,910	8,800	34,032	3,850	1,020
	36	8.60	3.901	19,700	87,630	12,739	56,670	49,250	219,070	22,530	100,220	118,200	13,350	57,347	6,480	1,000
	147	0.56	0.254	3,720	16,550	1,433	6,370	9,300	41,370	2,450	10,900	22,770	2,570	6,587	740	980
	123	0.83	0.376	5,000	22,240	2,045	9,100	12,500	55,600	3,470	15,440	30,770	3,480	9,446	1,070	970
	99	1.25	0.567	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	970
	75	2.25	1.021	8,550	38,030	4,178	18,580	21,380	95,100	7,080	31,490	53,440	6,040	19,590	2,210	960
	51	5.20	2.359	14,390	64,010	8,084	35,960	35,970	160,000	13,190	58,670	91,730	10,360	38,666	4,370	940
	39	9.30	4.218	21,340	94,930	13,315	59,230	53,350	237,310	23,180	103,110	138,700	15,670	64,935	7,340	920
	143	1.05	0.476	5,810	25,840	2,234	9,940	14,530	64,630	3,840	17,080	41,580	4,700	11,994	1,360	840
	115	1.52	0.689	6,910	30,740	2,862	12,730	17,280	76,870	4,890	21,750	49,690	5,610	15,434	1,740	830
	87	2.73	1.238	9,920	44,130	4,551	20,240	24,800	110,320	7,670	34,120	71,910	8,120	24,755	2,800	830
	59	6.00	2.722	16,650	74,060	8,775	39,030	41,620	185,130	14,530	64,630	122,800	13,870	48,556	5,490	810
	45	10.80	4.899	24,620	109,520	14,404	64,070	61,560	273,830	24,300	108,090	184,700	20,870	81,056	9,160	800
	163	1.20	0.544	6,620	29,450	2,410	10,720	16,560	73,660	4,190	18,640	54,020	6,100	14,750	1,670	740
	131	1.73	0.785	7,880	35,050	3,086	13,730	19,690	87,590	5,330	23,710	64,480	7,290	18,955	2,140	730
	99	3.10	1.406	11,290	50,220	4,899	21,790	28,220	125,530	8,360	37,190	93,110	10,520	30,325	3,430	730
	67	7.10	3.221	18,900	84,070	9,421	41,910	47,260	210,220	15,820	70,370	158,300	17,890	59,200	6,690	720
	51	12.30	5.579	27,910	124,150	15,425	68,610	69,770	310,350	25,510	113,470	237,200	26,800	98,373	11,110	710
	183	1.35	0.612	7,440	33,090	2,576	11,460	18,590	82,690	4,520	20,110	68,090	7,690	17,694	2,000	660
	147	1.94	0.880	8,840	39,320	3,295	14,660	22,090	98,260	5,760	25,620	81,190	9,170	22,712	2,570	650
	111	3.48	1.579	12,650	56,270	5,226	23,250	31,640	140,740	9,030	40,170	117,000	13,220	36,268	4,100	650
	75	7.90	3.583	21,160	94,120	10,028	44,610	52,900	235,310	17,060	75,890	198,400	22,420	70,537	7,970	640
	57	13.70	6.214	31,190	138,740	16,386	72,890	77,980	346,870	27,410	121,930	296,300	33,480	116,793	13,200	630
	203	1.50	0.680	8,250	36,700	2,731	12,150	20,620	91,720	4,850	21,570	83,780	9,470	20,813	2,350	590
	163	2.16	0.980	9,800	43,590	3,492	15,530	24,500	108,980	6,170	27,450	99,830	11,280	26,695	3,020	590
	123	3.85	1.746	14,020	62,360	5,534	24,620	35,060	155,950	9,670	43,010	143,700	16,240	42,561	4,810	590
	83	8.90	4.037	23,420	104,180	10,602	47,160	58,550	260,440	18,250	81,180	243,000	27,460	82,528	9,320	580
	63	15.80	7.167	34,470	153,330	17,293	76,920	86,180	383,350	29,300	130,330	362,000	40,900	136,238	15,390	570
	203	2.69	1.220	12,200	54,270	3,941	17,530	30,510	135,720	7,140	31,760	154,800	17,490	37,518	4,240	470
	153	4.79	2.173	17,440	77,580	6,235	27,730	43,610	193,990	11,180	49,730	222,400	25,130	59,649	6,740	470
	103	10.90	4.944	29,060	129,270	11,909	52,970	72,650	323,160	21,070	93,720	374,200	42,280	115,037	13,000	470
	78	19.50	8.845	42,680	189,850	19,360	86,120	106,700	474,630	33,780	150,260	554,900	62,700	188,838	21,340	460
	243	3.21	1.456	14,610	64,990	4,338	19,300	36,520	162,450	8,050	35,810	221,900	25,070	49,436	5,590	400
	183	5.73	2.599	20,860	92,790	6,856	30,500	52,160	232,020	12,600	56,050	318,100	35,940	78,447	8,860	390
	123	13.00	5.897	34,700	154,350	13,065	58,120	86,760	385,930	23,720	105,510	533,600	60,290	150,708	17,030	390
	93	23.30	10.569	50,890	226,370	21,200	94,300	127,200	565,810	37,980	168,940	788,800	89,120	246,541	27,860	390
	143	15.10	6.849	40,350	179,490	14,100	62,720	100,900	448,830	26,220	116,630	721,200	81,480	189,106	21,370	340
	108	27.10	12.292	59,100	262,890	22,845	101,620	147,700	657,000	41,970	186,690	1,064,000	120,220	308,527	34,860	330
	163	17.20	7.802	45,990	204,570	15,034	66,870	115,000	511,550	28,620	127,310	937,100	105,880	229,832	25,970	290
	123	30.80	13.971	67,310	299,410	24,332	108,230	168,300	748,640	45,770	203,600	1,380,000	155,920	374,256	42,290	290

SEALED (MOLDED) RADIAL CONTACT, C-TYPE THIN SECTION BALL BEARINGS

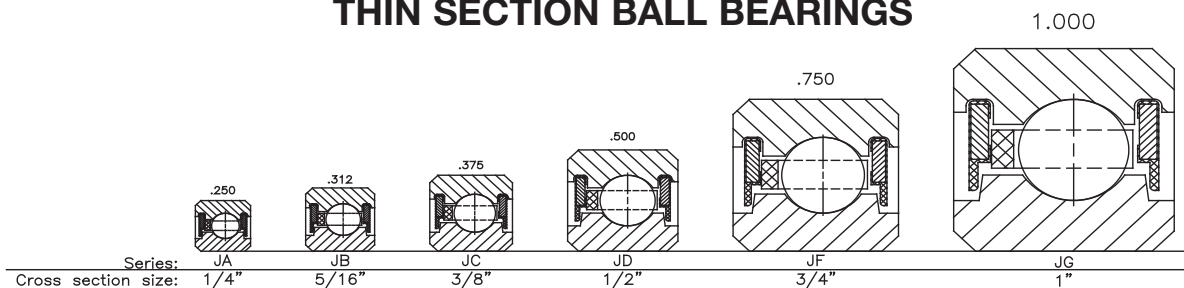


PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
JA020CP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.155	54.74	2.343	59.51	0.025	0.64	1/8
JB020CP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.194	55.73	2.430	61.72	0.032	0.81	5/32
JA025CP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.655	67.44	2.843	72.21	0.025	0.64	1/8
JB025CP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.694	68.43	2.930	74.42	0.032	0.81	5/32
JA030CP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.155	80.14	3.343	84.91	0.025	0.64	1/8
JB030CP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.194	81.13	3.430	87.12	0.032	0.81	5/32
JA035CP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.655	92.84	3.843	97.61	0.025	0.64	1/8
JB035CP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.694	93.83	3.930	99.82	0.032	0.81	5/32
JA040CP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.155	105.54	4.343	110.31	0.025	0.64	1/8
JB040CP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.194	106.53	4.430	112.52	0.032	0.81	5/32
JC040CP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.233	107.52	4.516	114.71	0.040	1.02	3/16
JD040CP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.310	109.47	4.687	119.05	0.060	1.52	1/4
JF040CP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.465	113.41	5.031	127.79	0.080	2.03	3/8
JG040CP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.620	117.35	5.375	136.53	0.080	2.03	1/2
JA042CP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.405	111.89	4.593	116.66	0.025	0.64	1/8
JB042CP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.444	112.88	4.680	118.87	0.032	0.81	5/32
JC042CP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.483	113.87	4.766	121.06	0.040	1.02	3/16
JD042CP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.560	115.82	4.937	125.40	0.060	1.52	1/4
JF042CP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.715	119.76	5.281	134.14	0.080	2.03	3/8
JG042CP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	4.870	123.70	5.590	141.99	0.080	2.03	1/2
JA045CP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.655	118.24	4.843	123.01	0.025	0.64	1/8
JB045CP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.694	119.23	4.930	125.22	0.032	0.81	5/32
JC045CP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.733	120.22	5.016	127.41	0.040	1.02	3/16
JD045CP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.810	122.17	5.187	131.75	0.060	1.52	1/4
JF045CP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	4.965	126.11	5.531	140.49	0.080	2.03	3/8
JG045CP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.120	130.05	5.875	149.23	0.080	2.03	1/2
JA047CP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.905	124.59	5.093	129.36	0.025	0.64	1/8
JB047CP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.944	125.58	5.180	131.57	0.032	0.81	5/32
JC047CP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	4.983	126.57	5.266	133.76	0.040	1.02	3/16
JD047CP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.060	128.52	5.437	138.10	0.060	1.52	1/4
JF047CP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.215	132.46	5.781	146.84	0.080	2.03	3/8
JG047CP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.370	136.40	6.090	154.69	0.080	2.03	1/2
JA050CP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.155	130.94	5.343	135.71	0.025	0.64	1/8
JB050CP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.194	131.93	5.430	137.92	0.032	0.81	5/32
JC050CP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.233	132.92	5.516	140.11	0.040	1.02	3/16
JD050CP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.310	134.87	5.687	144.45	0.060	1.52	1/4
JF050CP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.465	138.81	6.031	153.19	0.080	2.03	3/8
JG050CP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.620	142.25	6.375	161.93	0.080	2.03	1/2
JA055CP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.655	143.64	5.843	148.41	0.025	0.64	1/8
JB055CP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.694	144.63	5.930	150.62	0.032	0.81	5/32
JC055CP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.733	145.62	6.016	152.81	0.040	1.02	3/16
JD055CP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.810	147.57	6.187	157.15	0.060	1.52	1/4
JF055CP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	5.965	151.51	6.531	165.89	0.080	2.03	3/8
JG055CP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.120	155.45	6.875	174.63	0.080	2.03	1/2

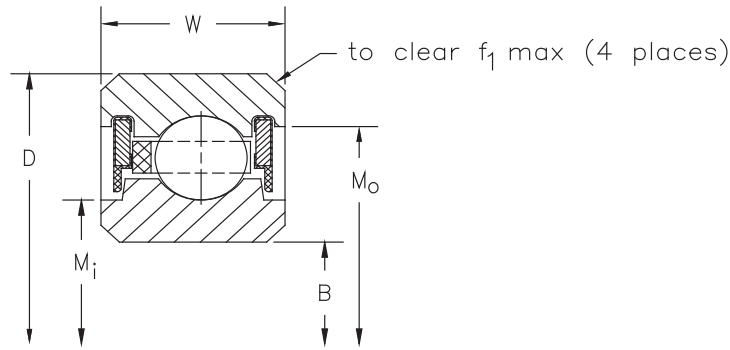


	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	27	0.10	0.045	680	3,025	393	1,748	1,080	4,800	1,640	7,300	490	55	740	80	8,890
	23	0.16	0.073	930	4,140	560	2,490	1,460	6,490	2,320	10,320	680	80	1,070	120	8,650
	33	0.13	0.059	830	3,692	442	1,966	1,310	5,830	1,770	7,870	720	80	970	110	7,270
	28	0.20	0.091	1,140	5,070	610	2,710	1,750	7,780	2,510	11,170	990	110	1,410	160	7,110
	39	0.15	0.068	990	4,404	487	2,166	1,530	6,810	1,880	8,360	990	110	1,220	140	6,150
	33	0.24	0.109	1,340	5,960	650	2,890	2,050	9,120	2,680	11,920	1,360	150	1,770	200	6,040
	45	0.18	0.082	1,140	5,071	530	2,358	1,750	7,780	1,990	8,850	1,320	150	1,490	170	5,330
	38	0.27	0.122	1,540	6,850	690	3,070	2,340	10,410	2,810	12,500	1,780	200	2,140	240	5,250
	51	0.19	0.086	1,290	5,738	571	2,540	1,980	8,810	2,080	9,250	1,680	190	1,770	200	4,710
	43	0.30	0.136	1,750	7,780	720	3,200	2,630	11,700	2,950	13,120	2,270	260	2,550	290	4,640
	35	0.45	0.204	2,100	9,340	1,020	4,540	3,110	13,830	3,740	16,640	2,720	310	3,280	370	4,570
	27	0.78	0.354	3,080	13,700	1,290	5,740	4,950	22,020	6,520	29,000	4,450	500	5,870	660	4,440
	19	1.90	0.862	5,360	23,840	2,250	10,010	7,980	35,500	11,420	50,800	7,580	860	10,850	1,230	4,210
	15	3.60	1.633	8,210	36,520	3,940	17,530	12,960	57,650	19,440	86,470	12,960	1,460	19,440	2,200	4,000
	54	0.20	0.091	1,370	6,094	591	2,629	2,090	9,300	2,110	9,390	1,880	210	1,900	210	4,440
	45	0.31	0.141	1,830	8,140	730	3,250	2,740	12,190	3,000	13,340	2,500	280	2,730	310	4,380
	37	0.47	0.213	2,220	9,880	1,030	4,580	3,270	14,550	3,830	17,040	3,030	340	3,550	400	4,320
	28	0.83	0.376	3,190	14,190	1,320	5,870	5,110	22,730	6,580	29,270	4,860	550	6,250	710	4,210
	20	2.00	0.907	5,640	25,090	2,270	10,100	8,400	37,370	11,810	52,530	8,400	950	11,810	1,330	4,000
	15	3.80	1.724	8,210	36,520	4,070	18,100	12,960	57,650	19,440	86,470	13,600	1,540	20,410	2,310	3,810
	57	0.22	0.100	1,440	6,405	610	2,713	2,200	9,790	2,170	9,650	2,090	240	2,060	230	4,210
	48	0.33	0.150	1,950	8,670	750	3,340	2,920	12,990	3,080	13,700	2,810	320	2,960	330	4,160
	39	0.48	0.218	2,340	10,410	1,060	4,720	3,440	15,300	3,910	17,390	3,360	380	3,810	430	4,100
	30	0.88	0.399	3,420	15,210	1,350	6,010	5,460	24,290	6,820	30,340	5,460	620	6,820	770	4,000
	21	2.10	0.953	5,930	26,380	2,350	10,450	8,820	39,230	12,200	54,270	9,270	1,050	12,810	1,450	3,810
	16	4.00	1.814	8,760	38,970	4,210	18,730	13,820	61,470	20,290	90,250	15,200	1,720	22,320	2,520	3,640
	60	0.23	0.104	1,520	6,760	760	3,380	2,310	10,280	2,220	9,880	2,310	260	2,220	250	4,000
	50	0.34	0.154	2,030	9,030	1,070	4,760	3,030	13,480	3,110	13,830	3,070	350	3,140	350	3,950
	41	0.50	0.227	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	4,070	460	3,900
	31	0.94	0.426	3,530	15,700	2,360	10,500	5,620	25,000	6,840	30,430	5,910	670	7,180	810	3,810
	22	2.20	0.998	6,210	27,620	4,310	19,170	9,220	41,010	12,490	55,560	10,140	1,150	13,740	1,550	3,640
	17	4.10	1.860	9,300	41,370	7,290	32,430	14,680	65,300	21,130	93,990	16,890	1,910	24,300	2,750	3,480
	63	0.24	0.109	1,590	7,073	648	2,882	2,420	10,760	2,240	9,960	2,540	290	2,350	270	3,810
	53	0.38	0.172	2,150	9,560	1,100	4,890	3,210	14,280	3,190	14,190	3,410	390	3,390	380	3,760
	43	0.58	0.263	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	4,340	490	3,720
	33	1.00	0.454	3,760	16,730	2,430	10,810	5,970	26,560	7,040	31,320	6,570	740	7,740	870	3,640
	23	2.30	1.043	6,490	28,870	4,380	19,480	9,600	42,700	12,710	56,540	11,050	1,250	14,620	1,650	3,480
	18	4.30	1.950	9,850	43,810	7,570	33,670	15,550	69,170	21,950	97,640	18,660	2,110	26,340	2,980	3,330
	69	0.25	0.113	1,750	7,784	685	3,047	2,650	11,790	2,320	10,320	3,040	340	2,660	300	3,480
	58	0.41	0.186	2,360	10,500	1,130	5,030	3,500	15,570	3,280	14,590	4,070	460	3,810	430	3,440
	47	0.59	0.268	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	4,900	550	3,400
	36	1.06	0.481	4,100	18,240	2,510	11,170	6,480	28,820	7,270	32,340	7,780	880	8,720	990	3,330
	25	2.50	1.134	7,050	31,360	4,540	20,190	10,370	46,130	13,170	58,580	12,970	1,470	16,460	1,860	3,200
	19	4.70	2.132	10,400	46,260	7,850	34,920	16,410	73,000	22,750	101,200	21,330	2,410	29,580	3,340	3,080

SEALED (MOLDED) RADIAL CONTACT, C-TYPE THIN SECTION BALL BEARINGS



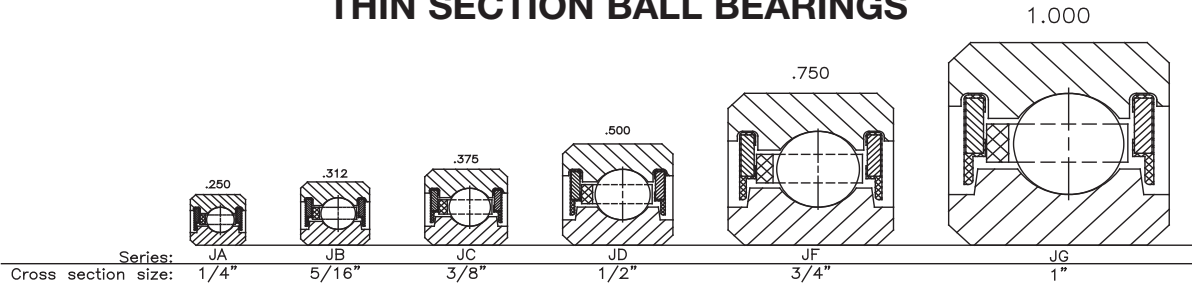
PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
JA060CP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.155	156.34	6.343	161.11	0.025	0.64	1/8
JB060CP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.194	157.33	6.430	163.32	0.032	0.81	5/32
JC060CP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.233	158.32	6.516	165.51	0.040	1.02	3/16
JD060CP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.310	160.27	6.687	169.85	0.060	1.52	1/4
JF060CP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.465	164.21	7.031	178.59	0.080	2.03	3/8
JG060CP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.620	168.15	7.375	187.33	0.080	2.03	1/2
JA065CP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.655	169.04	6.843	173.81	0.025	0.64	1/8
JB065CP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.694	170.03	6.930	176.02	0.032	0.81	5/32
JC065CP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.733	171.02	7.016	178.21	0.040	1.02	3/16
JD065CP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.810	172.97	7.187	182.55	0.060	1.52	1/4
JF065CP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	6.965	176.91	7.531	191.29	0.080	2.03	3/8
JG065CP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.120	180.85	7.875	200.03	0.080	2.03	1/2
JA070CP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.155	181.74	7.343	186.51	0.025	0.64	1/8
JB070CP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.194	182.73	7.430	188.72	0.032	0.81	5/32
JC070CP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.233	183.72	7.516	190.91	0.040	1.02	3/16
JD070CP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.310	185.67	7.687	195.25	0.060	1.52	1/4
JF070CP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.465	189.61	8.031	203.99	0.080	2.03	3/8
JG070CP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.620	193.55	8.375	212.73	0.080	2.03	1/2
JA075CP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.655	194.44	7.843	199.21	0.025	0.64	1/8
JB075CP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.694	195.43	7.930	201.42	0.032	0.81	5/32
JC075CP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.733	196.42	8.016	203.61	0.040	1.02	3/16
JD075CP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.810	198.37	8.187	207.95	0.060	1.52	1/4
JF075CP0*	7.5000	190.500	9.0000	228.600	0.7500	19.050	7.965	202.31	8.531	216.69	0.080	2.03	3/8
JG075CP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.120	206.25	8.875	225.43	0.080	2.03	1/2
JA080CP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.155	207.14	8.343	211.91	0.025	0.64	1/8
JB080CP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.194	208.13	8.430	214.12	0.032	0.81	5/32
JC080CP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.233	209.12	8.516	216.31	0.040	1.02	3/16
JD080CP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.310	211.07	8.687	220.65	0.060	1.52	1/4
JF080CP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.465	215.01	9.031	229.39	0.080	2.03	3/8
JG080CP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.620	218.95	9.375	238.13	0.080	2.03	1/2
JA090CP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.155	232.54	9.343	237.31	0.025	0.64	1/8
JB090CP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.194	233.53	9.430	239.52	0.032	0.81	5/32
JC090CP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.233	234.52	9.516	241.71	0.040	1.02	3/16
JD090CP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.310	236.47	9.687	246.05	0.060	1.52	1/4
JF090CP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.465	240.41	10.031	254.79	0.080	2.03	3/8
JG090CP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.620	244.35	10.375	263.53	0.080	2.03	1/2
JA100CP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.155	257.94	10.343	262.71	0.025	0.64	1/8
JB100CP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.194	258.93	10.430	264.92	0.032	0.81	5/32
JC100CP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.233	259.92	10.516	267.11	0.040	1.02	3/16
JD100CP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.310	261.87	10.687	271.45	0.060	1.52	1/4
JF100CP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.465	265.81	11.031	280.91	0.080	2.03	3/8
JG100CP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.620	269.75	11.375	288.93	0.080	2.03	1/2
JA110CP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.155	283.34	11.343	288.11	0.025	0.64	1/8
JB110CP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.194	284.33	11.430	290.32	0.032	0.81	5/32



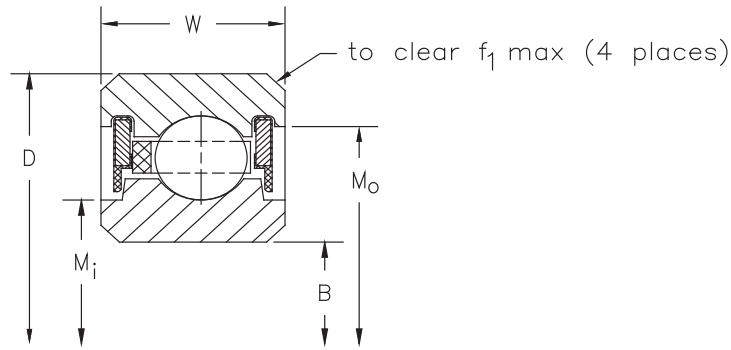
	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	75	0.28	0.127	1,900	8,450	830	3,690	2,870	12,770	2,420	10,760	3,590	410	3,020	340	3,200
	63	0.44	0.200	2,560	11,390	1,170	5,200	3,790	16,860	3,380	15,030	4,790	540	4,270	480	3,170
	51	0.63	0.286	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	5,510	620	3,140
	39	1.16	0.526	4,450	19,790	2,580	11,480	6,990	31,090	7,500	33,360	9,090	1,030	9,740	1,100	3,080
	27	2.70	1.225	7,620	33,900	4,660	20,730	11,130	49,510	13,530	60,180	15,030	1,700	18,260	2,060	2,960
	21	5.10	2.313	11,490	51,110	8,390	37,320	18,140	80,690	24,320	108,180	25,390	2,870	34,050	3,850	2,860
	81	0.30	0.136	2,050	9,120	850	3,780	3,100	13,790	2,450	10,900	4,180	470	3,310	370	2,960
	68	0.47	0.213	2,760	12,280	1,200	5,340	4,080	18,150	3,470	15,440	5,560	630	4,730	530	2,940
	55	0.68	0.308	3,310	14,720	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	6,110	690	2,910
	42	1.22	0.553	4,790	21,310	2,650	11,790	7,500	33,360	7,680	34,160	10,500	1,190	10,760	1,220	2,860
	29	2.90	1.315	8,180	36,390	4,790	21,310	11,900	52,930	13,900	61,830	17,250	1,950	20,160	2,280	2,760
	22	5.40	2.449	12,040	53,560	8,520	37,900	18,910	84,120	24,700	109,870	28,360	3,200	37,050	4,190	2,670
	87	0.31	0.141	2,200	9,790	870	3,870	3,320	14,770	2,520	11,210	4,810	540	3,660	410	2,760
	73	0.50	0.227	2,970	13,210	1,240	5,520	4,380	19,480	3,600	16,010	6,400	720	5,260	590	2,740
	59	0.73	0.331	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	6,710	760	2,710
	45	1.31	0.594	5,130	22,820	2,730	12,140	8,020	35,670	7,910	35,190	12,030	1,360	11,870	1,340	2,670
	31	3.20	1.451	8,750	38,920	4,920	21,890	12,670	56,360	14,280	63,520	19,640	2,220	22,130	2,500	2,580
	24	5.80	2.631	13,130	58,410	8,880	39,500	20,520	91,280	25,750	114,540	32,840	3,710	41,210	4,660	2,500
	93	0.34	0.154	2,350	10,450	890	3,960	3,540	15,750	2,580	11,480	5,490	620	4,000	450	2,580
	78	0.53	0.240	3,170	14,100	1,280	5,690	4,670	20,770	3,710	16,500	7,300	820	5,800	660	2,560
	63	0.78	0.354	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	7,300	820	2,540
	48	1.41	0.640	5,470	24,330	2,800	12,460	8,530	37,940	8,120	36,120	13,650	1,540	12,990	1,470	2,500
	33	3.40	1.542	9,310	41,410	5,040	22,420	13,440	59,780	14,610	64,990	22,170	2,500	24,100	2,720	2,420
	25	6.10	2.767	10,640	47,330	8,960	39,860	21,270	94,610	25,990	115,610	36,160	4,090	44,190	4,990	2,350
	99	0.38	0.172	2,500	11,120	910	4,050	3,770	16,770	2,640	11,740	6,220	700	4,350	490	2,420
	83	0.57	0.259	3,370	14,990	1,280	5,690	4,960	22,060	3,720	16,550	8,240	930	6,190	700	2,410
	67	0.84	0.381	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	7,990	900	2,390
	51	1.53	0.694	5,810	25,840	2,860	12,720	9,040	40,210	8,290	36,880	15,370	1,740	14,090	1,590	2,350
	35	3.50	1.588	9,880	43,950	5,140	22,860	14,200	63,160	14,900	66,280	24,840	2,810	26,070	2,950	2,290
	27	6.50	2.948	14,770	65,700	9,300	41,370	22,890	101,820	26,960	119,920	41,200	4,650	48,520	5,480	2,220
	111	0.44	0.200	2,810	12,500	940	4,180	4,210	18,730	2,730	12,140	7,800	880	5,050	570	2,160
	93	0.66	0.299	3,780	16,810	1,330	5,920	5,540	24,640	3,860	17,170	10,320	1,170	7,190	810	2,150
	75	0.94	0.426	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	9,410	1,060	2,130
	57	1.72	0.780	6,500	28,910	2,970	13,210	10,060	44,750	8,620	38,340	19,120	2,160	16,390	1,850	2,110
	39	3.90	1.769	11,000	48,930	5,360	23,840	15,740	70,020	15,550	69,170	30,690	3,470	30,320	3,430	2,050
	30	7.20	3.266	16,420	73,040	9,720	43,240	25,270	112,410	28,200	125,440	50,540	5,710	56,390	6,370	2,000
	123	0.50	0.227	3,110	13,830	990	4,400	4,660	20,730	2,860	12,720	9,560	1,080	5,860	660	1,950
	103	0.73	0.331	4,190	18,640	1,400	6,230	6,130	27,270	4,050	18,020	12,630	1,430	8,350	940	1,940
	83	1.06	0.481	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	10,730	1,210	1,930
	63	1.88	0.853	7,180	31,940	3,070	13,660	11,080	49,290	8,900	39,590	23,270	2,630	18,680	2,110	1,900
	43	4.30	1.950	12,130	53,960	5,550	24,690	17,260	76,780	16,060	71,440	37,110	4,190	34,530	3,900	1,860
	33	7.90	3.583	18,060	80,330	10,040	44,660	27,620	122,860	29,110	129,490	60,760	6,860	64,040	7,240	1,820
	135	0.52	0.236	3,410	15,170	1,030	4,580	5,110	22,730	2,980	13,260	11,500	1,300	6,700	760	1,780
	113	0.75	0.340	4,590	20,420	1,464	6,510	6,700	29,800	4,130	18,370	15,160	1,710	9,340	1,060	1,770

SEALED (MOLDED) RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS



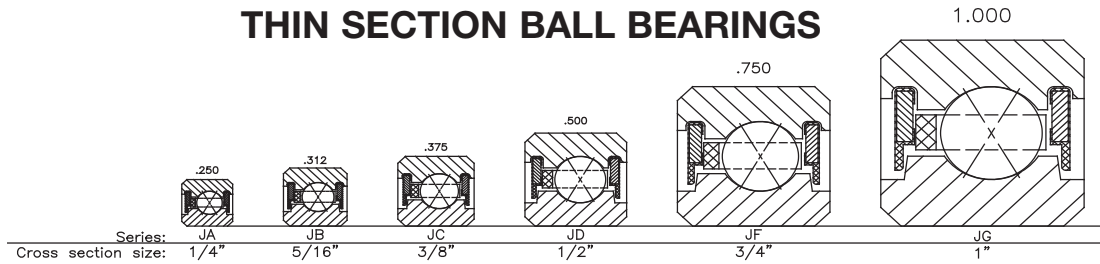
PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o			f ₁ Housing Fillet	Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm
JC110CP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.233	285.32	11.516	292.51	0.040	1.02	3/16
JD110CP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.310	287.27	11.687	296.85	0.060	1.52	1/4
JF110CP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.465	291.21	12.031	305.59	0.080	2.03	3/8
JG110CP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.620	295.15	12.375	314.33	0.080	2.03	1/2
JA120CP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.155	308.74	12.343	313.51	0.025	0.64	1/8
JB120CP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.194	309.73	12.430	315.72	0.032	0.81	5/32
JC120CP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.233	310.72	12.516	317.91	0.040	1.02	3/16
JD120CP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.310	312.67	12.687	322.25	0.060	1.52	1/4
JF120CP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.465	316.61	13.031	330.99	0.080	2.03	3/8
JG120CP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	13.620	320.55	13.375	339.73	0.080	2.03	1/2



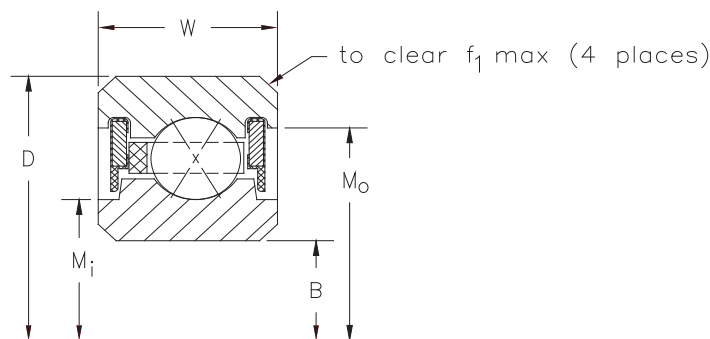
	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
				lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm		lbf - in	Nm
	91	1.16	0.526	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,760
	69	2.06	0.934	7,870	35,010	3,180	14,150	12,100	53,820	9,220	41,010	27,830	3,140	21,210	2,400	1,740
	47	4.80	2.177	13,260	58,980	5,833	25,950	18,790	83,580	16,610	73,880	44,160	4,990	39,040	4,410	1,700
	36	8.60	3.901	19,700	87,630	10,360	46,080	29,980	133,360	30,060	133,710	71,940	8,130	72,140	8,150	1,670
	147	0.56	0.254	3,720	16,550	1,078	4,800	5,560	24,730	3,080	13,700	13,620	1,540	7,550	850	1,630
	123	0.83	0.376	5,000	22,240	1,539	6,850	7,290	32,430	4,270	18,990	17,940	2,030	10,530	1,190	1,620
	99	1.25	0.567	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,620
	75	2.25	1.021	8,550	38,030	3,320	14,770	13,140	58,450	9,630	42,840	32,840	3,710	24,070	2,720	1,600
	51	5.20	2.359	14,390	64,010	6,105	27,160	20,340	90,480	17,200	76,510	51,860	5,860	43,850	4,950	1,570
	39	9.30	4.218	21,340	94,930	10,690	47,550	32,350	143,900	30,990	137,850	84,100	9,500	80,580	9,100	1,540

J-SERIES

SEALED (MOLDED) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS

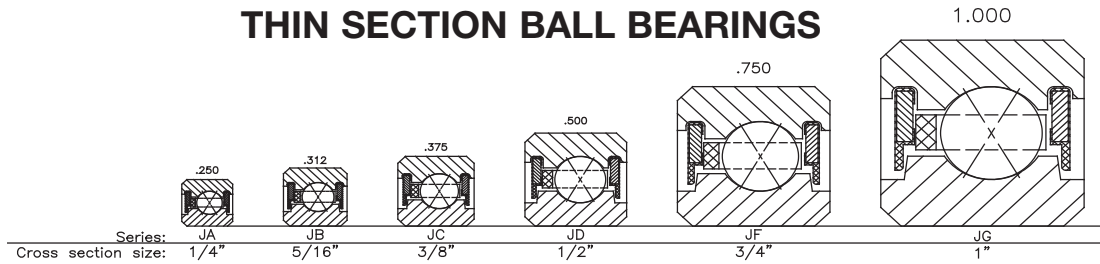


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
JA020XP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.155	54.74	2.343	59.51	0.025	0.64	1/8
JB020XP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.194	55.73	2.430	61.72	0.032	0.81	5/32
JA025XP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.655	67.44	2.843	72.21	0.025	0.64	1/8
JB025XP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.694	68.43	2.930	74.42	0.032	0.81	5/32
JA030XP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.155	80.14	3.343	84.91	0.025	0.64	1/8
JB030XP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.194	81.13	3.430	87.12	0.032	0.81	5/32
JA035XP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.655	92.84	3.843	97.61	0.025	0.64	1/8
JB035XP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.694	93.83	3.930	99.82	0.032	0.81	5/32
JA040XP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.155	105.54	4.343	110.31	0.025	0.64	1/8
JB040XP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.194	106.53	4.430	112.52	0.032	0.81	5/32
JC040XP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.233	107.52	4.516	114.71	0.040	1.02	3/16
JD040XP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.310	109.47	4.687	119.05	0.060	1.52	1/4
JF040XP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.465	113.41	5.031	127.79	0.080	2.03	3/8
JG040XP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.620	117.35	5.375	136.53	0.080	2.03	1/2
JA042XP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.405	111.89	4.593	116.66	0.025	0.64	1/8
JB042XP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.444	112.88	4.680	118.87	0.032	0.81	5/32
JC042XP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.483	113.87	4.766	121.06	0.040	1.02	3/16
JD042XP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.560	115.82	4.937	125.40	0.060	1.52	1/4
JF042XP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.715	119.76	5.281	134.14	0.080	2.03	3/8
JG042XP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	4.870	123.70	5.590	141.99	0.080	2.03	1/2
JA045XP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.655	118.24	4.843	123.01	0.025	0.64	1/8
JB045XP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.694	119.23	4.930	125.22	0.032	0.81	5/32
JC045XP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.733	120.22	5.016	127.41	0.040	1.02	3/16
JD045XP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.810	122.17	5.187	131.75	0.060	1.52	1/4
JF045XP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	4.965	126.11	5.531	140.49	0.080	2.03	3/8
JG045XP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.120	130.05	5.875	149.23	0.080	2.03	1/2
JA047XP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.905	124.59	5.093	129.36	0.025	0.64	1/8
JB047XP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.944	125.58	5.180	131.57	0.032	0.81	5/32
JC047XP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	4.983	126.57	5.266	133.76	0.040	1.02	3/16
JD047XP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.060	128.52	5.437	138.10	0.060	1.52	1/4
JF047XP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.215	132.46	5.781	146.84	0.080	2.03	3/8
JG047XP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.370	136.40	6.090	154.69	0.080	2.03	1/2
JA050XP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.155	130.94	5.343	135.71	0.025	0.64	1/8
JB050XP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.194	131.93	5.430	137.92	0.032	0.81	5/32
JC050XP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.233	132.92	5.516	140.11	0.040	1.02	3/16
JD050XP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.310	134.87	5.687	144.45	0.060	1.52	1/4
JF050XP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.465	138.81	6.031	153.19	0.080	2.03	3/8
JG050XP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.620	142.25	6.375	161.93	0.080	2.03	1/2
JA055XP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.655	143.64	5.843	148.41	0.025	0.64	1/8
JB055XP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.694	144.63	5.930	150.62	0.032	0.81	5/32
JC055XP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.733	145.62	6.016	152.81	0.040	1.02	3/16
JD055XP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.810	147.57	6.187	157.15	0.060	1.52	1/4
JF055XP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	5.965	151.51	6.531	165.89	0.080	2.03	3/8
JG055XP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.120	155.45	6.875	174.63	0.080	2.03	1/2

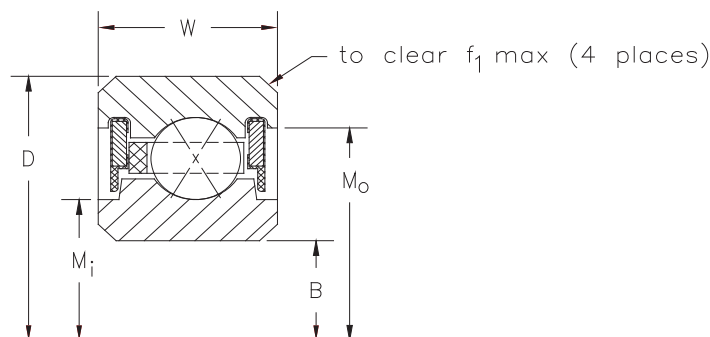


	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	27	0.10	0.045	680	3,020	514	2,290	1,710	7,606	1,230	5,470	770	90	550	60	5,330
	23	0.16	0.073	930	4,140	758	3,370	2,340	10,410	1,740	7,740	1,080	120	800	90	5,190
	33	0.13	0.059	830	3,690	583	2,590	2,090	9,300	1,320	5,870	1,150	130	730	80	4,360
	28	0.20	0.091	1,140	5,070	848	3,770	2,840	12,630	1,880	8,360	1,600	180	1,060	120	4,270
	39	0.15	0.068	990	4,400	643	2,860	2,470	10,990	1,410	6,270	1,600	180	920	100	3,690
	33	0.24	0.109	1,340	5,960	933	4,150	3,350	14,900	1,990	8,850	2,220	250	1,320	150	3,620
	45	0.18	0.082	1,140	5,070	701	3,120	2,850	12,680	1,480	6,580	2,130	240	1,110	130	3,200
	38	0.27	0.122	1,540	6,850	1,014	4,510	3,860	17,170	2,100	9,340	2,940	330	1,600	180	3,150
	51	0.19	0.086	1,290	5,740	756	3,363	3,220	14,323	1,550	6,890	2,740	310	1,320	150	2,820
	43	0.30	0.136	1,750	7,780	1,091	4,850	4,370	19,440	2,210	9,830	3,770	430	1,900	210	2,780
	35	0.45	0.204	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,740
	27	0.78	0.354	3,080	13,700	2,311	10,280	7,700	34,250	4,890	21,750	6,930	780	4,400	500	2,670
	19	1.90	0.862	5,360	23,840	4,665	20,750	13,400	59,610	8,830	39,280	12,730	1,440	8,390	950	2,530
	15	3.60	1.633	8,210	36,520	7,979	35,490	20,520	91,280	15,150	67,390	20,520	2,320	15,150	1,710	2,400
	54	0.20	0.091	1,370	6,090	783	3,480	3,410	15,170	1,590	7,070	3,070	350	1,430	160	2,670
	45	0.31	0.141	1,830	8,140	1,120	4,980	4,570	20,330	2,230	9,920	4,170	470	2,040	230	2,630
	37	0.47	0.213	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,590
	28	0.83	0.376	3,190	14,190	2,355	10,480	7,980	35,500	4,920	21,890	7,580	860	4,670	530	2,530
	20	2.00	0.907	5,640	25,090	4,795	21,330	14,110	62,760	8,990	39,990	14,110	1,590	8,993	1,020	2,400
	15	3.80	1.724	8,210	36,520	7,917	35,220	20,520	91,280	15,150	67,390	21,550	2,430	15,910	1,800	2,290
	57	0.22	0.100	1,440	6,410	809	3,600	3,600	16,010	1,610	7,160	3,420	390	1,530	170	2,530
	48	0.33	0.150	1,950	8,670	1,165	5,180	4,880	21,710	2,300	10,230	4,690	530	2,220	250	2,490
	39	0.48	0.218	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,460
	30	0.88	0.399	3,420	15,210	2,454	10,920	8,550	38,030	5,080	22,600	8,550	970	5,080	570	2,400
	21	2.10	0.953	5,930	26,380	4,923	21,900	14,810	65,880	9,180	40,830	15,550	1,760	9,695	1,100	2,290
	16	4.00	1.814	8,760	38,970	8,205	36,500	21,890	97,370	15,820	70,370	24,080	2,720	17,400	1,970	2,180
	60	0.23	0.104	1,520	6,760	834	3,710	3,790	16,860	1,650	7,340	3,790	430	1,650	190	2,400
	50	0.34	0.154	2,030	9,030	1,193	5,310	5,080	22,600	2,310	10,280	5,140	580	2,340	260	2,370
	41	0.50	0.227	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	2,340
	31	0.94	0.426	3,530	15,700	2,496	11,100	8,840	39,320	5,130	22,820	9,280	1,050	5,380	610	2,290
	22	2.20	0.998	6,210	27,620	5,048	22,450	15,520	69,040	9,380	41,720	17,070	1,930	10,416	1,180	2,180
	17	4.10	1.860	9,300	41,370	8,487	37,750	23,260	103,470	16,470	73,260	26,740	3,020	18,940	2,140	2,090
	63	0.24	0.109	1,590	7,070	859	3,821	3,980	17,700	1,680	7,470	4,180	470	1,760	200	2,290
	53	0.38	0.172	2,150	9,560	1,236	5,500	5,380	23,930	2,380	10,590	5,720	650	2,520	280	2,260
	43	0.58	0.263	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	2,230
	33	1.00	0.454	3,760	16,730	2,592	11,530	9,410	41,860	5,270	23,440	10,350	1,170	5,800	660	2,180
	23	2.30	1.043	6,490	28,870	5,172	23,010	16,220	72,150	9,520	42,350	18,660	2,110	11,157	1,260	2,090
	18	4.30	1.950	9,850	43,810	8,762	38,980	24,620	109,520	17,110	76,110	29,550	3,340	20,530	2,320	2,000
	69	0.25	0.113	1,750	7,780	908	4,040	4,360	19,390	1,720	7,650	5,020	570	1,970	220	2,090
	58	0.41	0.186	2,360	10,500	1,304	5,800	5,890	26,200	2,460	10,940	6,850	770	2,860	320	2,060
	47	0.59	0.268	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	2,040
	36	1.06	0.481	4,100	18,240	2,725	12,120	10,260	45,640	5,450	24,240	12,310	1,390	6,540	740	2,000
	25	2.50	1.134	7,050	31,360	5,415	24,090	17,630	78,420	9,820	43,680	22,040	2,490	12,696	1,430	1,920
	19	4.70	2.132	10,400	46,260	8,979	39,940	25,990	115,610	17,460	77,670	33,790	3,820	22,700	2,560	1,850

SEALED (MOLDED) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS

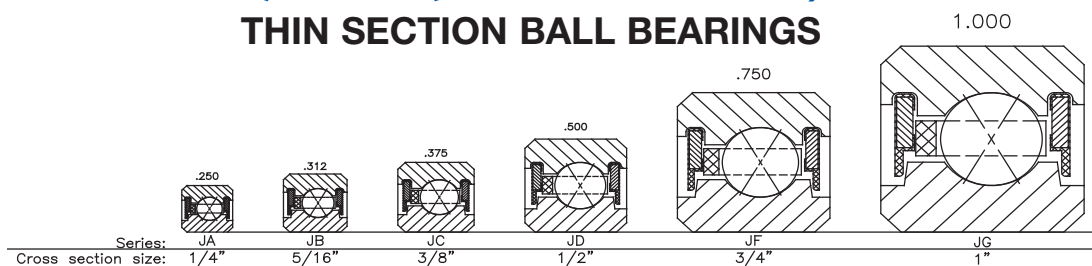


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
JA060XP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.155	156.34	6.343	161.11	0.025	0.64	1/8
JB060XP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.194	157.33	6.430	163.32	0.032	0.81	5/32
JC060XP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.233	158.32	6.516	165.51	0.040	1.02	3/16
JD060XP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.310	160.27	6.687	169.85	0.060	1.52	1/4
JF060XP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.465	164.21	7.031	178.59	0.080	2.03	3/8
JG060XP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.620	168.15	7.375	187.33	0.080	2.03	1/2
JA065XP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.655	169.04	6.843	173.81	0.025	0.64	1/8
JB065XP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.694	170.03	6.930	176.02	0.032	0.81	5/32
JC065XP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.733	171.02	7.016	178.21	0.040	1.02	3/16
JD065XP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.810	172.97	7.187	182.55	0.060	1.52	1/4
JF065XP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	6.965	176.91	7.531	191.29	0.080	2.03	3/8
JG065XP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.120	180.85	7.875	200.03	0.080	2.03	1/2
JA070XP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.155	181.74	7.343	186.51	0.025	0.64	1/8
JB070XP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.194	182.73	7.430	188.72	0.032	0.81	5/32
JC070XP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.233	183.72	7.516	190.91	0.040	1.02	3/16
JD070XP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.310	185.67	7.687	195.25	0.060	1.52	1/4
JF070XP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.465	189.61	8.031	203.99	0.080	2.03	3/8
JG070XP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.620	193.55	8.375	212.73	0.080	2.03	1/2
JA075XP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.655	194.44	7.843	199.21	0.025	0.64	1/8
JB075XP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.694	195.43	7.930	201.42	0.032	0.81	5/32
JC075XP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.733	196.42	8.016	203.61	0.040	1.02	3/16
JD075XP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.810	198.37	8.187	207.95	0.060	1.52	1/4
JF075XP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	7.965	202.31	8.531	216.69	0.080	2.03	3/8
JG075XP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.120	206.25	8.875	225.43	0.080	2.03	1/2
JA080XP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.155	207.14	8.343	211.91	0.025	0.64	1/8
JB080XP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.194	208.13	8.430	214.12	0.032	0.81	5/32
JC080XP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.233	209.12	8.516	216.31	0.040	1.02	3/16
JD080XP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.310	211.07	8.687	220.65	0.060	1.52	1/4
JF080XP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.465	215.01	9.031	229.39	0.080	2.03	3/8
JG080XP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.620	218.95	9.375	238.13	0.080	2.03	1/2
JA090XP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.155	232.54	9.343	237.31	0.025	0.64	1/8
JB090XP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.194	233.53	9.430	239.52	0.032	0.81	5/32
JC090XP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.233	234.52	9.516	241.71	0.040	1.02	3/16
JD090XP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.310	236.47	9.687	246.05	0.060	1.52	1/4
JF090XP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.465	240.41	10.031	254.79	0.080	2.03	3/8
JG090XP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.620	244.35	10.375	263.53	0.080	2.03	1/2
JA100XP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.155	257.94	10.343	262.71	0.025	0.64	1/8
JB100XP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.194	258.93	10.430	264.92	0.032	0.81	5/32
JC100XP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.233	259.92	10.516	267.11	0.040	1.02	3/16
JD100XP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.310	261.87	10.687	271.45	0.060	1.52	1/4
JF100XP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.465	265.81	11.031	280.91	0.080	2.03	3/8
JG100XP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.620	269.75	11.375	288.93	0.080	2.03	1/2
JA110XP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.155	283.34	11.343	288.11	0.025	0.64	1/8
JB110XP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.194	284.33	11.430	290.32	0.032	0.81	5/32

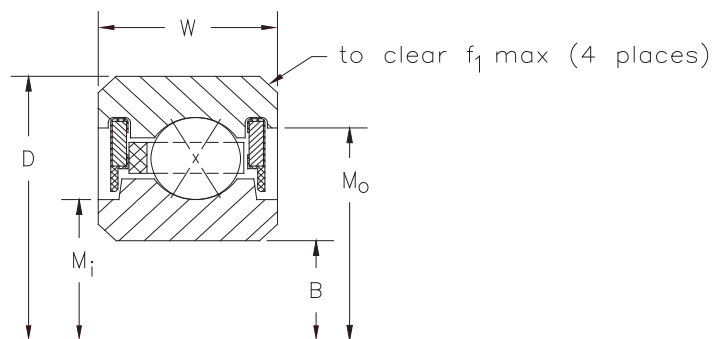


	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	75	0.28	0.127	1,900	8,452	955	4,250	4,740	21,085	1,780	7,920	5,930	670	2,240	250	1,920
	63	0.44	0.200	2,560	11,390	1,371	6,100	6,400	28,470	2,540	11,300	8,080	910	3,247	370	1,900
	51	0.63	0.286	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,880
	39	1.16	0.526	4,450	19,790	2,855	12,700	11,120	49,460	5,610	24,950	14,450	1,630	7,290	820	1,850
	27	2.70	1.225	7,620	33,900	5,651	25,140	19,050	84,740	10,150	45,150	25,710	2,900	14,311	1,620	1,780
	21	5.10	2.313	11,490	51,110	9,503	42,270	28,730	127,800	18,290	81,360	40,220	4,540	25,610	2,890	1,710
	81	0.30	0.136	2,050	9119	1,001	4,450	5,120	22,775	1,840	8,180	6,910	780	2,535	290	1,780
	68	0.47	0.213	2,760	12,280	1,435	6,380	6,910	30,740	2,590	11,520	9,410	1,060	3,668	410	1,760
	55	0.68	0.308	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,750
	42	1.22	0.553	4,790	21,310	2,980	13,260	11,970	53,250	5,740	25,530	16,760	1,890	8,040	910	1,710
	29	2.90	1.315	8,180	36,390	5,880	26,160	20,460	91,010	10,380	46,170	29,660	3,350	15,993	1,810	1,660
	22	5.40	2.449	12,040	53,560	9,713	43,210	30,100	133,890	18,520	82,380	45,140	5,100	27,770	3,140	1,600
	87	0.31	0.141	2,200	9,790	1,046	4,650	5,500	24,470	1,850	8,230	7,980	900	2,844	320	1,660
	73	0.50	0.227	2,970	13,210	1,498	6,660	7,420	33,010	2,660	11,830	10,850	1,230	4,109	460	1,640
	59	0.73	0.331	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,630
	45	1.31	0.594	5,130	22,820	3,103	13,800	12,830	57,070	5,880	26,160	19,240	2,170	8,810	1,000	1,600
	31	3.20	1.451	8,750	38,920	6,103	27,150	21,870	97,280	10,640	47,330	33,890	3,830	17,744	2,000	1,550
	24	5.80	2.631	13,130	58,410	10,208	45,410	32,830	146,040	19,330	85,980	52,530	5,940	30,930	3,490	1,500
	93	0.34	0.154	2,350	10,450	1,089	4,840	5,880	26,160	1,890	8,410	9,120	1,030	3,165	360	1,550
	78	0.53	0.240	3,170	14,100	1,559	6,930	7,920	35,230	2,730	12,140	12,380	1,400	4,568	520	1,540
	63	0.78	0.354	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,520
	48	1.41	0.640	5,470	24,330	3,222	14,330	13,680	60,850	6,060	26,960	21,890	2,470	9,700	1,100	1,500
	33	3.40	1.542	9,310	41,410	6,323	28,130	23,280	103,550	10,930	48,620	38,410	4,340	19,568	2,210	1,450
	25	6.10	2.767	13,680	60,850	10,410	46,310	34,200	152,130	19,460	86,560	58,140	6,570	33,196	3,750	1,410
	99	0.38	0.172	2,500	11,120	1,131	5,030	6,260	27,850	1,970	8,760	10,330	1,170	3,499	400	1,450
	83	0.57	0.259	3,370	14,990	1,618	7,200	8,430	37,500	2,790	12,410	14,020	1,580	5,045	570	1,440
	67	0.84	0.381	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,430
	51	1.53	0.694	5,810	25,840	3,338	14,850	14,540	64,680	6,170	27,450	24,710	2,790	10,643	1,200	1,410
	35	3.50	1.588	9,880	43,950	6,535	29,070	24,690	109,830	11,190	49,780	43,200	4,880	21,453	2,420	1,370
	27	6.50	2.948	14,770	65,700	10,882	48,410	36,940	164,320	20,230	89,990	66,480	7,510	36,743	4,150	1,330
	111	0.44	0.200	2,810	12,500	1,212	5,390	7,020	31,230	2,040	9,070	12,990	1,470	4,204	470	1,300
	93	0.66	0.299	3,780	16,810	1,732	7,700	9,450	42,040	2,890	12,860	17,600	1,990	6,050	680	1,290
	75	0.94	0.426	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,280
	57	1.72	0.780	6,500	28,910	3,561	15,840	16,250	72,280	6,410	28,510	30,870	3,490	12,693	1,430	1,260
	39	3.90	1.769	11,000	48,930	6,947	30,900	27,510	122,370	11,630	51,730	53,640	6,060	25,410	2,870	1,230
	30	7.20	3.266	16,420	73,040	11,526	51,270	41,040	182,560	21,020	93,500	82,080	9,270	43,240	4,890	1,200
	123	0.50	0.227	3,110	13,830	1,289	5,730	7,780	34,610	2,180	9,700	15,940	1,800	4,956	560	1,170
	103	0.73	0.331	4,190	18,640	1,841	8,190	10,460	46,530	3,080	13,700	21,580	2,440	7,121	800	1,160
	83	1.06	0.481	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	1,160
	63	1.88	0.853	7,180	31,940	3,776	16,800	17,960	79,890	6,680	29,710	37,710	4,260	14,872	1,680	1,140
	43	4.30	1.950	12,130	53,960	7,342	32,660	30,330	134,910	12,100	53,820	65,210	7,370	29,608	3,350	1,120
	33	7.90	3.583	18,060	80,330	12,147	54,030	45,140	200,790	21,790	96,930	99,320	11,220	50,124	5,660	1,090
	135	0.52	0.236	3,410	15,170	1,362	6,060	8,540	37,990	2,320	10,320	19,210	2,170	5,750	650	1,070
	113	0.75	0.340	4,590	20,420	1,945	8,650	11,480	51,070	3,280	14,590	25,970	2,930	8,254	930	1,060

SEALED (MOLDED) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS

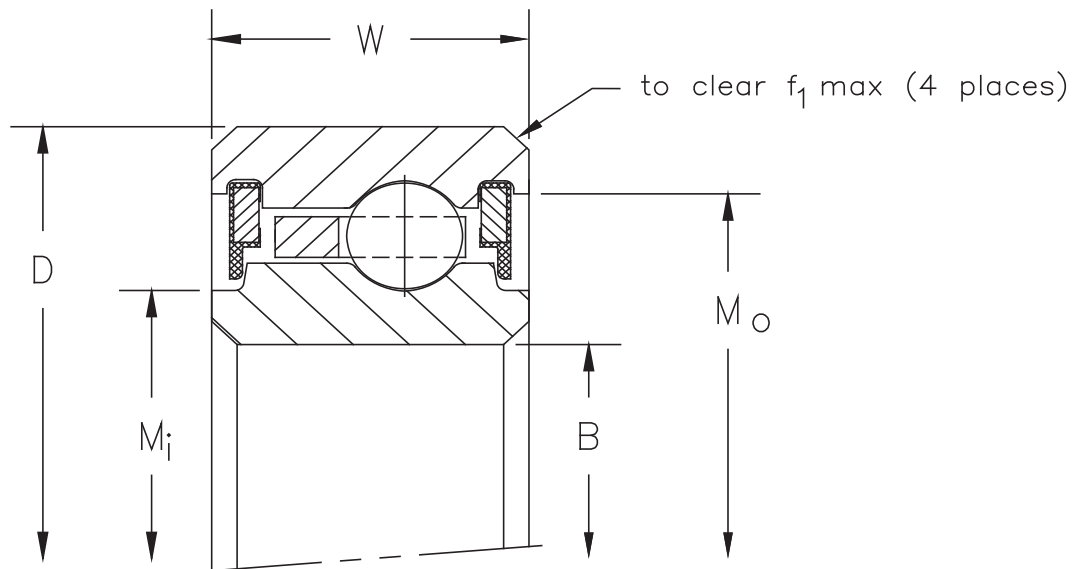


PART NUMBER*	NOMINAL DIMENSIONS											
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet	Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
JC110XP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.233	285.32	11.516	292.51	0.040	3/16
JD110XP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.310	287.27	11.687	296.85	0.060	1/4
JF110XP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.465	291.21	12.031	305.59	0.080	3/8
JG110XP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.620	295.15	12.375	314.33	0.080	1/2
JA120XP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.155	308.74	12.343	313.51	0.025	1/8
JB120XP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.194	309.73	12.430	315.72	0.032	5/32
JC120XP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.233	310.72	12.516	317.91	0.040	3/16
JD120XP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.310	312.67	12.687	322.25	0.060	1/4
JF120XP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.465	316.61	13.031	330.99	0.080	3/8
JG120XP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	13.620	320.55	13.375	339.73	0.080	1/2



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
				lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	91	1.16	0.526	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	1,050
	69	2.06	0.934	7,870	35,010	3,981	17,710	19,670	87,500	6,830	30,380	45,230	5,110	17,173	1,940	1,040
	47	4.80	2.177	13,260	58,980	7,721	34,340	33,150	147,460	12,490	55,560	77,910	8,800	34,032	3,850	1,020
	36	8.60	3.901	19,700	87,630	12,739	56,670	49,250	219,070	22,530	100,220	118,200	13,350	57,347	6,480	1,000
	147	0.56	0.254	3,720	16,550	1,433	6,370	9,300	41,370	2,450	10,900	22,770	2,570	6,587	740	980
	123	0.83	0.376	5,000	22,240	2,045	9,100	12,500	55,600	3,470	15,440	30,770	3,480	9,446	1,070	970
	99	1.25	0.567	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	970
	75	2.25	1.021	8,550	38,030	4,178	18,580	21,380	95,100	7,080	31,490	53,440	6,040	19,590	2,210	960
	51	5.20	2.359	14,390	64,010	8,084	35,960	35,970	160,000	13,190	58,670	91,730	10,360	38,666	4,370	940
	39	9.30	4.218	21,340	94,930	13,315	59,230	53,350	237,310	23,180	103,110	138,700	15,670	64,935	7,340	920

SEALED (MOLDED) RADIAL CONTACT C-TYPE THIN SECTION BALL BEARINGS

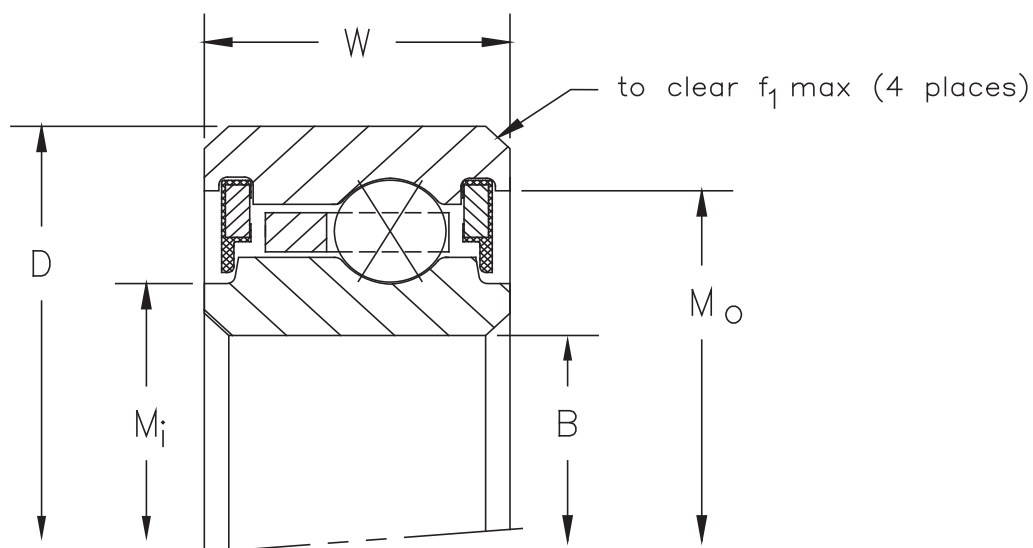


PART NUMBER*	NOMINAL DIMENSIONS													
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
JHA10CLO	1.000	25.400	1.375	34.925	250	6.350	1.093	27.762	1.260	32.004	0.015	0.38	3/32	
JHA15CLO	1.500	38.100	1.875	47.625	250	6.350	1.593	40.462	1.760	44.704	0.015	0.38	3/32	
JHA17CLO	1.750	44.450	2.125	53.975	250	6.350	1.843	46.812	2.010	51.054	0.015	0.38	3/32	



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	22	0.035	0.016	290	1,290	300	1,330	480	2,140	880	3,910	110	10	210	25	16,840
	30	0.052	0.024	400	1,780	350	1,560	650	2,890	1,020	4,540	220	25	350	40	11,850
	33	0.060	0.027	540	2,402	455	2,024	865	3,847	1,330	5,916	355	40	545	61	10,320

SEALED (MOLDED) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS

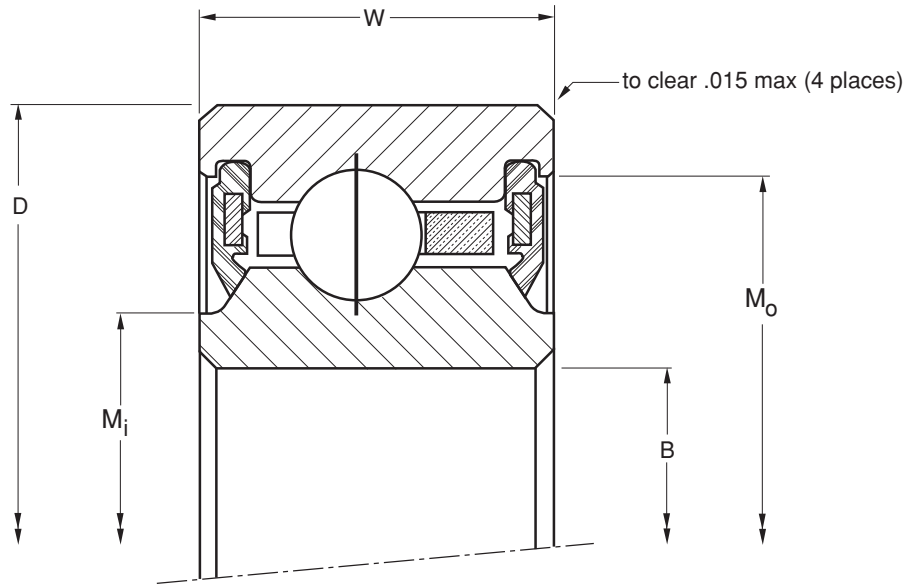


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o			f ₁ Housing Fillet	Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	mm
JHA10XL0	1.000	25.400	1.375	34.925	250	6.350	1.093	27.762	1.260	32.004	0.015	0.38	3/32
JHA15XL0	1.500	38.100	1.875	47.625	250	6.350	1.593	40.462	1.760	44.704	0.015	0.38	3/32
JHA17XL0	1.750	44.450	2.125	53.975	250	6.350	1.843	46.812	2.010	51.054	0.015	0.38	3/32



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	22	0.035	0.016	290	1,290	270	1,200	730	3,250	680	3,020	170	20	160	20	10,110
	30	0.052	0.024	400	1,779	301	1,380	1,000	4,450	770	3,430	340	40	260	30	7,110
	33	0.060	0.027	540	2,402	412	1,833	1,355	6,027	1,000	4,448	555	63	405	46	6,190

SEALED (MOLDED) RADIAL CONTACT, C-TYPE JU-SERIES THIN SECTION BALL BEARINGS

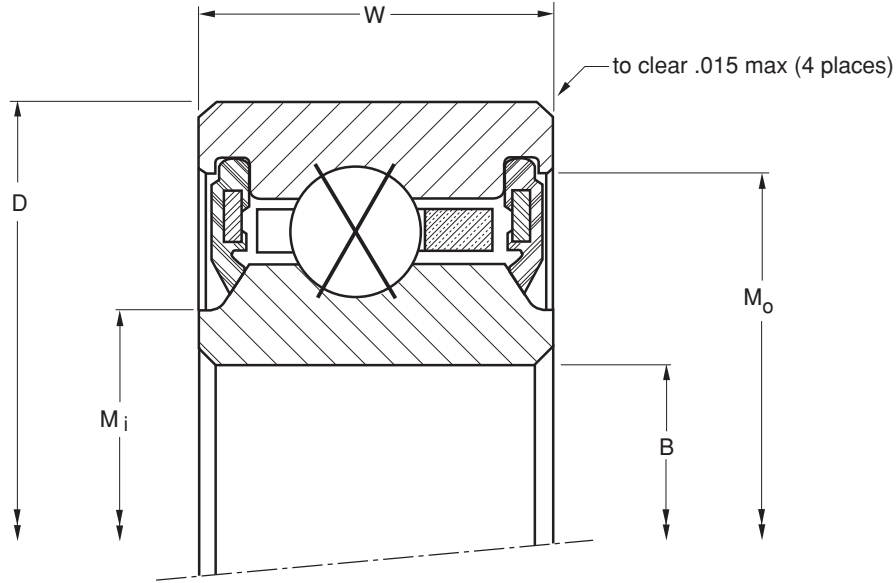


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o			Ball Diameter	Ball Quantity
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	
JU040CP0	4.0000	101.600	4.7500	120.650	0.5000	12.700	4.155	105.54	4.550	115.57	3/16	35	
JU042CP0	4.2500	107.950	5.0000	127.000	0.5000	12.700	4.405	111.89	4.800	121.92	3/16	37	
JU045CP0	4.5000	114.300	5.2500	133.350	0.5000	12.700	4.655	118.24	5.050	128.27	3/16	39	
JU047CP0	4.7500	120.650	5.5000	139.700	0.5000	12.700	4.905	124.59	5.300	134.62	3/16	41	
JU050CP0	5.0000	127.000	5.7500	146.050	0.5000	12.700	5.155	130.94	5.550	140.97	3/16	43	
JU055CP0	5.5000	139.700	6.2500	158.750	0.5000	12.700	5.655	143.64	6.050	153.67	3/16	47	
JU060CP0	6.0000	152.400	6.7500	171.450	0.5000	12.700	6.155	156.34	6.550	166.37	3/16	51	
JU065CP0	6.5000	165.100	7.2500	184.150	0.5000	12.700	6.655	169.04	7.050	179.07	3/16	55	
JU070CP0	7.0000	177.800	7.7500	196.850	0.5000	12.700	7.155	181.74	7.550	191.77	3/16	59	
JU075CP0	7.5000	190.500	8.2500	209.550	0.5000	12.700	7.655	194.44	8.050	204.47	3/16	63	
JU080CP0	8.0000	203.200	8.7500	222.250	0.5000	12.700	8.155	207.14	8.550	217.17	3/16	67	
JU090CP0	9.0000	228.600	9.7500	247.650	0.5000	12.700	9.155	232.54	9.550	242.57	3/16	75	
JU100CP0	10.0000	254.000	10.7500	273.050	0.5000	12.700	10.155	257.94	10.550	267.97	3/16	83	
JU110CP0	11.0000	279.400	11.7500	298.450	0.5000	12.700	11.155	283.34	11.550	293.37	3/16	91	
JU120CP0	12.0000	304.800	12.7500	323.850	0.5000	12.700	12.155	308.74	12.550	318.77	3/16	99	



	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
			Radial				Thrust				Moment				
			Static		Dynamic		Static		Dynamic		Static			Dynamic	
	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	0.55	0.249	2,100	9,340	1,290	5,740	3,110	13,830	3,740	16,640	2,720	310	3,280	370	3,660
	0.58	0.263	2,220	9,880	1,320	5,870	3,270	14,550	3,830	17,040	3,030	340	3,550	400	3,460
	0.61	0.277	2,340	10,410	1,350	6,010	3,440	15,300	3,910	17,390	3,360	380	3,810	430	3,280
	0.65	0.295	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	4,070	460	3,120
	0.68	0.308	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	4,340	490	2,980
	0.74	0.336	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	4,900	550	2,720
	0.81	0.367	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	5,510	620	2,510
	0.87	0.395	3,315	14,750	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	6,110	690	2,330
	0.93	0.422	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	6,710	760	2,170
	0.99	0.449	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	7,300	820	2,030
	1.06	0.481	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	7,990	900	1,910
	1.18	0.535	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	9,410	1,060	1,700
	1.31	0.594	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	10,730	1,210	1,540
	1.43	0.649	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,410
	1.56	0.708	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,300

SEALED (MOLDED) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS

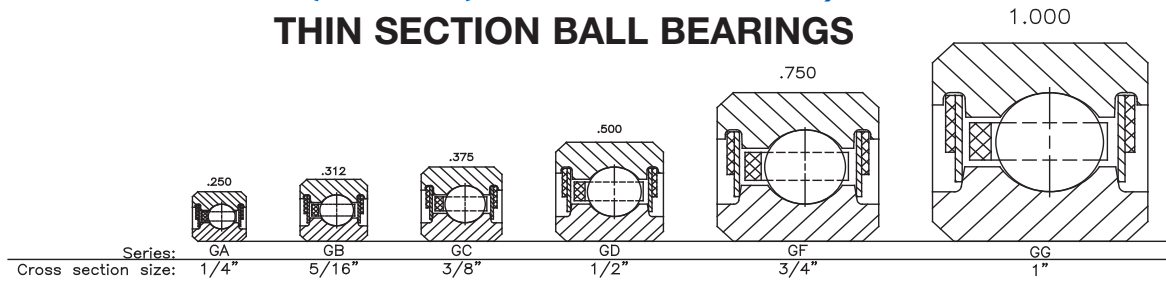


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o			Ball Diameter	Ball Quantity
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	
JU040XP0	4.0000	101.600	4.7500	120.650	0.5000	12.700	4.155	105.54	4.550	115.57	3/16	35	
JU042XP0	4.2500	107.950	5.0000	127.000	0.5000	12.700	4.405	111.89	4.800	121.92	3/16	37	
JU045XP0	4.5000	114.300	5.2500	133.350	0.5000	12.700	4.655	118.24	5.050	128.27	3/16	39	
JU047XP0	4.7500	120.650	5.5000	139.700	0.5000	12.700	4.905	124.59	5.300	134.62	3/16	41	
JU050XP0	5.0000	127.000	5.7500	146.050	0.5000	12.700	5.155	130.94	5.550	140.97	3/16	43	
JU055XP0	5.5000	139.700	6.2500	158.750	0.5000	12.700	5.655	143.64	6.050	153.67	3/16	47	
JU060XP0	6.0000	152.400	6.7500	171.450	0.5000	12.700	6.155	156.34	6.550	166.37	3/16	51	
JU065XP0	6.5000	165.100	7.2500	184.150	0.5000	12.700	6.655	169.04	7.050	179.07	3/16	55	
JU070XP0	7.0000	177.800	7.7500	196.850	0.5000	12.700	7.155	181.74	7.550	191.77	3/16	59	
JU075XP0	7.5000	190.500	8.2500	209.550	0.5000	12.700	7.655	194.44	8.050	204.47	3/16	63	
JU080XP0	8.0000	203.200	8.7500	222.250	0.5000	12.700	8.155	207.14	8.550	217.17	3/16	67	
JU090XP0	9.0000	228.600	9.7500	247.650	0.5000	12.700	9.155	232.54	9.550	242.57	3/16	75	
JU100XP0	10.0000	254.000	10.7500	273.050	0.5000	12.700	10.155	257.94	10.550	267.97	3/16	83	
JU110XP0	11.0000	279.400	11.7500	298.450	0.5000	12.700	11.155	283.34	11.550	293.37	3/16	91	
JU120XP0	12.0000	304.800	12.7500	323.850	0.5000	12.700	12.155	308.74	12.550	318.77	3/16	99	

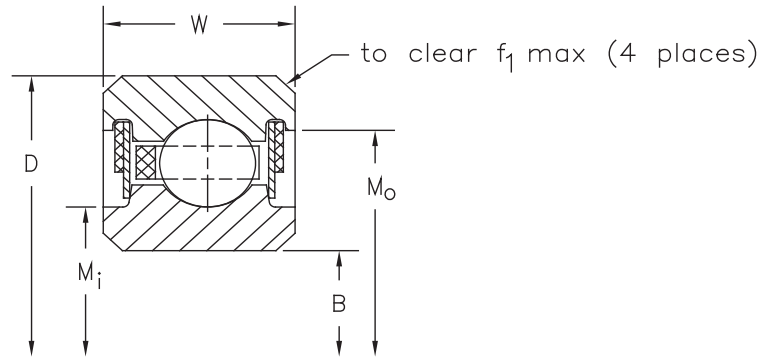


	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
			Radial				Thrust				Moment				
			Static		Dynamic		Static		Dynamic		Static			Dynamic	
	lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm		lbf - in	Nm
	0.55	0.249	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,280
	0.58	0.263	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,160
	0.61	0.277	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,050
	0.65	0.295	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	1,950
	0.68	0.308	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	1,860
	0.74	0.336	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	1,700
	0.81	0.367	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,570
	0.87	0.395	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,460
	0.93	0.422	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,360
	0.99	0.449	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,270
	1.06	0.481	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,190
	1.18	0.535	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,070
	1.31	0.594	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	970
	1.43	0.649	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	880
	1.56	0.708	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	810

SEALED (COMBO) RADIAL CONTACT, C-TYPE THIN SECTION BALL BEARINGS

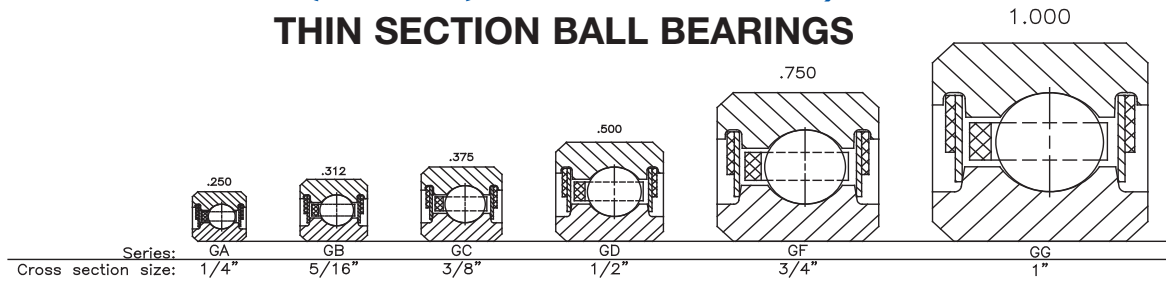


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
GA020CP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.155	54.74	2.343	59.51	0.025	0.64	1/8
GB020CP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.194	55.73	2.430	61.72	0.032	0.81	5/32
GA025CP0	2.5000	63.500	3.3000	76.200	0.2500	6.350	2.655	67.44	2.843	72.21	0.025	0.64	1/8
GB025CP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.694	68.43	2.930	74.42	0.032	0.81	5/32
GA030CP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.155	80.14	3.343	84.91	0.025	0.64	1/8
GB030CP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.194	81.13	3.430	87.12	0.032	0.81	5/32
GA035CP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.655	92.84	3.843	97.61	0.025	0.64	1/8
GB035CP0*	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.694	93.83	3.930	99.82	0.032	0.81	5/32
GA040CP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.155	105.54	4.343	110.31	0.025	0.64	1/8
GB040CP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.194	106.53	4.430	112.52	0.032	0.81	5/32
GC040CP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.233	107.52	4.516	114.71	0.040	1.02	3/16
GD040CP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.310	109.47	4.687	119.05	0.060	1.52	1/4
GF040CP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.465	113.41	5.031	127.79	0.080	2.03	3/8
GG040CP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.620	117.35	5.375	136.53	0.080	2.03	1/2
GA042CP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.405	111.89	4.593	116.66	0.025	0.64	1/8
GB042CP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.444	112.88	4.680	118.87	0.032	0.81	5/32
GC042CP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.483	113.87	4.766	121.06	0.040	1.02	3/16
GD042CP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.560	115.82	4.937	125.40	0.060	1.52	1/4
GF042CP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.715	119.76	5.281	134.14	0.080	2.03	3/8
GG042CP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	4.870	123.70	5.590	141.99	0.080	2.03	1/2
GA045CP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.655	118.24	4.843	123.01	0.025	0.64	1/8
GB045CP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.694	119.23	4.930	125.22	0.032	0.81	5/32
GC045CP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.733	120.22	5.016	127.41	0.040	1.02	3/16
GD045CP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.810	122.17	5.187	131.75	0.060	1.52	1/4
GF045CP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	4.965	126.11	5.531	140.49	0.080	2.03	3/8
GG045CP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.120	130.05	5.875	149.23	0.080	2.03	1/2
GA047CP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.905	124.59	5.093	129.36	0.025	0.64	1/8
GB047CP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.944	125.58	5.180	131.57	0.032	0.81	5/32
GC047CP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	4.983	126.57	5.266	133.76	0.040	1.02	3/16
GD047CP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.060	128.52	5.437	138.10	0.060	1.52	1/4
GF047CP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.215	132.46	5.781	146.84	0.080	2.03	3/8
GG047CP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.370	136.40	6.090	154.69	0.080	2.03	1/2
GA050CP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.155	130.94	5.343	135.71	0.025	0.64	1/8
GB050CP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.194	131.93	5.430	137.92	0.032	0.81	5/32
GC050CP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.233	132.92	5.516	140.11	0.040	1.02	3/16
GD050CP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.310	134.87	5.687	144.45	0.060	1.52	1/4
GF050CP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.465	138.81	6.031	153.19	0.080	2.03	3/8
GG050CP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.620	142.25	6.375	161.93	0.080	2.03	1/2
GA055CP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.655	143.64	5.843	148.41	0.025	0.64	1/8
GB055CP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.694	144.63	5.930	150.62	0.032	0.81	5/32
GC055CP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.733	145.62	6.016	152.81	0.040	1.02	3/16
GD055CP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.810	147.57	6.187	157.15	0.060	1.52	1/4
GF055CP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	5.965	151.51	6.531	165.89	0.080	2.03	3/8
GG055CP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.120	155.45	6.875	174.63	0.080	2.03	1/2

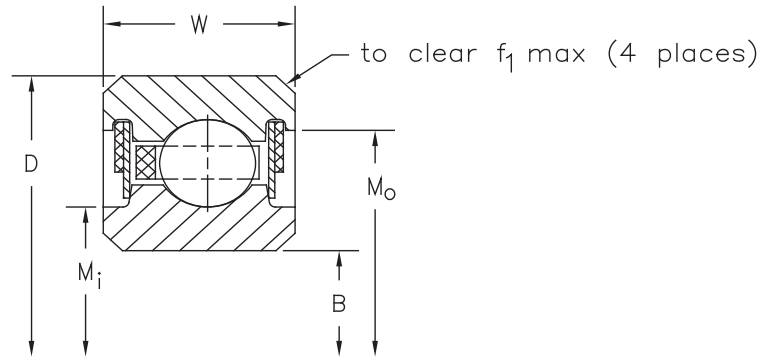


	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm	
	27	0.10	0.045	680	3,025	393	1,748	1,080	4,800	1,640	7,300	490	55	740	80	8,890
	23	0.16	0.073	930	4,140	560	2,490	1,460	6,490	2,320	10,320	680	80	1,070	120	8,650
	33	0.13	0.059	830	3,692	442	1,966	1,310	5,830	1,770	7,870	720	80	970	110	7,270
	28	0.20	0.091	1,140	5,070	610	2,710	1,750	7,780	2,510	11,170	990	110	1,410	160	7,110
	39	0.15	0.068	990	4,404	487	2,166	1,530	6,810	1,880	8,360	990	110	1,220	140	6,150
	33	0.24	0.109	1,340	5,960	650	2,890	2,050	9,120	2,680	11,920	1,360	150	1,770	200	6,040
	45	0.18	0.082	1,140	5,071	530	2,358	1,750	7,780	1,990	8,850	1,320	150	1,490	170	5,330
	38	0.27	0.122	1,540	6,850	690	3,070	2,340	10,410	2,810	12,500	1,780	200	2,140	240	5,250
	51	0.19	0.086	1,290	5,738	571	2,540	1,980	8,810	2,080	9,250	1,680	190	1,770	200	4,710
	43	0.30	0.136	1,750	7,780	720	3,200	2,630	11,700	2,950	13,120	2,270	260	2,550	290	4,640
	35	0.45	0.204	2,100	9,340	1,020	4,540	3,110	13,830	3,740	16,640	2,720	310	3,280	370	4,570
	27	0.78	0.354	3,080	13,700	1,290	5,740	4,950	22,020	6,520	29,000	4,450	500	5,870	660	4,440
	19	1.90	0.862	5,360	23,840	2,250	10,010	7,980	35,500	11,420	50,800	7,580	860	10,850	1,230	4,210
	15	3.60	1.633	8,210	36,520	3,940	17,530	12,960	57,650	19,440	86,470	12,960	1,460	19,440	2,200	4,000
	54	0.20	0.091	1,370	6,094	591	2,629	2,090	9,300	2,110	9,390	1,880	210	1,900	210	4,440
	45	0.31	0.141	1,830	8,140	730	3,250	2,740	12,190	3,000	13,340	2,500	280	2,730	310	4,380
	37	0.47	0.213	2,220	9,880	1,030	4,580	3,270	14,550	3,830	17,040	3,030	340	3,550	400	4,320
	28	0.83	0.376	3,190	14,190	1,320	5,870	5,110	22,730	6,580	29,270	4,860	550	6,250	710	4,210
	20	2.00	0.907	5,640	25,090	2,270	10,100	8,400	37,370	11,810	52,530	8,400	950	11,810	1,330	4,000
	15	3.80	1.724	8,210	36,520	4,070	18,100	12,960	57,650	19,440	86,470	13,600	1,540	20,410	2,310	3,810
	57	0.22	0.100	1,440	6,405	610	2,713	2,200	9,790	2,170	9,650	2,090	240	2,060	230	4,210
	48	0.33	0.150	1,950	8,670	750	3,340	2,920	12,990	3,080	13,700	2,810	320	2,960	330	4,160
	39	0.48	0.218	2,340	10,410	1,060	4,720	3,440	15,300	3,910	17,390	3,360	380	3,810	430	4,100
	30	0.88	0.399	3,420	15,210	1,350	6,010	5,460	24,290	6,820	30,340	5,460	620	6,820	770	4,000
	21	2.10	0.953	5,930	26,380	2,350	10,450	8,820	39,230	12,200	54,270	9,270	1,050	12,810	1,450	3,810
	16	4.00	1.814	8,760	38,970	4,210	18,730	13,820	61,470	20,290	90,250	15,200	1,720	22,320	2,520	3,640
	60	0.23	0.104	1,520	6,760	760	3,380	2,310	10,280	2,220	9,880	2,310	260	2,220	250	4,000
	50	0.34	0.154	2,030	9,030	1,070	4,760	3,030	13,480	3,110	13,830	3,070	350	3,140	350	3,950
	41	0.50	0.227	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	4,070	460	3,900
	31	0.94	0.426	3,530	15,700	2,360	10,500	5,620	25,000	6,840	30,430	5,910	670	7,180	810	3,810
	22	2.20	0.998	6,210	27,620	4,310	19,170	9,220	41,010	12,490	55,560	10,140	1,150	13,740	1,550	3,640
	17	4.10	1.860	9,300	41,370	7,290	32,430	14,680	65,300	21,130	93,990	16,890	1,910	24,300	2,750	3,480
	63	0.24	0.109	1,590	7,073	648	2,882	2,420	10,760	2,240	9,960	2,540	290	2,350	270	3,810
	53	0.38	0.172	2,150	9,560	1,100	4,890	3,210	14,280	3,190	14,190	3,410	390	3,390	380	3,760
	43	0.58	0.263	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	4,340	490	3,720
	33	1.00	0.454	3,760	16,730	2,430	10,810	5,970	26,560	7,040	31,320	6,570	740	7,740	870	3,640
	23	2.30	1.043	6,490	28,870	4,380	19,480	9,600	42,700	12,710	56,540	11,050	1,250	14,620	1,650	3,480
	18	4.30	1.950	9,850	43,810	7,570	33,670	15,550	69,170	21,950	97,640	18,660	2,110	26,340	2,980	3,330
	69	0.25	0.113	1,750	7,784	685	3,047	2,650	11,790	2,320	10,320	3,040	340	2,660	300	3,480
	58	0.41	0.186	2,360	10,500	1,130	5,030	3,500	15,570	3,280	14,590	4,070	460	3,810	430	3,440
	47	0.59	0.268	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	4,900	550	3,400
	36	1.06	0.481	4,100	18,240	2,510	11,170	6,480	28,820	7,270	32,340	7,780	880	8,720	990	3,330
	25	2.50	1.134	7,050	31,360	4,540	20,190	10,370	46,130	13,170	58,580	12,970	1,470	16,460	1,860	3,200
	19	4.70	2.132	10,400	46,260	7,850	34,920	16,410	73,000	22,750	101,200	21,330	2,410	29,580	3,340	3,080

SEALED (COMBO) RADIAL CONTACT, C-TYPE THIN SECTION BALL BEARINGS

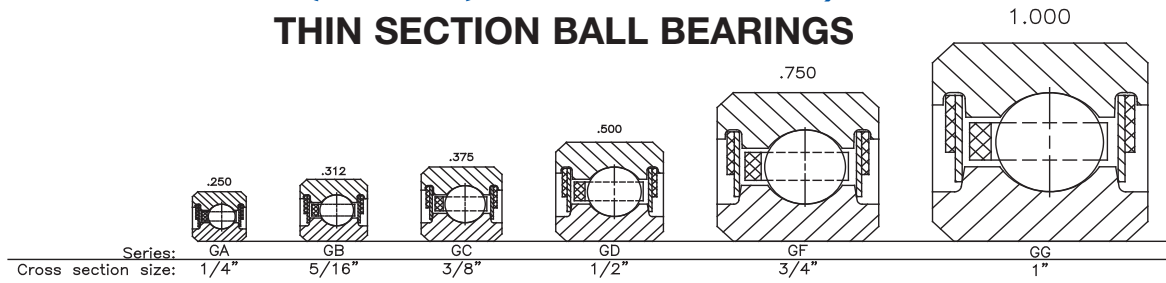


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
GA060CP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.155	156.34	6.343	161.11	0.025	0.64	1/8
GB060CP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.194	157.33	6.430	163.32	0.032	0.81	5/32
GC060CP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.233	158.32	6.516	165.51	0.040	1.02	3/16
GD060CP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.310	160.27	6.687	169.85	0.060	1.52	1/4
GF060CP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.465	164.21	7.031	178.59	0.080	2.03	3/8
GG060CP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.620	168.15	7.375	187.33	0.080	2.03	1/2
GA065CP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.655	169.04	6.843	173.81	0.025	0.64	1/8
GB065CP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.694	170.03	6.930	176.02	0.032	0.81	5/32
GC065CP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.733	171.02	7.016	178.21	0.040	1.02	3/16
GD065CP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.810	172.97	7.187	182.55	0.060	1.52	1/4
GF065CP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	6.965	176.91	7.531	191.29	0.080	2.03	3/8
GG065CP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.120	180.85	7.875	200.03	0.080	2.03	1/2
GA070CP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.155	181.74	7.343	186.51	0.025	0.64	1/8
GB070CP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.194	182.73	7.430	188.72	0.032	0.81	5/32
GC070CP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.233	183.72	7.516	190.91	0.040	1.02	3/16
GD070CP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.310	185.67	7.687	195.25	0.060	1.52	1/4
GF070CP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.465	189.61	8.031	203.99	0.080	2.03	3/8
GG070CP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.620	193.55	8.375	212.73	0.080	2.03	1/2
GA075CP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.655	194.44	7.843	199.21	0.025	0.64	1/8
GB075CP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.694	195.43	7.930	201.42	0.032	0.81	5/32
GC075CP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.733	196.42	8.016	203.61	0.040	1.02	3/16
GD075CP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.810	198.37	8.187	207.95	0.060	1.52	1/4
GF075CP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	7.965	202.31	8.531	216.69	0.080	2.03	3/8
GG075CP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.120	206.25	8.875	225.43	0.080	2.03	1/2
GA080CP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.155	207.14	8.343	211.91	0.025	0.64	1/8
GB080CP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.194	208.13	8.430	214.12	0.032	0.81	5/32
GC080CP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.233	209.12	8.516	216.31	0.040	1.02	3/16
GD080CP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.310	211.07	8.687	220.65	0.060	1.52	1/4
GF080CP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.465	215.01	9.031	229.39	0.080	2.03	3/8
GG080CP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.620	218.95	9.375	238.13	0.080	2.03	1/2
GA090CP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.155	232.54	9.343	237.31	0.025	0.64	1/8
GB090CP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.194	233.53	9.430	239.52	0.032	0.81	5/32
GC090CP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.233	234.52	9.516	241.71	0.040	1.02	3/16
GD090CP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.310	236.47	9.687	246.05	0.060	1.52	1/4
GF090CP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.465	240.41	10.031	254.79	0.080	2.03	3/8
GG090CP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.620	244.35	10.375	263.53	0.080	2.03	1/2
GA100CP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.155	257.94	10.343	262.71	0.025	0.64	1/8
GB100CP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.194	258.93	10.430	264.92	0.032	0.81	5/32
GC100CP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.233	259.92	10.516	267.11	0.040	1.02	3/16
GD100CP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.310	261.87	10.687	271.45	0.060	1.52	1/4
GF100CP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.465	265.81	11.031	280.91	0.080	2.03	3/8
GG100CP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.620	269.75	11.375	288.93	0.080	2.03	1/2
GA110CP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.155	283.34	11.343	288.11	0.025	0.64	1/8
GB110CP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.194	284.33	11.430	290.32	0.032	0.81	5/32

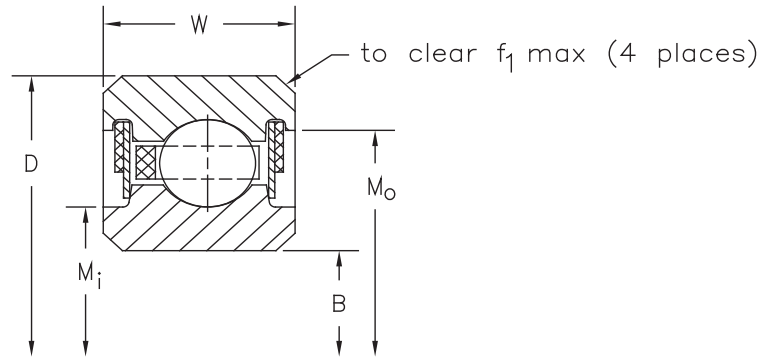


	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	75	0.28	0.127	1,900	8,450	830	3,690	2,870	12,770	2,420	10,760	3,590	410	3,020	340	3,200
	63	0.44	0.200	2,560	11,390	1,170	5,200	3,790	16,860	3,380	15,030	4,790	540	4,270	480	3,170
	51	0.63	0.286	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	5,510	620	3,140
	39	1.16	0.526	4,450	19,790	2,580	11,480	6,990	31,090	7,500	33,360	9,090	1,030	9,740	1,100	3,080
	27	2.70	1.225	7,620	33,900	4,660	20,730	11,130	49,510	13,530	60,180	15,030	1,700	18,260	2,060	2,960
	21	5.10	2.313	11,490	51,110	8,390	37,320	18,140	80,690	24,320	108,180	25,390	2,870	34,050	3,850	2,860
	81	0.30	0.136	2,050	9,120	850	3,780	3,100	13,790	2,450	10,900	4,180	470	3,310	370	2,960
	68	0.47	0.213	2,760	12,280	1,200	5,340	4,080	18,150	3,470	15,440	5,560	630	4,730	530	2,940
	55	0.68	0.308	3,310	14,720	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	6,110	690	2,910
	42	1.22	0.553	4,790	21,310	2,650	11,790	7,500	33,360	7,680	34,160	10,500	1,190	10,760	1,220	2,860
	29	2.90	1.315	8,180	36,390	4,790	21,310	11,900	52,930	13,900	61,830	17,250	1,950	20,160	2,280	2,760
	22	5.40	2.449	12,040	53,560	8,520	37,900	18,910	84,120	24,700	109,870	28,360	3,200	37,050	4,190	2,670
	87	0.31	0.141	2,200	9,790	870	3,870	3,320	14,770	2,520	11,210	4,810	540	3,660	410	2,760
	73	0.50	0.227	2,970	13,210	1,240	5,520	4,380	19,480	3,600	16,010	6,400	720	5,260	590	2,740
	59	0.73	0.331	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	6,710	760	2,710
	45	1.31	0.594	5,130	22,820	2,730	12,140	8,020	35,670	7,910	35,190	12,030	1,360	11,870	1,340	2,670
	31	3.20	1.451	8,750	38,920	4,920	21,890	12,670	56,360	14,280	63,520	19,640	2,220	22,130	2,500	2,580
	24	5.80	2.631	13,130	58,410	8,880	39,500	20,520	91,280	25,750	114,540	32,840	3,710	41,210	4,660	2,500
	93	0.34	0.154	2,350	10,450	890	3,960	3,540	15,750	2,580	11,480	5,490	620	4,000	450	2,580
	78	0.53	0.240	3,170	14,100	1,280	5,690	4,670	20,770	3,710	16,500	7,300	820	5,800	660	2,560
	63	0.78	0.354	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	7,300	820	2,540
	48	1.41	0.640	5,470	24,330	2,800	12,460	8,530	37,940	8,120	36,120	13,650	1,540	12,990	1,470	2,500
	33	3.40	1.542	9,310	41,410	5,040	22,420	13,440	59,780	14,610	64,990	22,170	2,500	24,100	2,720	2,420
	25	6.10	2.767	10,640	47,330	8,960	39,860	21,270	94,610	25,990	115,610	36,160	4,090	44,190	4,990	2,350
	99	0.38	0.172	2,500	11,120	910	4,050	3,770	16,770	2,640	11,740	6,220	700	4,350	490	2,420
	83	0.57	0.259	3,370	14,990	1,280	5,690	4,960	22,060	3,720	16,550	8,240	930	6,190	700	2,410
	67	0.84	0.381	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	7,990	900	2,390
	51	1.53	0.694	5,810	25,840	2,860	12,720	9,040	40,210	8,290	36,880	15,370	1,740	14,090	1,590	2,350
	35	3.50	1.588	9,880	43,950	5,140	22,860	14,200	63,160	14,900	66,280	24,840	2,810	26,070	2,950	2,290
	27	6.50	2.948	14,770	65,700	9,300	41,370	22,890	101,820	26,960	119,920	41,200	4,650	48,520	5,480	2,220
	111	0.44	0.200	2,810	12,500	940	4,180	4,210	18,730	2,730	12,140	7,800	880	5,050	570	2,160
	93	0.66	0.299	3,780	16,810	1,330	5,920	5,540	24,640	3,860	17,170	10,320	1,170	7,190	810	2,150
	75	0.94	0.426	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	9,410	1,060	2,130
	57	1.72	0.780	6,500	28,910	2,970	13,210	10,060	44,750	8,620	38,340	19,120	2,160	16,390	1,850	2,110
	39	3.90	1.769	11,000	48,930	5,360	23,840	15,740	70,020	15,550	69,170	30,690	3,470	30,320	3,430	2,050
	30	7.20	3.266	16,420	73,040	9,720	43,240	25,270	112,410	28,200	125,440	50,540	5,710	56,390	6,370	2,000
	123	0.50	0.227	3,110	13,830	990	4,400	4,660	20,730	2,860	12,720	9,560	1,080	5,860	660	1,950
	103	0.73	0.331	4,190	18,640	1,400	6,230	6,130	27,270	4,050	18,020	12,630	1,430	8,350	940	1,940
	83	1.06	0.481	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	10,730	1,210	1,930
	63	1.88	0.853	7,180	31,940	3,070	13,660	11,080	49,290	8,900	39,590	23,270	2,630	18,680	2,110	1,900
	43	4.30	1.950	12,130	53,960	5,550	24,690	17,260	76,780	16,060	71,440	37,110	4,190	34,530	3,900	1,860
	33	7.90	3.583	18,060	80,330	10,040	44,660	27,620	122,860	29,110	129,490	60,760	6,860	64,040	7,240	1,820
	135	0.52	0.236	3,410	15,170	1,030	4,580	5,110	22,730	2,980	13,260	11,500	1,300	6,700	760	1,780
	113	0.75	0.340	4,590	20,420	1,464	6,510	6,700	29,800	4,130	18,370	15,160	1,710	9,340	1,060	1,770

SEALED (COMBO) RADIAL CONTACT, C-TYPE THIN SECTION BALL BEARINGS

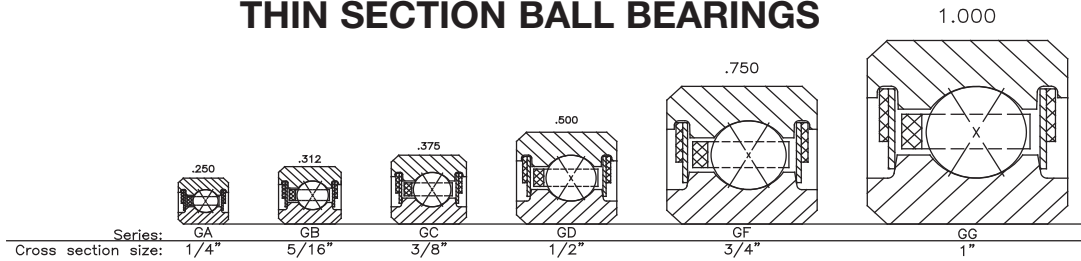


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm
GC110CP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.233	285.32	11.516	292.51	0.040	1.02	3/16
GD110CP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.310	287.27	11.687	296.85	0.060	1.52	1/4
GF110CP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.465	291.21	12.031	305.59	0.080	2.03	3/8
GG110CP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.620	295.15	12.375	314.33	0.080	2.03	1/2
GA120CP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.155	308.74	12.343	313.51	0.025	0.64	1/8
GB120CP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.194	309.73	12.430	315.72	0.032	0.81	5/32
GC120CP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.233	310.72	12.516	317.91	0.040	1.02	3/16
GD120CP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.310	312.67	12.687	322.25	0.060	1.52	1/4
GF120CP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.465	316.61	13.031	330.99	0.080	2.03	3/8
GG120CP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	13.620	320.55	13.375	339.73	0.080	2.03	1/2

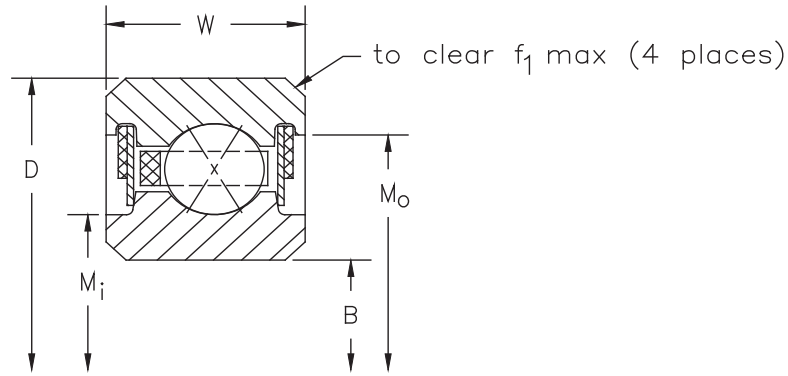


	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
				lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N		lbf - in	Nm
	91	1.16	0.526	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,760
	69	2.06	0.934	7,870	35,010	3,180	14,150	12,100	53,820	9,220	41,010	27,830	3,140	21,210	2,400	1,740
	47	4.80	2.177	13,260	58,980	5,833	25,950	18,790	83,580	16,610	73,880	44,160	4,990	39,040	4,410	1,700
	36	8.60	3.901	19,700	87,630	10,360	46,080	29,980	133,360	30,060	133,710	71,940	8,130	72,140	8,150	1,670
	147	0.56	0.254	3,720	16,550	1,078	4,800	5,560	24,730	3,080	13,700	13,620	1,540	7,550	850	1,630
	123	0.83	0.376	5,000	22,240	1,539	6,850	7,290	32,430	4,270	18,990	17,940	2,030	10,530	1,190	1,620
	99	1.25	0.567	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,620
	75	2.25	1.021	8,550	38,030	3,320	14,770	13,140	58,450	9,630	42,840	32,840	3,710	24,070	2,720	1,600
	51	5.20	2.359	14,390	64,010	6,105	27,160	20,340	90,480	17,200	76,510	51,860	5,860	43,850	4,950	1,570
	39	9.30	4.218	21,340	94,930	10,690	47,550	32,350	143,900	30,990	137,850	84,100	9,500	80,580	9,100	1,540

SEALED (COMBO) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS

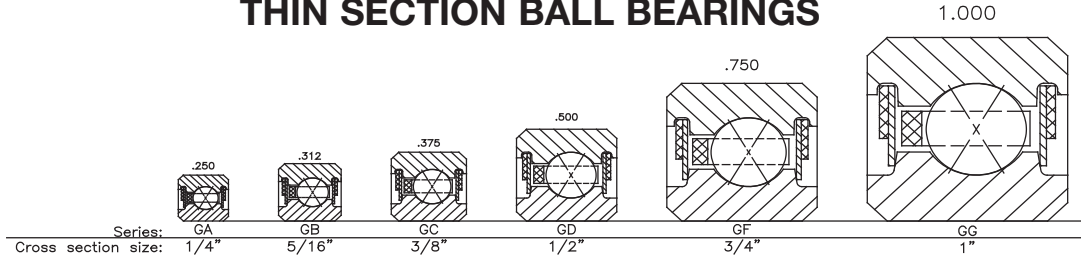


PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
GA020XP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.155	54.74	2.343	59.51	0.025	0.64	1/8
GB020XP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.194	55.73	2.430	61.72	0.032	0.81	5/32
GA025XP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.655	67.44	2.843	72.21	0.025	0.64	1/8
GB025XP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.694	68.43	2.930	74.42	0.032	0.81	5/32
GA030XP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.155	80.14	3.343	84.91	0.025	0.64	1/8
GB030XP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.194	81.13	3.430	87.12	0.032	0.81	5/32
GA035XP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.655	92.84	3.843	97.61	0.025	0.64	1/8
GB035XP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.694	93.83	3.930	99.82	0.032	0.81	5/32
GA040XP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.155	105.54	4.343	110.31	0.025	0.64	1/8
GB040XP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.194	106.53	4.430	112.52	0.032	0.81	5/32
GC040XP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.233	107.52	4.516	114.71	0.040	1.02	3/16
GD040XP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.310	109.47	4.687	119.05	0.060	1.52	1/4
GF040XP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.465	113.41	5.031	127.79	0.080	2.03	3/8
GG040XP0	4.0000	107.950	6.0000	152.400	1.0000	25.400	4.620	117.35	5.375	136.53	0.080	2.03	1/2
GA042XP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.405	111.89	4.593	116.66	0.025	0.64	1/8
GB042XP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.444	112.88	4.680	118.87	0.032	0.81	5/32
GC042XP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.483	113.87	4.766	121.06	0.040	1.02	3/16
GD042XP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.560	115.82	4.937	125.40	0.060	1.52	1/4
GF042XP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.715	119.76	5.281	134.14	0.080	2.03	3/8
GG042XP0	4.2500	114.300	6.2500	158.750	1.0000	25.400	4.870	123.70	5.590	141.99	0.080	2.03	1/2
GA045XP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.655	118.24	4.843	123.01	0.025	0.64	1/8
GB045XP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.694	119.23	4.930	125.22	0.032	0.81	5/32
GC045XP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.733	120.22	5.016	127.41	0.040	1.02	3/16
GD045XP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.810	122.17	5.187	131.75	0.060	1.52	1/4
GF045XP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	4.965	126.11	5.531	140.49	0.080	2.03	3/8
GG045XP0	4.5000	120.650	6.5000	165.100	1.0000	25.400	5.120	130.05	5.875	149.23	0.080	2.03	1/2
GA047XP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.905	124.59	5.093	129.36	0.025	0.64	1/8
GB047XP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.944	125.58	5.180	131.57	0.032	0.81	5/32
GC047XP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	4.983	126.57	5.266	133.76	0.040	1.02	3/16
GD047XP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.060	128.52	5.437	138.10	0.060	1.52	1/4
GF047XP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.215	132.46	5.781	146.84	0.080	2.03	3/8
GG047XP0	4.7500	127.000	6.7500	171.450	1.0000	25.400	5.370	136.40	6.090	154.69	0.080	2.03	1/2
GA050XP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.155	130.94	5.343	135.71	0.025	0.64	1/8
GB050XP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.194	131.93	5.430	137.92	0.032	0.81	5/32
GC050XP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.233	132.92	5.516	140.11	0.040	1.02	3/16
GD050XP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.310	134.87	5.687	144.45	0.060	1.52	1/4
GF050XP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.465	138.81	6.031	153.19	0.080	2.03	3/8
GG050XP0	5.0000	139.700	7.0000	177.800	1.0000	25.400	5.620	142.25	6.375	161.93	0.080	2.03	1/2
GA055XP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.655	143.64	5.843	148.41	0.025	0.64	1/8
GB055XP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.694	144.63	5.930	150.62	0.032	0.81	5/32
GC055XP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.733	145.62	6.016	152.81	0.040	1.02	3/16
GD055XP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.810	147.57	6.187	157.15	0.060	1.52	1/4
GF055XP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	5.965	151.51	6.531	165.89	0.080	2.03	3/8
GG055XP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.120	155.45	6.875	174.63	0.080	2.03	1/2

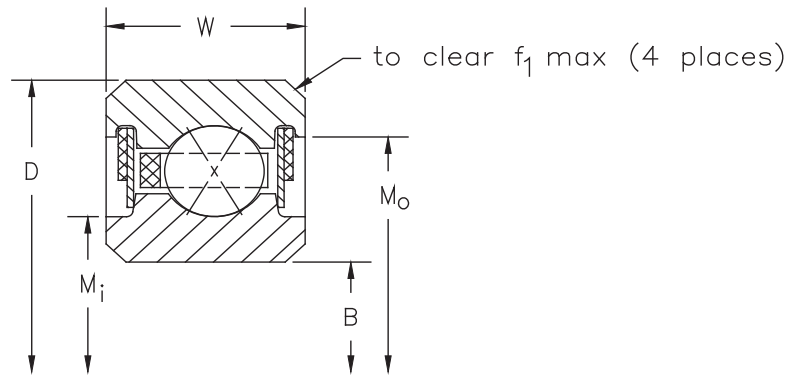


	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	27	0.10	0.045	680	3,020	514	2,290	1,710	7,606	1,230	5,470	770	90	550	60	5,330
	23	0.16	0.073	930	4,140	758	3,370	2,340	10,410	1,740	7,470	1,080	120	800	90	5,190
	33	0.13	0.059	830	3,690	583	2,590	2,090	9,300	1,320	5,870	1,150	130	730	80	4,360
	28	0.20	0.091	1,140	5,070	848	3,770	2,840	12,630	1,880	8,360	1,600	180	1,060	120	4,270
	39	0.15	0.068	990	4,400	643	2,860	2,470	10,990	1,410	6,270	1,600	180	920	100	3,690
	33	0.24	0.109	1,340	5,960	933	4,150	3,350	14,900	1,990	8,850	2,220	250	1,320	150	3,620
	45	0.18	0.082	1,140	5,070	701	3,120	2,850	12,680	1,480	6,580	2,130	240	1,110	130	3,200
	38	0.27	0.122	1,540	6,850	1,014	4,510	3,860	17,170	2,100	9,340	2,940	330	1,600	180	3,150
	51	0.19	0.086	1,290	5,740	756	3,363	3,220	14,323	1,550	6,890	2,740	310	1,320	150	2,820
	43	0.30	0.136	1,750	7,780	1,091	4,850	4,370	19,440	2,210	9,830	3,770	430	1,900	210	2,780
	35	0.45	0.204	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,740
	27	0.78	0.354	3,080	13,700	2,311	10,280	7,700	34,250	4,890	21,750	6,930	780	4,400	500	2,670
	19	1.90	0.862	5,360	23,840	4,665	20,750	13,400	59,610	8,830	39,280	12,730	1,440	8,390	950	2,530
	15	3.60	1.633	8,210	36,520	7,979	35,490	20,520	91,280	15,150	67,390	20,520	2,320	15,150	1,710	2,400
	54	0.20	0.091	1,370	6,090	783	3,480	3,410	15,170	1,590	7,070	3,070	350	1,430	160	2,670
	45	0.31	0.141	1,830	8,140	1,120	4,980	4,570	20,330	2,230	9,920	4,170	470	2,040	230	2,630
	37	0.47	0.213	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,590
	28	0.83	0.376	3,190	14,190	2,355	10,480	7,980	35,500	4,920	21,890	7,580	860	4,670	530	2,530
	20	2.00	0.907	5,640	25,090	4,795	21,330	14,110	62,760	8,990	39,990	14,110	1,590	8,993	1,020	2,400
	15	3.80	1.724	8,210	36,520	7,917	35,220	20,520	91,280	15,150	67,390	21,550	2,430	15,910	1,800	2,290
	57	0.22	0.100	1,440	6,410	809	3,600	3,600	16,010	1,610	7,160	3,420	390	1,530	170	2,530
	48	0.33	0.150	1,950	8,670	1,165	5,180	4,880	21,710	2,300	10,230	4,690	530	2,220	250	2,490
	39	0.48	0.218	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,460
	30	0.88	0.399	3,420	15,210	2,454	10,920	8,550	38,030	5,080	22,600	8,550	970	5,080	570	2,400
	21	2.10	0.953	5,930	26,380	4,923	21,900	14,810	65,880	9,180	40,830	15,550	1,760	9,695	1,100	2,290
	16	4.00	1.814	8,760	38,970	8,205	36,500	21,890	97,370	15,820	70,370	24,080	2,720	17,400	1,970	2,180
	60	0.23	0.104	1,520	6,760	834	3,710	3,790	16,860	1,650	7,340	3,790	430	1,650	190	2,400
	50	0.34	0.154	2,030	9,030	1,193	5,310	5,080	22,600	2,310	10,280	5,140	580	2,340	260	2,370
	41	0.50	0.227	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	2,340
	31	0.94	0.426	3,530	15,700	2,496	11,100	8,840	39,320	5,130	22,820	9,280	1,050	5,380	610	2,290
	22	2.20	0.998	6,210	27,620	5,048	22,450	15,520	69,040	9,380	41,720	17,070	1,930	10,416	1,180	2,180
	17	4.10	1.860	9,300	41,370	8,487	37,750	23,260	103,470	16,470	73,260	26,740	3,020	18,940	2,140	2,090
	63	0.24	0.109	1,590	7,070	859	3,821	3,980	17,700	1,680	7,470	4,180	470	1,760	200	2,290
	53	0.38	0.172	2,150	9,560	1,236	5,500	5,380	23,930	2,380	10,590	5,720	650	2,520	280	2,260
	43	0.58	0.263	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	2,230
	33	1.00	0.454	3,760	16,730	2,592	11,530	9,410	41,860	5,270	23,440	10,350	1,170	5,800	660	2,180
	23	2.30	1.043	6,490	28,870	5,172	23,010	16,220	72,150	9,520	42,350	18,660	2,110	11,157	1,260	2,090
	18	4.30	1.950	9,850	43,810	8,762	38,980	24,620	109,520	17,110	76,110	29,550	3,340	20,530	2,320	2,000
	69	0.25	0.113	1,750	7,780	908	4,040	4,360	19,390	1,720	7,650	5,020	570	1,970	220	2,090
	58	0.41	0.186	2,360	10,500	1,304	5,800	5,890	26,200	2,460	10,940	6,850	770	2,860	320	2,060
	47	0.59	0.268	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	2,040
	36	1.06	0.481	4,100	18,240	2,725	12,120	10,260	45,640	5,450	24,240	12,310	1,390	6,540	740	2,000
	25	2.50	1.134	7,050	31,360	5,415	24,090	17,630	78,420	9,820	43,680	22,040	2,490	12,696	1,430	1,920
	19	4.70	2.132	10,400	46,260	8,979	39,940	25,990	115,610	17,460	77,670	33,790	3,820	22,700	2,560	1,850

SEALED (COMBO) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS



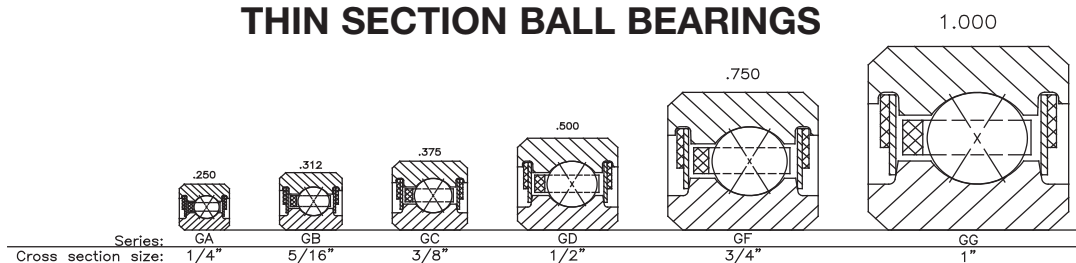
PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
GA060XP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.155	156.34	6.343	161.11	0.025	0.64	1/8
GB060XP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.194	157.33	6.430	163.32	0.032	0.81	5/32
GC060XP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.233	158.32	6.516	165.51	0.040	1.02	3/16
GD060XP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.310	160.27	6.687	169.85	0.060	1.52	1/4
GF060XP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.465	164.21	7.031	178.59	0.080	2.03	3/8
GG060XP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.620	168.15	7.375	187.33	0.080	2.03	1/2
GA065XP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.655	169.04	6.843	173.81	0.025	0.64	1/8
GB065XP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.694	170.03	6.930	176.02	0.032	0.81	5/32
GC065XP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.733	171.02	7.016	178.21	0.040	1.02	3/16
GD065XP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.810	172.97	7.187	182.55	0.060	1.52	1/4
GF065XP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	6.965	176.91	7.531	191.29	0.080	2.03	3/8
GG065XP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.120	180.85	7.875	200.03	0.080	2.03	1/2
GA070XP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.155	181.74	7.343	186.51	0.025	0.64	1/8
GB070XP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.194	182.73	7.430	188.72	0.032	0.81	5/32
GC070XP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.233	183.72	7.516	190.91	0.040	1.02	3/16
GD070XP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.310	185.67	7.687	195.25	0.060	1.52	1/4
GF070XP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.465	189.61	8.031	203.99	0.080	2.03	3/8
GG070XP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.620	193.55	8.375	212.73	0.080	2.03	1/2
GA075XP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.655	194.44	7.843	199.21	0.025	0.64	1/8
GB075XP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.694	195.43	7.930	201.42	0.032	0.81	5/32
GC075XP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.733	196.42	8.016	203.61	0.040	1.02	3/16
GD075XP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.810	198.37	8.187	207.95	0.060	1.52	1/4
GF075XP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	7.965	202.31	8.531	216.69	0.080	2.03	3/8
GG075XP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.120	206.25	8.875	225.43	0.080	2.03	1/2
GA080XP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.155	207.14	8.343	211.91	0.025	0.64	1/8
GB080XP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.194	208.13	8.430	214.12	0.032	0.81	5/32
GC080XP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.233	209.12	8.516	216.31	0.040	1.02	3/16
GD080XP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.310	211.07	8.687	220.65	0.060	1.52	1/4
GF080XP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.465	215.01	9.031	229.39	0.080	2.03	3/8
GG080XP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.620	218.95	9.375	238.13	0.080	2.03	1/2
GA090XP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.155	232.54	9.343	237.31	0.025	0.64	1/8
GB090XP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.194	233.53	9.430	239.52	0.032	0.81	5/32
GC090XP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.233	234.52	9.516	241.71	0.040	1.02	3/16
GD090XP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.310	236.47	9.687	246.05	0.060	1.52	1/4
GF090XP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.465	240.41	10.031	254.79	0.080	2.03	3/8
GG090XP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.620	244.35	10.375	263.53	0.080	2.03	1/2
GA100XP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.155	257.94	10.343	262.71	0.025	0.64	1/8
GB100XP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.194	258.93	10.430	264.92	0.032	0.81	5/32
GC100XP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.233	259.92	10.516	267.11	0.040	1.02	3/16
GD100XP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.310	261.87	10.687	271.45	0.060	1.52	1/4
GF100XP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.465	265.81	11.031	280.91	0.080	2.03	3/8
GG100XP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.620	269.75	11.375	288.93	0.080	2.03	1/2
GA110XP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.155	283.34	11.343	288.11	0.025	0.64	1/8
GB110XP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.194	284.33	11.430	290.32	0.032	0.81	5/32



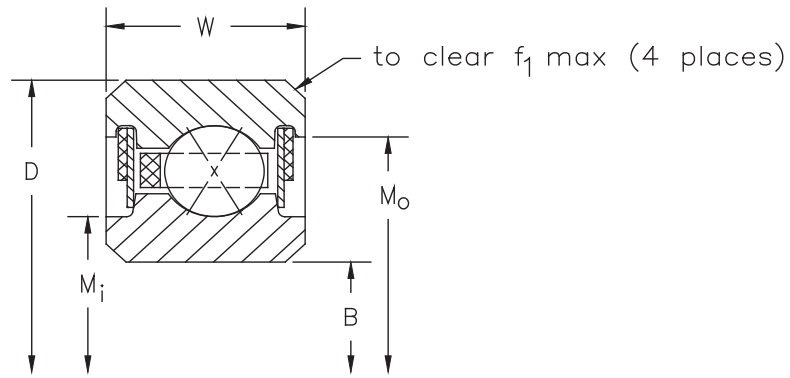
	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	75	0.28	0.127	1,900	8,452	955	4,250	4,740	21,085	1,780	7,920	5,930	670	2,240	250	1,920
	63	0.44	0.200	2,560	11,390	1,371	6,100	6,400	28,470	2,540	11,300	8,080	910	3,247	370	1,900
	51	0.63	0.286	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,880
	39	1.16	0.526	4,450	19,790	2,855	12,700	11,120	49,460	5,610	24,950	14,450	1,630	7,290	820	1,850
	27	2.70	1.225	7,620	33,900	5,651	25,140	19,050	84,740	10,150	45,150	25,710	2,900	14,311	1,620	1,780
	21	5.10	2.313	11,490	51,110	9,503	42,270	28,730	127,800	18,290	81,360	40,220	4,540	25,610	2,890	1,710
	81	0.30	0.136	2,050	9119	1,001	4,450	5,120	22,775	1,840	8,180	6,910	780	2,535	290	1,780
	68	0.47	0.214	2,760	12,280	1,435	6,380	6,910	30,740	2,590	11,520	9,410	1,060	3,668	410	1,760
	55	0.68	0.308	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,750
	42	1.22	0.553	4,790	21,310	2,980	13,260	11,970	53,250	5,740	25,530	16,760	1,890	8,040	910	1,710
	29	2.90	1.315	8,180	36,390	5,880	26,160	20,460	91,010	10,380	46,170	29,660	3,350	15,993	1,810	1,660
	22	5.40	2.449	12,040	53,560	9,713	43,210	30,100	133,890	18,520	82,380	45,140	5,100	27,770	3,140	1,600
	87	0.31	0.141	2,200	9,790	1,046	4,650	5,500	24,470	1,850	8,230	7,980	900	2,844	320	1,660
	73	0.50	0.227	2,970	13,210	1,498	6,660	7,420	33,010	2,660	11,830	10,850	1,230	4,109	460	1,640
	59	0.73	0.331	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,630
	45	1.31	0.594	5,130	22,820	3,103	13,800	12,830	57,070	5,880	26,160	19,240	2,170	8,810	1,000	1,600
	31	3.20	1.451	8,750	38,920	6,103	27,150	21,870	97,280	10,640	47,330	33,890	3,830	17,744	2,000	1,550
	24	5.80	2.631	13,130	58,410	10,208	45,410	32,830	146,040	19,330	85,980	52,530	5,940	30,930	3,490	1,500
	93	0.34	0.154	2,350	10,450	1,089	4,840	5,880	26,160	1,890	8,410	9,120	1,030	3,165	360	1,550
	78	0.53	0.240	3,170	14,100	1,559	6,930	7,920	35,230	2,730	12,140	12,380	1,400	4,568	520	1,540
	63	0.78	0.354	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,520
	48	1.41	0.640	5,470	24,330	3,222	14,330	13,680	60,850	6,060	26,960	21,890	2,470	9,700	1,100	1,500
	33	3.40	1.542	9,310	41,410	6,323	28,130	23,280	103,550	10,930	48,620	38,410	4,340	19,568	2,210	1,450
	25	6.10	2.767	13,680	60,850	10,410	46,310	34,200	152,130	19,460	86,560	58,140	6,570	33,196	3,750	1,410
	99	0.38	0.172	2,500	11,120	1,131	5,030	6,260	27,850	1,970	8,760	10,330	1,170	3,499	400	1,450
	83	0.57	0.259	3,370	14,990	1,618	7,200	8,430	37,500	2,790	12,410	14,020	1,580	5,045	570	1,440
	67	0.84	0.381	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,430
	51	1.53	0.694	5,810	25,840	3,338	14,850	14,540	64,680	6,170	27,450	24,710	2,790	10,643	1,200	1,410
	35	3.50	1.588	9,880	43,950	6,535	29,070	24,690	109,830	11,190	49,780	43,200	4,880	21,453	2,420	1,370
	27	6.50	2.948	14,770	65,700	10,882	48,410	36,940	164,320	20,230	89,990	66,480	7,510	36,743	4,150	1,330
	111	0.44	0.200	2,810	12,500	1,212	5,390	7,020	31,230	2,040	9,070	12,990	1,470	4,204	470	1,300
	93	0.66	0.299	3,780	16,810	1,732	7,700	9,450	42,040	2,890	12,860	17,600	1,990	6,050	680	1,290
	75	0.94	0.426	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,280
	57	1.72	0.780	6,500	28,910	3,561	15,840	16,250	72,280	6,410	28,510	30,870	3,490	12,693	1,430	1,260
	39	3.90	1.769	11,000	48,930	6,947	30,900	27,510	122,370	11,630	51,730	53,640	6,060	25,410	2,870	1,230
	30	7.20	3.266	16,420	73,040	11,526	51,270	41,040	182,560	21,020	93,500	82,080	9,270	43,240	4,890	1,200
	123	0.50	0.227	3,110	13,830	1,289	5,730	7,780	34,610	2,180	9,700	15,940	1,800	4,956	560	1,170
	103	0.73	0.331	4,190	18,640	1,841	8,190	10,460	46,530	3,080	13,700	21,580	2,440	7,121	800	1,160
	83	1.06	0.481	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	1,160
	63	1.88	0.853	7,180	31,940	3,776	16,800	17,960	79,890	6,680	29,710	37,710	4,260	14,872	1,680	1,140
	43	4.30	1.950	12,130	53,960	7,342	32,660	30,330	134,910	12,100	53,820	65,210	7,370	29,608	3,350	1,120
	33	7.90	3.583	18,060	80,330	12,147	54,030	45,140	200,790	21,790	96,930	99,320	11,220	50,124	5,660	1,090
	135	0.52	0.236	3,410	15,170	1,362	6,060	8,540	37,990	2,320	10,320	19,210	2,170	5,750	650	1,070
	113	0.75	0.340	4,590	20,420	1,945	8,650	11,480	51,070	3,280	14,590	25,970	2,930	8,254	930	1,060

SEALED (COMBO) 4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS



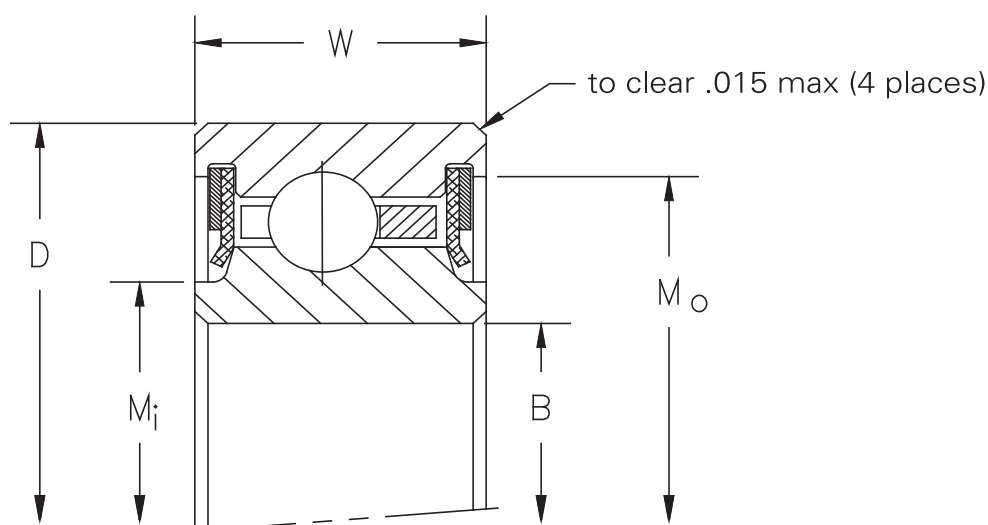
PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm
GC110XP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.233	285.32	11.516	292.51	0.040	1.02	3/16
GD110XP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.310	287.27	11.687	296.85	0.060	1.52	1/4
GF110XP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.465	291.21	12.031	305.59	0.080	2.03	3/8
GG110XP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.620	295.15	12.375	314.33	0.080	2.03	1/2
GA120XP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.155	308.74	12.343	313.51	0.025	0.64	1/8
GB120XP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.194	309.73	12.430	315.72	0.032	0.81	5/32
GC120XP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.233	310.72	12.516	317.91	0.040	1.02	3/16
GD120XP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.310	312.67	12.687	322.25	0.060	1.52	1/4
GF120XP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.465	316.61	13.031	330.99	0.080	2.03	3/8
GG120XP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	13.620	320.55	13.375	339.73	0.080	2.03	1/2



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
				lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	
	91	1.16	0.526	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	1,050
	69	2.06	0.934	7,870	35,010	3,981	17,710	19,670	87,500	6,830	30,380	45,230	5,110	17,173	1,940	1,040
	47	4.80	2.177	13,260	58,980	7,721	34,340	33,150	147,460	12,490	55,560	77,910	8,800	34,032	3,850	1,020
	36	8.60	3.901	19,700	87,630	12,739	56,670	49,250	219,070	22,530	100,220	118,200	13,350	57,347	6,480	1,000
	147	0.56	0.254	3,720	16,550	1,433	6,370	9,300	41,370	2,450	10,900	22,770	2,570	6,587	740	980
	123	0.83	0.376	5,000	22,240	2,045	9,100	12,500	55,600	3,470	15,440	30,770	3,480	9,446	1,070	970
	99	1.25	0.567	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	970
	75	2.25	1.021	8,550	38,030	4,178	18,580	21,380	95,100	7,080	31,490	53,440	6,040	19,590	2,210	960
	51	5.20	2.359	14,390	64,010	8,084	35,960	35,970	160,000	13,190	58,670	91,730	10,360	38,666	4,370	940
	39	9.30	4.218	21,340	94,930	13,315	59,230	53,350	237,310	23,180	103,110	138,700	15,670	64,935	7,340	920

G-SERIES

SEALED (COMBO) RADIAL CONTACT, C-TYPE THIN SECTION BALL BEARINGS

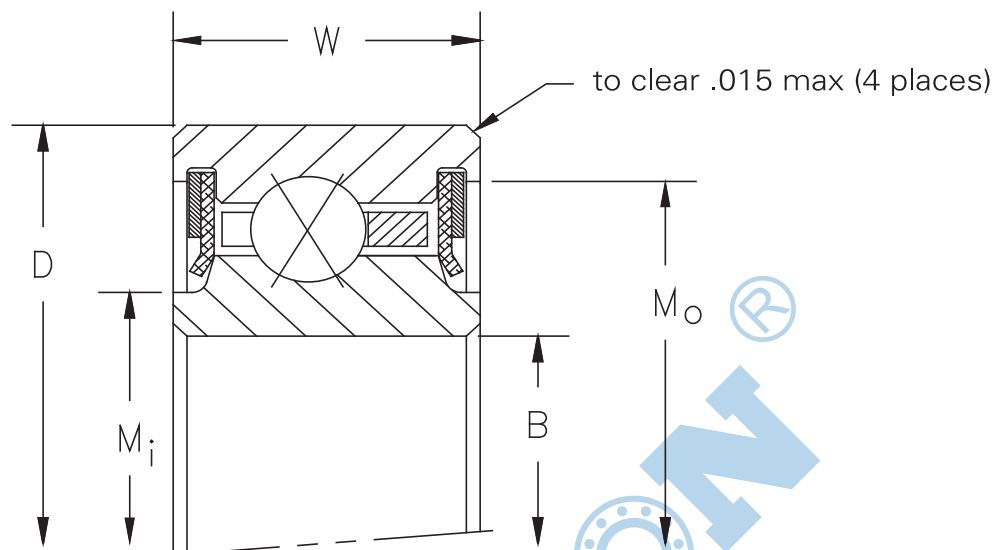


PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o			Ball Diameter	Ball Quantity
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm			
GU040CP0	4.0000	101.600	4.7500	120.650	0.5000	12.700	4.155	105.54	4.550	115.57	3/16	35	
GU042CP0	4.2500	107.950	5.0000	127.000	0.5000	12.700	4.405	111.89	4.800	121.92	3/16	37	
GU045CP0	4.5000	114.300	5.2500	133.350	0.5000	12.700	4.655	118.24	5.050	128.27	3/16	39	
GU047CP0	4.7500	120.650	5.5000	139.700	0.5000	12.700	4.905	124.59	5.300	134.62	3/16	41	
GU050CP0	5.0000	127.000	5.7500	146.050	0.5000	12.700	5.155	130.94	5.550	140.97	3/16	43	
GU055CP0	5.5000	139.700	6.2500	158.750	0.5000	12.700	5.655	143.64	6.050	153.67	3/16	47	
GU060CP0	6.0000	152.400	6.7500	171.450	0.5000	12.700	6.155	156.34	6.550	166.37	3/16	51	
GU065CP0	6.5000	165.100	7.2500	184.150	0.5000	12.700	6.655	169.04	7.050	179.07	3/16	55	
GU070CP0	7.0000	177.800	7.7500	196.850	0.5000	12.700	7.155	181.74	7.550	191.77	3/16	59	
GU075CP0	7.5000	190.500	8.2500	209.550	0.5000	12.700	7.655	194.44	8.050	204.47	3/16	63	
GU080CP0	8.0000	203.200	8.7500	222.250	0.5000	12.700	8.155	207.14	8.550	217.17	3/16	67	
GU090CP0	9.0000	228.600	9.7500	247.650	0.5000	12.700	9.155	232.54	9.550	242.57	3/16	75	
GU100CP0	10.0000	254.000	10.7500	273.050	0.5000	12.700	10.155	257.94	10.550	267.97	3/16	83	
GU110CP0	11.0000	279.400	11.7500	298.450	0.5000	12.700	11.155	283.34	11.550	293.37	3/16	91	
GU120CP0	12.0000	304.800	12.7500	323.850	0.5000	12.700	12.155	308.74	12.550	318.77	3/16	99	



	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
			Radial				Thrust				Moment				
			Static		Dynamic		Static		Dynamic		Static			Dynamic	
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm		
	0.55	0.249	2,100	9,340	1,290	5,740	3,110	13,830	3,740	16,640	2,720	310	3,280	370	3,660
	0.58	0.263	2,220	9,880	1,320	5,870	3,270	14,550	3,830	17,040	3,030	340	3,550	400	3,460
	0.61	0.277	2,340	10,410	1,350	6,010	3,440	15,300	3,910	17,390	3,360	380	3,810	430	3,280
	0.65	0.295	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	4,070	460	3,120
	0.68	0.308	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	4,340	490	2,980
	0.74	0.336	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	4,900	550	2,720
	0.81	0.367	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	5,510	620	2,510
	0.87	0.395	3,315	14,750	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	6,110	690	2,330
	0.93	0.422	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	6,710	760	2,170
	0.99	0.449	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	7,300	820	2,030
	1.06	0.481	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	7,990	900	1,910
	1.18	0.535	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	9,410	1,060	1,700
	1.31	0.594	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	10,730	1,210	1,540
	1.43	0.649	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,410
	1.56	0.708	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,300

SEALED (COMBO) 4-POINT CONTACT, X-TYPE THIN SECTION BALL BEARINGS



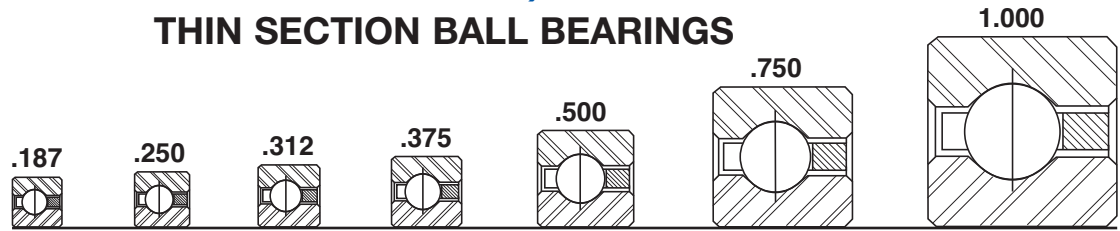
PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o			Ball Diameter	Ball Quantity
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	
GU040XP0	4.0000	101.600	4.7500	120.650	0.5000	12.700	4.155	105.54	4.550	115.57	3/16	35	
GU042XP0	4.2500	107.950	5.0000	127.000	0.5000	12.700	4.405	111.89	4.800	121.92	3/16	37	
GU045XP0	4.5000	114.300	5.2500	133.350	0.5000	12.700	4.655	118.24	5.050	128.27	3/16	39	
GU047XP0	4.7500	120.650	5.5000	139.700	0.5000	12.700	4.905	124.59	5.300	134.62	3/16	41	
GU050XP0	5.0000	127.000	5.7500	146.050	0.5000	12.700	5.155	130.94	5.550	140.97	3/16	43	
GU055XP0	5.5000	139.700	6.2500	158.750	0.5000	12.700	5.655	143.64	6.050	153.67	3/16	47	
GU060XP0	6.0000	152.400	6.7500	171.450	0.5000	12.700	6.155	156.34	6.550	166.37	3/16	51	
GU065XP0	6.5000	165.100	7.2500	184.150	0.5000	12.700	6.655	169.04	7.050	179.07	3/16	55	
GU070XP0	7.0000	177.800	7.7500	196.850	0.5000	12.700	7.155	181.74	7.550	191.77	3/16	59	
GU075XP0	7.5000	190.500	8.2500	209.550	0.5000	12.700	7.655	194.44	8.050	204.47	3/16	63	
GU080XP0	8.0000	203.200	8.7500	222.250	0.5000	12.700	8.155	207.14	8.550	217.17	3/16	67	
GU090XP0	9.0000	228.600	9.7500	247.650	0.5000	12.700	9.155	232.54	9.550	242.57	3/16	75	
GU100XP0	10.0000	254.000	10.7500	273.050	0.5000	12.700	10.155	257.94	10.550	267.97	3/16	83	
GU110XP0	11.0000	279.400	11.7500	298.450	0.5000	12.700	11.155	283.34	11.550	293.37	3/16	91	
GU120XP0	12.0000	304.800	12.7500	323.850	0.5000	12.700	12.155	308.74	12.550	318.77	3/16	99	



	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
			Radial				Thrust				Moment				
			Static		Dynamic		Static		Dynamic		Static			Dynamic	
	lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm		lbf - in	Nm
	0.55	0.249	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,280
	0.58	0.263	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,160
	0.61	0.277	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,050
	0.65	0.295	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	1,950
	0.68	0.308	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	1,860
	0.74	0.336	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	1,700
	0.81	0.367	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,570
	0.87	0.395	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,460
	0.93	0.422	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,360
	0.99	0.449	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,270
	1.06	0.481	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,190
	1.18	0.535	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,070
	1.31	0.594	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	970
	1.43	0.649	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	880
	1.56	0.708	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	810

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

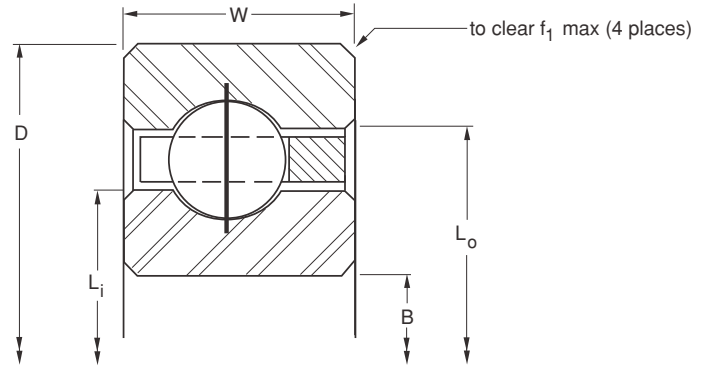


Series:	NAA	NA	NB	NC	ND	NF	NG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f1 Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	Lj -Inner Ring in. mm	Lo -Outer Ring in. mm	in.	mm	
NAA10CLO	1.0000	25.400	1.3752	34.930	0.1875	4.763	1.141 28.98	1.234 31.34	0.015	0.38	3/32
NAA15CLO	1.5000	38.100	1.8752	47.630	0.1875	4.763	1.641 41.68	1.734 44.04	0.015	0.38	3/32
NAA17CLO	1.7500	44.450	2.1252	53.980	0.1875	4.760	1.890 48.00	1.985 50.42	0.015	0.38	3/32
NA020CPO	2.0000	50.800	2.5002	63.505	0.2500	6.350	2.188 55.58	2.313 58.75	0.025	0.64	1/8
NB020CPO	2.0000	50.800	2.6252	66.680	0.3125	7.938	2.234 56.74	2.391 60.73	0.032	0.81	5/32
NA025CPO	2.5000	63.500	3.0002	76.205	0.2500	6.350	2.688 68.28	2.813 71.45	0.025	0.64	1/8
NB025CPO	2.5000	63.500	3.1252	79.380	0.3125	7.938	2.734 69.44	2.891 73.43	0.032	0.81	5/32
NA030CPO	3.0000	76.200	3.5002	88.905	0.2500	6.350	3.188 80.98	3.313 84.15	0.025	0.64	1/8
NB030CPO	3.0000	76.200	3.6252	92.080	0.3125	7.938	3.234 82.14	3.391 86.13	0.032	0.81	5/32
NA035CPO	3.5000	88.900	4.0002	101.605	0.2500	6.350	3.688 93.68	3.813 96.85	0.025	0.64	1/8
NB035CPO	3.5000	88.900	4.1252	104.780	0.3125	7.938	3.734 94.84	3.897 98.98	0.032	0.81	5/32
NA040CPO	3.9998	101.595	4.5003	114.308	0.2500	6.350	4.188 106.38	4.313 109.55	0.025	0.64	1/8
NB040CPO	3.9998	101.595	4.6253	117.483	0.3125	7.938	4.234 107.54	4.391 111.53	0.032	0.81	5/32
NC040CPO	3.9998	101.595	4.7503	120.658	0.3750	9.525	4.281 108.74	4.469 113.51	0.040	1.02	3/16
ND040CPO	3.9998	101.595	5.0003	127.008	0.5000	12.700	4.375 111.13	4.625 117.48	0.060	1.52	1/4
NF040CPO	3.9998	101.595	5.5003	139.708	0.7500	19.050	4.563 115.90	4.938 125.43	0.080	2.03	3/8
NG040CPO	3.9998	101.595	6.0003	152.408	1.0000	25.400	4.750 120.65	5.250 133.35	0.080	2.03	1/2
NA042CPO	4.2498	107.945	4.7503	120.658	0.2500	6.350	4.438 112.73	4.563 115.90	0.025	0.64	1/8
NB042CPO	4.2498	107.945	4.8753	123.833	0.3125	7.938	4.484 113.89	4.641 117.88	0.032	0.81	5/32
NC042CPO	4.2498	107.945	5.0003	127.008	0.3750	9.525	4.531 115.09	4.719 119.86	0.040	1.02	3/16
ND042CPO	4.2498	107.945	5.2503	133.358	0.5000	12.700	4.625 117.48	4.875 123.83	0.060	1.52	1/4
NF042CPO	4.2498	107.945	5.7503	146.058	0.7500	19.050	4.813 122.25	5.188 131.78	0.080	2.03	3/8
NG042CPO	4.2498	107.945	6.2503	158.758	1.0000	25.400	5.000 127.00	5.500 139.70	0.080	2.03	1/2
NA045CPO	4.4998	114.295	5.0003	127.008	0.2500	6.350	4.688 119.08	4.813 122.25	0.025	0.64	1/8
NB045CPO	4.4998	114.295	5.1253	130.183	0.3125	7.938	4.734 120.24	4.891 124.23	0.032	0.81	5/32
NC045CPO	4.4998	114.295	5.2503	133.358	0.3750	9.525	4.781 121.44	4.969 126.21	0.040	1.02	3/16
ND045CPO	4.4998	114.295	5.5003	139.708	0.5000	12.700	4.875 123.83	5.125 130.18	0.060	1.52	1/4
NF045CPO	4.4998	114.295	6.0003	152.408	0.7500	19.050	5.063 128.60	5.438 138.13	0.080	2.03	3/8
NG045CPO	4.4998	114.295	6.5003	165.108	1.0000	25.400	5.250 133.35	5.750 146.05	0.080	2.03	1/2
NA047CPO	4.7498	120.645	5.2503	133.358	0.2500	6.350	4.938 125.43	5.063 128.60	0.025	0.64	1/8
NB047CPO	4.7498	120.645	5.3753	136.533	0.3125	7.938	4.984 126.59	5.141 130.58	0.032	0.81	5/32
NC047CPO	4.7498	120.645	5.5003	139.708	0.3750	9.525	5.031 127.79	5.219 132.56	0.040	1.02	3/16
ND047CPO	4.7498	120.645	5.7503	146.058	0.5000	12.700	5.125 130.18	5.375 136.53	0.060	1.52	1/4
NF047CPO	4.7498	120.645	6.2503	158.758	0.7500	19.050	5.313 134.95	5.688 144.48	0.080	2.03	3/8
NG047CPO	4.7498	120.645	6.7503	171.458	1.0000	25.400	5.500 139.70	6.000 152.40	0.080	2.03	1/2
NA050CPO	4.9998	126.995	5.5003	139.708	0.2500	6.350	5.188 131.78	5.313 134.95	0.025	0.64	1/8
NB050CPO	4.9998	126.995	5.6253	142.883	0.3125	7.938	5.234 132.94	5.391 136.93	0.032	0.81	5/32
NC050CPO	4.9998	126.995	5.7503	146.058	0.3750	9.525	5.281 134.14	5.469 138.91	0.040	1.02	3/16
ND050CPO	4.9998	126.995	6.0003	152.408	0.5000	12.700	5.375 136.53	5.625 142.88	0.060	1.52	1/4
NF050CPO	4.9998	126.995	6.5003	165.108	0.7500	19.050	5.563 141.30	5.938 150.83	0.080	2.03	3/8
NG050CPO	4.9998	126.995	7.0003	177.808	1.0000	25.400	5.750 146.05	6.250 158.75	0.080	2.03	1/2
NA055CPO	5.4998	139.695	6.0003	152.408	0.2500	6.350	5.688 144.48	5.813 147.65	0.025	0.64	1/8
NB055CPO	5.4998	139.695	6.1253	155.583	0.3125	7.938	5.734 145.64	5.891 149.63	0.032	0.81	5/32
NC055CPO	5.4998	139.695	6.2503	158.758	0.3750	9.525	5.781 146.84	5.969 151.61	0.040	1.02	3/16
ND055CPO	5.4998	139.695	6.5003	165.108	0.5000	12.700	5.875 149.23	6.125 155.58	0.060	1.52	1/4
NF055CPO	5.4998	139.695	7.0003	177.808	0.7500	19.050	6.063 154.00	6.438 163.53	0.080	2.03	3/8



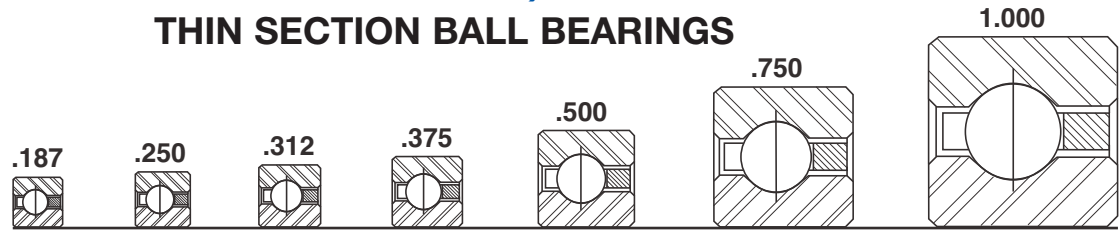
- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)	
				Radial		Thrust				Moment					
				Static	Dynamic	Static	Dynamic	Static	Dynamic	Static	Dynamic	Static	Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm		
	21	0.03	0.014	290	1,290	300	1,330	480	2,140	880	3,910	110	10	16,840	
	29	0.04	0.018	400	1,780	350	1,560	650	2,890	1,020	4,540	220	25	11,850	
	33	0.06	0.027	540	2,402	455	2,033	865	3,847	1,330	5,916	355	40	10,320	
	27	0.10	0.045	680	3,020	560	2,490	1,080	4,800	1,640	7,300	490	55	8,890	
	23	0.16	0.073	930	4,140	800	3,560	1,460	6,490	2,320	10,320	680	80	8,650	
	33	0.13	0.059	830	3,690	610	2,710	1,310	5,830	1,770	7,870	720	80	7,270	
	28	0.20	0.091	1,140	5,070	860	3,830	1,750	7,780	2,510	11,170	990	110	7,110	
	39	0.15	0.068	990	4,400	650	2,890	1,530	6,810	1,880	8,360	990	110	6,150	
	33	0.24	0.109	1,340	5,960	920	4,090	2,050	9,120	2,680	11,920	1,360	150	6,040	
	45	0.18	0.082	1,140	5,070	690	3,070	1,750	7,780	1,990	8,850	1,320	150	5,330	
	38	0.27	0.122	1,540	6,850	970	4,310	2,340	10,410	2,810	12,500	1,780	200	5,250	
	51	0.19	0.086	1,290	5,740	720	3,200	1,980	8,810	2,080	9,250	1,680	190	4,710	
	43	0.30	0.136	1,750	7,780	1,020	4,540	2,630	11,700	2,950	13,120	2,270	260	4,640	
	35	0.45	0.204	2,100	9,340	1,290	5,740	3,110	13,830	3,740	16,640	2,720	310	4,570	
	27	0.78	0.354	3,080	13,700	2,250	10,010	4,950	22,020	6,520	29,000	4,450	500	4,440	
	19	1.90	0.862	5,360	23,840	3,940	17,530	7,980	35,500	11,420	50,800	7,580	860	4,210	
	15	3.60	1.633	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	12,960	1,460	4,000	
	54	0.20	0.091	1,370	6,090	730	3,250	2,090	9,300	2,110	9,390	1,880	210	4,440	
	45	0.31	0.141	1,830	8,140	1,030	4,580	2,740	12,190	3,000	13,340	2,500	280	4,380	
	37	0.47	0.213	2,220	9,880	1,320	5,870	3,270	14,550	3,830	17,040	3,030	340	4,320	
	28	0.83	0.376	3,190	14,190	2,270	10,100	5,110	22,730	6,580	29,270	4,860	550	4,210	
	20	2.00	0.907	5,640	25,090	4,070	18,100	8,400	37,370	11,810	52,530	8,400	950	4,000	
	15	3.80	1.724	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	13,600	1,540	3,810	
	57	0.22	0.100	1,440	6,410	750	3,340	2,200	9,790	2,170	9,650	2,090	240	4,210	
	48	0.33	0.150	1,950	8,670	1,060	4,720	2,920	12,990	3,080	13,700	2,810	320	4,160	
	39	0.48	0.218	2,340	10,410	1,350	6,010	3,440	15,300	3,910	17,390	3,360	380	4,100	
	30	0.88	0.399	3,420	15,210	2,350	10,450	5,460	24,290	6,820	30,340	5,460	620	4,000	
	21	2.10	0.953	5,930	26,380	4,210	18,730	8,820	39,230	12,200	54,270	9,270	1,050	3,810	
	16	4.00	1.814	8,760	38,970	7,000	31,140	13,820	61,470	20,290	90,250	15,200	1,720	3,640	
	60	0.23	0.104	1,520	6,760	760	3,380	2,310	10,280	2,220	9,880	2,310	260	4,000	
	50	0.34	0.154	2,030	9,030	1,070	4,760	3,030	13,480	3,110	13,830	3,070	350	3,950	
	41	0.50	0.227	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	3,900	
	31	0.94	0.426	3,530	15,700	2,360	10,500	5,620	25,000	6,840	30,430	5,910	670	3,810	
	22	2.20	0.998	6,210	27,620	4,310	19,170	9,220	41,010	12,490	55,560	10,140	1,150	3,640	
	17	4.10	1.860	9,300	41,370	7,290	32,430	14,680	65,300	21,130	93,990	16,890	1,910	3,480	
	63	0.24	0.109	1,590	7,070	770	3,430	2,420	10,760	2,240	9,960	2,540	290	3,810	
	53	0.38	0.172	2,150	9,560	1,100	4,890	3,210	14,280	3,190	14,190	3,410	390	3,760	
	43	0.58	0.263	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	3,720	
	33	1.00	0.454	3,760	16,730	2,430	10,810	5,970	26,560	7,040	31,320	6,570	740	3,640	
	23	2.30	1.043	6,490	28,870	4,380	19,480	9,600	42,700	12,710	56,540	11,050	1,250	3,480	
	18	4.30	1.950	9,850	43,810	7,570	33,670	15,550	69,170	21,950	97,640	18,660	2,110	3,330	
	69	0.25	0.113	1,750	7,780	800	3,560	2,650	11,790	2,320	10,320	3,040	340	3,480	
	58	0.41	0.186	2,360	10,500	1,130	5,030	3,500	15,570	3,280	14,590	4,070	460	3,440	
	47	0.59	0.268	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	3,400	
	36	1.06	0.481	4,100	18,240	2,510	11,170	6,480	28,820	7,270	32,340	7,780	880	3,330	
	25	2.50	1.134	7,050	31,360	4,540	20,190	10,370	46,130	13,170	58,580	12,970	1,470	3,200	

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

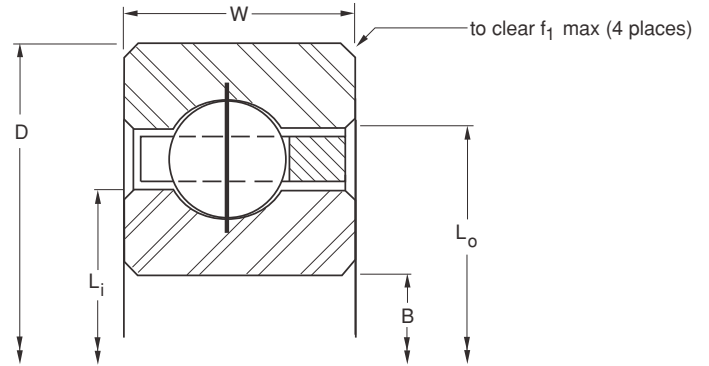


Series:	NAA	NA	NB	NC	ND	NF	NG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
NG055CPO	5.4998	139.695	7.5003	190.508	1.0000	25.400	6.250 158.75	6.750 171.45	0.080	2.03	1/2
NA060CPO	5.9998	152.395	6.5003	165.108	0.2500	6.350	6.188 157.18	6.313 160.35	0.025	0.64	1/8
NB060CPO	5.9998	152.395	6.6253	168.283	0.3125	7.938	6.234 158.34	6.391 162.33	0.032	0.81	5/32
NC060CPO	5.9998	152.395	6.7503	171.458	0.3750	9.525	6.281 159.54	6.469 164.31	0.040	1.02	3/16
ND060CPO	5.9998	152.395	7.0003	177.808	0.5000	12.700	6.375 161.93	6.625 168.28	0.060	1.52	1/4
NF060CPO	5.9998	152.395	7.5003	190.508	0.7500	19.050	6.563 166.70	6.938 176.23	0.080	2.03	3/8
NG060CPO	5.9998	152.395	8.0003	203.208	1.0000	25.400	6.750 171.45	7.250 184.15	0.080	2.03	1/2
NA065CPO	6.4998	165.095	7.0003	177.808	0.2500	6.350	6.688 169.88	6.813 173.05	0.025	0.64	1/8
NB065CPO	6.4998	165.095	7.1253	180.983	0.3125	7.938	6.734 171.04	6.891 175.03	0.032	0.81	5/32
NC065CPO	6.4998	165.095	7.2503	184.158	0.3750	9.525	6.781 172.24	6.969 177.01	0.040	1.02	3/16
ND065CPO	6.4998	165.095	7.5003	190.508	0.5000	12.700	6.875 174.63	7.125 180.98	0.060	1.52	1/4
NF065CPO	6.4998	165.095	8.0003	203.208	0.7500	19.050	7.063 179.40	7.438 188.93	0.080	2.03	3/8
NG065CPO	6.4998	165.095	8.5003	215.908	1.0000	25.400	7.250 184.15	7.750 196.85	0.080	2.03	1/2
NA070CPO	6.9998	177.795	7.5003	190.508	0.2500	6.350	7.188 182.58	7.313 185.75	0.025	0.64	1/8
NB070CPO	6.9998	177.795	7.6253	193.683	0.3125	7.938	7.234 183.74	7.391 187.73	0.032	0.81	5/32
NC070CPO	6.9998	177.795	7.7503	196.858	0.3750	9.525	7.281 184.94	7.469 189.71	0.040	1.02	3/16
ND070CPO	6.9998	177.795	8.0003	203.208	0.5000	12.700	7.375 187.33	7.625 193.68	0.060	1.52	1/4
NF070CPO	6.9998	177.795	8.5003	215.908	0.7500	19.050	7.563 192.10	7.938 201.63	0.080	2.03	3/8
NG070CPO	6.9998	177.795	9.0003	228.608	1.0000	25.400	7.750 196.85	8.250 209.55	0.080	2.03	1/2
NA075CPO	7.4998	190.495	8.0003	203.208	0.2500	6.350	7.688 195.28	7.813 198.45	0.025	0.64	1/8
NB075CPO	7.4998	190.495	8.1253	206.383	0.3125	7.938	7.734 196.44	7.891 200.43	0.032	0.81	5/32
NC075CPO	7.4998	190.495	8.2503	209.558	0.3750	9.525	7.781 197.64	7.969 202.41	0.040	1.02	3/16
ND075CPO	7.4998	190.495	8.5003	215.908	0.5000	12.700	7.875 200.03	8.125 206.38	0.060	1.52	1/4
NF075CPO	7.4998	190.495	9.0003	228.608	0.7500	19.050	8.063 204.80	8.438 214.33	0.080	2.03	3/8
NG075CPO	7.4998	190.495	9.5003	241.308	1.0000	25.400	8.250 209.55	8.750 222.25	0.080	2.03	1/2
NA080CPO	7.9998	203.195	8.5003	215.908	0.2500	6.350	8.188 207.98	8.313 211.15	0.025	0.64	1/8
NB080CPO	7.9998	203.195	8.6253	219.083	0.3125	7.938	8.234 209.14	8.391 213.13	0.032	0.81	5/32
NC080CPO	7.9998	203.195	8.7503	222.258	0.3750	9.525	8.281 210.34	8.469 215.11	0.040	1.02	3/16
ND080CPO	7.9998	203.195	9.0003	228.608	0.5000	12.700	8.375 212.73	8.625 219.08	0.060	1.52	1/4
NF080CPO	7.9998	203.195	9.5003	241.308	0.7500	19.050	8.563 217.50	8.938 227.03	0.080	2.03	3/8
NG080CPO	7.9998	203.195	10.0003	254.008	1.0000	25.400	8.750 222.25	9.250 234.95	0.080	2.03	1/2
NA090CPO	8.9998	228.595	9.5003	241.308	0.2500	6.350	9.188 233.38	9.313 236.55	0.025	0.64	1/8
NB090CPO	8.9998	228.595	9.6253	244.483	0.3125	7.938	9.234 234.54	9.391 238.53	0.032	0.81	5/32
NC090CPO	8.9998	228.595	9.7503	247.658	0.3750	9.525	9.281 235.74	9.469 240.51	0.040	1.02	3/16
ND090CPO	8.9998	228.595	10.0003	254.008	0.5000	12.700	9.375 238.13	9.625 244.48	0.060	1.52	1/4
NF090CPO	8.9998	228.595	10.5003	266.708	0.7500	19.050	9.563 242.90	9.938 252.43	0.080	2.03	3/8
NG090CPO	8.9998	228.595	11.0003	279.408	1.0000	25.400	9.750 247.65	10.250 260.35	0.080	2.03	1/2
NA100CPO	9.9998	253.995	10.5003	266.708	0.2500	6.350	10.188 258.78	10.313 261.95	0.025	0.64	1/8
NB100CPO	9.9998	253.995	10.6253	269.883	0.3125	7.938	10.234 259.94	10.391 263.93	0.032	0.81	5/32
NC100CPO	9.9998	253.995	10.7503	273.058	0.3750	9.525	10.281 261.14	10.469 265.91	0.040	1.02	3/16
ND100CPO	9.9998	253.995	11.0003	279.408	0.5000	12.700	10.375 263.53	10.625 269.88	0.060	1.52	1/4
NF100CPO	9.9998	253.995	11.5003	292.108	0.7500	19.050	10.563 268.30	10.938 277.83	0.080	2.03	3/8
NG100CPO	9.9998	253.995	12.0003	304.808	1.0000	25.400	10.750 273.05	11.250 285.75	0.080	2.03	1/2



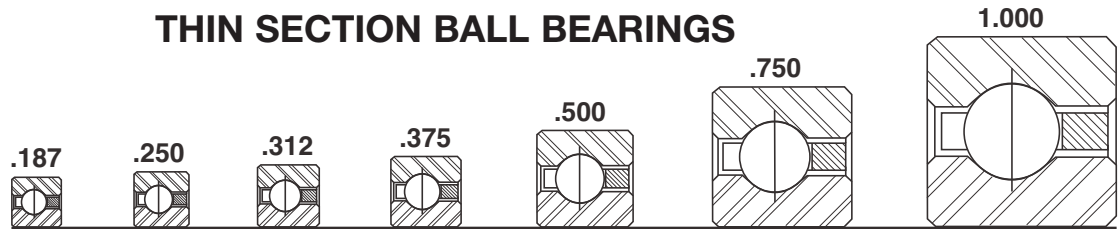
- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)	
				Radial		Thrust				Moment					
				Static	Dynamic	Static	Dynamic	Static	Dynamic	Static	Dynamic	Static	Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm		
	19	4.70	2.132	10,400	46,260	7,850	34,920	16,410	73,000	22,750	101,200	21,330	2,410	3,080	
	75	0.28	0.127	1,900	8,450	830	3,690	2,870	12,770	2,420	10,760	3,590	410	3,200	
	63	0.44	0.200	2,560	11,390	1,170	5,200	3,790	16,860	3,380	15,030	4,790	540	3,170	
	51	0.63	0.286	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	3,140	
	39	1.16	0.526	4,450	19,790	2,580	11,480	6,990	31,090	7,500	33,360	9,090	1,030	3,080	
	27	2.70	1.225	7,620	33,900	4,660	20,730	11,130	49,510	13,530	60,180	15,030	1,700	2,960	
	21	5.10	2.313	11,490	51,110	8,390	37,320	18,140	80,690	24,320	108,180	25,390	2,870	2,860	
	81	0.30	0.136	2,050	9,120	850	3,780	3,100	13,790	2,450	10,900	4,180	470	2,960	
	68	0.47	0.213	2,760	12,280	1,200	5,340	4,080	18,150	3,470	15,440	5,560	630	2,940	
	55	0.68	0.308	3,310	14,720	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	2,910	
	42	1.22	0.553	4,790	21,310	2,650	11,790	7,500	33,360	7,680	34,160	10,500	1,190	2,860	
	29	2.90	1.315	8,180	36,390	4,790	21,310	11,900	52,930	13,900	61,830	17,250	1,950	2,760	
	22	5.40	2.449	12,040	53,560	8,520	37,900	18,910	84,120	24,700	109,870	28,360	3,200	2,670	
	87	0.31	0.141	2,200	9,790	870	3,870	3,320	14,770	2,520	11,210	4,810	540	2,760	
	73	0.50	0.227	2,970	13,210	1,240	5,520	4,380	19,480	3,600	16,010	6,400	720	2,740	
	59	0.73	0.331	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	2,710	
	45	1.31	0.594	5,130	22,820	2,730	12,140	8,020	35,670	7,910	35,190	12,030	1,360	2,670	
	31	3.20	1.451	8,750	38,920	4,920	21,890	12,670	56,360	14,280	63,520	19,640	2,220	2,580	
	24	5.80	2.631	13,130	58,410	8,880	39,500	20,520	91,280	25,750	114,540	32,840	3,710	2,500	
	93	0.34	0.154	2,350	10,450	890	3,960	3,540	15,750	2,580	11,480	5,490	620	2,580	
	78	0.53	0.240	3,170	14,100	1,280	5,690	4,670	20,770	3,710	16,500	7,300	820	2,560	
	63	0.78	0.354	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	2,540	
	48	1.41	0.640	5,470	24,330	2,800	12,460	8,530	37,940	8,120	36,120	13,650	1,540	2,500	
	33	3.40	1.542	9,310	41,410	5,040	22,420	13,440	59,780	14,610	64,990	22,170	2,500	2,420	
	25	6.10	2.767	10,640	47,330	8,960	39,860	21,270	94,610	25,990	115,610	36,160	4,090	2,350	
	99	0.38	0.172	2,500	11,120	910	4,050	3,770	16,770	2,640	11,740	6,220	700	2,420	
	83	0.57	0.259	3,370	14,990	1,280	5,690	4,960	22,060	3,720	16,550	8,240	930	2,410	
	67	0.84	0.381	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	2,390	
	51	1.53	0.694	5,810	25,840	2,860	12,720	9,040	40,210	8,290	36,880	15,370	1,740	2,350	
	35	3.50	1.588	9,880	43,950	5,140	22,860	14,200	63,160	14,900	66,280	24,840	2,810	2,290	
	27	6.50	2.948	14,770	65,700	9,300	41,370	22,890	101,820	26,960	119,920	41,200	4,650	2,220	
	111	0.44	0.200	2,810	12,500	940	4,180	4,210	18,730	2,730	12,140	7,800	880	2,160	
	93	0.66	0.299	3,780	16,810	1,330	5,920	5,540	24,640	3,860	17,170	10,320	1,170	2,150	
	75	0.94	0.426	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	2,130	
	57	1.72	0.780	6,500	28,910	2,970	13,210	10,060	44,750	8,620	38,340	19,120	2,160	2,110	
	39	3.90	1.769	11,000	48,930	5,360	23,840	15,740	70,020	15,550	69,170	30,690	3,470	2,050	
	30	7.20	3.266	16,420	73,040	9,720	43,240	25,270	112,410	28,200	125,440	50,540	5,710	2,000	
	123	0.50	0.227	3,110	13,830	990	4,400	4,660	20,730	2,860	12,720	9,560	1,080	1,950	
	103	0.73	0.331	4,190	18,640	1,400	6,230	6,130	27,270	4,050	18,020	12,630	1,430	1,940	
	83	1.06	0.481	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	1,930	
	63	1.88	0.853	7,180	31,940	3,070	13,660	11,080	49,290	8,900	39,590	23,270	2,630	1,900	
	43	4.30	1.950	12,130	53,960	5,550	24,690	17,260	76,780	16,060	71,440	37,110	4,190	1,860	
	33	7.90	3.583	18,060	80,330	10,040	44,660	27,620	122,860	29,110	129,490	60,760	6,860	1,820	

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

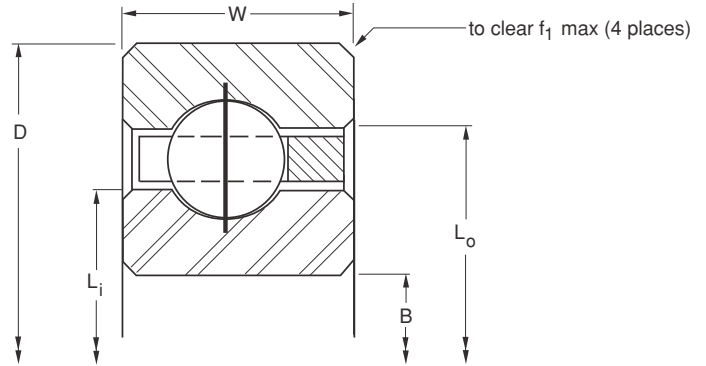


Series:	NAA	NA	NB	NC	ND	NF	NG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring in. mm	L _o -Outer Ring in. mm	in.	mm	
NA110CP0	10.9998	279.395	11.5003	292.108	0.2500	6.350	11.188 284.18	11.313 287.35	0.025	0.64	1/8
NB110CP0	10.9998	279.395	11.6253	295.283	0.3125	7.938	11.234 285.34	11.391 289.33	0.032	0.81	5/32
NC110CP0	10.9998	279.395	11.7503	298.458	0.3750	9.525	11.281 286.54	11.469 291.31	0.040	1.02	3/16
ND110CP0	10.9998	279.395	12.0003	304.808	0.5000	12.700	11.375 288.93	11.625 295.28	0.060	1.52	1/4
NF110CP0	10.9998	279.395	12.5003	317.508	0.7500	19.050	11.563 293.70	11.938 303.23	0.080	2.03	3/8
NG110CP0	10.9998	279.395	13.0003	330.208	1.0000	25.400	11.750 298.45	12.250 311.15	0.080	2.03	1/2
NA120CP0	11.9998	304.795	12.5003	317.508	0.2500	6.350	12.188 309.58	12.313 312.75	0.025	0.64	1/8
NB120CP0	11.9998	304.795	12.6253	320.683	0.3125	7.938	12.234 310.74	12.391 314.73	0.032	0.81	5/32
NC120CP0	11.9998	304.795	12.7503	323.858	0.3750	9.525	12.281 311.94	12.469 316.71	0.040	1.02	3/16
ND120CP0	11.9998	304.795	13.0003	330.208	0.5000	12.700	12.375 314.33	12.625 320.68	0.060	1.52	1/4
NF120CP0	11.9998	304.795	13.5003	342.908	0.7500	19.050	12.563 319.10	12.938 328.63	0.080	2.03	3/8
NG120CP0	11.9998	304.795	14.0003	355.608	1.0000	25.400	12.750 323.85	13.250 336.55	0.080	2.03	1/2
NB140CP0	13.9998	355.595	14.6253	371.483	0.3125	7.938	14.234 361.54	14.391 365.53	0.032	0.81	5/32
NC140CP0	13.9998	355.595	14.7503	374.658	0.3750	9.525	14.281 362.74	14.469 367.51	0.040	1.02	3/16
ND140CP0	13.9998	355.595	15.0003	381.008	0.5000	12.700	14.375 365.13	14.625 371.48	0.060	1.52	1/4
NF140CP0	13.9998	355.595	15.5003	393.708	0.7500	19.050	14.563 369.90	14.938 379.43	0.080	2.03	3/8
NG140CP0	13.9998	355.595	16.0003	406.408	1.0000	25.400	14.750 374.65	15.250 387.35	0.080	2.03	1/2
NB160CP0	15.9998	406.395	16.6253	422.283	0.3125	7.938	16.234 412.34	16.391 416.33	0.032	0.81	5/32
NC160CP0	15.9998	406.395	16.7503	425.458	0.3750	9.525	16.281 413.54	16.469 418.31	0.040	1.02	3/16
ND160CP0	15.9998	406.395	17.0003	431.808	0.5000	12.700	16.375 415.93	16.625 422.28	0.060	1.52	1/4
NF160CP0	15.9998	406.395	17.5003	444.508	0.7500	19.050	16.563 420.70	16.938 430.23	0.080	2.03	3/8
NG160CP0	15.9998	406.395	18.0003	457.208	1.0000	25.400	16.750 425.45	17.250 438.15	0.080	2.03	1/2
NB180CP0	17.9998	457.195	18.6253	473.083	0.3125	7.938	18.234 463.14	18.391 467.13	0.032	0.81	5/32
NC180CP0	17.9998	457.195	18.7503	476.258	0.3750	9.525	18.281 464.34	18.469 469.11	0.040	1.02	3/16
ND180CP0	17.9998	457.195	19.0003	482.608	0.5000	12.700	18.375 466.73	18.625 473.08	0.060	1.52	1/4
NF180CP0	17.9998	457.195	19.5003	495.308	0.7500	19.050	18.563 471.50	18.938 481.03	0.080	2.03	3/8
NG180CP0	17.9998	457.195	20.0003	508.008	1.0000	25.400	18.750 476.25	19.250 488.95	0.080	2.03	1/2
NB200CP0	19.9998	507.995	20.6253	523.883	0.3125	7.938	20.234 513.94	20.391 517.93	0.032	0.81	5/32
NC200CP0	19.9998	507.995	20.7503	527.058	0.3750	9.525	20.281 515.14	20.469 519.91	0.040	1.02	3/16
ND200CP0	19.9998	507.995	21.0003	533.408	0.5000	12.700	20.375 517.53	20.625 523.88	0.060	1.52	1/4
NF200CP0	19.9998	507.995	21.5003	546.108	0.7500	19.050	20.563 522.30	20.938 531.83	0.080	2.03	3/8
NG200CP0	19.9998	507.995	22.0003	558.808	1.0000	25.400	20.750 527.05	21.250 539.75	0.080	2.03	1/2
NC250CP0	24.9998	634.995	25.7503	654.058	0.3750	9.525	25.281 642.14	25.469 646.91	0.040	1.02	3/16
ND250CP0	24.9998	634.995	26.0003	660.408	0.5000	12.700	25.375 644.53	25.625 650.88	0.060	1.52	1/4
NF250CP0	24.9998	634.995	26.5003	673.108	0.7500	19.050	25.563 649.30	25.938 658.83	0.080	2.03	3/8
NG250CP0	24.9998	634.995	27.0003	685.808	1.0000	25.400	25.750 654.05	26.250 666.75	0.080	2.03	1/2
NC300CP0	29.9998	761.995	30.7503	781.058	0.3750	9.525	30.281 769.14	30.469 773.91	0.040	1.02	3/16
ND300CP0	29.9998	761.995	31.0003	787.408	0.5000	12.700	30.375 771.53	30.625 777.88	0.060	1.52	1/4
NF300CP0	29.9998	761.995	31.5003	800.108	0.7500	19.050	30.563 776.30	30.938 785.83	0.080	2.03	3/8
NG300CP0	29.9998	761.995	32.0003	812.808	1.0000	25.400	30.750 781.05	31.250 793.75	0.080	2.03	1/2
NF350CP0	34.9998	888.995	36.5003	927.108	0.7500	19.050	35.563 903.30	35.938 912.83	0.080	2.03	3/8
NG350CP0	34.9998	888.995	37.0003	939.808	1.0000	25.400	35.750 908.05	36.250 920.75	0.080	2.03	1/2
NF400CP0	39.9998	1015.995	41.5003	1054.108	0.7500	19.050	40.563 1030.30	40.938 1039.83	0.080	2.03	3/8
NG400CP0	39.9998	1015.995	42.0003	1066.808	1.0000	25.400	40.750 1035.05	41.250 1047.75	0.080	2.03	1/2



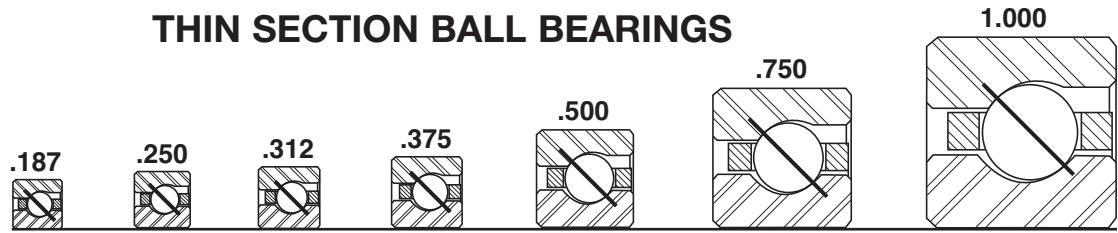
- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)	
				Radial				Thrust				Moment					
				Static		Dynamic		Static		Dynamic		Static		Dynamic			
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm		
	135	0.52	0.236	3,410	15,170	1,030	4,580	5,110	22,730	2,980	13,260	11,500	1,300	6,700	760	1,780	
	113	0.75	0.340	4,590	20,420	1,464	6,510	6,700	29,800	4,130	18,370	15,160	1,710	9,340	1,060	1,770	
	91	1.16	0.526	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,760	
	69	2.06	0.934	7,870	35,010	3,180	14,150	12,100	53,820	9,220	41,010	27,830	3,140	21,210	2,400	1,740	
	47	4.80	2.177	13,260	58,980	5,833	25,950	18,790	83,580	16,610	73,880	44,160	4,990	39,040	4,410	1,700	
	36	8.60	3.901	19,700	87,630	10,360	46,080	29,980	133,360	30,060	133,710	71,940	8,130	72,140	8,150	1,670	
	147	0.56	0.254	3,720	16,550	1,078	4,800	5,560	24,730	3,080	13,700	13,620	1,540	7,550	850	1,630	
	123	0.83	0.376	5,000	22,240	1,539	6,850	7,290	32,430	4,270	18,990	17,940	2,030	10,530	1,190	1,620	
	99	1.25	0.567	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,620	
	75	2.25	1.021	8,550	38,030	3,320	14,770	13,140	58,450	9,630	42,840	32,840	3,710	24,070	2,720	1,600	
	51	5.20	2.359	14,390	64,010	6,105	27,160	20,340	90,480	17,200	76,510	51,860	5,860	43,850	4,950	1,570	
	39	9.30	4.218	21,340	94,930	10,690	47,550	32,350	143,900	30,990	137,850	84,100	9,500	80,580	9,100	1,540	
	143	1.05	0.476	5,810	25,840	1,680	7,470	8,450	37,590	4,520	20,110	24,180	2,730	12,930	1,460	1,400	
	115	1.52	0.689	6,910	30,740	2,154	9,580	9,820	43,680	5,800	25,800	28,240	3,190	16,680	1,880	1,390	
	87	2.73	1.238	9,920	44,130	3,460	15,390	15,180	67,520	10,030	44,620	44,020	4,970	29,100	3,290	1,380	
	59	6.00	2.722	16,650	74,060	6,620	29,450	23,410	104,130	18,090	80,470	69,050	7,800	53,380	6,030	1,360	
	45	10.80	4.899	24,620	109,520	11,280	50,180	37,080	164,940	32,710	145,500	111,250	12,570	98,140	11,090	1,330	
	163	1.20	0.544	6,620	29,450	1,812	8,060	9,620	42,790	4,800	21,350	31,370	3,540	15,670	1,770	1,230	
	131	1.73	0.785	7,880	35,050	2,321	10,320	11,160	49,640	6,050	26,910	36,550	4,130	19,830	2,240	1,220	
	99	3.10	1.406	11,290	50,220	3,688	16,410	17,230	76,640	10,500	46,710	56,850	6,420	34,660	3,920	1,210	
	67	7.10	3.221	18,900	84,070	7,104	31,600	26,480	117,790	19,000	84,520	88,690	10,020	63,630	7,190	1,190	
	51	12.30	5.579	27,910	124,150	11,820	52,580	41,810	185,980	34,270	152,440	142,150	16,060	116,530	13,170	1,180	
	183	1.35	0.612	7,440	33,090	1,936	8,610	10,780	47,950	5,050	22,460	39,490	4,460	18,490	2,090	1,090	
	147	1.94	0.880	8,840	39,320	2,478	11,020	12,510	55,650	6,390	28,420	45,960	5,190	23,480	2,650	1,090	
	111	3.48	1.579	12,650	56,270	3,933	17,490	19,260	85,670	10,870	48,350	71,270	8,050	40,200	4,540	1,080	
	75	7.90	3.583	21,160	94,120	7,557	33,620	29,560	131,490	19,980	88,880	110,840	12,520	74,910	8,460	1,070	
	57	13.70	6.214	31,190	138,740	12,367	55,010	46,540	207,020	35,660	158,620	176,870	19,980	135,510	15,310	1,050	
	203	1.50	0.680	8,250	36,700	2,053	9,130	11,940	53,110	5,260	23,400	48,520	5,480	21,370	2,410	980	
	163	2.16	0.980	9,800	43,590	2,626	11,680	13,850	61,610	6,670	29,670	56,430	6,380	27,170	3,070	980	
	123	3.85	1.746	14,020	62,360	4,164	18,520	21,320	94,840	11,380	50,620	87,400	9,870	46,680	5,270	980	
	83	8.90	4.037	23,420	104,180	7,986	35,520	32,620	145,100	20,570	91,500	135,390	15,300	85,380	9,650	960	
	63	15.80	7.167	34,470	153,330	13,044	58,020	51,240	227,930	36,780	163,610	215,210	24,320	154,490	17,460	950	
	203	2.69	1.220	12,200	54,270	2,962	13,180	17,200	76,510	7,300	32,470	87,290	9,860	37,070	4,190	790	
	153	4.79	2.173	17,440	77,580	4,689	20,860	26,410	117,480	12,260	54,540	134,690	15,220	62,530	7,060	780	
	103	10.90	4.944	29,060	129,270	8,963	39,870	40,270	179,130	21,910	97,460	207,390	23,430	112,830	12,750	780	
	78	19.50	8.845	42,680	189,850	14,591	64,900	63,110	280,730	40,100	178,370	328,150	37,080	208,540	23,560	770	
	243	3.21	1.456	14,610	64,990	3,260	14,500	20,560	91,460	8,000	35,590	124,910	14,110	48,610	5,490	660	
	183	5.73	2.599	20,860	92,790	5,153	22,920	31,540	140,300	13,440	59,780	192,420	21,740	82,010	9,270	660	
	123	13.00	5.897	34,700	154,350	9,828	43,720	47,960	213,340	23,620	105,070	294,970	33,330	145,270	16,410	650	
	93	23.30	10.569	50,890	226,370	15,963	71,010	74,940	333,350	42,510	189,090	464,640	52,500	263,580	29,780	650	
	143	15.10	6.849	40,350	179,490	10,603	47,160	55,610	247,370	24,970	111,070	397,620	44,930	178,510	20,170	560	
	108	27.10	12.292	59,100	262,890	17,195	76,490	86,680	385,570	44,120	196,260	624,100	70,510	317,650	35,890	560	
	163	17.20	7.802	45,990	204,570	11,302	50,270	63,300	281,570	26,530	118,010	515,930	58,290	216,240	24,430	490	
	123	30.80	13.971	67,310	299,410	18,307	81,430	98,590	438,550	47,080	209,420	808,420	91,340	386,040	43,620	490	

ANGULAR CONTACT, A-TYPE

THIN SECTION BALL BEARINGS

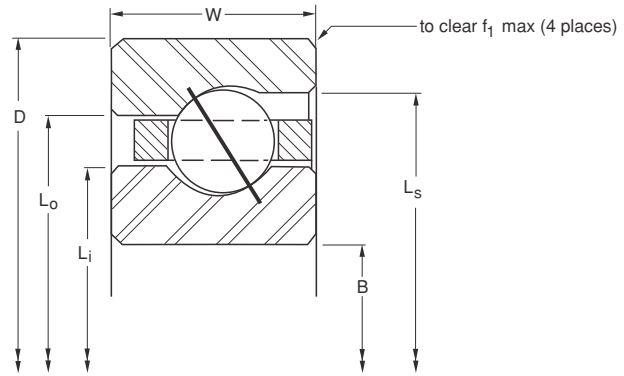


Series:	NAA	NA	NB	NC	ND	NF	NG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS														
	B Bore	D Outside Diameter	W Width	Land Diameter			f ₁ Housing Fillet	Ball Diameter							
				L _i -Inner Ring	L _o -Outer Ring	L _s -Counter Bore									
	in.	mm	in.	mm	in.	mm	in.	mm	in.						
NAA10AGO	1.0000	25.400	1.3752	34.930	0.1875	4.763	1.141	28.98	1.234	31.34	1.235	31.37	0.015	0.38	3/32
NAA15AGO	1.5000	38.100	1.8752	47.630	0.1875	4.763	1.641	41.68	1.734	44.04	1.735	44.07	0.015	0.38	3/32
NAA17AGO	1.7500	44.450	2.1252	53.980	0.1875	4.763	1.890	48.01	1.985	50.42	2.024	51.41	0.015	0.38	3/32
NA020ARO	2.0000	50.800	2.5002	63.505	0.2500	6.350	2.188	55.58	2.313	58.75	2.375	60.33	0.025	0.64	1/8
NB020ARO	2.0000	50.800	2.6252	66.680	0.3125	7.938	2.234	56.74	2.391	60.73	2.469	62.71	0.032	0.81	5/32
NA025ARO	2.5000	63.500	3.0002	76.205	0.2500	6.350	2.688	68.28	2.813	71.45	2.875	73.03	0.025	0.64	1/8
NB025ARO	2.5000	63.500	3.1252	79.380	0.3125	7.938	2.734	69.44	2.891	73.43	2.969	75.41	0.032	0.81	5/32
NA030ARO	3.0000	76.200	3.5002	88.905	0.2500	6.350	3.188	80.98	3.313	84.15	3.375	85.73	0.025	0.64	1/8
NB030ARO	3.0000	76.200	3.6252	92.080	0.3125	7.938	3.234	82.14	3.391	86.13	3.469	88.11	0.032	0.81	5/32
NA035ARO	3.5000	88.900	4.0002	101.605	0.2500	6.350	3.688	93.68	3.813	96.85	3.875	98.43	0.025	0.64	1/8
NB035ARO	3.5000	88.900	4.1252	104.780	0.3125	7.938	3.734	94.84	3.891	98.83	3.969	100.81	0.032	0.81	5/32
NA040ARO	3.9998	101.595	4.5003	114.308	0.2500	6.350	4.188	106.38	4.313	109.55	4.375	111.13	0.025	0.64	1/8
NB040ARO	3.9998	101.595	4.6253	117.483	0.3125	7.938	4.234	107.54	4.391	111.53	4.469	113.51	0.032	0.81	5/32
NC040ARO	3.9998	101.595	4.7503	120.658	0.3750	9.525	4.281	108.74	4.469	113.51	4.563	115.90	0.040	1.02	3/16
ND040ARO	3.9998	101.595	5.0003	127.008	0.5000	12.700	4.375	111.13	4.625	117.48	4.750	120.65	0.060	1.52	1/4
NF040ARO	3.9998	101.595	5.5003	139.708	0.7500	19.050	4.563	115.90	4.938	125.43	5.125	130.18	0.080	2.03	3/8
NG040ARO	3.9998	101.595	6.0003	152.408	1.0000	25.400	4.750	120.65	5.250	133.35	5.500	139.70	0.080	2.03	1/2
NA042ARO	4.2498	107.945	4.7503	120.658	0.2500	6.350	4.438	112.73	4.563	115.90	4.625	117.48	0.025	0.64	1/8
NB042ARO	4.2498	107.945	4.8753	123.833	0.3125	7.938	4.484	113.89	4.641	117.88	4.719	119.86	0.032	0.81	5/32
NC042ARO	4.2498	107.945	5.0003	127.008	0.3750	9.525	4.531	115.09	4.719	119.86	4.813	122.25	0.040	1.02	3/16
ND042ARO	4.2498	107.945	5.2503	133.358	0.5000	12.700	4.625	117.48	4.875	123.83	5.000	127.00	0.060	1.52	1/4
NF042ARO	4.2498	107.945	5.7503	146.058	0.7500	19.050	4.813	122.25	5.188	131.78	5.375	136.53	0.080	2.03	3/8
NG042ARO	4.2498	107.945	6.2503	158.758	1.0000	25.400	5.000	127.00	5.500	139.70	5.750	146.05	0.080	2.03	1/2
NA045ARO	4.4998	114.295	5.0003	127.008	0.2500	6.350	4.688	119.08	4.813	122.25	4.875	123.83	0.025	0.64	1/8
NB045ARO	4.4998	114.295	5.1253	130.183	0.3125	7.938	4.734	120.24	4.891	124.23	4.969	126.21	0.032	0.81	5/32
NC045ARO	4.4998	114.295	5.2503	133.358	0.3750	9.525	4.781	121.44	4.969	126.21	5.063	128.60	0.040	1.02	3/16
ND045ARO	4.4998	114.295	5.5003	139.708	0.5000	12.700	4.875	123.83	5.125	130.18	5.250	133.35	0.060	1.52	1/4
NF045ARO	4.4998	114.295	6.0003	152.408	0.7500	19.050	5.063	128.60	5.438	138.13	5.625	142.88	0.080	2.03	3/8
NG045ARO	4.4998	114.295	6.5003	165.108	1.0000	25.400	5.250	133.35	5.750	146.05	6.000	152.40	0.080	2.03	1/2
NA047ARO	4.7498	120.645	5.2503	133.358	0.2500	6.350	4.938	125.43	5.063	128.60	5.125	130.18	0.025	0.64	1/8
NB047ARO	4.7498	120.645	5.3753	136.533	0.3125	7.938	4.984	126.59	5.141	130.58	5.219	132.56	0.032	0.81	5/32
NC047ARO	4.7498	120.645	5.5003	139.708	0.3750	9.525	5.031	127.79	5.219	132.56	5.313	134.95	0.040	1.02	3/16
ND047ARO	4.7498	120.645	5.7503	146.058	0.5000	12.700	5.125	130.18	5.375	136.53	5.500	139.70	0.060	1.52	1/4
NF047ARO	4.7498	120.645	6.2503	158.758	0.7500	19.050	5.313	134.95	5.688	144.48	5.875	149.23	0.080	2.03	3/8
NG047ARO	4.7498	120.645	6.7503	171.458	1.0000	25.400	5.500	139.70	6.000	152.40	6.250	158.75	0.080	2.03	1/2
NA050ARO	4.9998	126.995	5.5003	139.708	0.2500	6.350	5.188	131.78	5.313	134.95	5.375	136.53	0.025	0.64	1/8
NB050ARO	4.9998	126.995	5.6253	142.883	0.3125	7.938	5.234	132.94	5.391	136.93	5.469	138.91	0.032	0.81	5/32
NC050ARO	4.9998	126.995	5.7503	146.058	0.3750	9.525	5.281	134.14	5.469	138.91	5.563	141.30	0.040	1.02	3/16
ND050ARO	4.9998	126.995	6.0003	152.408	0.5000	12.700	5.375	136.53	5.625	142.88	5.750	146.05	0.060	1.52	1/4
NF050ARO	4.9998	126.995	6.5003	165.108	0.7500	19.050	5.563	141.30	5.938	150.83	6.125	155.58	0.080	2.03	3/8
NG050ARO	4.9998	126.995	7.0003	177.808	1.0000	25.400	5.750	146.05	6.250	158.75	6.500	165.10	0.080	2.03	1/2
NA055ARO	5.4998	139.695	6.0003	152.408	0.2500	6.350	5.688	144.48	5.813	147.65	5.875	149.23	0.025	0.64	1/8
NB055ARO	5.4998	139.695	6.1253	155.583	0.3125	7.938	5.734	145.64	5.891	149.63	5.969	151.61	0.032	0.81	5/32
NC055ARO	5.4998	139.695	6.2503	158.758	0.3750	9.525	5.781	146.84	5.969	151.61	6.063	154.00	0.040	1.02	3/16
ND055ARO	5.4998	139.695	6.5003	165.108	0.5000	12.700	5.875	149.23	6.125	155.58	6.250	158.75	0.060	1.52	1/4
NF055ARO	5.4998	139.695	7.0003	177.808	0.7500	19.050	6.063	154.00	6.438	163.53	6.625	168.28	0.080	2.03	3/8



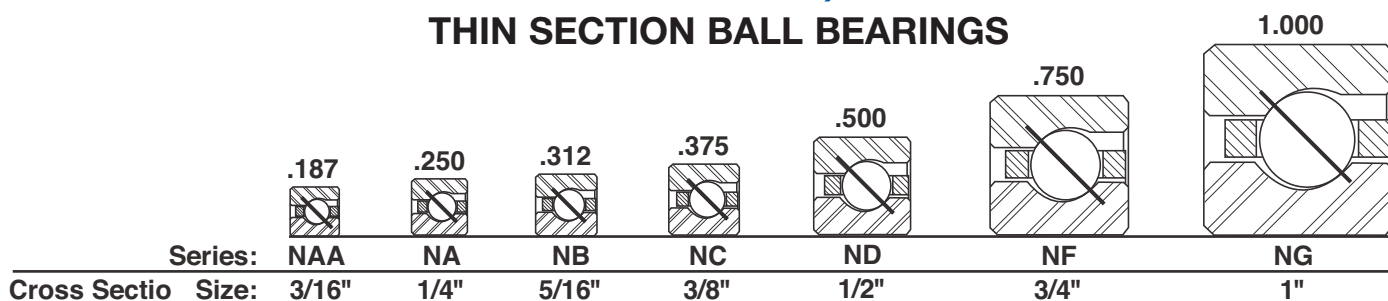
- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



Ball Quantity	Approx. Weight lbs. kg	LOAD RATINGS										Limiting Speed (RPM)	
		Radial				Thrust				Moment			
		Static		Dynamic		Static		Dynamic		Static		Dynamic	
		lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm
28	0.03 0.014	340	1,510	330	1,470	970	4,310	960	4,270	N/A	N/A	N/A	N/A
40	0.04 0.018	480	2,140	380	1,690	1,380	6,140	1,100	4,890	N/A	N/A	N/A	N/A
44	0.06 0.027	635	2,824	520	2,313	1,830	8,140	1,415	6,294	N/A	N/A	N/A	N/A
36	0.10 0.045	790	3,510	600	2,670	2,280	10,140	1,730	7,700	N/A	N/A	N/A	N/A
31	0.16 0.073	1,090	4,850	850	3,780	3,150	14,010	2,460	10,940	N/A	N/A	N/A	N/A
44	0.13 0.059	960	4,270	640	2,850	2,780	12,370	1,860	8,270	N/A	N/A	N/A	N/A
38	0.20 0.091	1,340	5,960	920	4,090	3,860	17,170	2,680	11,920	N/A	N/A	N/A	N/A
52	0.15 0.068	1,140	5,070	680	3,020	3,290	14,630	1,980	8,810	N/A	N/A	N/A	N/A
44	0.24 0.109	1,550	6,890	970	4,310	4,470	19,880	2,800	12,460	N/A	N/A	N/A	N/A
60	0.18 0.082	1,310	5,830	720	3,200	3,790	16,860	2,070	9,210	N/A	N/A	N/A	N/A
51	0.27 0.122	1,790	7,960	1,020	4,540	5,180	23,040	2,970	13,210	N/A	N/A	N/A	N/A
68	0.19 0.086	1,490	6,630	750	3,340	4,300	19,130	2,180	9,700	N/A	N/A	N/A	N/A
58	0.30 0.136	2,040	9,070	1,080	4,800	5,890	26,200	3,130	13,920	N/A	N/A	N/A	N/A
49	0.45 0.204	2,550	11,340	1,410	6,270	7,360	32,740	4,080	18,150	N/A	N/A	N/A	N/A
36	0.78 0.354	3,550	15,790	2,070	9,210	10,260	45,640	6,020	26,780	N/A	N/A	N/A	N/A
26	1.90 0.862	6,350	28,250	4,350	19,350	18,340	81,580	12,620	56,140	N/A	N/A	N/A	N/A
20	3.60 1.633	9,480	42,170	7,340	32,650	27,360	121,700	21,290	94,700	N/A	N/A	N/A	N/A
72	0.20 0.091	1,580	7,030	770	3,430	4,550	20,240	2,240	9,960	N/A	N/A	N/A	N/A
61	0.31 0.141	2,150	9,560	1,090	4,850	6,200	27,580	3,170	14,100	N/A	N/A	N/A	N/A
52	0.47 0.213	2,710	12,050	1,440	6,410	7,820	34,790	4,180	18,590	N/A	N/A	N/A	N/A
38	0.83 0.376	3,750	16,680	2,410	10,720	10,830	48,170	6,990	31,090	N/A	N/A	N/A	N/A
27	2.00 0.907	6,600	29,360	4,390	19,530	19,050	84,740	12,740	56,670	N/A	N/A	N/A	N/A
21	3.80 1.724	9,950	44,260	7,580	33,720	28,730	127,800	21,990	97,820	N/A	N/A	N/A	N/A
76	0.22 0.100	1,660	7,380	780	3,470	4,810	21,400	2,260	10,050	N/A	N/A	N/A	N/A
64	0.33 0.150	16,801	74,730	1,120	4,980	6,500	28,910	3,240	14,410	N/A	N/A	N/A	N/A
55	0.48 0.218	2,860	12,720	1,470	6,540	8,270	36,790	4,260	18,950	N/A	N/A	N/A	N/A
40	0.88 0.399	3,950	17,570	2,460	10,940	11,400	50,710	7,140	31,760	N/A	N/A	N/A	N/A
29	2.10 0.953	7,090	31,540	4,550	20,240	20,460	91,010	13,200	58,720	N/A	N/A	N/A	N/A
22	4.00 1.814	10,430	46,390	7,820	34,790	30,100	133,890	22,690	100,930	N/A	N/A	N/A	N/A
80	0.23 0.104	1,750	7,780	800	3,560	5,060	22,510	2,310	10,280	N/A	N/A	N/A	N/A
68	0.34 0.154	2,390	10,630	1,140	5,070	6,910	30,740	3,290	14,630	N/A	N/A	N/A	N/A
58	0.50 0.227	3,020	13,430	1,500	6,670	8,720	38,790	4,340	19,310	N/A	N/A	N/A	N/A
42	0.94 0.426	4,150	18,460	2,510	11,170	11,970	53,250	7,280	32,380	N/A	N/A	N/A	N/A
30	2.20 0.998	7,330	32,610	4,610	20,510	21,160	94,120	13,380	59,520	N/A	N/A	N/A	N/A
23	4.10 1.860	10,900	48,490	8,060	35,850	31,460	139,940	23,370	103,950	N/A	N/A	N/A	N/A
84	0.24 0.109	1,840	8,180	810	3,600	5,310	23,620	2,360	10,500	N/A	N/A	N/A	N/A
71	0.38 0.172	2,500	11,120	1,160	5,160	7,210	32,070	3,350	14,900	N/A	N/A	N/A	N/A
61	0.58 0.263	3,180	14,150	1,540	6,850	9,170	40,790	4,450	19,790	N/A	N/A	N/A	N/A
44	1.00 0.454	4,340	19,310	2,550	11,340	12,540	55,780	7,400	32,920	N/A	N/A	N/A	N/A
31	2.30 1.043	7,570	33,670	4,650	20,680	21,870	97,280	13,480	59,960	N/A	N/A	N/A	N/A
24	4.30 1.950	11,370	50,580	8,290	36,880	32,830	146,040	24,040	106,940	N/A	N/A	N/A	N/A
92	0.25 0.113	2,020	8,990	830	3,690	5,820	25,890	2,410	10,720	N/A	N/A	N/A	N/A
78	0.41 0.186	2,740	12,190	1,200	5,340	7,920	35,230	3,480	15,480	N/A	N/A	N/A	N/A
66	0.59 0.268	3,440	15,300	1,560	6,940	9,920	44,130	4,540	20,190	N/A	N/A	N/A	N/A
48	1.06 0.481	4,740	21,080	2,640	11,740	13,680	60,850	7,660	34,070	N/A	N/A	N/A	N/A
34	2.50 1.134	8,310	36,960	4,820	21,440	23,980	106,670	13,980	62,190	N/A	N/A	N/A	N/A

ANGULAR CONTACT, A-TYPE

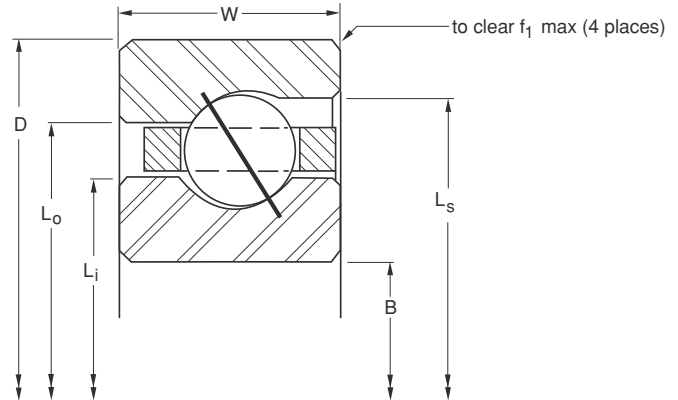
THIN SECTION BALL BEARINGS



PART NUMBER*	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter			f ₁ Housing Fillet		Ball Diameter			
							L _i -Inner Ring	L _o -Outer Ring	L _s -Counter Bore						
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm			
NG055ARO	5.4998	139.695	7.5003	190.508	1.0000	25.400	6.250	158.75	6.750	171.45	7.000	177.80	0.080	2.03	1/2
NA060ARO	5.9998	152.395	6.5003	165.108	0.2500	6.350	6.188	157.18	6.313	160.35	6.375	161.93	0.025	0.64	1/8
NB060ARO	5.9998	152.395	6.6253	168.283	0.3125	7.938	6.234	158.34	6.391	162.33	6.469	164.31	0.032	0.81	5/32
NC060ARO	5.9998	152.395	6.7503	171.458	0.3750	9.525	6.281	159.54	6.469	164.31	6.563	166.70	0.040	1.02	3/16
ND060ARO	5.9998	152.395	7.0003	177.808	0.5000	12.700	6.375	161.93	6.625	168.28	6.750	171.45	0.060	1.52	1/4
NF060ARO	5.9998	152.395	7.5003	190.508	0.7500	19.050	6.563	166.70	6.938	176.23	7.125	180.98	0.080	2.03	3/8
NG060ARO	5.9998	152.395	8.0003	203.208	1.0000	25.400	6.750	171.45	7.250	184.15	7.500	190.50	0.080	2.03	1/2
NA065ARO	6.4998	165.095	7.0003	177.808	0.2500	6.350	6.688	169.88	6.813	173.05	6.875	174.63	0.025	0.64	1/8
NB065ARO	6.4998	165.095	7.1253	180.983	0.3125	7.938	6.734	171.04	6.891	175.03	6.969	177.01	0.032	0.81	5/32
NC065ARO	6.4998	165.095	7.2503	184.158	0.3750	9.525	6.781	172.24	6.969	177.01	7.063	179.40	0.040	1.02	3/16
ND065ARO	6.4998	165.095	7.5003	190.508	0.5000	12.700	6.875	174.63	7.125	180.98	7.250	184.15	0.060	1.52	1/4
NF065ARO	6.4998	165.095	8.0003	203.208	0.7500	19.050	7.063	179.40	7.438	188.93	7.625	193.68	0.080	2.03	3/8
NG065ARO	6.4998	165.095	8.5003	215.908	1.0000	25.400	7.250	184.15	7.750	196.85	8.000	203.20	0.080	2.03	1/2
NA070ARO	6.9998	177.795	7.5003	190.508	0.2500	6.350	7.188	182.58	7.313	185.75	7.375	187.33	0.025	0.64	1/8
NB070ARO	6.9998	177.795	7.6253	193.683	0.3125	7.938	7.234	183.74	7.391	187.73	7.469	189.71	0.032	0.81	5/32
NC070ARO	6.9998	177.795	7.7503	196.858	0.3750	9.525	7.281	184.94	7.469	189.71	7.563	192.10	0.040	1.02	3/16
ND070ARO	6.9998	177.795	8.0003	203.208	0.5000	12.700	7.375	187.33	7.625	193.68	7.750	196.85	0.060	1.52	1/4
NF070ARO	6.9998	177.795	8.5003	215.908	0.7500	19.050	7.563	192.10	7.938	201.63	8.125	206.38	0.080	2.03	3/8
NG070ARO	6.9998	177.795	9.0003	228.608	1.0000	25.400	7.750	196.85	8.250	209.55	8.500	215.90	0.080	2.03	1/2
NA075ARO	7.4998	190.495	8.0003	203.208	0.2500	6.350	7.688	195.28	7.813	198.45	7.875	200.03	0.025	0.64	1/8
NB075ARO	7.4998	190.495	8.1253	206.383	0.3125	7.938	7.734	196.44	7.891	200.43	7.969	202.41	0.032	0.81	5/32
NC075ARO	7.4998	190.495	8.2503	209.558	0.3750	9.525	7.781	197.64	7.969	202.41	8.063	204.80	0.040	1.02	3/16
ND075ARO	7.4998	190.495	8.5003	215.908	0.5000	12.700	7.875	200.03	8.125	206.38	8.250	209.55	0.060	1.52	1/4
NF075ARO	7.4998	190.495	9.0003	228.608	0.7500	19.050	8.063	204.80	8.438	214.33	8.625	219.08	0.080	2.03	3/8
NG075ARO	7.4998	190.495	9.5003	241.308	1.0000	25.400	8.250	209.55	8.750	222.25	9.000	228.60	0.080	2.03	1/2
NA080ARO	7.9998	203.195	8.5003	215.908	0.2500	6.350	8.188	207.98	8.313	211.15	8.375	212.73	0.025	0.64	1/8
NB080ARO	7.9998	203.195	8.6253	219.083	0.3125	7.938	8.234	209.14	8.391	213.13	8.469	215.11	0.032	0.81	5/32
NC080ARO	7.9998	203.195	8.7503	222.258	0.3750	9.525	8.281	210.34	8.469	215.11	8.563	217.50	0.040	1.02	3/16
ND080ARO	7.9998	203.195	9.0003	228.608	0.5000	12.700	8.375	212.73	8.625	219.08	8.750	222.25	0.060	1.52	1/4
NF080ARO	7.9998	203.195	9.5003	241.308	0.7500	19.050	8.563	217.50	8.938	227.03	9.125	231.78	0.080	2.03	3/8
NG080ARO	7.9998	203.195	10.0003	254.008	1.0000	25.400	8.750	222.25	9.250	234.95	9.500	241.30	0.080	2.03	1/2
NA090ARO	8.9998	228.595	9.5003	241.308	0.2500	6.350	9.188	233.38	9.313	236.55	9.375	238.13	0.025	0.64	1/8
NB090ARO	8.9998	228.595	9.6253	244.483	0.3125	7.938	9.234	234.54	9.391	238.53	9.469	240.51	0.032	0.81	5/32
NC090ARO	8.9998	228.595	9.7503	247.658	0.3750	9.525	9.281	235.74	9.469	240.51	9.563	242.90	0.040	1.02	3/16
ND090ARO	8.9998	228.595	10.0003	254.008	0.5000	12.700	9.375	238.13	9.625	244.48	9.750	247.65	0.060	1.52	1/4
NF090ARO	8.9998	228.595	10.5003	266.708	0.7500	19.050	9.563	242.90	9.938	252.43	10.125	257.18	0.080	2.03	3/8
NG090ARO	8.9998	228.595	11.0003	279.408	1.0000	25.400	9.750	247.65	10.250	260.35	10.500	266.70	0.080	2.03	1/2
NA100ARO	9.9998	253.995	10.5003	266.708	0.2500	6.350	10.188	258.78	10.313	261.95	10.375	263.53	0.025	0.64	1/8
NB100ARO	9.9998	253.995	10.6253	269.883	0.3125	7.938	10.234	259.94	10.391	263.93	10.469	265.91	0.032	0.81	5/32
NC100ARO	9.9998	253.995	10.7503	273.058	0.3750	9.525	10.281	261.14	10.469	265.91	10.563	268.30	0.040	1.02	3/16
ND100ARO	9.9998	253.995	11.0003	279.408	0.5000	12.700	10.375	263.53	10.625	269.88	10.750	273.05	0.060	1.52	1/4
NF100ARO	9.9998	253.995	11.5003	292.108	0.7500	19.050	10.563	268.30	10.938	277.83	11.125	282.58	0.080	2.03	3/8
NG100ARO	9.9998	253.995	12.0003	304.808	1.0000	25.400	10.750	273.05	11.250	285.75	11.500	292.10	0.080	2.03	1/2



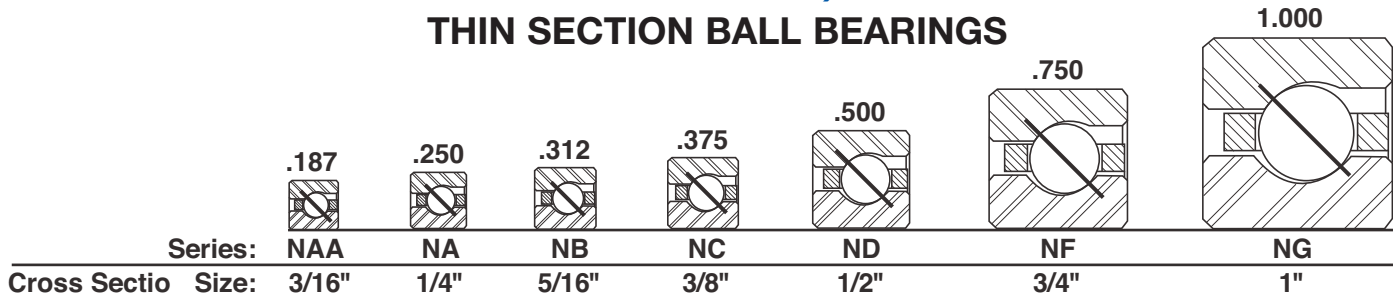
- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)	
				Radial				Thrust				Moment			
				Static		Dynamic		Static		Dynamic		Static		Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm
	26	4.70	2.132	12,320	54,800	8,610	38,300	35,570	158,220	24,960	111,030	N/A	N/A	N/A	N/A
	100	0.28	0.127	2,190	9,740	860	3,830	6,320	28,110	2,500	11,120	N/A	N/A	N/A	N/A
	85	0.44	0.200	2,990	13,300	1,240	5,520	8,630	38,390	3,600	16,010	N/A	N/A	N/A	N/A
	72	0.63	0.286	3,750	16,680	1,620	7,210	10,820	48,130	4,690	20,860	N/A	N/A	N/A	N/A
	52	1.16	0.526	5,130	22,820	2,720	12,100	14,820	65,920	7,880	35,050	N/A	N/A	N/A	N/A
	37	2.70	1.225	9,040	40,210	5,010	22,290	26,100	116,100	14,530	64,630	N/A	N/A	N/A	N/A
	28	5.10	2.313	13,270	59,030	8,860	39,410	38,300	170,370	25,700	114,320	N/A	N/A	N/A	N/A
	108	0.30	0.136	2,370	10,540	890	3,960	6,830	30,380	2,580	11,480	N/A	N/A	N/A	N/A
	91	0.47	0.213	3,200	14,230	1,260	5,600	9,240	41,100	3,650	16,240	N/A	N/A	N/A	N/A
	78	0.68	0.308	4,060	18,060	1,670	7,430	11,720	52,130	4,830	21,480	N/A	N/A	N/A	N/A
	56	1.22	0.553	5,530	24,600	2,780	12,370	15,960	70,990	8,070	35,900	N/A	N/A	N/A	N/A
	40	2.90	1.315	9,770	43,460	5,140	22,860	28,220	125,530	14,920	66,370	N/A	N/A	N/A	N/A
	30	5.40	2.449	14,220	63,250	9,110	40,520	41,040	182,560	26,410	117,480	N/A	N/A	N/A	N/A
	116	0.31	0.141	2,540	11,300	900	4,000	7,340	32,650	2,600	11,570	N/A	N/A	N/A	N/A
	98	0.50	0.227	3,450	15,350	1,300	5,780	9,960	44,300	3,760	16,730	N/A	N/A	N/A	N/A
	83	0.73	0.331	4,320	19,220	1,720	7,650	12,470	55,470	4,980	22,150	N/A	N/A	N/A	N/A
	60	1.31	0.594	5,920	26,330	2,850	12,680	17,100	76,060	8,260	36,740	N/A	N/A	N/A	N/A
	43	3.20	1.451	10,510	46,750	5,290	23,530	30,330	134,910	15,350	68,280	N/A	N/A	N/A	N/A
	32	5.80	2.631	15,160	67,440	9,370	41,680	43,780	194,740	27,160	120,810	N/A	N/A	N/A	N/A
	124	0.34	0.154	2,720	12,100	920	4,090	7,840	34,870	2,660	11,830	N/A	N/A	N/A	N/A
	105	0.53	0.240	3,700	16,460	1,330	5,920	10,670	47,460	3,860	17,170	N/A	N/A	N/A	N/A
	89	0.78	0.354	4,630	20,600	1,750	7,780	13,380	59,520	5,090	22,640	N/A	N/A	N/A	N/A
	64	1.41	0.640	6,320	28,110	2,940	13,080	18,240	81,140	8,520	37,900	N/A	N/A	N/A	N/A
	45	3.40	1.542	11,000	48,930	5,380	23,930	31,740	141,190	15,590	69,350	N/A	N/A	N/A	N/A
	34	6.10	2.767	16,110	71,660	9,560	42,530	46,510	206,890	27,710	123,260	N/A	N/A	N/A	N/A
	132	0.38	0.172	2,890	12,860	960	4,270	8,350	37,140	2,770	12,320	N/A	N/A	N/A	N/A
	112	0.57	0.259	3,940	17,530	1,360	6,050	11,380	50,620	3,950	17,570	N/A	N/A	N/A	N/A
	95	0.84	0.381	4,950	22,020	1,800	8,010	14,280	63,520	5,210	23,180	N/A	N/A	N/A	N/A
	68	1.53	0.694	6,710	29,850	2,990	13,300	19,380	86,210	8,670	38,570	N/A	N/A	N/A	N/A
	48	3.50	1.588	11,730	52,180	5,520	24,550	33,860	150,620	16,020	71,260	N/A	N/A	N/A	N/A
	36	6.50	2.948	17,060	75,890	9,800	43,590	49,250	219,070	28,430	126,460	N/A	N/A	N/A	N/A
	148	0.44	0.200	3,240	14,410	990	4,400	9,360	41,640	2,860	12,720	N/A	N/A	N/A	N/A
	125	0.66	0.299	4,400	19,570	1,410	6,270	12,700	56,490	4,080	18,150	N/A	N/A	N/A	N/A
	106	0.94	0.426	5,520	24,550	1,860	8,270	15,930	70,860	5,400	24,020	N/A	N/A	N/A	N/A
	76	1.72	0.780	7,500	33,360	3,100	13,790	21,660	96,350	9,000	40,030	N/A	N/A	N/A	N/A
	54	3.90	1.769	13,190	58,670	5,780	25,710	38,090	169,430	16,760	74,550	N/A	N/A	N/A	N/A
	40	7.20	3.266	18,960	84,340	10,190	45,330	54,720	243,410	29,540	131,400	N/A	N/A	N/A	N/A
	164	0.50	0.227	3,590	15,970	1,030	4,580	10,370	46,130	3,000	13,340	N/A	N/A	N/A	N/A
	139	0.73	0.331	4,890	21,750	1,480	6,580	14,120	62,810	4,290	19,080	N/A	N/A	N/A	N/A
	118	1.06	0.481	6,140	27,310	1,942	8,640	17,730	78,870	5,570	24,780	N/A	N/A	N/A	N/A
	84	1.88	0.853	8,290	36,880	3,240	14,410	23,940	106,490	9,390	41,770	N/A	N/A	N/A	N/A
	59	4.30	1.950	14,420	64,140	5,980	26,600	41,620	185,130	17,330	77,090	N/A	N/A	N/A	N/A
	44	7.90	3.583	20,850	92,750	10,560	46,970	60,190	267,740	30,620	136,200	N/A	N/A	N/A	N/A

ANGULAR CONTACT, A-TYPE

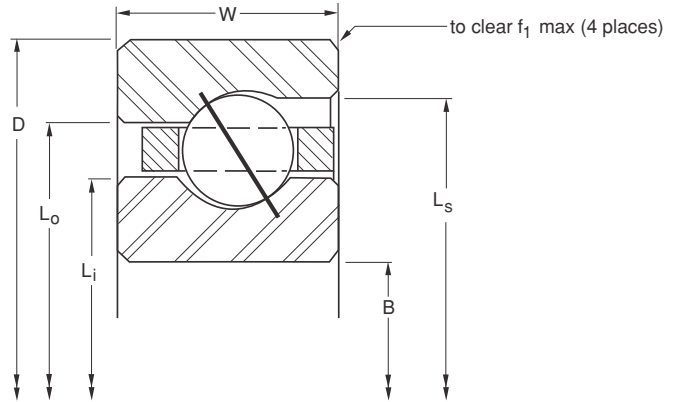
THIN SECTION BALL BEARINGS



PART NUMBER*	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter			f ₁ Housing Fillet	
	in.	mm	in.	mm	in.	mm	L ₁ -Inner Ring	L ₀ -Outer Ring	L _S -Counter Bore	in.	mm
NA110ARO	10.9998	279.395	11.5003	292.108	0.2500	6.350	11.188 284.18	11.313 287.35	11.375 288.93	0.025 0.64	1/8
NB110ARO	10.9998	279.395	11.6253	295.283	0.3125	7.938	11.234 285.34	11.391 289.33	11.469 291.31	0.032 0.81	5/32
NC110ARO	10.9998	279.395	11.7503	298.458	0.3750	9.525	11.281 286.54	11.469 291.31	11.563 293.70	0.040 1.02	3/16
ND110ARO	10.9998	279.395	12.0003	304.808	0.5000	12.700	11.375 288.93	11.625 295.28	11.750 298.45	0.060 1.52	1/4
NF110ARO	10.9998	279.395	12.5003	317.508	0.7500	19.050	11.563 293.70	11.938 303.23	12.125 307.98	0.080 2.03	3/8
NG110ARO	10.9998	279.395	13.0003	330.208	1.0000	25.400	11.750 298.45	12.250 311.15	12.500 317.50	0.080 2.03	1/2
NA120ARO	11.9998	304.795	12.5003	317.508	0.2500	6.350	12.188 309.58	12.313 312.75	12.375 314.33	0.025 0.64	1/8
NB120ARO	11.9998	304.795	12.6253	320.683	0.3125	7.938	12.234 310.74	12.391 314.73	12.469 316.71	0.032 0.81	5/32
NC120ARO	11.9998	304.795	12.7503	323.858	0.3750	9.525	12.281 311.94	12.469 316.71	12.563 319.10	0.040 1.02	3/16
ND120ARO	11.9998	304.795	13.0003	330.208	0.5000	12.700	12.375 314.33	12.625 320.68	12.750 323.85	0.060 1.52	1/4
NF120ARO	11.9998	304.795	13.5003	342.908	0.7500	19.050	12.563 319.10	12.938 328.63	13.125 333.38	0.080 2.03	3/8
NG120ARO	11.9998	304.795	14.0003	355.608	1.0000	25.400	12.750 323.85	13.250 336.55	13.500 342.90	0.080 2.03	1/2
NB140ARO	13.9998	355.595	14.6253	371.483	0.3125	7.938	14.234 361.54	14.391 365.53	14.469 367.51	0.032 0.81	5/32
NC140ARO	13.9998	355.595	14.7503	374.658	0.3750	9.525	14.281 362.74	14.469 367.51	14.563 369.90	0.040 1.02	3/16
ND140ARO	13.9998	355.595	15.0003	381.008	0.5000	12.700	14.375 365.13	14.625 371.48	14.750 374.65	0.060 1.52	1/4
NF140ARO	13.9998	355.595	15.5003	393.708	0.7500	19.050	14.563 369.90	14.938 379.43	15.125 384.18	0.080 2.03	3/8
NG140ARO	13.9998	355.595	16.0003	406.408	1.0000	25.400	14.750 374.65	15.250 387.35	15.500 393.70	0.080 2.03	1/2
NB160ARO	15.9998	406.395	16.6253	422.283	0.3125	7.938	16.234 412.34	16.391 416.33	16.469 418.31	0.032 0.81	5/32
NC160ARO	15.9998	406.395	16.7503	425.458	0.3750	9.525	16.281 413.54	16.469 418.31	16.563 420.70	0.040 1.02	3/16
ND160ARO	15.9998	406.395	17.0003	431.808	0.5000	12.700	16.375 415.93	16.625 422.28	16.750 425.45	0.060 1.52	1/4
NF160ARO	15.9998	406.395	17.5003	444.508	0.7500	19.050	16.563 420.70	16.938 430.23	17.125 434.98	0.080 2.03	3/8
NG160ARO	15.9998	406.395	18.0003	457.208	1.0000	25.400	16.750 425.45	17.250 438.15	17.500 444.50	0.080 2.03	1/2
NB180ARO	17.9998	457.195	18.6253	473.083	0.3125	7.938	18.234 463.14	18.391 467.13	18.469 469.11	0.032 0.81	5/32
NC180ARO	17.9998	457.195	18.7503	476.258	0.3750	9.525	18.281 464.34	18.469 469.11	18.563 471.50	0.040 1.02	3/16
ND180ARO	17.9998	457.195	19.0003	482.608	0.5000	12.700	18.375 466.73	18.625 473.08	18.750 476.25	0.060 1.52	1/4
NF180ARO	17.9998	457.195	19.5003	495.308	0.7500	19.050	18.563 471.50	18.938 481.03	19.125 485.78	0.080 2.03	3/8
NG180ARO	17.9998	457.195	20.0003	508.008	1.0000	25.400	18.750 476.25	19.250 488.95	19.500 495.30	0.080 2.03	1/2
NB200ARO	19.9998	507.995	20.6253	523.883	0.3125	7.938	20.234 513.94	20.391 517.93	20.469 519.91	0.032 0.81	5/32
NC200ARO	19.9998	507.995	20.7503	527.058	0.3750	9.525	20.281 515.14	20.469 519.91	20.563 522.30	0.040 1.02	3/16
ND200ARO	19.9998	507.995	21.0003	533.408	0.5000	12.700	20.375 517.53	20.625 523.88	20.750 527.05	0.060 1.52	1/4
NF200ARO	19.9998	507.995	21.5003	546.108	0.7500	19.050	20.563 522.30	20.938 531.83	21.125 536.58	0.080 2.03	3/8
NG200ARO	19.9998	507.995	22.0003	558.808	1.0000	25.400	20.750 527.05	21.250 539.75	21.500 546.10	0.080 2.03	1/2
NC250ARO	24.9998	634.995	25.7503	654.058	0.3750	9.525	25.281 642.14	25.469 646.91	25.563 649.30	0.040 1.02	3/16
ND250ARO	24.9998	634.995	26.0003	660.408	0.5000	12.700	25.375 644.53	25.625 650.88	25.750 654.05	0.060 1.52	1/4
NF250ARO	24.9998	634.995	26.5003	673.108	0.7500	19.050	25.563 649.30	25.938 658.83	26.125 663.58	0.080 2.03	3/8
NG250ARO	24.9998	634.995	27.0003	685.808	1.0000	25.400	25.750 654.05	26.250 666.75	26.500 673.10	0.080 2.03	1/2
NC300ARO	29.9998	761.995	30.7503	781.058	0.3750	9.525	30.281 769.14	30.469 773.91	30.563 776.30	0.040 1.02	3/16
ND300ARO	29.9998	761.995	31.0003	787.408	0.5000	12.700	30.375 771.53	30.625 777.88	30.750 781.05	0.060 1.52	1/4
NF300ARO	29.9998	761.995	31.5003	800.108	0.7500	19.050	30.563 776.30	30.938 785.83	31.125 790.58	0.080 2.03	3/8
NG300ARO	29.9998	761.995	32.0003	812.808	1.0000	25.400	30.750 781.05	31.250 793.75	31.500 800.10	0.080 2.03	1/2
NF350ARO	34.9998	888.995	36.5003	927.108	0.7500	19.050	35.563 903.30	35.938 912.83	36.125 917.58	0.080 2.03	3/8
NG350ARO	34.9998	888.995	37.0003	939.808	1.0000	25.400	35.750 908.05	36.250 920.75	36.500 927.10	0.080 2.03	1/2
NF400ARO	39.9998	1015.995	41.5003	1054.108	0.7500	19.050	40.563 1030.30	40.938 1039.83	41.125 1044.58	0.080 2.03	3/8
NG400ARO	39.9998	1015.995	42.0003	1066.808	1.0000	25.400	40.750 1035.05	41.250 1047.75	41.500 1054.10	0.080 2.03	1/2



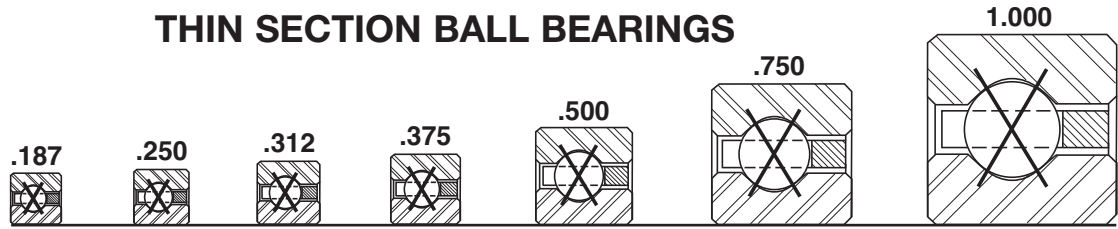
- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



Ball Quantity	Approx. Weight lbs. kg	LOAD RATINGS								Limiting Speed (RPM)	
		Radial		Thrust		Moment					
		Static lbf	Dynamic N	Static lbf	Dynamic N	Static lbf - in	Dynamic Nm	Static lbf - in	Dynamic Nm		
180	0.52 0.236	3,940	17,530	1,072	4,770	11,380	50,620	3,100	13,790	1,780	
152	0.75 0.340	5,350	23,800	1,540	6,850	15,440	68,680	4,350	19,350	1,770	
129	1.16 0.526	6,720	29,890	2,047	9,110	19,390	86,250	5,780	25,710	1,760	
92	2.06 0.934	9,080	40,390	3,310	14,720	26,220	116,630	9,600	42,700	1,740	
65	4.80 2.177	15,880	70,640	6,227	27,700	45,850	203,950	17,870	79,490	1,700	
48	8.60 3.901	22,750	101,200	10,920	48,570	65,660	292,070	31,660	140,830	1,670	
196	0.56 0.254	4,290	19,080	1,128	5,020	12,390	55,110	3,200	14,230	1,630	
166	0.83 0.376	5,840	25,980	1,623	7,220	16,860	75,000	4,510	20,060	1,620	
140	1.25 0.567	7,290	32,430	2,147	9,550	21,040	93,590	5,980	26,600	1,620	
100	2.25 1.021	9,870	43,900	3,430	15,260	28,500	126,770	9,950	44,260	1,600	
70	5.20 2.359	17,100	76,060	6,487	28,860	49,380	219,650	18,340	81,580	1,570	
52	9.30 4.218	24,640	109,600	11,230	49,950	71,140	316,450	32,570	144,880	1,540	
192	1.05 0.476	6,760	30,070	1,767	7,860	19,500	86,740	4,840	21,530	1,400	
163	1.52 0.689	8,490	37,770	2,347	10,440	24,500	108,980	6,330	28,160	1,390	
116	2.73 1.238	11,450	50,930	3,582	15,930	33,060	147,060	10,340	45,990	1,380	
81	6.00 2.722	19,790	88,030	7,043	31,330	57,140	254,170	19,490	86,700	1,360	
60	10.80 4.899	28,430	126,460	11,770	52,360	82,080	365,110	34,150	151,910	1,330	
219	1.20 0.544	7,710	34,300	1,907	8,480	22,250	98,970	5,150	22,910	1,230	
186	1.73 0.785	9,680	43,060	2,533	11,270	27,950	124,330	6,730	29,940	1,220	
132	3.10 1.406	13,030	57,960	3,856	17,150	37,620	167,340	11,030	49,060	1,210	
92	7.10 3.221	22,480	100,000	7,563	33,640	64,890	288,650	20,310	90,340	1,190	
68	12.30 5.579	32,220	143,320	12,360	54,980	93,020	413,770	35,850	159,470	1,180	
246	1.35 0.612	8,660	38,520	2,038	9,070	24,990	111,160	5,510	24,510	1,090	
209	1.94 0.880	10,880	48,400	2,707	12,040	31,410	139,720	7,280	32,380	1,090	
148	3.48 1.579	14,610	64,990	4,113	18,300	42,180	187,630	11,390	50,670	1,080	
104	7.90 3.583	25,410	113,030	8,103	36,040	73,360	326,320	21,210	94,350	1,070	
76	13.70 6.214	36,020	160,220	12,898	57,370	104,000	462,620	37,230	165,610	1,050	
273	1.50 0.680	9,610	42,750	2,162	9,620	27,730	123,350	5,900	26,240	980	
231	2.16 0.980	12,030	53,510	2,863	12,740	34,720	154,440	7,780	34,610	980	
164	3.85 1.746	16,190	72,020	4,356	19,380	46,740	207,910	11,920	53,020	980	
115	8.90 4.037	28,100	125,000	8,562	38,090	81,120	360,840	22,680	100,890	960	
84	15.80 7.167	39,810	177,080	13,612	60,550	114,900	511,100	38,830	172,720	950	
288	2.69 1.220	14,900	66,280	3,233	14,380	43,280	192,520	9,010	40,080	790	
204	4.79 2.173	20,140	89,590	4,908	21,830	58,140	258,620	13,540	60,230	780	
142	10.90 4.944	34,700	154,350	9,585	42,640	100,200	445,710	26,100	116,100	780	
104	19.50 8.845	49,280	219,210	15,239	67,790	142,300	632,980	41,420	184,250	770	
345	3.21 1.456	17,960	79,890	3,561	15,840	51,850	230,640	10,160	45,190	660	
244	5.73 2.599	24,090	107,160	5,397	24,010	69,540	309,330	15,260	67,880	660	
170	13.00 5.897	41,540	184,780	10,533	46,850	119,900	533,340	29,430	130,910	650	
124	23.30 10.569	58,760	261,380	16,687	74,230	169,600	754,420	46,020	204,710	650	
198	15.10 6.849	48,380	215,200	11,382	50,630	139,700	621,420	32,580	144,920	560	
144	27.10 12.292	68,240	303,550	17,982	79,990	197,000	876,300	50,840	226,150	560	
226	17.20 7.802	55,220	245,630	12,147	54,030	159,400	709,050	35,580	158,270	490	
164	30.80 13.971	77,720	345,720	19,153	85,200	224,400	998,180	55,440	246,610	490	

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

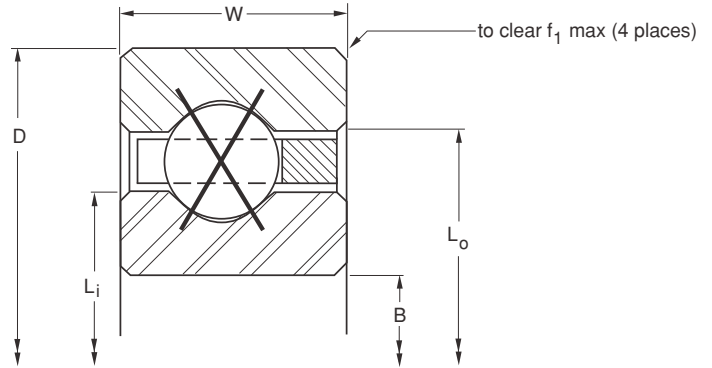


Series:	NAA	NA	NB	NC	ND	NF	NG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
NAA10XL0	1.0000	25.400	1.3752	34.930	0.1875	4.763	1.141	28.98	1.234	31.34	3/32
NAA15XL0	1.5000	38.100	1.8752	47.630	0.1875	4.763	1.641	41.68	1.734	44.04	3/32
NAA17XL0	1.7500	44.450	2.1252	53.980	0.1875	4.763	1.890	48.01	1.985	50.42	3/32
NA020XP0	2.0000	50.800	2.5002	63.505	0.2500	6.350	2.188	55.58	2.313	58.75	1/8
NB020XP0	2.0000	50.800	2.6252	66.680	0.3125	7.938	2.234	56.74	2.391	60.73	5/32
NA025XP0	2.5000	63.500	3.0002	76.205	0.2500	6.350	2.688	68.28	2.813	71.45	1/8
NB025XP0	2.5000	63.500	3.1252	79.380	0.3125	7.938	2.734	69.44	2.891	73.43	5/32
NA030XP0	3.0000	76.200	3.5002	88.905	0.2500	6.350	3.188	80.98	3.313	84.15	1/8
NB030XP0	3.0000	76.200	3.6252	92.080	0.3125	7.938	3.234	82.14	3.391	86.13	5/32
NA035XP0	3.5000	88.900	4.0002	101.605	0.2500	6.350	3.688	93.68	3.813	96.85	1/8
NB035XP0	3.5000	88.900	4.1252	104.780	0.3125	7.938	3.734	94.84	3.891	98.83	5/32
NA040XP0	3.9998	101.595	4.5003	114.308	0.2500	6.350	4.188	106.38	4.313	109.55	1/8
NB040XP0	3.9998	101.595	4.6253	117.483	0.3125	7.938	4.234	107.54	4.391	111.53	5/32
NC040XP0	3.9998	101.595	4.7503	120.658	0.3750	9.525	4.281	108.74	4.469	113.51	3/16
ND040XP0	3.9998	101.595	5.0003	127.008	0.5000	12.700	4.375	111.13	4.625	117.48	1/4
NF040XP0	3.9998	101.595	5.5003	139.708	0.7500	19.050	4.563	115.90	4.938	125.43	3/8
NG040XP0	3.9998	101.595	6.0003	152.408	1.0000	25.400	4.750	120.65	5.250	133.35	1/2
NA042XP0	4.2498	107.945	4.7503	120.658	0.2500	6.350	4.438	112.73	4.563	115.90	1/8
NB042XP0	4.2498	107.945	4.8753	123.833	0.3125	7.938	4.484	113.89	4.641	117.88	5/32
NC042XP0	4.2498	107.945	5.0003	127.008	0.3750	9.525	4.531	115.09	4.719	119.86	3/16
ND042XP0	4.2498	107.945	5.2503	133.358	0.5000	12.700	4.625	117.48	4.875	123.83	1/4
NF042XP0	4.2498	107.945	5.7503	146.058	0.7500	19.050	4.813	122.25	5.188	131.78	3/8
NG042XP0	4.2498	107.945	6.2503	158.758	1.0000	25.400	5.000	127.00	5.500	139.70	1/2
NA045XP0	4.4998	114.295	5.0003	127.008	0.2500	6.350	4.688	119.08	4.813	122.25	1/8
NB045XP0	4.4998	114.295	5.1253	130.183	0.3125	7.938	4.734	120.24	4.891	124.23	5/32
NC045XP0	4.4998	114.295	5.2503	133.358	0.3750	9.525	4.781	121.44	4.969	126.21	3/16
ND045XP0	4.4998	114.295	5.5003	139.708	0.5000	12.700	4.875	123.83	5.125	130.18	1/4
NF045XP0*	4.4998	114.295	6.0003	152.408	0.7500	19.050	5.063	128.60	5.438	138.13	3/8
NG045XP0	4.4998	114.295	6.5003	165.108	1.0000	25.400	5.250	133.35	5.750	146.05	1/2
NA047XP0	4.7498	120.645	5.2503	133.358	0.2500	6.350	4.938	125.43	5.063	128.60	1/8
NB047XP0	4.7498	120.645	5.3753	136.533	0.3125	7.938	4.984	126.59	5.141	130.58	5/32
NC047XP0	4.7498	120.645	5.5003	139.708	0.3750	9.525	5.031	127.79	5.219	132.56	3/16
ND047XP0	4.7498	120.645	5.7503	146.058	0.5000	12.700	5.125	130.18	5.375	136.53	1/4
NF047XP0	4.7498	120.645	6.2503	158.758	0.7500	19.050	5.313	134.95	5.688	144.48	3/8
NG047XP0	4.7498	120.645	6.7503	171.458	1.0000	25.400	5.500	139.70	6.000	152.40	1/2
NA050XP0	4.9998	126.995	5.5003	139.708	0.2500	6.350	5.188	131.78	5.313	134.95	1/8
NB050XP0	4.9998	126.995	5.6253	142.883	0.3125	7.938	5.234	132.94	5.391	136.93	5/32
NC050XP0	4.9998	126.995	5.7503	146.058	0.3750	9.525	5.281	134.14	5.469	138.91	3/16
ND050XP0	4.9998	126.995	6.0003	152.408	0.5000	12.700	5.375	136.53	5.625	142.88	1/4
NF050XP0	4.9998	126.995	6.5003	165.108	0.7500	19.050	5.563	141.30	5.938	150.83	3/8
NG050XP0	4.9998	126.995	7.0003	177.808	1.0000	25.400	5.750	146.05	6.250	158.75	1/2
NA055XP0	5.4998	139.695	6.0003	152.408	0.2500	6.350	5.688	144.48	5.813	147.65	1/8
NB055XP0	5.4998	139.695	6.1253	155.583	0.3125	7.938	5.734	145.64	5.891	149.63	5/32
NC055XP0	5.4998	139.695	6.2503	158.758	0.3750	9.525	5.781	146.84	5.969	151.61	3/16
ND055XP0	5.4998	139.695	6.5003	165.108	0.5000	12.700	5.875	149.23	6.125	155.58	1/4
NF055XP0	5.4998	139.695	7.0003	177.808	0.7500	19.050	6.063	154.00	6.438	163.53	3/8



- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	21	0.03	0.014	290	1,290	270	1,200	730	3,250	680	3,020	170	20	160	20	10,110
	29	0.04	0.018	400	1,780	310	1,380	1,000	4,450	770	3,430	340	40	260	30	7,110
	33	0.06	0.027	540	2,402	412	1,832	1,355	6,027	1,000	4,448	555	63	405	46	6,190
	27	0.10	0.045	680	3,020	514	2,290	1,710	7,610	1,230	5,470	770	90	550	60	5,330
	23	0.16	0.073	930	4,140	758	3,370	2,340	10,410	1,740	7,740	1,080	120	800	90	5,190
	33	0.13	0.059	830	3,690	583	2,590	2,090	9,300	1,320	5,870	1,150	130	730	80	4,360
	28	0.20	0.091	1,140	5,070	848	3,770	2,840	12,630	1,880	8,360	1,600	180	1,060	120	4,270
	39	0.15	0.068	990	4,400	643	2,860	2,470	10,990	1,410	6,270	1,600	180	920	100	3,690
	33	0.24	0.109	1,340	5,960	933	4,150	3,350	14,900	1,990	8,850	2,220	250	1,320	150	3,620
	45	0.18	0.082	1,140	5,070	701	3,120	2,850	12,680	1,480	6,580	2,130	240	1,110	130	3,200
	38	0.27	0.122	1,540	6,850	1,014	4,510	3,860	17,170	2,100	9,340	2,940	330	1,600	180	3,150
	51	0.19	0.086	1,290	5,740	756	3,360	3,220	14,320	1,550	6,890	2,740	310	1,320	150	2,820
	43	0.30	0.136	1,750	7,780	1,091	4,850	4,370	19,440	2,210	9,830	3,770	430	1,900	210	2,780
	35	0.45	0.204	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,740
	27	0.78	0.354	3,080	13,700	2,311	10,280	7,700	34,250	4,890	21,750	6,930	780	4,400	500	2,670
	19	1.90	0.862	5,360	23,840	4,665	20,750	13,400	59,610	8,830	39,280	12,730	1,440	8,390	950	2,530
	15	3.60	1.633	8,210	36,520	7,979	35,490	20,520	91,280	15,150	67,390	20,520	2,320	15,150	1,710	2,400
	54	0.20	0.091	1,370	6,090	783	3,480	3,410	15,170	1,590	7,070	3,070	350	1,430	160	2,670
	45	0.31	0.141	1,830	8,140	1,120	4,980	4,570	20,330	2,230	9,920	4,170	470	2,040	230	2,630
	37	0.47	0.213	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,590
	28	0.83	0.376	3,190	14,190	2,355	10,480	7,980	35,500	4,920	21,890	7,580	860	4,670	530	2,530
	20	2.00	0.907	5,640	25,090	4,795	21,330	14,110	62,760	8,990	39,990	14,110	1,590	8,993	1,020	2,400
	15	3.80	1.724	8,210	36,520	7,917	35,220	20,520	91,280	15,150	67,390	21,550	2,430	15,910	1,800	2,290
	57	0.22	0.100	1,440	6,410	809	3,600	3,600	16,010	1,610	7,160	3,420	390	1,530	170	2,530
	48	0.33	0.150	1,950	8,670	1,165	5,180	4,880	21,710	2,300	10,230	4,690	530	2,220	250	2,490
	39	0.48	0.218	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,460
	30	0.88	0.399	3,420	15,210	2,454	10,920	8,550	38,030	5,080	22,600	8,550	970	5,080	570	2,400
	21	2.10	0.953	5,930	26,380	4,923	21,900	14,810	65,880	9,180	40,830	15,550	1,760	9,695	1,100	2,290
	16	4.00	1.814	8,760	38,970	8,205	36,500	21,890	97,370	15,820	70,370	24,080	2,720	17,400	1,970	2,180
	60	0.23	0.104	1,520	6,760	834	3,710	3,790	16,860	1,650	7,340	3,790	430	1,650	190	2,400
	50	0.34	0.154	2,030	9,030	1,193	5,310	5,080	22,600	2,310	10,280	5,140	580	2,340	260	2,370
	41	0.50	0.227	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	2,340
	31	0.94	0.426	3,530	15,700	2,496	11,100	8,840	39,320	5,130	22,820	9,280	1,050	5,380	610	2,290
	22	2.20	0.998	6,210	27,620	5,048	22,450	15,520	69,040	9,380	41,720	17,070	1,930	10,416	1,180	2,180
	17	4.10	1.860	9,300	41,370	8,487	37,750	23,260	103,470	16,470	73,260	26,740	3,020	18,940	2,140	2,090
	63	0.24	0.109	1,590	7,070	859	3,820	3,980	17,700	1,680	7,470	4,180	470	1,760	200	2,290
	53	0.38	0.172	2,150	9,560	1,236	5,500	5,380	23,930	2,380	10,590	5,720	650	2,520	280	2,260
	43	0.58	0.263	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	2,230
	33	1.00	0.454	3,760	16,730	2,592	11,530	9,410	41,860	5,270	23,440	10,350	1,170	5,800	660	2,180
	23	2.30	1.043	6,490	28,870	5,172	23,010	16,220	72,150	9,520	42,350	18,660	2,110	11,157	1,260	2,090
	18	4.30	1.950	9,850	43,810	8,762	38,980	24,620	109,520	17,110	76,110	29,550	3,340	20,530	2,320	2,000
	69	0.25	0.113	1,750	7,780	908	4,040	4,360	19,390	1,720	7,650	5,020	570	1,970	220	2,090
	58	0.41	0.186	2,360	10,500	1,304	5,800	5,890	26,200	2,460	10,940	6,850	770	2,860	320	2,060
	47	0.59	0.268	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	2,040
	36	1.06	0.481	4,100	18,240	2,725	12,120	10,260	45,640	5,450	24,240	12,310	1,390	6,540	740	2,000
	25	2.50	1.134	7,050	31,360	5,415	24,090	17,630	78,420	9,820	43,680	22,040	2,490	12,696	1,430	1,920

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

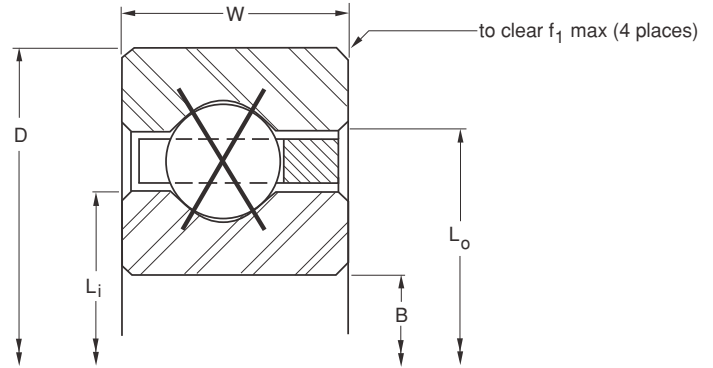


Series:	NAA	NA	NB	NC	ND	NF	NG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS									
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet	Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring		
NG055XPO	5.4998	139.695	7.5003	190.508	1.0000	25.400	6.250 158.75	6.750 171.45	0.080 2.03	1/2
NA060XPO	5.9998	152.395	6.5003	165.108	0.2500	6.350	6.188 157.18	6.313 160.35	0.025 0.64	1/8
NB060XPO	5.9998	152.395	6.6253	168.283	0.3125	7.938	6.234 158.34	6.391 162.33	0.032 0.81	5/32
NC060XPO	5.9998	152.395	6.7503	171.458	0.3750	9.525	6.281 159.54	6.469 164.31	0.040 1.02	3/16
ND060XPO	5.9998	152.395	7.0003	177.808	0.5000	12.700	6.375 161.93	6.625 168.28	0.060 1.52	1/4
NF060XPO	5.9998	152.395	7.5003	190.508	0.7500	19.050	6.563 166.70	6.938 176.23	0.080 2.03	3/8
NG060XPO	5.9998	152.395	8.0003	203.208	1.0000	25.400	6.750 171.45	7.250 184.15	0.080 2.03	1/2
NA065XPO	6.4998	165.095	7.0003	177.808	0.2500	6.350	6.688 169.88	6.813 173.05	0.025 0.64	1/8
NB065XPO	6.4998	165.095	7.1253	180.983	0.3125	7.938	6.734 171.04	6.891 175.03	0.032 0.81	5/32
NC065XPO	6.4998	165.095	7.2503	184.158	0.3750	9.525	6.781 172.24	6.969 177.01	0.040 1.02	3/16
ND065XPO	6.4998	165.095	7.5003	190.508	0.5000	12.700	6.875 174.63	7.125 180.98	0.060 1.52	1/4
NF065XPO	6.4998	165.095	8.0003	203.208	0.7500	19.050	7.063 179.40	7.438 188.93	0.080 2.03	3/8
NG065XPO	6.4998	165.095	8.5003	215.908	1.0000	25.400	7.250 184.15	7.750 196.85	0.080 2.03	1/2
NA070XPO	6.9998	177.795	7.5003	190.508	0.2500	6.350	7.188 182.58	7.313 185.75	0.025 0.64	1/8
NB070XPO	6.9998	177.795	7.6253	193.683	0.3125	7.938	7.234 183.74	7.391 187.73	0.032 0.81	5/32
NC070XPO	6.9998	177.795	7.7503	196.858	0.3750	9.525	7.281 184.94	7.469 189.71	0.040 1.02	3/16
ND070XPO	6.9998	177.795	8.0003	203.208	0.5000	12.700	7.375 187.33	7.625 193.68	0.060 1.52	1/4
NF070XPO	6.9998	177.795	8.5003	215.908	0.7500	19.050	7.563 192.10	7.938 201.63	0.080 2.03	3/8
NG070XPO	6.9998	177.795	9.0003	228.608	1.0000	25.400	7.750 196.85	8.250 209.55	0.080 2.03	1/2
NA075XPO	7.4998	190.495	8.0003	203.208	0.2500	6.350	7.688 195.28	7.813 198.45	0.025 0.64	1/8
NB075XPO	7.4998	190.495	8.1253	206.383	0.3125	7.938	7.734 196.44	7.891 200.43	0.032 0.81	5/32
NC075XPO	7.4998	190.495	8.2503	209.558	0.3750	9.525	7.781 197.64	7.969 202.41	0.040 1.02	3/16
ND075XPO	7.4998	190.495	8.5003	215.908	0.5000	12.700	7.875 200.03	8.125 206.38	0.060 1.52	1/4
NF075XPO	7.4998	190.495	9.0003	228.608	0.7500	19.050	8.063 204.80	8.438 214.33	0.080 2.03	3/8
NG075XPO	7.4998	190.495	9.5003	241.308	1.0000	25.400	8.250 209.55	8.750 222.25	0.080 2.03	1/2
NA080XPO	7.9998	203.195	8.5003	215.908	0.2500	6.350	8.188 207.98	8.313 211.15	0.025 0.64	1/8
NB080XPO	7.9998	203.195	8.6253	219.083	0.3125	7.938	8.234 209.14	8.391 213.13	0.032 0.81	5/32
NC080XPO	7.9998	203.195	8.7503	222.258	0.3750	9.525	8.281 210.34	8.469 215.11	0.040 1.02	3/16
ND080XPO	7.9998	203.195	9.0003	228.608	0.5000	12.700	8.375 212.73	8.625 219.08	0.060 1.52	1/4
NF080XPO	7.9998	203.195	9.5003	241.308	0.7500	19.050	8.563 217.50	8.938 227.03	0.080 2.03	3/8
NG080XPO	7.9998	203.195	10.0003	254.008	1.0000	25.400	8.750 222.25	9.250 234.95	0.080 2.03	1/2
NA090XPO	8.9998	228.595	9.5003	241.308	0.2500	6.350	9.188 233.38	9.313 236.55	0.025 0.64	1/8
NB090XPO	8.9998	228.595	9.6253	244.483	0.3125	7.938	9.234 234.54	9.391 238.53	0.032 0.81	5/32
NC090XPO	8.9998	228.595	9.7503	247.658	0.3750	9.525	9.281 235.74	9.469 240.51	0.040 1.02	3/16
ND090XPO	8.9998	228.595	10.0003	254.008	0.5000	12.700	9.375 238.13	9.625 244.48	0.060 1.52	1/4
NF090XPO	8.9998	228.595	10.5003	266.708	0.7500	19.050	9.563 242.90	9.938 252.43	0.080 2.03	3/8
NG090XPO	8.9998	228.595	11.0003	279.408	1.0000	25.400	9.750 247.65	10.250 260.35	0.080 2.03	1/2
NA100XPO	9.9998	253.995	10.5003	266.708	0.2500	6.350	10.188 258.78	10.313 261.95	0.025 0.64	1/8
NB100XPO	9.9998	253.995	10.6253	269.883	0.3125	7.938	10.234 259.94	10.391 263.93	0.032 0.81	5/32
NC100XPO	9.9998	253.995	10.7503	273.058	0.3750	9.525	10.281 261.14	10.469 265.91	0.040 1.02	3/16
ND100XPO	9.9998	253.995	11.0003	279.408	0.5000	12.700	10.375 263.53	10.625 269.88	0.060 1.52	1/4
NF100XPO	9.9998	253.995	11.5003	292.108	0.7500	19.050	10.563 268.30	10.938 277.83	0.080 2.03	3/8
NG100XPO	9.9998	253.995	12.0003	304.808	1.0000	25.400	10.750 273.05	11.250 285.75	0.080 2.03	1/2



- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator

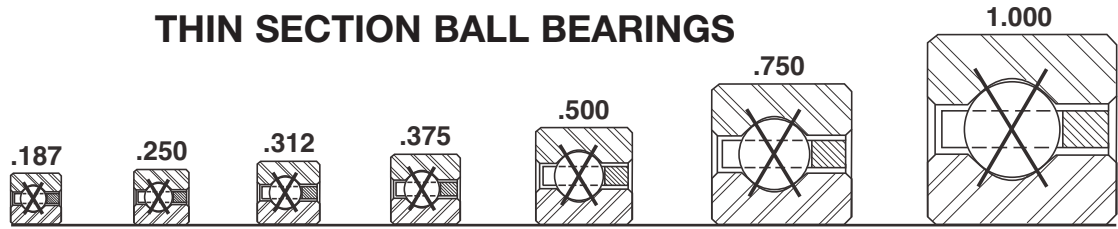


	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	19	4.70	2.132	10,400	46,260	8,979	39,940	25,990	115,610	17,460	77,670	33,790	3,820	22,700	2,560	1,850
	75	0.28	0.127	1,900	8,450	955	4,250	4,740	21,080	1,780	7,920	5,930	670	2,240	250	1,920
	63	0.44	0.200	2,560	11,390	1,371	6,100	6,400	28,470	2,540	11,300	8,080	910	3,247	370	1,900
	51	0.63	0.286	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,880
	39	1.16	0.526	4,450	19,790	2,855	12,700	11,120	49,460	5,610	24,950	14,450	1,630	7,290	820	1,850
	27	2.70	1.225	7,620	33,900	5,651	25,140	19,050	84,740	10,150	45,150	25,710	2,900	14,311	1,620	1,780
	21	5.10	2.313	11,490	51,110	9,503	42,270	28,730	127,800	18,290	81,360	40,220	4,540	25,610	2,890	1,710
	81	0.30	0.136	2,050	9,120	1,001	4,450	5,120	22,770	1,840	8,180	6,910	780	2,535	290	1,780
	68	0.47	0.213	2,760	12,280	1,435	6,380	6,910	30,740	2,590	11,520	9,410	1,060	3,668	410	1,760
	55	0.68	0.308	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,750
	42	1.22	0.553	4,790	21,310	2,980	13,260	11,970	53,250	5,740	25,530	16,760	1,890	8,040	910	1,710
	29	2.90	1.315	8,180	36,390	5,880	26,160	20,460	91,010	10,380	46,170	29,660	3,350	15,993	1,810	1,660
	22	5.40	2.449	12,040	53,560	9,713	43,210	30,100	133,890	18,520	82,380	45,140	5,100	27,770	3,140	1,600
	87	0.31	0.141	2,200	9,790	1,046	4,650	5,500	24,470	1,850	8,230	7,980	900	2,844	320	1,660
	73	0.50	0.227	2,970	13,210	1,498	6,660	7,420	33,010	2,660	11,830	10,850	1,230	4,109	460	1,640
	59	0.73	0.331	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,630
	45	1.31	0.594	5,130	22,820	3,103	13,800	12,830	57,070	5,880	26,160	19,240	2,170	8,810	1,000	1,600
	31	3.20	1.451	8,750	38,920	6,103	27,150	21,870	97,280	10,640	47,330	33,890	3,830	17,744	2,000	1,550
	24	5.80	2.631	13,130	58,410	10,208	45,410	32,830	146,040	19,330	85,980	52,530	5,940	30,930	3,490	1,500
	93	0.34	0.154	2,350	10,450	1,089	4,840	5,880	26,160	1,890	8,410	9,120	1,030	3,165	360	1,550
	78	0.53	0.240	3,170	14,100	1,559	6,930	7,920	35,230	2,730	12,140	12,380	1,400	4,568	520	1,540
	63	0.78	0.354	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,520
	48	1.41	0.640	5,470	24,330	3,222	14,330	13,680	60,850	6,060	26,960	21,890	2,470	9,700	1,100	1,500
	33	3.40	1.542	9,310	41,410	6,323	28,130	23,280	103,550	10,930	48,620	38,410	4,340	19,568	2,210	1,450
	25	6.10	2.767	13,680	60,850	10,410	46,310	34,200	152,130	19,460	86,560	58,140	6,570	33,196	3,750	1,410
	99	0.38	0.172	2,500	11,120	1,131	5,030	6,260	27,850	1,970	8,760	10,330	1,170	3,499	400	1,450
	83	0.57	0.259	3,370	14,990	1,618	7,200	8,430	37,500	2,790	12,410	14,020	1,580	5,045	570	1,440
	67	0.84	0.381	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,430
	51	1.53	0.694	5,810	25,840	3,338	14,850	14,540	64,680	6,170	27,450	24,710	2,790	10,643	1,200	1,410
	35	3.50	1.588	9,880	43,950	6,535	29,070	24,690	109,830	11,190	49,780	43,200	4,880	21,453	2,420	1,370
	27	6.50	2.948	14,770	65,700	10,882	48,410	36,940	164,320	20,230	89,990	66,480	7,510	36,743	4,150	1,330
	111	0.44	0.200	2,810	12,500	1,212	5,390	7,020	31,230	2,040	9,070	12,990	1,470	4,204	470	1,300
	93	0.66	0.299	3,780	16,810	1,732	7,700	9,450	42,040	2,890	12,860	17,600	1,990	6,050	680	1,290
	75	0.94	0.426	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,280
	57	1.72	0.780	6,500	28,910	3,561	15,840	16,250	72,280	6,410	28,510	30,870	3,490	12,693	1,430	1,260
	39	3.90	1.769	11,000	48,930	6,947	30,900	27,510	122,370	11,630	51,730	53,640	6,060	25,410	2,870	1,230
	30	7.20	3.266	16,420	73,040	11,526	51,270	41,040	182,560	21,020	93,500	82,080	9,270	43,240	4,890	1,200
	123	0.50	0.227	3,110	13,830	1,289	5,730	7,780	34,610	2,180	9,700	15,940	1,800	4,956	560	1,170
	103	0.73	0.331	4,190	18,640	1,841	8,190	10,460	46,530	3,080	13,700	21,580	2,440	7,121	800	1,160
	83	1.06	0.481	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	1,160
	63	1.88	0.853	7,180	31,940	3,776	16,800	17,960	79,890	6,680	29,710	37,710	4,260	14,872	1,680	1,140
	43	4.30	1.950	12,130	53,960	7,342	32,660	30,330	134,910	12,100	53,820	65,210	7,370	29,608	3,350	1,120
	33	7.90	3.583	18,060	80,330	12,147	54,030	45,140	200,790	21,790	96,930	99,320	11,220	50,124	5,660	1,090

Refer to the Engineering section for load and speed limitations.

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

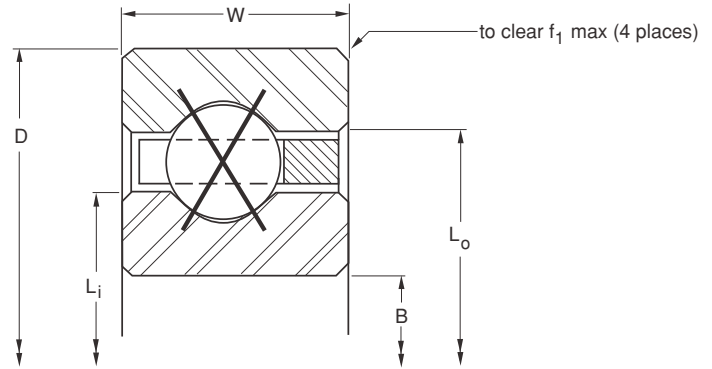


Series:	NAA	NA	NB	NC	ND	NF	NG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
NA110XPO	10.9998	279.395	11.5003	292.108	0.2500	6.350	11.188	284.18	11.313	287.35	1/8
NB110XPO	10.9998	279.395	11.6253	295.283	0.3125	7.938	11.234	285.34	11.391	289.33	5/32
NC110XPO	10.9998	279.395	11.7503	298.458	0.3750	9.525	11.281	286.54	11.469	291.31	3/16
ND110XPO	10.9998	279.395	12.0003	304.808	0.5000	12.700	11.375	288.93	11.625	295.28	1/4
NF110XPO	10.9998	279.395	12.5003	317.508	0.7500	19.050	11.563	293.70	11.938	303.23	3/8
NG110XPO	10.9998	279.395	13.0003	330.208	1.0000	25.400	11.750	298.45	12.250	311.15	1/2
NA120XPO	11.9998	304.795	12.5003	317.508	0.2500	6.350	12.188	309.58	12.313	312.75	1/8
NB120XPO	11.9998	304.795	12.6253	320.683	0.3125	7.938	12.234	310.74	12.391	314.73	5/32
NC120XPO	11.9998	304.795	12.7503	323.858	0.3750	9.525	12.281	311.94	12.469	316.71	3/16
ND120XPO	11.9998	304.795	13.0003	330.208	0.5000	12.700	12.375	314.33	12.625	320.68	1/4
NF120XPO	11.9998	304.795	13.5003	342.908	0.7500	19.050	12.563	319.10	12.938	328.63	3/8
NG120XPO	11.9998	304.795	14.0003	355.608	1.0000	25.400	12.750	323.85	13.250	336.55	1/2
NB140XPO	13.9998	355.595	14.6253	371.483	0.3125	7.938	14.234	361.54	14.391	365.53	5/32
NC140XPO	13.9998	355.595	14.7503	374.658	0.3750	9.525	14.281	362.74	14.469	367.51	3/16
ND140XPO	13.9998	355.595	15.0003	381.008	0.5000	12.700	14.375	365.13	14.625	371.48	1/4
NF140XPO	13.9998	355.595	15.5003	393.708	0.7500	19.050	14.563	369.90	14.938	379.43	3/8
NG140XPO	13.9998	355.595	16.0003	406.408	1.0000	25.400	14.750	374.65	15.250	387.35	1/2
NB160XPO	15.9998	406.395	16.6253	422.283	0.3125	7.938	16.234	412.34	16.391	416.33	5/32
NC160XPO	15.9998	406.395	16.7503	425.458	0.3750	9.525	16.281	413.54	16.469	418.31	3/16
ND160XPO	15.9998	406.395	17.0003	431.808	0.5000	12.700	16.375	415.93	16.625	422.28	1/4
NF160XPO	15.9998	406.395	17.5003	444.508	0.7500	19.050	16.563	420.70	16.938	430.23	3/8
NG160XPO	15.9998	406.395	18.0003	457.208	1.0000	25.400	16.750	425.45	17.250	438.15	1/2
NB180XPO	17.9998	457.195	18.6253	473.083	0.3125	7.938	18.234	463.14	18.391	467.13	5/32
NC180XPO	17.9998	457.195	18.7503	476.258	0.3750	9.525	18.281	464.34	18.469	469.11	3/16
ND180XPO	17.9998	457.195	19.0003	482.608	0.5000	12.700	18.375	466.73	18.625	473.08	1/4
NF180XPO	17.9998	457.195	19.5003	495.308	0.7500	19.050	18.563	471.50	18.938	481.03	3/8
NG180XPO	17.9998	457.195	20.0003	508.008	1.0000	25.400	18.750	476.25	19.250	488.95	1/2
NB200XPO	19.9998	507.995	20.6253	523.883	0.3125	7.938	20.234	513.94	20.391	517.93	5/32
NC200XPO	19.9998	507.995	20.7503	527.058	0.3750	9.525	20.281	515.14	20.469	519.91	3/16
ND200XPO	19.9998	507.995	21.0003	533.408	0.5000	12.700	20.375	517.53	20.625	523.88	1/4
NF200XPO	19.9998	507.995	21.5003	546.108	0.7500	19.050	20.563	522.30	20.938	531.83	3/8
NG200XPO	19.9998	507.995	22.0003	558.808	1.0000	25.400	20.750	527.05	21.250	539.75	1/2
NC250XPO	24.9998	634.995	25.7503	654.058	0.3750	9.525	25.281	642.14	25.469	646.91	3/16
ND250XPO	24.9998	634.995	26.0003	660.408	0.5000	12.700	25.375	644.53	25.625	650.88	1/4
NF250XPO	24.9998	634.995	26.5003	673.108	0.7500	19.050	25.563	649.30	25.938	658.83	3/8
NG250XPO	24.9998	634.995	27.0003	685.808	1.0000	25.400	25.750	654.05	26.250	666.75	1/2
NC300XPO	29.9998	761.995	30.7503	781.058	0.3750	9.525	30.281	769.14	30.469	773.91	3/16
ND300XPO	29.9998	761.995	31.0003	787.408	0.5000	12.700	30.375	771.53	30.625	777.88	1/4
NF300XPO	29.9998	761.995	31.5003	800.108	0.7500	19.050	30.563	776.30	30.938	785.83	3/8
NG300XPO	29.9998	761.995	32.0003	812.808	1.0000	25.400	30.750	781.05	31.250	793.75	1/2
NF350XPO	34.9998	888.995	36.5003	927.108	0.7500	19.050	35.563	903.30	35.938	912.83	3/8
NG350XPO	34.9998	888.995	37.0003	939.808	1.0000	25.400	35.750	908.05	36.250	920.75	1/2
NF400XPO	39.9998	1015.995	41.5003	1054.108	0.7500	19.050	40.563	1030.30	40.938	1039.83	3/8
NG400XPO	39.9998	1015.995	42.0003	1066.808	1.0000	25.400	40.750	1035.05	41.250	1047.75	1/2



- 52100 Steel with Thin Dense Chrome Coating
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator

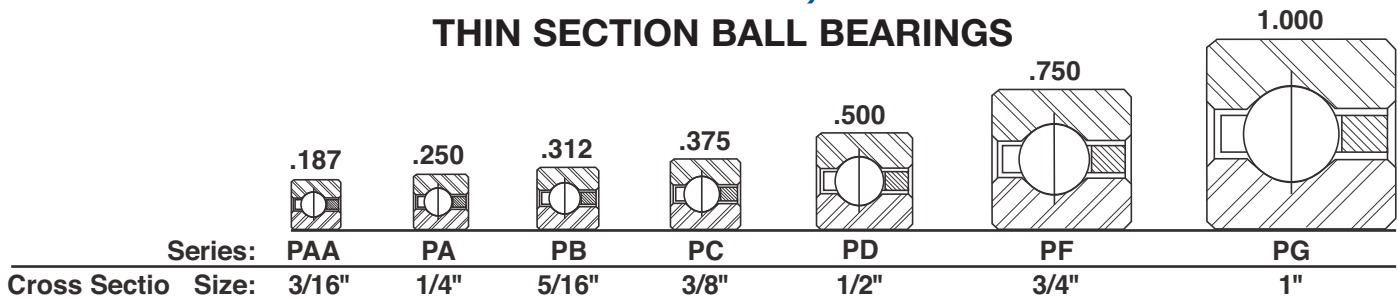


	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	135	0.52	0.236	3,410	15,170	1,362	6,060	8,540	37,990	2,320	10,320	19,210	2,170	5,750	650	1,070
	113	0.75	0.340	4,590	20,420	1,945	8,650	11,480	51,070	3,280	14,590	25,970	2,930	8,254	930	1,060
	91	1.16	0.526	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	1,050
	69	2.06	0.934	7,870	35,010	3,981	17,710	19,670	87,500	6,830	30,380	45,230	5,110	17,173	1,940	1,040
	47	4.80	2.177	13,260	58,980	7,721	34,340	33,150	147,460	12,490	55,560	77,910	8,800	34,032	3,850	1,020
	36	8.60	3.901	19,700	87,630	12,739	56,670	49,250	219,070	22,530	100,220	118,200	13,350	57,347	6,480	1,000
	147	0.56	0.254	3,720	16,550	1,433	6,370	9,300	41,370	2,450	10,900	22,770	2,570	6,587	740	980
	123	0.83	0.376	5,000	22,240	2,045	9,100	12,500	55,600	3,470	15,440	30,770	3,480	9,446	1,070	970
	99	1.25	0.567	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	970
	75	2.25	1.021	8,550	38,030	4,178	18,580	21,380	95,100	7,080	31,490	53,440	6,040	19,590	2,210	960
	51	5.20	2.359	14,390	64,010	8,084	35,960	35,970	160,000	13,190	58,670	91,730	10,360	38,666	4,370	940
	39	9.30	4.218	21,340	94,930	13,315	59,230	53,350	237,310	23,180	103,110	138,700	15,670	64,935	7,340	920
	143	1.05	0.476	5,810	25,840	2,234	9,940	14,530	64,630	3,840	17,080	41,580	4,700	11,994	1,360	840
	115	1.52	0.689	6,910	30,740	2,862	12,730	17,280	76,870	4,890	21,750	49,690	5,610	15,434	1,740	830
	87	2.73	1.238	9,920	44,130	4,551	20,240	24,800	110,320	7,670	34,120	71,910	8,120	24,755	2,800	830
	59	6.00	2.722	16,650	74,060	8,775	39,030	41,620	185,130	14,530	64,630	122,800	13,870	48,556	5,490	810
	45	10.80	4.899	24,620	109,520	14,404	64,070	61,560	273,830	24,300	108,090	184,700	20,870	81,056	9,160	800
	163	1.20	0.544	6,620	29,450	2,410	10,720	16,560	73,660	4,190	18,640	54,020	6,100	14,750	1,670	740
	131	1.73	0.785	7,880	35,050	3,086	13,730	19,690	87,590	5,330	23,710	64,480	7,290	18,955	2,140	730
	99	3.10	1.406	11,290	50,220	4,899	21,790	28,220	125,530	8,360	37,190	93,110	10,520	30,325	3,430	730
	67	7.10	3.221	18,900	84,070	9,421	41,910	47,260	210,220	15,820	70,370	158,300	17,890	59,200	6,690	720
	51	12.30	5.579	27,910	124,150	15,425	68,610	69,770	310,350	25,510	113,470	237,200	26,800	98,373	11,110	710
	183	1.35	0.612	7,440	33,090	2,576	11,460	18,590	82,690	4,520	20,110	68,090	7,690	17,694	2,000	660
	147	1.94	0.880	8,840	39,320	3,295	14,660	22,090	98,260	5,760	25,620	81,190	9,170	22,712	2,570	650
	111	3.48	1.579	12,650	56,270	5,226	23,250	31,640	140,740	9,030	40,170	117,000	13,220	36,268	4,100	650
	75	7.90	3.583	21,160	94,120	10,028	44,610	52,900	235,310	17,060	75,890	198,400	22,420	70,537	7,970	640
	57	13.70	6.214	31,190	138,740	16,386	72,890	77,980	346,870	27,410	121,930	296,300	33,480	116,793	13,200	630
	203	1.50	0.680	8,250	36,700	2,731	12,150	20,620	91,720	4,850	21,570	83,780	9,470	20,813	2,350	590
	163	2.16	0.980	9,800	43,590	3,492	15,530	24,500	108,980	6,170	27,450	99,830	11,280	26,695	3,020	590
	123	3.85	1.746	14,020	62,360	5,534	24,620	35,060	155,950	9,670	43,010	143,700	16,240	42,561	4,810	590
	83	8.90	4.037	23,420	104,180	10,602	47,160	58,550	260,440	18,250	81,180	243,000	27,460	82,528	9,320	580
	63	15.80	7.167	34,470	153,330	17,293	76,920	86,180	383,350	29,300	130,330	362,000	40,900	136,238	15,390	570
	203	2.69	1.220	12,200	54,270	3,941	17,530	30,510	135,720	7,140	31,760	154,800	17,490	37,518	4,240	470
	153	4.79	2.173	17,440	77,580	6,235	27,730	43,610	193,990	11,180	49,730	222,400	25,130	59,649	6,740	470
	103	10.90	4.944	29,060	129,270	11,909	52,970	72,650	323,160	21,070	93,720	374,200	42,280	115,037	13,000	470
	78	19.50	8.845	42,680	189,850	19,360	86,120	106,700	474,630	33,780	150,260	554,900	62,700	188,838	21,340	460
	243	3.21	1.456	14,610	64,990	4,338	19,300	36,520	162,450	8,050	35,810	221,900	25,070	49,436	5,590	400
	183	5.73	2.599	20,860	92,790	6,856	30,500	52,160	232,020	12,600	56,050	318,100	35,940	78,447	8,860	390
	123	13.00	5.897	34,700	154,350	13,065	58,120	86,760	385,930	23,720	105,510	533,600	60,290	150,708	17,030	390
	93	23.30	10.569	50,890	226,370	21,200	94,300	127,200	565,810	37,980	168,940	788,800	89,120	246,541	27,860	390
	143	15.10	6.849	40,350	179,490	14,100	62,720	100,900	448,830	26,220	116,630	721,200	81,480	189,106	21,370	340
	108	27.10	12.292	59,100	262,890	22,845	101,620	147,700	657,000	41,970	186,690	1,064,000	120,220	308,527	34,860	330
	163	17.20	7.802	45,990	204,570	15,034	66,870	115,000	511,550	28,620	127,310	937,100	105,880	229,832	25,970	290
	123	30.80	13.971	67,310	299,410	24,332	108,230	168,300	748,640	45,770	203,600	1,380,000	155,920	374,256	42,290	290

N-SERIES

RADIAL CONTACT, C-TYPE

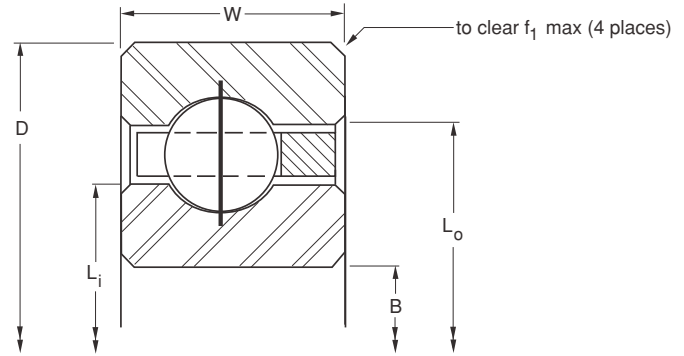
THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
PAA10CLO	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	3/32
PAA15CLO	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	3/32
PAA17CLO	1.7500	44.450	2.1250	53.975	0.1875	4.760	1.890	48.00	1.985	50.42	3/32
PA020CP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	1/8
PB020CP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	5/32
PA025CP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	1/8
PB025CP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	5/32
PA030CP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	1/8
PB030CP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	5/32
PA035CP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	1/8
PB035CP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.897	98.98	5/32
PA040CP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	1/8
PB040CP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	5/32
PC040CP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	3/16
PD040CP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	1/4
PF040CP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	3/8
PG040CP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	1/2
PA042CP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	1/8
PB042CP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	5/32
PC042CP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	3/16
PD042CP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	1/4
PF042CP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	3/8
PG042CP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	1/2
PA045CP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	1/8
PB045CP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	5/32
PC045CP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	3/16
PD045CP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	1/4
PF045CP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	3/8
PG045CP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	1/2
PA047CP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	1/8
PB047CP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	5/32
PC047CP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	3/16
PD047CP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	1/4
PF047CP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	3/8
PG047CP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	1/2
PA050CP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	1/8
PB050CP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	5/32
PC050CP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	3/16
PD050CP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	1/4
PF050CP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	3/8
PG050CP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	1/2
PA055CP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	1/8
PB055CP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	5/32
PC055CP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	3/16
PD055CP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	1/4
PF055CP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	3/8



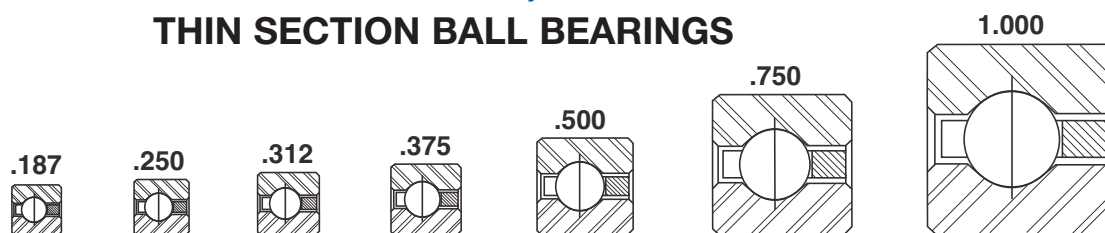
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



Ball Quantity	Approx. Weight lbs. kg	LOAD RATINGS										Limiting Speed (RPM)	
		Radial				Thrust				Moment			
		Static		Dynamic		Static		Dynamic		Static		Dynamic	
		lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm
21	0.03 0.014	290	1,290	300	1,330	480	2,140	880	3,910	110	10	210	25
29	0.04 0.018	400	1,780	350	1,560	650	2,890	1,020	4,540	220	25	350	40
33	0.06 0.027	540	2,402	455	2,033	865	3,847	1,330	5,916	355	40	545	62
27	0.10 0.045	680	3,020	560	2,490	1,080	4,800	1,640	7,300	490	55	740	80
23	0.16 0.073	930	4,140	800	3,560	1,460	6,490	2,320	10,320	680	80	1,070	120
33	0.13 0.059	830	3,690	610	2,710	1,310	5,830	1,770	7,870	720	80	970	110
28	0.20 0.091	1,140	5,070	860	3,830	1,750	7,780	2,510	11,170	990	110	1,410	160
39	0.15 0.068	990	4,400	650	2,890	1,530	6,810	1,880	8,360	990	110	1,220	140
33	0.24 0.109	1,340	5,960	920	4,090	2,050	9,120	2,680	11,920	1,360	150	1,770	200
45	0.18 0.082	1,140	5,070	690	3,070	1,750	7,780	1,990	8,850	1,320	150	1,490	170
38	0.27 0.122	1,540	6,850	970	4,310	2,340	10,410	2,810	12,500	1,780	200	2,140	240
51	0.19 0.086	1,290	5,740	720	3,200	1,980	8,810	2,080	9,250	1,680	190	1,770	200
43	0.30 0.136	1,750	7,780	1,020	4,540	2,630	11,700	2,950	13,120	2,270	260	2,550	290
35	0.45 0.204	2,100	9,340	1,290	5,740	3,110	13,830	3,740	16,640	2,720	310	3,280	370
27	0.78 0.354	3,080	13,700	2,250	10,010	4,950	22,020	6,520	29,000	4,450	500	5,870	660
19	1.90 0.862	5,360	23,840	3,940	17,530	7,980	35,500	11,420	50,800	7,580	860	10,850	1,230
15	3.60 1.633	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	12,960	1,460	19,440	2,200
54	0.20 0.091	1,370	6,090	730	3,250	2,090	9,300	2,110	9,390	1,880	210	1,900	210
45	0.31 0.141	1,830	8,140	1,030	4,580	2,740	12,190	3,000	13,340	2,500	280	2,730	310
37	0.47 0.213	2,220	9,880	1,320	5,870	3,270	14,550	3,830	17,040	3,030	340	3,550	400
28	0.83 0.376	3,190	14,190	2,270	10,100	5,110	22,730	6,580	29,270	4,860	550	6,250	710
20	2.00 0.907	5,640	25,090	4,070	18,100	8,400	37,370	11,810	52,530	8,400	950	11,810	1,330
15	3.80 1.724	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	13,600	1,540	20,410	2,310
57	0.22 0.100	1,440	6,410	750	3,340	2,200	9,790	2,170	9,650	2,090	240	2,060	230
48	0.33 0.150	1,950	8,670	1,060	4,720	2,920	12,990	3,080	13,700	2,810	320	2,960	330
39	0.48 0.218	2,340	10,410	1,350	6,010	3,440	15,300	3,910	17,390	3,360	380	3,810	430
30	0.88 0.399	3,420	15,210	2,350	10,450	5,460	24,290	6,820	30,340	5,460	620	6,820	770
21	2.10 0.953	5,930	26,380	4,210	18,730	8,820	39,230	12,200	54,270	9,270	1,050	12,810	1,450
16	4.00 1.814	8,760	38,970	7,000	31,140	13,820	61,470	20,290	90,250	15,200	1,720	22,320	2,520
60	0.23 0.104	1,520	6,760	760	3,380	2,310	10,280	2,220	9,880	2,310	260	2,220	250
50	0.34 0.154	2,030	9,030	1,070	4,760	3,030	13,480	3,110	13,830	3,070	350	3,140	350
41	0.50 0.227	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	4,070	460
31	0.94 0.426	3,530	15,700	2,360	10,500	5,620	25,000	6,840	30,430	5,910	670	7,180	810
22	2.20 0.998	6,210	27,620	4,310	19,170	9,220	41,010	12,490	55,560	10,140	1,150	13,740	1,550
17	4.10 1.860	9,300	41,370	7,290	32,430	14,680	65,300	21,130	93,990	16,890	1,910	24,300	2,750
63	0.24 0.109	1,590	7,070	770	3,430	2,420	10,760	2,240	9,960	2,540	290	2,350	270
53	0.38 0.172	2,150	9,560	1,100	4,890	3,210	14,280	3,190	14,190	3,410	390	3,390	380
43	0.58 0.263	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	4,340	490
33	1.00 0.454	3,760	16,730	2,430	10,810	5,970	26,560	7,040	31,320	6,570	740	7,740	870
23	2.30 1.043	6,490	28,870	4,380	19,480	9,600	42,700	12,710	56,540	11,050	1,250	14,620	1,650
18	4.30 1.950	9,850	43,810	7,570	33,670	15,550	69,170	21,950	97,640	18,660	2,110	26,340	2,980
69	0.25 0.113	1,750	7,780	800	3,560	2,650	11,790	2,320	10,320	3,040	340	2,660	300
58	0.41 0.186	2,360	10,500	1,130	5,030	3,500	15,570	3,280	14,590	4,070	460	3,810	430
47	0.59 0.268	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	4,900	550
36	1.06 0.481	4,100	18,240	2,510	11,170	6,480	28,820	7,270	32,340	7,780	880	8,720	990
25	2.50 1.134	7,050	31,360	4,540	20,190	10,370	46,130	13,170	58,580	12,970	1,470	16,460	1,860

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

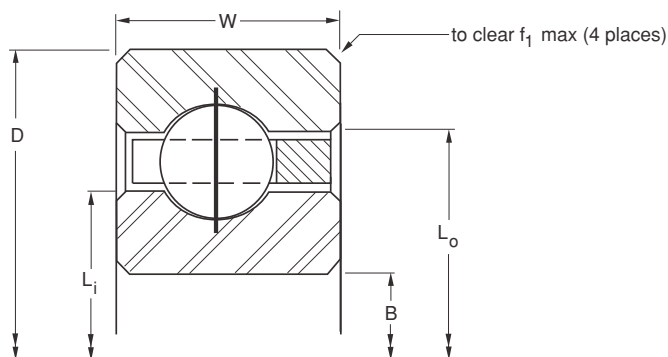


Series:	PAA	PA	PB	PC	PD	PF	PG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet	Ball Diameter	
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring		L _o -Outer Ring		in.	mm	in.
PG055CP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	0.080	2.03	1/2
PA060CP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	0.025	0.64	1/8
PB060CP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	0.032	0.81	5/32
PC060CP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	0.040	1.02	3/16
PD060CP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	0.060	1.52	1/4
PF060CP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	0.080	2.03	3/8
PG060CP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	0.080	2.03	1/2
PA065CP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	0.025	0.64	1/8
PB065CP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	0.032	0.81	5/32
PC065CP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	0.040	1.02	3/16
PD065CP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	0.060	1.52	1/4
PF065CP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	0.080	2.03	3/8
PG065CP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	0.080	2.03	1/2
PA070CP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	0.025	0.64	1/8
PB070CP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	0.032	0.81	5/32
PC070CP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	0.040	1.02	3/16
PD070CP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	0.060	1.52	1/4
PF070CP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	0.080	2.03	3/8
PG070CP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	0.080	2.03	1/2
PA075CP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	0.025	0.64	1/8
PB075CP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	0.032	0.81	5/32
PC075CP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	0.040	1.02	3/16
PD075CP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	0.060	1.52	1/4
PF075CP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	0.080	2.03	3/8
PG075CP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	0.080	2.03	1/2
PA080CP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	0.025	0.64	1/8
PB080CP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	0.032	0.81	5/32
PC080CP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	0.040	1.02	3/16
PD080CP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	0.060	1.52	1/4
PF080CP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	0.080	2.03	3/8
PG080CP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	0.080	2.03	1/2
PA090CP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	0.025	0.64	1/8
PB090CP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	0.032	0.81	5/32
PC090CP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	0.040	1.02	3/16
PD090CP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	0.060	1.52	1/4
PF090CP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	0.080	2.03	3/8
PG090CP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	0.080	2.03	1/2
PA100CP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	0.025	0.64	1/8
PB100CP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	0.032	0.81	5/32
PC100CP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	0.040	1.02	3/16
PD100CP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	0.060	1.52	1/4
PF100CP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	0.080	2.03	3/8
PG100CP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	0.080	2.03	1/2



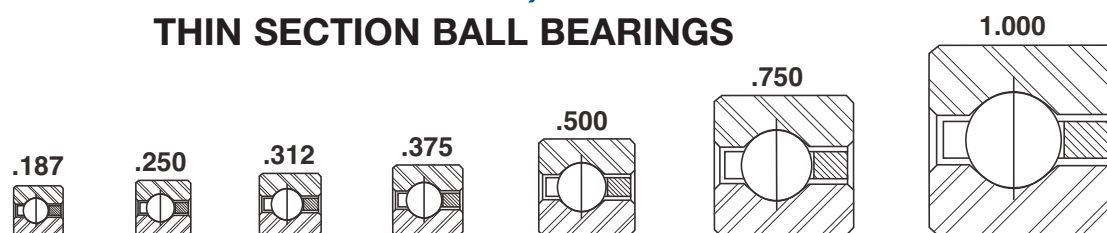
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)	
				Radial		Thrust				Moment					
				Static	Dynamic	Static	Dynamic	Static	Dynamic	Static	Dynamic	Static	Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm		
	19	4.70	2.132	10,400	46,260	7,850	34,920	16,410	73,000	22,750	101,200	21,330	2,410	3,080	
	75	0.28	0.127	1,900	8,450	830	3,690	2,870	12,770	2,420	10,760	3,590	410	3,200	
	63	0.44	0.200	2,560	11,390	1,170	5,200	3,790	16,860	3,380	15,030	4,790	540	3,170	
	51	0.63	0.286	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	3,140	
	39	1.16	0.526	4,450	19,790	2,580	11,480	6,990	31,090	7,500	33,360	9,090	1,030	3,080	
	27	2.70	1.225	7,620	33,900	4,660	20,730	11,130	49,510	13,530	60,180	15,030	1,700	2,960	
	21	5.10	2.313	11,490	51,110	8,390	37,320	18,140	80,690	24,320	108,180	25,390	2,870	2,860	
	81	0.30	0.136	2,050	9,120	850	3,780	3,100	13,790	2,450	10,900	4,180	470	2,960	
	68	0.47	0.213	2,760	12,280	1,200	5,340	4,080	18,150	3,470	15,440	5,560	630	2,940	
	55	0.68	0.308	3,310	14,720	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	2,910	
	42	1.22	0.553	4,790	21,310	2,650	11,790	7,500	33,360	7,680	34,160	10,500	1,190	2,860	
	29	2.90	1.315	8,180	36,390	4,790	21,310	11,900	52,930	13,900	61,830	17,250	1,950	2,760	
	22	5.40	2.449	12,040	53,560	8,520	37,900	18,910	84,120	24,700	109,870	28,360	3,200	2,670	
	87	0.31	0.141	2,200	9,790	870	3,870	3,320	14,770	2,520	11,210	4,810	540	2,760	
	73	0.50	0.227	2,970	13,210	1,240	5,520	4,380	19,480	3,600	16,010	6,400	720	2,740	
	59	0.73	0.331	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	2,710	
	45	1.31	0.594	5,130	22,820	2,730	12,140	8,020	35,670	7,910	35,190	12,030	1,360	2,670	
	31	3.20	1.451	8,750	38,920	4,920	21,890	12,670	56,360	14,280	63,520	19,640	2,220	2,580	
	24	5.80	2.631	13,130	58,410	8,880	39,500	20,520	91,280	25,750	114,540	32,840	3,710	2,500	
	93	0.34	0.154	2,350	10,450	890	3,960	3,540	15,750	2,580	11,480	5,490	620	2,580	
	78	0.53	0.240	3,170	14,100	1,280	5,690	4,670	20,770	3,710	16,500	7,300	820	2,560	
	63	0.78	0.354	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	2,540	
	48	1.41	0.640	5,470	24,330	2,800	12,460	8,530	37,940	8,120	36,120	13,650	1,540	2,500	
	33	3.40	1.542	9,310	41,410	5,040	22,420	13,440	59,780	14,610	64,990	22,170	2,500	2,420	
	25	6.10	2.767	10,640	47,330	8,960	39,860	21,270	94,610	25,990	115,610	36,160	4,090	2,350	
	99	0.38	0.172	2,500	11,120	910	4,050	3,770	16,770	2,640	11,740	6,220	700	2,420	
	83	0.57	0.259	3,370	14,990	1,280	5,690	4,960	22,060	3,720	16,550	8,240	930	2,410	
	67	0.84	0.381	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	2,390	
	51	1.53	0.694	5,810	25,840	2,860	12,720	9,040	40,210	8,290	36,880	15,370	1,740	2,350	
	35	3.50	1.588	9,880	43,950	5,140	22,860	14,200	63,160	14,900	66,280	24,840	2,810	2,290	
	27	6.50	2.948	14,770	65,700	9,300	41,370	22,890	101,820	26,960	119,920	41,200	4,650	2,220	
	111	0.44	0.200	2,810	12,500	940	4,180	4,210	18,730	2,730	12,140	7,800	880	2,160	
	93	0.66	0.299	3,780	16,810	1,330	5,920	5,540	24,640	3,860	17,170	10,320	1,170	2,150	
	75	0.94	0.426	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	2,130	
	57	1.72	0.780	6,500	28,910	2,970	13,210	10,060	44,750	8,620	38,340	19,120	2,160	2,110	
	39	3.90	1.769	11,000	48,930	5,360	23,840	15,740	70,020	15,550	69,170	30,690	3,430	2,050	
	30	7.20	3.266	16,420	73,040	9,720	43,240	25,270	112,410	28,200	125,440	50,540	5,710	2,000	
	123	0.50	0.227	3,110	13,830	990	4,400	4,660	20,730	2,860	12,720	9,560	1,080	1,950	
	103	0.73	0.331	4,190	18,640	1,400	6,230	6,130	27,270	4,050	18,020	12,630	1,430	1,940	
	83	1.06	0.481	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	1,930	
	63	1.88	0.853	7,180	31,940	3,070	13,660	11,080	49,290	8,900	39,590	23,270	2,630	1,900	
	43	4.30	1.950	12,130	53,960	5,550	24,690	17,260	76,780	16,060	71,440	37,110	4,190	1,860	
	33	7.90	3.583	18,060	80,330	10,040	44,660	27,620	122,860	29,110	129,490	60,760	6,860	1,820	

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

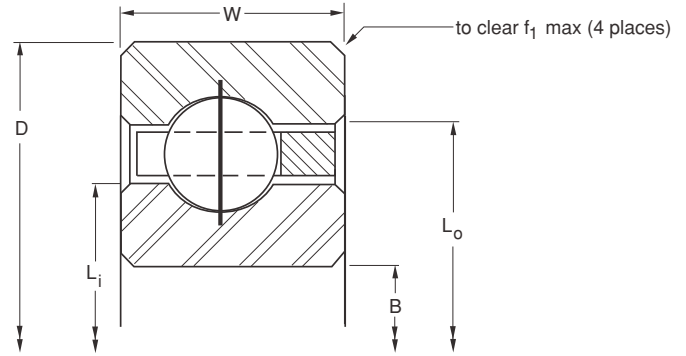


Series:	PAA	PA	PB	PC	PD	PF	PG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter		
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm			
PA110CP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	11.313	287.35	0.025	0.64	1/8
PB110CP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	11.391	289.33	0.032	0.81	5/32
PC110CP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	11.469	291.31	0.040	1.02	3/16
PD110CP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	11.625	295.28	0.060	1.52	1/4
PF110CP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	11.938	303.23	0.080	2.03	3/8
PG110CP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	12.250	311.15	0.080	2.03	1/2
PA120CP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	12.313	312.75	0.025	0.64	1/8
PB120CP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	12.391	314.73	0.032	0.81	5/32
PC120CP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	12.469	316.71	0.040	1.02	3/16
PD120CP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	12.625	320.68	0.060	1.52	1/4
PF120CP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	12.938	328.63	0.080	2.03	3/8
PG120CP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	13.250	336.55	0.080	2.03	1/2
PB140CP0	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	14.391	365.53	0.032	0.81	5/32
PC140CP0	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	14.469	367.51	0.040	1.02	3/16
PD140CP0	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	14.625	371.48	0.060	1.52	1/4
PF140CP0	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	14.938	379.43	0.080	2.03	3/8
PG140CP0	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	15.250	387.35	0.080	2.03	1/2
PB160CP0	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	16.391	416.33	0.032	0.81	5/32
PC160CP0	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	16.469	418.31	0.040	1.02	3/16
PD160CP0	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	16.625	422.28	0.060	1.52	1/4
PF160CP0*	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	16.938	430.23	0.080	2.03	3/8
PG160CP0	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	17.250	438.15	0.080	2.03	1/2
PB180CP0	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	18.391	467.13	0.032	0.81	5/32
PC180CP0	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	18.469	469.11	0.040	1.02	3/16
PD180CP0	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	18.625	473.08	0.060	1.52	1/4
PF180CP0*	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	18.938	481.03	0.080	2.03	3/8
PG180CP0	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	19.250	488.95	0.080	2.03	1/2
PB200CP0	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	20.391	517.93	0.032	0.81	5/32
PC200CP0	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	20.469	519.91	0.040	1.02	3/16
PD200CP0	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	20.625	523.88	0.060	1.52	1/4
PF200CP0	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	20.938	531.83	0.080	2.03	3/8
PG200CP0	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	21.250	539.75	0.080	2.03	1/2
PC250CP0	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	25.469	646.91	0.040	1.02	3/16
PD250CP0	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	25.625	650.88	0.060	1.52	1/4
PF250CP0	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	25.938	658.83	0.080	2.03	3/8
PG250CP0	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	26.250	666.75	0.080	2.03	1/2
PC300CP0	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	30.469	773.91	0.040	1.02	3/16
PD300CP0	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	30.625	777.88	0.060	1.52	1/4
PF300CP0	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	30.938	785.83	0.080	2.03	3/8
PG300CP0	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	31.250	793.75	0.080	2.03	1/2
PF350CP0	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	35.938	912.83	0.080	2.03	3/8
PG350CP0	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	36.250	920.75	0.080	2.03	1/2
PF400CP0	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	40.938	1039.83	0.080	2.03	3/8
PG400CP0	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	41.250	1047.75	0.080	2.03	1/2



- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	135	0.52	0.236	3,410	15,170	1,030	4,580	5,110	22,730	2,980	13,260	11,500	1,300	6,700	760	1,780
	113	0.75	0.340	4,590	20,420	1,464	6,510	6,700	29,800	4,130	18,370	15,160	1,710	9,340	1,060	1,770
	91	1.16	0.526	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,760
	69	2.06	0.934	7,870	35,010	3,180	14,150	12,100	53,820	9,220	41,010	27,830	3,140	21,210	2,400	1,740
	47	4.80	2.177	13,260	58,980	5,833	25,950	18,790	83,580	16,610	73,880	44,160	4,990	39,040	4,410	1,700
	36	8.60	3.901	19,700	87,630	10,360	46,080	29,980	133,360	30,060	133,710	71,940	8,130	72,140	8,150	1,670
	147	0.56	0.254	3,720	16,550	1,078	4,800	5,560	24,730	3,080	13,700	13,620	1,540	7,550	850	1,630
	123	0.83	0.376	5,000	22,240	1,539	6,850	7,290	32,430	4,270	18,990	17,940	2,030	10,530	1,190	1,620
	99	1.25	0.567	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,620
	75	2.25	1.021	8,550	38,030	3,320	14,770	13,140	58,450	9,630	42,840	32,840	3,710	24,070	2,720	1,600
	51	5.20	2.359	14,390	64,010	6,105	27,160	20,340	90,480	17,200	76,510	51,860	5,860	43,850	4,950	1,570
	39	9.30	4.218	21,340	94,930	10,690	47,550	32,350	143,900	30,990	137,850	84,100	9,500	80,580	9,100	1,540
	143	1.05	0.476	5,810	25,840	1,680	7,470	8,450	37,590	4,520	20,110	24,180	2,730	12,930	1,460	1,400
	115	1.52	0.689	6,910	30,740	2,154	9,580	9,820	43,680	5,800	25,800	28,240	3,190	16,680	1,880	1,390
	87	2.73	1.238	9,920	44,130	3,460	15,390	15,180	67,520	10,030	44,620	44,020	4,970	29,100	3,290	1,380
	59	6.00	2.722	16,650	74,060	6,620	29,450	23,410	104,130	18,090	80,470	69,050	7,800	53,380	6,030	1,360
	45	10.80	4.899	24,620	109,520	11,280	50,180	37,080	164,940	32,710	145,500	111,250	12,570	98,140	11,090	1,330
	163	1.20	0.544	6,620	29,450	1,812	8,060	9,620	42,790	4,800	21,350	31,370	3,540	15,670	1,770	1,230
	131	1.73	0.785	7,880	35,050	2,321	10,320	11,160	49,640	6,050	26,910	36,550	4,130	19,830	2,240	1,220
	99	3.10	1.406	11,290	50,220	3,688	16,410	17,230	76,640	10,500	46,710	56,850	6,420	34,660	3,920	1,210
	67	7.10	3.221	18,900	84,070	7,104	31,600	26,480	117,790	19,000	84,520	88,690	10,020	63,630	7,190	1,190
	51	12.30	5.579	27,910	124,150	11,820	52,580	41,810	185,980	34,270	152,440	142,150	16,060	116,530	13,170	1,180
	183	1.35	0.612	7,440	33,090	1,936	8,610	10,780	47,950	5,050	22,460	39,490	4,460	18,490	2,090	1,090
	147	1.94	0.880	8,840	39,320	2,478	11,020	12,510	55,650	6,390	28,420	45,960	5,190	23,480	2,650	1,090
	111	3.48	1.579	12,650	56,270	3,933	17,490	19,260	85,670	10,870	48,350	71,270	8,050	40,200	4,540	1,080
	75	7.90	3.583	21,160	94,120	7,557	33,620	29,560	131,490	19,980	88,880	110,840	12,520	74,910	8,460	1,070
	57	13.70	6.214	31,190	138,740	12,367	55,010	46,540	207,020	35,660	158,620	176,870	19,980	135,510	15,310	1,050
	203	1.50	0.680	8,250	36,700	2,053	9,130	11,940	53,110	5,260	23,400	48,520	5,480	21,370	2,410	980
	163	2.16	0.980	9,800	43,590	2,626	11,680	13,850	61,610	6,670	29,670	56,430	6,380	27,170	3,070	980
	123	3.85	1.746	14,020	62,360	4,164	18,520	21,320	94,840	11,380	50,620	87,400	9,870	46,680	5,270	980
	83	8.90	4.037	23,420	104,180	7,986	35,520	32,620	145,100	20,570	91,500	135,390	15,300	85,380	9,650	960
	63	15.80	7.167	34,470	153,330	13,044	58,020	51,240	227,930	36,780	163,610	215,210	24,320	154,490	17,460	950
	203	2.69	1.220	12,200	54,270	2,962	13,180	17,200	76,510	7,300	32,470	87,290	9,860	37,070	4,190	790
	153	4.79	2.173	17,440	77,580	4,689	20,860	26,410	117,480	12,260	54,540	134,690	15,220	62,530	7,060	780
	103	10.90	4.944	29,060	129,270	8,963	39,870	40,270	179,130	21,910	97,460	207,390	23,430	112,830	12,750	780
	78	19.50	8.845	42,680	189,850	14,591	64,900	63,110	280,730	40,100	178,370	328,150	37,080	208,540	23,560	770
	243	3.21	1.456	14,610	64,990	3,260	14,500	20,560	91,460	8,000	35,590	124,910	14,110	48,610	5,490	660
	183	5.73	2.599	20,860	92,790	5,153	22,920	31,540	140,300	13,440	59,780	192,420	21,740	82,010	9,270	660
	123	13.00	5.897	34,700	154,350	9,828	43,720	47,960	213,340	23,620	105,070	294,970	33,330	145,270	16,410	650
	93	23.30	10.569	50,890	226,370	15,963	71,010	74,940	333,350	42,510	189,090	464,640	52,500	263,580	29,780	650
	143	15.10	6.849	40,350	179,490	10,603	47,160	55,610	247,370	24,970	111,070	397,620	44,930	178,510	20,170	560
	108	27.10	12.292	59,100	262,890	17,195	76,490	86,680	385,570	44,120	196,260	624,100	70,510	317,650	35,890	560
	163	17.20	7.802	45,990	204,570	11,302	50,270	63,300	281,570	26,530	118,010	515,930	58,290	216,240	24,430	490
	123	30.80	13.971	67,310	299,410	18,307	81,430	98,590	438,550	47,080	209,420	808,420	91,340	386,040	43,620	490

ANGULAR CONTACT, A-TYPE

THIN SECTION BALL BEARINGS



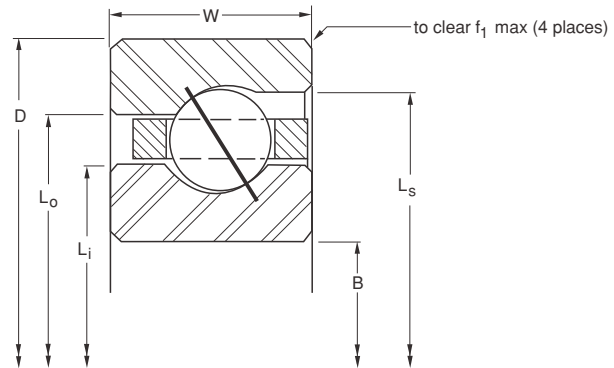
Series: PAA PA PB PC PD PF PG

Cross Section Size: 3/16" 1/4" 5/16" 3/8" 1/2" 3/4" 1"

PART NUMBER	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter						f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring		L _s -Counter Bore				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
PAA10AGO	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	1.235	31.37	0.015	0.38	3/32
PAA15AGO	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	1.735	44.07	0.015	0.38	3/32
PAA17AGO	1.7500	44.450	2.1250	53.975	0.1875	4.763	1.890	48.01	1.985	50.42	2.024	51.41	0.015	0.38	3/32
PA020ARO	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	2.375	60.33	0.025	0.64	1/8
PB020ARO	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	2.469	62.71	0.032	0.81	5/32
PA025ARO	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	2.875	73.03	0.025	0.64	1/8
PB025ARO	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	2.969	75.41	0.032	0.81	5/32
PA030ARO	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	3.375	85.73	0.025	0.64	1/8
PB030ARO	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	3.469	88.11	0.032	0.81	5/32
PA035ARO	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	3.875	98.43	0.025	0.64	1/8
PB035ARO	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.891	98.83	3.969	100.81	0.032	0.81	5/32
PA040ARO	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	4.375	111.13	0.025	0.64	1/8
PB040ARO	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	4.469	113.51	0.032	0.81	5/32
PC040ARO	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	4.563	115.90	0.040	1.02	3/16
PD040ARO	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	4.750	120.65	0.060	1.52	1/4
PF040ARO	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	5.125	130.18	0.080	2.03	3/8
PG040ARO	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	5.500	139.70	0.080	2.03	1/2
PA042ARO	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	4.625	117.48	0.025	0.64	1/8
PB042ARO	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	4.719	119.86	0.032	0.81	5/32
PC042ARO	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	4.813	122.25	0.040	1.02	3/16
PD042ARO	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	5.000	127.00	0.060	1.52	1/4
PF042ARO	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	5.375	136.53	0.080	2.03	3/8
PG042ARO	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	5.750	146.05	0.080	2.03	1/2
PA045ARO	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	4.875	123.83	0.025	0.64	1/8
PB045ARO	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	4.969	126.21	0.032	0.81	5/32
PC045ARO	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	5.063	128.60	0.040	1.02	3/16
PD045ARO	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	5.250	133.35	0.060	1.52	1/4
PF045ARO	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	5.625	142.88	0.080	2.03	3/8
PG045ARO	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	6.000	152.40	0.080	2.03	1/2
PA047ARO	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	5.125	130.18	0.025	0.64	1/8
PB047ARO	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	5.219	132.56	0.032	0.81	5/32
PC047ARO	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	5.313	134.95	0.040	1.02	3/16
PD047ARO	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	5.500	139.70	0.060	1.52	1/4
PF047ARO	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	5.875	149.23	0.080	2.03	3/8
PG047ARO	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	6.250	158.75	0.080	2.03	1/2
PA050ARO	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	5.375	136.53	0.025	0.64	1/8
PB050ARO	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	5.469	138.91	0.032	0.81	5/32
PC050ARO	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	5.563	141.30	0.040	1.02	3/16
PD050ARO	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	5.750	146.05	0.060	1.52	1/4
PF050ARO	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	6.125	155.58	0.080	2.03	3/8
PG050ARO	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	6.500	165.10	0.080	2.03	1/2
PA055ARO	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	5.875	149.23	0.025	0.64	1/8
PB055ARO	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	5.969	151.61	0.032	0.81	5/32
PC055ARO	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	6.063	154.00	0.040	1.02	3/16
PD055ARO	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	6.250	158.75	0.060	1.52	1/4
PF055ARO	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	6.625	168.28	0.080	2.03	3/8



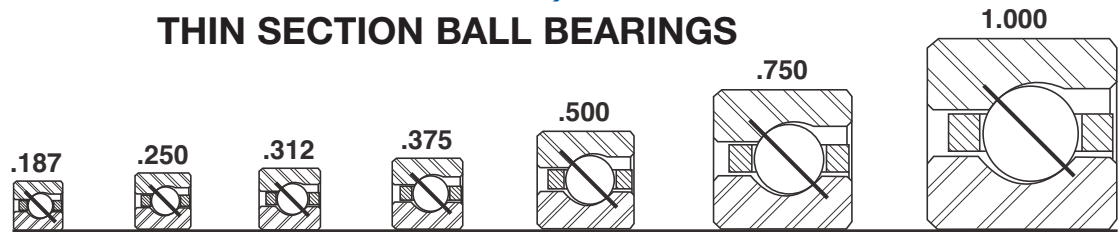
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	28	0.03	0.014	340	1,510	330	1,470	970	4,310	960	4,270	N/A	N/A	N/A	N/A	16,840
	40	0.04	0.018	480	2,140	380	1,690	1,380	6,140	1,100	4,890	N/A	N/A	N/A	N/A	11,850
	44	0.06	0.027	635	2,824	520	2,313	1,830	8,140	1,415	6,294	N/A	N/A	N/A	N/A	10,320
	36	0.10	0.045	790	3,510	600	2,670	2,280	10,140	1,730	7,700	N/A	N/A	N/A	N/A	8,890
	31	0.16	0.073	1,090	4,850	850	3,780	3,150	14,010	2,460	10,940	N/A	N/A	N/A	N/A	8,650
	44	0.13	0.059	960	4,270	640	2,850	2,780	12,370	1,860	8,270	N/A	N/A	N/A	N/A	7,270
	38	0.20	0.091	1,340	5,960	920	4,090	3,860	17,170	2,680	11,920	N/A	N/A	N/A	N/A	7,110
	52	0.15	0.068	1,140	5,070	680	3,020	3,290	14,630	1,980	8,810	N/A	N/A	N/A	N/A	6,150
	44	0.24	0.109	1,550	6,890	970	4,310	4,470	19,880	2,800	12,460	N/A	N/A	N/A	N/A	6,040
	60	0.18	0.082	1,310	5,830	720	3,200	3,790	16,860	2,070	9,210	N/A	N/A	N/A	N/A	5,330
	51	0.27	0.122	1,790	7,960	1,020	4,540	5,180	23,040	2,970	13,210	N/A	N/A	N/A	N/A	5,250
	68	0.19	0.086	1,490	6,630	750	3,340	4,300	19,130	2,180	9,700	N/A	N/A	N/A	N/A	4,710
	58	0.30	0.136	2,040	9,070	1,080	4,800	5,890	26,200	3,130	13,920	N/A	N/A	N/A	N/A	4,640
	49	0.45	0.204	2,550	11,340	1,410	6,270	7,360	32,740	4,080	18,150	N/A	N/A	N/A	N/A	4,570
	36	0.78	0.354	3,550	15,790	2,070	9,210	10,260	45,640	6,020	26,780	N/A	N/A	N/A	N/A	4,440
	26	1.90	0.862	6,350	28,250	4,350	19,350	18,340	81,580	12,620	56,140	N/A	N/A	N/A	N/A	4,210
	20	3.60	1.633	9,480	42,170	7,340	32,650	27,360	121,700	21,290	94,700	N/A	N/A	N/A	N/A	4,000
	72	0.20	0.091	1,580	7,030	770	3,430	4,550	20,240	2,240	9,960	N/A	N/A	N/A	N/A	4,440
	61	0.31	0.141	2,150	9,560	1,090	4,850	6,200	27,580	3,170	14,100	N/A	N/A	N/A	N/A	4,380
	52	0.47	0.213	2,710	12,050	1,440	6,410	7,820	34,790	4,180	18,590	N/A	N/A	N/A	N/A	4,320
	38	0.83	0.376	3,750	16,680	2,410	10,720	10,830	48,170	6,990	31,090	N/A	N/A	N/A	N/A	4,210
	27	2.00	0.907	6,600	29,360	4,390	19,530	19,050	84,740	12,740	56,670	N/A	N/A	N/A	N/A	4,000
	21	3.80	1.724	9,950	44,260	7,580	33,720	28,730	127,800	21,990	97,820	N/A	N/A	N/A	N/A	3,810
	76	0.22	0.100	1,660	7,380	780	3,470	4,810	21,400	2,260	10,050	N/A	N/A	N/A	N/A	4,210
	64	0.33	0.150	16,801	74,730	1,120	4,980	6,500	28,910	3,240	14,410	N/A	N/A	N/A	N/A	4,160
	55	0.48	0.218	2,860	12,720	1,470	6,540	8,270	36,790	4,260	18,950	N/A	N/A	N/A	N/A	4,100
	40	0.88	0.399	3,950	17,570	2,460	10,940	11,400	50,710	7,140	31,760	N/A	N/A	N/A	N/A	4,000
	29	2.10	0.953	7,090	31,540	4,550	20,240	20,460	91,010	13,200	58,720	N/A	N/A	N/A	N/A	3,810
	22	4.00	1.814	10,430	46,390	7,820	34,790	30,100	133,890	22,690	100,930	N/A	N/A	N/A	N/A	3,640
	80	0.23	0.104	1,750	7,780	800	3,560	5,060	22,510	2,310	10,280	N/A	N/A	N/A	N/A	4,000
	68	0.34	0.154	2,390	10,630	1,140	5,070	6,910	30,740	3,290	14,630	N/A	N/A	N/A	N/A	3,950
	58	0.50	0.227	3,020	13,430	1,500	6,670	8,720	38,790	4,340	19,310	N/A	N/A	N/A	N/A	3,900
	42	0.94	0.426	4,150	18,460	2,510	11,170	11,970	53,250	7,280	32,380	N/A	N/A	N/A	N/A	3,810
	30	2.20	0.998	7,330	32,610	4,610	20,510	21,160	94,120	13,380	59,520	N/A	N/A	N/A	N/A	3,640
	23	4.10	1.860	10,900	48,490	8,060	35,850	31,460	139,940	23,370	103,950	N/A	N/A	N/A	N/A	3,480
	84	0.24	0.109	1,840	8,180	810	3,600	5,310	23,620	2,360	10,500	N/A	N/A	N/A	N/A	3,810
	71	0.38	0.172	2,500	11,120	1,160	5,160	7,210	32,070	3,350	14,900	N/A	N/A	N/A	N/A	3,760
	61	0.58	0.263	3,180	14,150	1,540	6,850	9,170	40,790	4,450	19,790	N/A	N/A	N/A	N/A	3,720
	44	1.00	0.454	4,340	19,310	2,550	11,340	12,540	55,780	7,400	32,920	N/A	N/A	N/A	N/A	3,640
	31	2.30	1.043	7,570	33,670	4,650	20,680	21,870	97,280	13,480	59,960	N/A	N/A	N/A	N/A	3,480
	24	4.30	1.950	11,370	50,580	8,290	36,880	32,830	146,040	24,040	106,940	N/A	N/A	N/A	N/A	3,330
	92	0.25	0.113	2,020	8,990	830	3,690	5,820	25,890	2,410	10,720	N/A	N/A	N/A	N/A	3,480
	78	0.41	0.186	2,740	12,190	1,200	5,340	7,920	35,230	3,480	15,480	N/A	N/A	N/A	N/A	3,440
	66	0.59	0.268	3,440	15,300	1,560	6,940	9,920	44,130	4,540	20,190	N/A	N/A	N/A	N/A	3,400
	48	1.06	0.481	4,740	21,080	2,640	11,740	13,680	60,850	7,660	34,070	N/A	N/A	N/A	N/A	3,330
	34	2.50	1.134	8,310	36,960	4,820	21,440	23,980	106,670	13,980	62,190	N/A	N/A	N/A	N/A	3,200

ANGULAR CONTACT, A-TYPE

THIN SECTION BALL BEARINGS



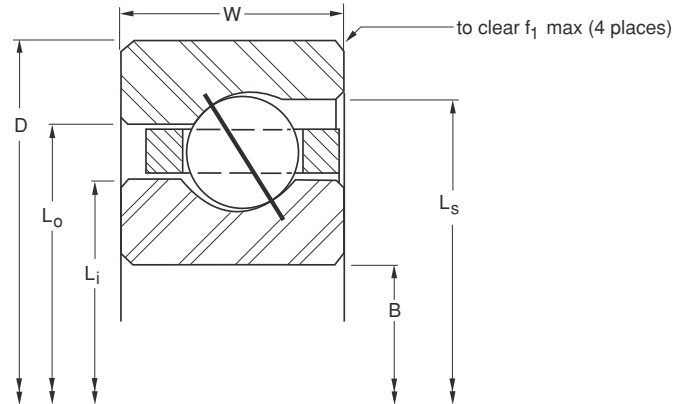
Series: PAA PA PB PC PD PF PG

Cross Section Size: 3/16" 1/4" 5/16" 3/8" 1/2" 3/4" 1"

PART NUMBER	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter						f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring		L _s -Counter Bore				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		
PG055AR0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	7.000	177.80	0.080	2.03	1/2
PA060AR0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	6.375	161.93	0.025	0.64	1/8
PB060AR0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	6.469	164.31	0.032	0.81	5/32
PC060AR0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	6.563	166.70	0.040	1.02	3/16
PD060AR0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	6.750	171.45	0.060	1.52	1/4
PF060AR0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	7.125	180.98	0.080	2.03	3/8
PG060AR0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	7.500	190.50	0.080	2.03	1/2
PA065AR0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	6.875	174.63	0.025	0.64	1/8
PB065AR0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	6.969	177.01	0.032	0.81	5/32
PC065AR0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	7.063	179.40	0.040	1.02	3/16
PD065AR0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	7.250	184.15	0.060	1.52	1/4
PF065AR0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	7.625	193.68	0.080	2.03	3/8
PG065AR0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	8.000	203.20	0.080	2.03	1/2
PA070AR0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	7.375	187.33	0.025	0.64	1/8
PB070AR0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	7.469	189.71	0.032	0.81	5/32
PC070AR0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	7.563	192.10	0.040	1.02	3/16
PD070AR0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	7.750	196.85	0.060	1.52	1/4
PF070AR0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	8.125	206.38	0.080	2.03	3/8
PG070AR0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	8.500	215.90	0.080	2.03	1/2
PA075AR0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	7.875	200.03	0.025	0.64	1/8
PB075AR0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	7.969	202.41	0.032	0.81	5/32
PC075AR0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	8.063	204.80	0.040	1.02	3/16
PD075AR0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	8.250	209.55	0.060	1.52	1/4
PF075AR0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	8.625	219.08	0.080	2.03	3/8
PG075AR0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	9.000	228.60	0.080	2.03	1/2
PA080AR0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	8.375	212.73	0.025	0.64	1/8
PB080AR0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	8.469	215.11	0.032	0.81	5/32
PC080AR0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	8.563	217.50	0.040	1.02	3/16
PD080AR0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	8.750	222.25	0.060	1.52	1/4
PF080AR0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	9.125	231.78	0.080	2.03	3/8
PG080AR0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	9.500	241.30	0.080	2.03	1/2
PA090AR0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	9.375	238.13	0.025	0.64	1/8
PB090AR0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	9.469	240.51	0.032	0.81	5/32
PC090AR0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	9.563	242.90	0.040	1.02	3/16
PD090AR0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	9.750	247.65	0.060	1.52	1/4
PF090AR0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	10.125	257.18	0.080	2.03	3/8
PG090AR0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	10.500	266.70	0.080	2.03	1/2
PA100AR0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	10.375	263.53	0.025	0.64	1/8
PB100AR0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	10.469	265.91	0.032	0.81	5/32
PC100AR0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	10.563	268.30	0.040	1.02	3/16
PD100AR0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	10.750	273.05	0.060	1.52	1/4
PF100AR0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	11.125	282.58	0.080	2.03	3/8
PG100AR0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	11.500	292.10	0.080	2.03	1/2



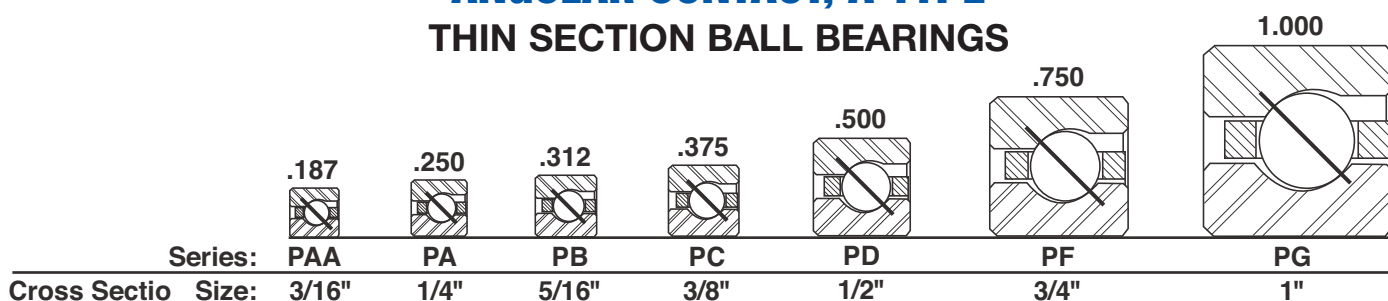
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)	
				Radial				Thrust				Moment					
				Static		Dynamic		Static		Dynamic		Static		Dynamic			
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf-in	Nm	lbf-in	Nm		
	26	4.70	2.132	12,320	54,800	8,610	38,300	35,570	158,220	24,960	111,030	N/A	N/A	N/A	N/A	3,080	
	100	0.28	0.127	2,190	9,740	860	3,830	6,320	28,110	2,500	11,120	N/A	N/A	N/A	N/A	3,200	
	85	0.44	0.200	2,990	13,300	1,240	5,520	8,630	38,390	3,600	16,010	N/A	N/A	N/A	N/A	3,170	
	72	0.63	0.286	3,750	16,680	1,620	7,210	10,820	48,130	4,690	20,860	N/A	N/A	N/A	N/A	3,140	
	52	1.16	0.526	5,130	22,820	2,720	12,100	14,820	65,920	7,880	35,050	N/A	N/A	N/A	N/A	3,080	
	37	2.70	1.225	9,040	40,210	5,010	22,290	26,100	116,100	14,530	64,630	N/A	N/A	N/A	N/A	2,960	
	28	5.10	2.313	13,270	59,030	8,860	39,410	38,300	170,370	25,700	114,320	N/A	N/A	N/A	N/A	2,860	
	108	0.30	0.136	2,370	10,540	890	3,960	6,830	30,380	2,580	11,480	N/A	N/A	N/A	N/A	2,960	
	91	0.47	0.213	3,200	14,230	1,260	5,600	9,240	41,100	3,650	16,240	N/A	N/A	N/A	N/A	2,940	
	78	0.68	0.308	4,060	18,060	1,670	7,430	11,720	52,130	4,830	21,480	N/A	N/A	N/A	N/A	2,910	
	56	1.22	0.553	5,530	24,600	2,780	12,370	15,960	70,990	8,070	35,900	N/A	N/A	N/A	N/A	2,860	
	40	2.90	1.315	9,770	43,460	5,140	22,860	28,220	125,530	14,920	66,370	N/A	N/A	N/A	N/A	2,760	
	30	5.40	2.449	14,220	63,250	9,110	40,520	41,040	182,560	26,410	117,480	N/A	N/A	N/A	N/A	2,670	
	116	0.31	0.141	2,540	11,300	900	4,000	7,340	32,650	2,600	11,570	N/A	N/A	N/A	N/A	2,760	
	98	0.50	0.227	3,450	15,350	1,300	5,780	9,960	44,300	3,760	16,730	N/A	N/A	N/A	N/A	2,740	
	83	0.73	0.331	4,320	19,220	1,720	7,650	12,470	55,470	4,980	22,150	N/A	N/A	N/A	N/A	2,710	
	60	1.31	0.594	5,920	26,330	2,850	12,680	17,100	76,060	8,260	36,740	N/A	N/A	N/A	N/A	2,670	
	43	3.20	1.451	10,510	46,750	5,290	23,530	30,330	134,910	15,350	68,280	N/A	N/A	N/A	N/A	2,580	
	32	5.80	2.631	15,160	67,440	9,370	41,680	43,780	194,740	27,160	120,810	N/A	N/A	N/A	N/A	2,500	
	124	0.34	0.154	2,720	12,100	920	4,090	7,840	34,870	2,660	11,830	N/A	N/A	N/A	N/A	2,580	
	105	0.53	0.240	3,700	16,460	1,330	5,920	10,670	47,460	3,860	17,170	N/A	N/A	N/A	N/A	2,560	
	89	0.78	0.354	4,630	20,600	1,750	7,780	13,380	59,520	5,090	22,640	N/A	N/A	N/A	N/A	2,540	
	64	1.41	0.640	6,320	28,110	2,940	13,080	18,240	81,140	8,520	37,900	N/A	N/A	N/A	N/A	2,500	
	45	3.40	1.542	11,000	48,930	5,380	23,930	31,740	141,190	15,590	69,350	N/A	N/A	N/A	N/A	2,420	
	34	6.10	2.767	16,110	71,660	9,560	42,530	46,510	206,890	27,710	123,260	N/A	N/A	N/A	N/A	2,350	
	132	0.38	0.172	2,890	12,860	960	4,270	8,350	37,140	2,770	12,320	N/A	N/A	N/A	N/A	2,420	
	112	0.57	0.259	3,940	17,530	1,360	6,050	11,380	50,620	3,950	17,570	N/A	N/A	N/A	N/A	2,410	
	95	0.84	0.381	4,950	22,020	1,800	8,010	14,280	63,520	5,210	23,180	N/A	N/A	N/A	N/A	2,390	
	68	1.53	0.694	6,710	29,850	2,990	13,300	19,380	86,210	8,670	38,570	N/A	N/A	N/A	N/A	2,350	
	48	3.50	1.588	11,730	52,180	5,520	24,550	33,860	150,620	16,020	71,260	N/A	N/A	N/A	N/A	2,290	
	36	6.50	2.948	17,060	75,890	9,800	43,590	49,250	219,070	28,430	126,460	N/A	N/A	N/A	N/A	2,220	
	148	0.44	0.200	3,240	14,410	990	4,400	9,360	41,640	2,860	12,720	N/A	N/A	N/A	N/A	2,160	
	125	0.66	0.299	4,400	19,570	1,410	6,270	12,700	56,490	4,080	18,150	N/A	N/A	N/A	N/A	2,150	
	106	0.94	0.426	5,520	24,550	1,860	8,270	15,930	70,860	5,400	24,020	N/A	N/A	N/A	N/A	2,130	
	76	1.72	0.780	7,500	33,360	3,100	13,790	21,660	96,350	9,000	40,030	N/A	N/A	N/A	N/A	2,110	
	54	3.90	1.769	13,190	58,670	5,780	25,710	38,090	169,430	16,760	74,550	N/A	N/A	N/A	N/A	2,050	
	40	7.20	3.266	18,960	84,340	10,190	45,330	54,720	243,410	29,540	131,400	N/A	N/A	N/A	N/A	2,000	
	164	0.50	0.227	3,590	15,970	1,030	4,580	10,370	46,130	3,000	13,340	N/A	N/A	N/A	N/A	1,950	
	139	0.73	0.331	4,890	21,750	1,480	6,580	14,120	62,810	4,290	19,080	N/A	N/A	N/A	N/A	1,940	
	118	1.06	0.481	6,140	27,310	1,942	8,640	17,730	78,870	5,570	24,780	N/A	N/A	N/A	N/A	1,930	
	84	1.88	0.853	8,290	36,880	3,240	14,410	23,940	106,490	9,390	41,770	N/A	N/A	N/A	N/A	1,900	
	59	4.30	1.950	14,420	64,140	5,980	26,600	41,620	185,130	17,330	77,090	N/A	N/A	N/A	N/A	1,860	
	44	7.90	3.583	20,850	92,750	10,560	46,970	60,190	267,740	30,620	136,200	N/A	N/A	N/A	N/A	1,820	

ANGULAR CONTACT, A-TYPE

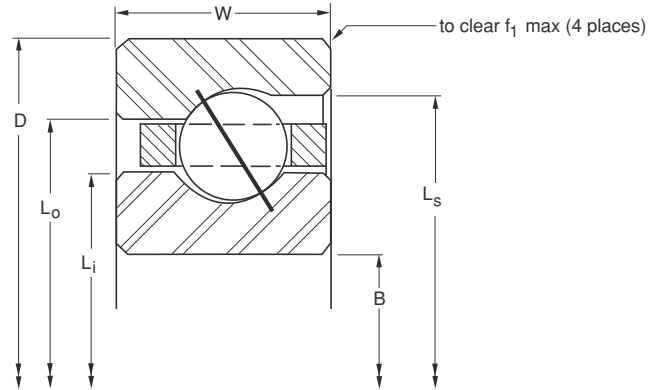
THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter		
							L _i -Inner Ring	L _o -Outer Ring	L _s -Counter Bore						
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm			
PA110ARO	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	11.313	287.35	11.375	288.93	0.025	0.64	1/8
PB110ARO	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	11.391	289.33	11.469	291.31	0.032	0.81	5/32
PC110ARO	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	11.469	291.31	11.563	293.70	0.040	1.02	3/16
PD110ARO	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	11.625	295.28	11.750	298.45	0.060	1.52	1/4
PF110ARO	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	11.938	303.23	12.125	307.98	0.080	2.03	3/8
PG110ARO	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	12.250	311.15	12.500	317.50	0.080	2.03	1/2
PA120ARO	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	12.313	312.75	12.375	314.33	0.025	0.64	1/8
PB120ARO	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	12.391	314.73	12.469	316.71	0.032	0.81	5/32
PC120ARO	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	12.469	316.71	12.563	319.10	0.040	1.02	3/16
PD120ARO	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	12.625	320.68	12.750	323.85	0.060	1.52	1/4
PF120ARO	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	12.938	328.63	13.125	333.38	0.080	2.03	3/8
PG120ARO	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	13.250	336.55	13.500	342.90	0.080	2.03	1/2
PB140ARO	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	14.391	365.53	14.469	367.51	0.032	0.81	5/32
PC140ARO	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	14.469	367.51	14.563	369.90	0.040	1.02	3/16
PD140ARO	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	14.625	371.48	14.750	374.65	0.060	1.52	1/4
PF140ARO	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	14.938	379.43	15.125	384.18	0.080	2.03	3/8
PG140ARO	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	15.250	387.35	15.500	393.70	0.080	2.03	1/2
PB160ARO	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	16.391	416.33	16.469	418.31	0.032	0.81	5/32
PC160ARO	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	16.469	418.31	16.563	420.70	0.040	1.02	3/16
PD160ARO	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	16.625	422.28	16.750	425.45	0.060	1.52	1/4
PF160ARO	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	16.938	430.23	17.125	434.98	0.080	2.03	3/8
PG160ARO	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	17.250	438.15	17.500	444.50	0.080	2.03	1/2
PB180ARO	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	18.391	467.13	18.469	469.11	0.032	0.81	5/32
PC180ARO	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	18.469	469.11	18.563	471.50	0.040	1.02	3/16
PD180ARO	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	18.625	473.08	18.750	476.25	0.060	1.52	1/4
PF180ARO	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	18.938	481.03	19.125	485.78	0.080	2.03	3/8
PG180ARO	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	19.250	488.95	19.500	495.30	0.080	2.03	1/2
PB200ARO	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	20.391	517.93	20.469	519.91	0.032	0.81	5/32
PC200ARO	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	20.469	519.91	20.563	522.30	0.040	1.02	3/16
PD200ARO	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	20.625	523.88	20.750	527.05	0.060	1.52	1/4
PF200ARO	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	20.938	531.83	21.125	536.58	0.080	2.03	3/8
PG200ARO	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	21.250	539.75	21.500	546.10	0.080	2.03	1/2
PC250ARO	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	25.469	646.91	25.563	649.30	0.040	1.02	3/16
PD250ARO	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	25.625	650.88	25.750	654.05	0.060	1.52	1/4
PF250ARO	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	25.938	658.83	26.125	663.58	0.080	2.03	3/8
PG250ARO	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	26.250	666.75	26.500	673.10	0.080	2.03	1/2
PC300ARO	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	30.469	773.91	30.563	776.30	0.040	1.02	3/16
PD300ARO	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	30.625	777.88	30.750	781.05	0.060	1.52	1/4
PF300ARO	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	30.938	785.83	31.125	790.58	0.080	2.03	3/8
PG300ARO	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	31.250	793.75	31.500	800.10	0.080	2.03	1/2
PF350ARO	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	35.938	912.83	36.125	917.58	0.080	2.03	3/8
PG350ARO	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	36.250	920.75	36.500	927.10	0.080	2.03	1/2
PF400ARO	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	40.938	1039.83	41.125	1044.58	0.080	2.03	3/8
PG400ARO	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	41.250	1047.75	41.500	1054.10	0.080	2.03	1/2



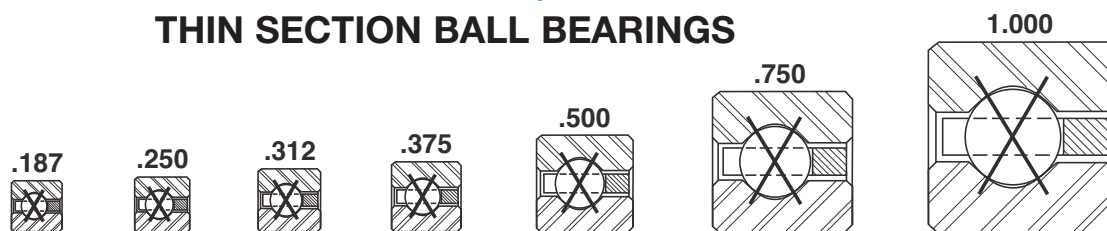
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	180	0.52	0.236	3,940	17,530	1,072	4,770	11,380	50,620	3,100	13,790	N/A	N/A	N/A	N/A	1,780
	152	0.75	0.340	5,350	23,800	1,540	6,850	15,440	68,680	4,350	19,350	N/A	N/A	N/A	N/A	1,770
	129	1.16	0.526	6,720	29,890	2,047	9,110	19,390	86,250	5,780	25,710	N/A	N/A	N/A	N/A	1,760
	92	2.06	0.934	9,080	40,390	3,310	14,720	26,220	116,630	9,600	42,700	N/A	N/A	N/A	N/A	1,740
	65	4.80	2.177	15,880	70,640	6,227	27,700	45,850	203,950	17,870	79,490	N/A	N/A	N/A	N/A	1,700
	48	8.60	3.901	22,750	101,200	10,920	48,570	65,660	292,070	31,660	140,830	N/A	N/A	N/A	N/A	1,670
	196	0.56	0.254	4,290	19,080	1,128	5,020	12,390	55,110	3,200	14,230	N/A	N/A	N/A	N/A	1,630
	166	0.83	0.376	5,840	25,980	1,623	7,220	16,860	75,000	4,510	20,060	N/A	N/A	N/A	N/A	1,620
	140	1.25	0.567	7,290	32,430	2,147	9,550	21,040	93,590	5,980	26,600	N/A	N/A	N/A	N/A	1,620
	100	2.25	1.021	9,870	43,900	3,430	15,260	28,500	126,770	9,950	44,260	N/A	N/A	N/A	N/A	1,600
	70	5.20	2.359	17,100	76,060	6,487	28,860	49,380	219,650	18,340	81,580	N/A	N/A	N/A	N/A	1,570
	52	9.30	4.218	24,640	109,600	11,230	49,950	71,140	316,450	32,570	144,880	N/A	N/A	N/A	N/A	1,540
	192	1.05	0.476	6,760	30,070	1,767	7,860	19,500	86,740	4,840	21,530	N/A	N/A	N/A	N/A	1,400
	163	1.52	0.689	8,490	37,770	2,347	10,440	24,500	108,980	6,330	28,160	N/A	N/A	N/A	N/A	1,390
	116	2.73	1.238	11,450	50,930	3,582	15,930	33,060	147,060	10,340	45,990	N/A	N/A	N/A	N/A	1,380
	81	6.00	2.722	19,790	88,030	7,043	31,330	57,140	254,170	19,490	86,700	N/A	N/A	N/A	N/A	1,360
	60	10.80	4.899	28,430	126,460	11,770	52,360	82,080	365,110	34,150	151,910	N/A	N/A	N/A	N/A	1,330
	219	1.20	0.544	7,710	34,300	1,907	8,480	22,250	98,970	5,150	22,910	N/A	N/A	N/A	N/A	1,230
	186	1.73	0.785	9,680	43,060	2,533	11,270	27,950	124,330	6,730	29,940	N/A	N/A	N/A	N/A	1,220
	132	3.10	1.406	13,030	57,960	3,856	17,150	37,620	167,340	11,030	49,060	N/A	N/A	N/A	N/A	1,210
	92	7.10	3.221	22,480	100,000	7,563	33,640	64,890	288,650	20,310	90,340	N/A	N/A	N/A	N/A	1,190
	68	12.30	5.579	32,220	143,320	12,360	54,980	93,020	413,770	35,850	159,470	N/A	N/A	N/A	N/A	1,180
	246	1.35	0.612	8,660	38,520	2,038	9,070	24,990	111,160	5,510	24,510	N/A	N/A	N/A	N/A	1,090
	209	1.94	0.880	10,880	48,400	2,707	12,040	31,410	139,720	7,280	32,380	N/A	N/A	N/A	N/A	1,090
	148	3.48	1.579	14,610	64,990	4,113	18,300	42,180	187,630	11,390	50,670	N/A	N/A	N/A	N/A	1,080
	104	7.90	3.583	25,410	113,030	8,103	36,040	73,360	326,320	21,210	94,350	N/A	N/A	N/A	N/A	1,070
	76	13.70	6.214	36,020	160,220	12,898	57,370	104,000	462,620	37,230	165,610	N/A	N/A	N/A	N/A	1,050
	273	1.50	0.680	9,610	42,750	2,162	9,620	27,730	123,350	5,900	26,240	N/A	N/A	N/A	N/A	980
	231	2.16	0.980	12,030	53,510	2,863	12,740	34,720	154,440	7,780	34,610	N/A	N/A	N/A	N/A	980
	164	3.85	1.746	16,190	72,020	4,356	19,380	46,740	207,910	11,920	53,020	N/A	N/A	N/A	N/A	980
	115	8.90	4.037	28,100	125,000	8,562	38,090	81,120	360,840	22,680	100,890	N/A	N/A	N/A	N/A	960
	84	15.80	7.167	39,810	177,080	13,612	60,550	114,900	511,100	38,830	172,720	N/A	N/A	N/A	N/A	950
	288	2.69	1.220	14,900	66,280	3,233	14,380	43,280	192,520	9,010	40,080	N/A	N/A	N/A	N/A	790
	204	4.79	2.173	20,140	89,590	4,908	21,830	58,140	258,620	13,540	60,230	N/A	N/A	N/A	N/A	780
	142	10.90	4.944	34,700	154,350	9,585	42,640	100,200	445,710	26,100	116,100	N/A	N/A	N/A	N/A	780
	104	19.50	8.845	49,280	219,210	15,239	67,790	142,300	632,980	41,420	184,250	N/A	N/A	N/A	N/A	770
	345	3.21	1.456	17,960	79,890	3,561	15,840	51,850	230,640	10,160	45,190	N/A	N/A	N/A	N/A	660
	244	5.73	2.599	24,090	107,160	5,397	24,010	69,540	309,330	15,260	67,880	N/A	N/A	N/A	N/A	660
	170	13.00	5.897	41,540	184,780	10,533	46,850	119,900	533,340	29,430	130,910	N/A	N/A	N/A	N/A	650
	124	23.30	10.569	58,760	261,380	16,687	74,230	169,600	754,420	46,020	204,710	N/A	N/A	N/A	N/A	650
	198	15.10	6.849	48,380	215,200	11,382	50,630	139,700	621,420	32,580	144,920	N/A	N/A	N/A	N/A	560
	144	27.10	12.292	68,240	303,550	17,982	79,990	197,000	876,300	50,840	226,150	N/A	N/A	N/A	N/A	560
	226	17.20	7.802	55,220	245,630	12,147	54,030	159,400	709,050	35,580	158,270	N/A	N/A	N/A	N/A	490
	164	30.80	13.971	77,720	345,720	19,153	85,200	224,400	998,180	55,440	246,610	N/A	N/A	N/A	N/A	490

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

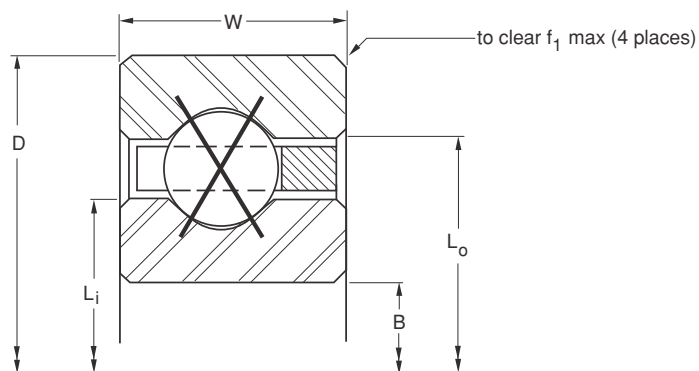


Series:	PAA	PA	PB	PC	PD	PF	PG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f1 Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	in.
PAA10XL0	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	0.015 0.38 3/32
PAA15XL0	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	0.015 0.38 3/32
PAA17XL0	1.7500	44.450	2.1250	53.975	0.1875	4.763	1.890	48.01	1.985	50.42	0.015 0.38 3/32
PA020XP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	0.025 0.64 1/8
PB020XP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	0.032 0.81 5/32
PA025XP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	0.025 0.64 1/8
PB025XP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	0.040 1.02 5/32
PA030XP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	0.025 0.64 1/8
PB030XP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	0.032 0.81 5/32
PA035XP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	0.025 0.64 1/8
PB035XP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.891	98.83	0.032 0.81 5/32
PA040XP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	0.025 0.64 1/8
PB040XP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	0.032 0.81 5/32
PC040XP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	0.040 1.02 3/16
PD040XP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	0.060 1.52 1/4
PF040XP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	0.080 2.03 3/8
PG040XP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	0.080 2.03 1/2
PA042XP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	0.025 0.64 1/8
PB042XP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	0.032 0.81 5/32
PC042XP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	0.040 1.02 3/16
PD042XP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	0.060 1.52 1/4
PF042XP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	0.080 2.03 3/8
PG042XP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	0.080 2.03 1/2
PA045XP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	0.025 0.64 1/8
PB045XP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	0.032 0.81 5/32
PC045XP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	0.040 1.02 3/16
PD045XP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	0.060 1.52 1/4
PF045XP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	0.080 2.03 3/8
PG045XP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	0.080 2.03 1/2
PA047XP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	0.025 0.64 1/8
PB047XP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	0.032 0.81 5/32
PC047XP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	0.040 1.02 3/16
PD047XP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	0.060 1.52 1/4
PF047XP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	0.080 2.03 3/8
PG047XP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	0.080 2.03 1/2
PA050XP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	0.025 0.64 1/8
PB050XP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	0.032 0.81 5/32
PC050XP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	0.040 1.02 3/16
PD050XP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	0.060 1.52 1/4
PF050XP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	0.080 2.03 3/8
PG050XP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	0.080 2.03 1/2
PA055XP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	0.025 0.64 1/8
PB055XP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	0.032 0.81 5/32
PC055XP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	0.040 1.02 3/16
PD055XP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	0.060 1.52 1/4
PF055XP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	0.080 2.03 3/8



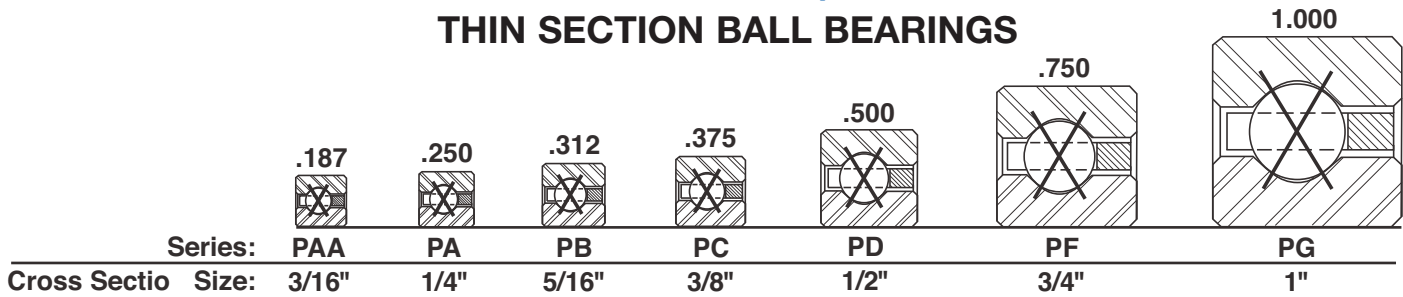
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	21	0.03	0.014	290	1,290	270	1,200	730	3,250	680	3,020	170	20	160	20	10,110
	29	0.04	0.018	400	1,780	310	1,380	1,000	4,450	770	3,430	340	40	260	30	7,110
	33	0.06	0.027	540	2,402	412	1,832	1,355	6,027	1,000	4,448	555	63	405	46	6,190
	27	0.10	0.045	680	3,020	514	2,290	1,710	7,610	1,230	5,470	770	90	550	60	5,330
	23	0.16	0.073	930	4,140	758	3,370	2,340	10,410	1,740	7,740	1,080	120	800	90	5,190
	33	0.13	0.059	830	3,690	583	2,590	2,090	9,300	1,320	5,870	1,150	130	730	80	4,360
	28	0.20	0.091	1,140	5,070	848	3,770	2,840	12,630	1,880	8,360	1,600	180	1,060	120	4,270
	39	0.15	0.068	990	4,400	643	2,860	2,470	10,990	1,410	6,270	1,600	180	920	100	3,690
	33	0.24	0.109	1,340	5,960	933	4,150	3,350	14,900	1,990	8,850	2,220	250	1,320	150	3,620
	45	0.18	0.082	1,140	5,070	701	3,120	2,850	12,680	1,480	6,580	2,130	240	1,110	130	3,200
	38	0.27	0.122	1,540	6,850	1,014	4,510	3,860	17,170	2,100	9,340	2,940	330	1,600	180	3,150
	51	0.19	0.086	1,290	5,740	756	3,360	3,220	14,320	1,550	6,890	2,740	310	1,320	150	2,820
	43	0.30	0.136	1,750	7,780	1,091	4,850	4,370	19,440	2,210	9,830	3,770	430	1,900	210	2,780
	35	0.45	0.204	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,740
	27	0.78	0.354	3,080	13,700	2,311	10,280	7,700	34,250	4,890	21,750	6,930	780	4,400	500	2,670
	19	1.90	0.862	5,360	23,840	4,665	20,750	13,400	59,610	8,830	39,280	12,730	1,440	8,390	950	2,530
	15	3.60	1.633	8,210	36,520	7,979	35,490	20,520	91,280	15,150	67,390	20,520	2,320	15,150	1,710	2,400
	54	0.20	0.091	1,370	6,090	783	3,480	3,410	15,170	1,590	7,070	3,070	350	1,430	160	2,670
	45	0.31	0.141	1,830	8,140	1,120	4,980	4,570	20,330	2,230	9,920	4,170	470	2,040	230	2,630
	37	0.47	0.213	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,590
	28	0.83	0.376	3,190	14,190	2,355	10,480	7,980	35,500	4,920	21,890	7,580	860	4,670	530	2,530
	20	2.00	0.907	5,640	25,090	4,795	21,330	14,110	62,760	8,990	39,990	14,110	1,590	8,993	1,020	2,400
	15	3.80	1.724	8,210	36,520	7,917	35,220	20,520	91,280	15,150	67,390	21,550	2,430	15,910	1,800	2,290
	57	0.22	0.100	1,440	6,410	809	3,600	3,600	16,010	1,610	7,160	3,420	390	1,530	170	2,530
	48	0.33	0.150	1,950	8,670	1,165	5,180	4,880	21,710	2,300	10,230	4,690	530	2,220	250	2,490
	39	0.48	0.218	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,460
	30	0.88	0.399	3,420	15,210	2,454	10,920	8,550	38,030	5,080	22,600	8,550	970	5,080	570	2,400
	21	2.10	0.953	5,930	26,380	4,923	21,900	14,810	65,880	9,180	40,830	15,550	1,760	9,695	1,100	2,290
	16	4.00	1.814	8,760	38,970	8,205	36,500	21,890	97,370	15,820	70,370	24,080	2,720	17,400	1,970	2,180
	60	0.23	0.104	1,520	6,760	834	3,710	3,790	16,860	1,650	7,340	3,790	430	1,650	190	2,400
	50	0.34	0.154	2,030	9,030	1,193	5,310	5,080	22,600	2,310	10,280	5,140	580	2,340	260	2,370
	41	0.50	0.227	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	2,340
	31	0.94	0.426	3,530	15,700	2,496	11,100	8,840	39,320	5,130	22,820	9,280	1,050	5,380	610	2,290
	22	2.20	0.998	6,210	27,620	5,048	22,450	15,520	69,040	9,380	41,720	17,070	1,930	10,416	1,180	2,180
	17	4.10	1.860	9,300	41,370	8,487	37,750	23,260	103,470	16,470	73,260	26,740	3,020	18,940	2,140	2,090
	63	0.24	0.109	1,590	7,070	859	3,820	3,980	17,700	1,680	7,470	4,180	470	1,760	200	2,290
	53	0.38	0.172	2,150	9,560	1,236	5,500	5,380	23,930	2,380	10,590	5,720	650	2,520	280	2,260
	43	0.58	0.263	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	2,230
	33	1.00	0.454	3,760	16,730	2,592	11,530	9,410	41,860	5,270	23,440	10,350	1,170	5,800	660	2,180
	23	2.30	1.043	6,490	28,870	5,172	23,010	16,220	72,150	9,520	42,350	18,660	2,110	11,157	1,260	2,090
	18	4.30	1.950	9,850	43,810	8,762	38,980	24,620	109,520	17,110	76,110	29,550	3,340	20,530	2,320	2,000
	69	0.25	0.113	1,750	7,780	908	4,040	4,360	19,390	1,720	7,650	5,020	570	1,970	220	2,090
	58	0.41	0.186	2,360	10,500	1,304	5,800	5,890	26,200	2,460	10,940	6,850	770	2,860	320	2,060
	47	0.59	0.268	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	2,040
	36	1.06	0.481	4,100	18,240	2,725	12,120	10,260	45,640	5,450	24,240	12,310	1,390	6,540	740	2,000
	25	2.50	1.134	7,050	31,360	5,415	24,090	17,630	78,420	9,820	43,680	22,040	2,490	12,696	1,430	1,920

4-POINT CONTACT, X-TYPE

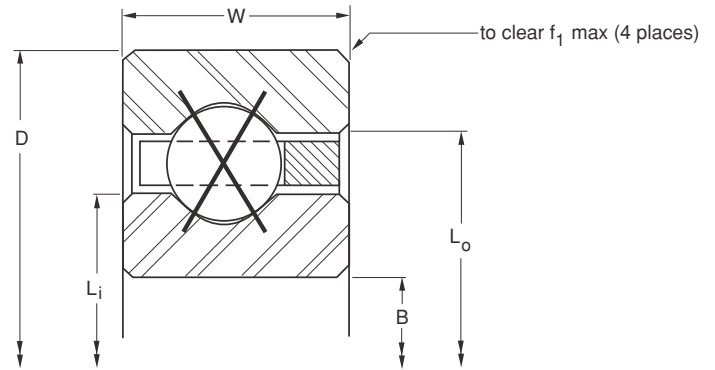
THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
PG055XP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	0.080	2.03	1/2
PA060XP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	0.025	0.64	1/8
PB060XP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	0.032	0.81	5/32
PC060XP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	0.040	1.02	3/16
PD060XP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	0.060	1.52	1/4
PF060XP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	0.080	2.03	3/8
PG060XP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	0.080	2.03	1/2
PA065XP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	0.025	0.64	1/8
PB065XP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	0.032	0.81	5/32
PC065XP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	0.040	1.02	3/16
PD065XP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	0.060	1.52	1/4
PF065XP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	0.080	2.03	3/8
PG065XP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	0.080	2.03	1/2
PA070XP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	0.025	0.64	1/8
PB070XP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	0.032	0.81	5/32
PC070XP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	0.040	1.02	3/16
PD070XP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	0.060	1.52	1/4
PF070XP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	0.080	2.03	3/8
PG070XP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	0.080	2.03	1/2
PA075XP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	0.025	0.64	1/8
PB075XP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	0.032	0.81	5/32
PC075XP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	0.040	1.02	3/16
PD075XP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	0.060	1.52	1/4
PF075XP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	0.080	2.03	3/8
PG075XP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	0.080	2.03	1/2
PA080XP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	0.025	0.64	1/8
PB080XP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	0.032	0.81	5/32
PC080XP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	0.040	1.02	3/16
PD080XP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	0.060	1.52	1/4
PF080XP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	0.080	2.03	3/8
PG080XP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	0.080	2.03	1/2
PA090XP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	0.025	0.64	1/8
PB090XP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	0.032	0.81	5/32
PC090XP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	0.040	1.02	3/16
PD090XP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	0.060	1.52	1/4
PF090XP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	0.080	2.03	3/8
PG090XP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	0.080	2.03	1/2
PA100XP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	0.025	0.64	1/8
PB100XP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	0.032	0.81	5/32
PC100XP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	0.040	1.02	3/16
PD100XP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	0.060	1.52	1/4
PF100XP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	0.080	2.03	3/8
PG100XP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	0.080	2.03	1/2



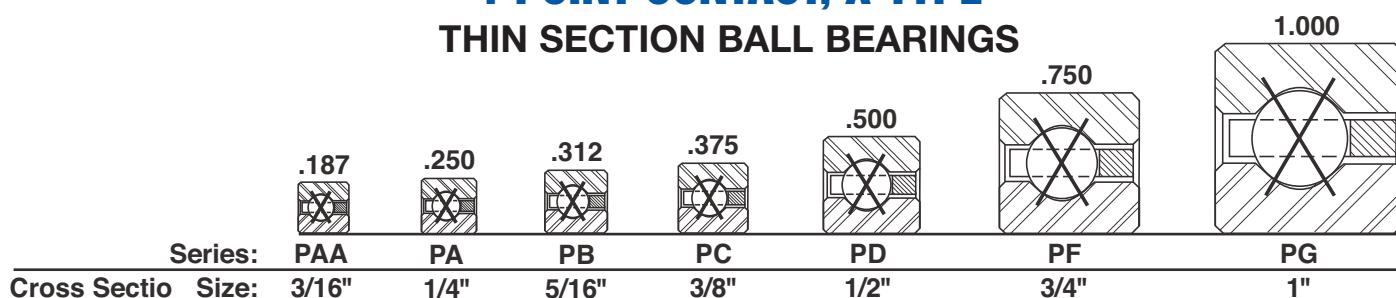
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	19	4.70	2.132	10,400	46,260	8,979	39,940	25,990	115,610	17,460	77,670	33,790	3,820	22,700	2,560	1,850
	75	0.28	0.127	1,900	8,450	955	4,250	4,740	21,080	1,780	7,920	5,930	670	2,240	250	1,920
	63	0.44	0.200	2,560	11,390	1,371	6,100	6,400	28,470	2,540	11,300	8,080	910	3,247	370	1,900
	51	0.63	0.286	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,880
	39	1.16	0.526	4,450	19,790	2,855	12,700	11,120	49,460	5,610	24,950	14,450	1,630	7,290	820	1,850
	27	2.70	1.225	7,620	33,900	5,651	25,140	19,050	84,740	10,150	45,150	25,710	2,900	14,311	1,620	1,780
	21	5.10	2.313	11,490	51,110	9,503	42,270	28,730	127,800	18,290	81,360	40,220	4,540	25,610	2,890	1,710
	81	0.30	0.136	2,050	9,120	1,001	4,450	5,120	22,770	1,840	8,180	6,910	780	2,535	290	1,780
	68	0.47	0.213	2,760	12,280	1,435	6,380	6,910	30,740	2,590	11,520	9,410	1,060	3,668	410	1,760
	55	0.68	0.308	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,750
	42	1.22	0.553	4,790	21,310	2,980	13,260	11,970	53,250	5,740	25,530	16,760	1,890	8,040	910	1,710
	29	2.90	1.315	8,180	36,390	5,880	26,160	20,460	91,010	10,380	46,170	29,660	3,350	15,993	1,810	1,660
	22	5.40	2.449	12,040	53,560	9,713	43,210	30,100	133,890	18,520	82,380	45,140	5,100	27,770	3,140	1,600
	87	0.31	0.141	2,200	9,790	1,046	4,650	5,500	24,470	1,850	8,230	7,980	900	2,844	320	1,660
	73	0.50	0.227	2,970	13,210	1,498	6,660	7,420	33,010	2,660	11,830	10,850	1,230	4,109	460	1,640
	59	0.73	0.331	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,630
	45	1.31	0.594	5,130	22,820	3,103	13,800	12,830	57,070	5,880	26,160	19,240	2,170	8,810	1,000	1,600
	31	3.20	1.451	8,750	38,920	6,103	27,150	21,870	97,280	10,640	47,330	33,890	3,830	17,744	2,000	1,550
	24	5.80	2.631	13,130	58,410	10,208	45,410	32,830	146,040	19,330	85,980	52,530	5,940	30,930	3,490	1,500
	93	0.34	0.154	2,350	10,450	1,089	4,840	5,880	26,160	1,890	8,410	9,120	1,030	3,165	360	1,550
	78	0.53	0.240	3,170	14,100	1,559	6,930	7,920	35,230	2,730	12,140	12,380	1,400	4,568	520	1,540
	63	0.78	0.354	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,520
	48	1.41	0.640	5,470	24,330	3,222	14,330	13,680	60,850	6,060	26,960	21,890	2,470	9,700	1,100	1,500
	33	3.40	1.542	9,310	41,410	6,323	28,130	23,280	103,550	10,930	48,620	38,410	4,340	19,568	2,210	1,450
	25	6.10	2.767	13,680	60,850	10,410	46,310	34,200	152,130	19,460	86,560	58,140	6,570	33,196	3,750	1,410
	99	0.38	0.172	2,500	11,120	1,131	5,030	6,260	27,850	1,970	8,760	10,330	1,170	3,499	400	1,450
	83	0.57	0.259	3,370	14,990	1,618	7,200	8,430	37,500	2,790	12,410	14,020	1,580	5,045	570	1,440
	67	0.84	0.381	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,430
	51	1.53	0.694	5,810	25,840	3,338	14,850	14,540	64,680	6,170	27,450	24,710	2,790	10,643	1,200	1,410
	35	3.50	1.588	9,880	43,950	6,535	29,070	24,690	109,830	11,190	49,780	43,200	4,880	21,453	2,420	1,370
	27	6.50	2.948	14,770	65,700	10,882	48,410	36,940	164,320	20,230	89,990	66,480	7,510	36,743	4,150	1,330
	111	0.44	0.200	2,810	12,500	1,212	5,390	7,020	31,230	2,040	9,070	12,990	1,470	4,204	470	1,300
	93	0.66	0.299	3,780	16,810	1,732	7,700	9,450	42,040	2,890	12,860	17,600	1,990	6,050	680	1,290
	75	0.94	0.426	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,280
	57	1.72	0.780	6,500	28,910	3,561	15,840	16,250	72,280	6,410	28,510	30,870	3,490	12,693	1,430	1,260
	39	3.90	1.769	11,000	48,930	6,947	30,900	27,510	122,370	11,630	51,730	53,640	6,060	25,410	2,870	1,230
	30	7.20	3.266	16,420	73,040	11,526	51,270	41,040	182,560	21,020	93,500	82,080	9,270	43,240	4,890	1,200
	123	0.50	0.227	3,110	13,830	1,289	5,730	7,780	34,610	2,180	9,700	15,940	1,800	4,956	560	1,170
	103	0.73	0.331	4,190	18,640	1,841	8,190	10,460	46,530	3,080	13,700	21,580	2,440	7,121	800	1,160
	83	1.06	0.481	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	1,160
	63	1.88	0.853	7,180	31,940	3,776	16,800	17,960	79,890	6,680	29,710	37,710	4,260	14,872	1,680	1,140
	43	4.30	1.950	12,130	53,960	7,342	32,660	30,330	134,910	12,100	53,820	65,210	7,370	29,608	3,350	1,120
	33	7.90	3.583	18,060	80,330	12,147	54,030	45,140	200,790	21,790	96,930	99,320	11,220	50,124	5,660	1,090

4-POINT CONTACT, X-TYPE

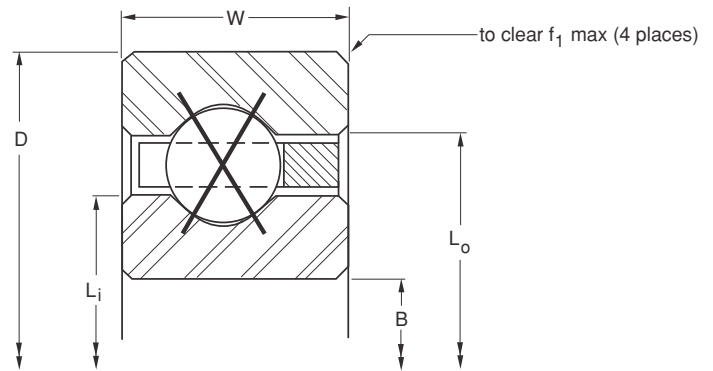
THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS									
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet	Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring		
PA110XP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	0.025	0.64
PB110XP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	0.032	0.81
PC110XP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	0.040	1.02
PD110XP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	0.060	1.52
PF110XP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	0.080	2.03
PG110XP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	0.080	2.03
PA120XP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	0.025	0.64
PB120XP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	0.032	0.81
PC120XP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	0.040	1.02
PD120XP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	0.060	1.52
PF120XP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	0.080	2.03
PG120XP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	0.080	2.03
PB140XP0	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	0.032	0.81
PC140XP0	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	0.040	1.02
PD140XP0	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	0.060	1.52
PF140XP0	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	0.080	2.03
PG140XP0	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	0.080	2.03
PB160XP0	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	0.032	0.81
PC160XP0	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	0.040	1.02
PD160XP0	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	0.060	1.52
PF160XP0	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	0.080	2.03
PG160XP0	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	0.080	2.03
PB180XP0	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	0.032	0.81
PC180XP0	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	0.040	1.02
PD180XP0	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	0.060	1.52
PF180XP0	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	0.080	2.03
PG180XP0	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	0.080	2.03
PB200XP0	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	0.032	0.81
PC200XP0	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	0.040	1.02
PD200XP0	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	0.060	1.52
PF200XP0	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	0.080	2.03
PG200XP0	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	0.080	2.03
PC250XP0	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	0.040	1.02
PD250XP0	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	0.060	1.52
PF250XP0	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	0.080	2.03
PG250XP0	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	0.080	2.03
PC300XP0	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	0.040	1.02
PD300XP0	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	0.060	1.52
PF300XP0	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	0.080	2.03
PG300XP0	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	0.080	2.03
PF350XP0	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	0.080	2.03
PG350XP0	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	0.080	2.03
PF400XP0	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	0.080	2.03
PG400XP0	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	0.080	2.03



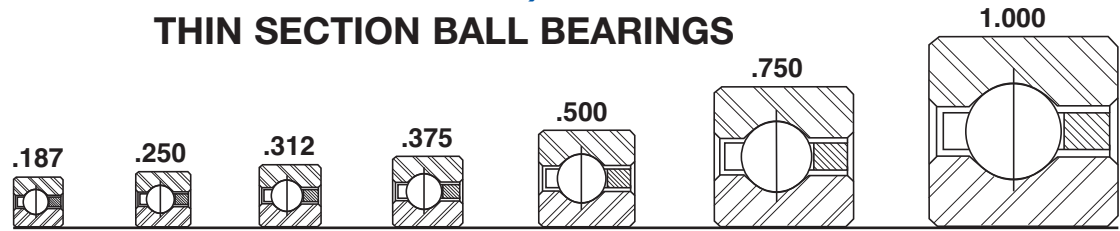
- 17-4PH Steel with Ceramic Balls
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	135	0.52	0.236	3,410	15,170	1,362	6,060	8,540	37,990	2,320	10,320	19,210	2,170	5,750	650	1,070
	113	0.75	0.340	4,590	20,420	1,945	8,650	11,480	51,070	3,280	14,590	25,970	2,930	8,254	930	1,060
	91	1.16	0.526	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	1,050
	69	2.06	0.934	7,870	35,010	3,981	17,710	19,670	87,500	6,830	30,380	45,230	5,110	17,173	1,940	1,040
	47	4.80	2.177	13,260	58,980	7,721	34,340	33,150	147,460	12,490	55,560	77,910	8,800	34,032	3,850	1,020
	36	8.60	3.901	19,700	87,630	12,739	56,670	49,250	219,070	22,530	100,220	118,200	13,350	57,347	6,480	1,000
	147	0.56	0.254	3,720	16,550	1,433	6,370	9,300	41,370	2,450	10,900	22,770	2,570	6,587	740	980
	123	0.83	0.376	5,000	22,240	2,045	9,100	12,500	55,600	3,470	15,440	30,770	3,480	9,446	1,070	970
	99	1.25	0.567	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	970
	75	2.25	1.021	8,550	38,030	4,178	18,580	21,380	95,100	7,080	31,490	53,440	6,040	19,590	2,210	960
	51	5.20	2.359	14,390	64,010	8,084	35,960	35,970	160,000	13,190	58,670	91,730	10,360	38,666	4,370	940
	39	9.30	4.218	21,340	94,930	13,315	59,230	53,350	237,310	23,180	103,110	138,700	15,670	64,935	7,340	920
	143	1.05	0.476	5,810	25,840	2,234	9,940	14,530	64,630	3,840	17,080	41,580	4,700	11,994	1,360	840
	115	1.52	0.689	6,910	30,740	2,862	12,730	17,280	76,870	4,890	21,750	49,690	5,610	15,434	1,740	830
	87	2.73	1.238	9,920	44,130	4,551	20,240	24,800	110,320	7,670	34,120	71,910	8,120	24,755	2,800	830
	59	6.00	2.722	16,650	74,060	8,775	39,030	41,620	185,130	14,530	64,630	122,800	13,870	48,556	5,490	810
	45	10.80	4.899	24,620	109,520	14,404	64,070	61,560	273,830	24,300	108,090	184,700	20,870	81,056	9,160	800
	163	1.20	0.544	6,620	29,450	2,410	10,720	16,560	73,660	4,190	18,640	54,020	6,100	14,750	1,670	740
	131	1.73	0.785	7,880	35,050	3,086	13,730	19,690	87,590	5,330	23,710	64,480	7,290	18,955	2,140	730
	99	3.10	1.406	11,290	50,220	4,899	21,790	28,220	125,530	8,360	37,190	93,110	10,520	30,325	3,430	730
	67	7.10	3.221	18,900	84,070	9,421	41,910	47,260	210,220	15,820	70,370	158,300	17,890	59,200	6,690	720
	51	12.30	5.579	27,910	124,150	15,425	68,610	69,770	310,350	25,510	113,470	237,200	26,800	98,373	11,110	710
	183	1.35	0.612	7,440	33,090	2,576	11,460	18,590	82,690	4,520	20,110	68,090	7,690	17,694	2,000	660
	147	1.94	0.880	8,840	39,320	3,295	14,660	22,090	98,260	5,760	25,620	81,190	9,170	22,712	2,570	650
	111	3.48	1.579	12,650	56,270	5,226	23,250	31,640	140,740	9,030	40,170	117,000	13,220	36,268	4,100	650
	75	7.90	3.583	21,160	94,120	10,028	44,610	52,900	235,310	17,060	75,890	198,400	22,420	70,537	7,970	640
	57	13.70	6.214	31,190	138,740	16,386	72,890	77,980	346,870	27,410	121,930	296,300	33,480	116,793	13,200	630
	203	1.50	0.680	8,250	36,700	2,731	12,150	20,620	91,720	4,850	21,570	83,780	9,470	20,813	2,350	590
	163	2.16	0.980	9,800	43,590	3,492	15,530	24,500	108,980	6,170	27,450	99,830	11,280	26,695	3,020	590
	123	3.85	1.746	14,020	62,360	5,534	24,620	35,060	155,950	9,670	43,010	143,700	16,240	42,561	4,810	590
	83	8.90	4.037	23,420	104,180	10,602	47,160	58,550	260,440	18,250	81,180	243,000	27,460	82,528	9,320	580
	63	15.80	7.167	34,470	153,330	17,293	76,920	86,180	383,350	29,300	130,330	362,000	40,900	136,238	15,390	570
	203	2.69	1.220	12,200	54,270	3,941	17,530	30,510	135,720	7,140	31,760	154,800	17,490	37,518	4,240	470
	153	4.79	2.173	17,440	77,580	6,235	27,730	43,610	193,990	11,180	49,730	222,400	25,130	59,649	6,740	470
	103	10.90	4.944	29,060	129,270	11,909	52,970	72,650	323,160	21,070	93,720	374,200	42,280	115,037	13,000	470
	78	19.50	8.845	42,680	189,850	19,360	86,120	106,700	474,630	33,780	150,260	554,900	62,700	188,838	21,340	460
	243	3.21	1.456	14,610	64,990	4,338	19,300	36,520	162,450	8,050	35,810	221,900	25,070	49,436	5,590	400
	183	5.73	2.599	20,860	92,790	6,856	30,500	52,160	232,020	12,600	56,050	318,100	35,940	78,447	8,860	390
	123	13.00	5.897	34,700	154,350	13,065	58,120	86,760	385,930	23,720	105,510	533,600	60,290	150,708	17,030	390
	93	23.30	10.569	50,890	226,370	21,200	94,300	127,200	565,810	37,980	168,940	788,800	89,120	246,541	27,860	390
	143	15.10	6.849	40,350	179,490	14,100	62,720	100,900	448,830	26,220	116,630	721,200	81,480	189,106	21,370	340
	108	27.10	12.292	59,100	262,890	22,845	101,620	147,700	657,000	41,970	186,690	1,064,000	120,220	308,527	34,860	330
	163	17.20	7.802	45,990	204,570	15,034	66,870	115,000	511,550	28,620	127,310	937,100	105,880	229,832	25,970	290
	123	30.80	13.971	67,310	299,410	24,332	108,230	168,300	748,640	45,770	203,600	1,380,000	155,920	374,256	42,290	290

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

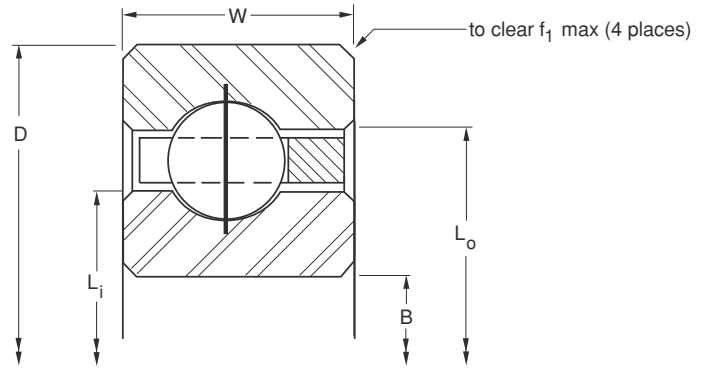


Series:	SAA	SA	SB	SC	SD	SF	SG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
SAA10CL0	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	3/32
SAA15CL0	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	3/32
SAA17CL0	1.7500	44.450	2.1250	53.975	0.1875	4.760	1.890	48.00	1.985	50.42	3/32
SA020CP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	1/8
SB020CP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	5/32
SA025CP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	1/8
SB025CP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	5/32
SA030CP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	1/8
SB030CP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	5/32
SA035CP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	1/8
SB035CP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.897	98.98	5/32
SA040CP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	1/8
SB040CP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	5/32
SC040CP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	3/16
SD040CP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	1/4
SF040CP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	3/8
SG040CP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	1/2
SA042CP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	1/8
SB042CP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	5/32
SC042CP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	3/16
SD042CP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	1/4
SF042CP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	3/8
SG042CP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	1/2
SA045CP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	1/8
SB045CP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	5/32
SC045CP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	3/16
SD045CP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	1/4
SF045CP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	3/8
SG045CP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	1/2
SA047CP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	1/8
SB047CP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	5/32
SC047CP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	3/16
SD047CP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	1/4
SF047CP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	3/8
SG047CP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	1/2
SA050CP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	1/8
SB050CP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	5/32
SC050CP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	3/16
SD050CP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	1/4
SF050CP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	3/8
SG050CP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	1/2
SA055CP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	1/8
SB055CP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	5/32
SC055CP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	3/16
SD055CP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	1/4
SF055CP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	3/8



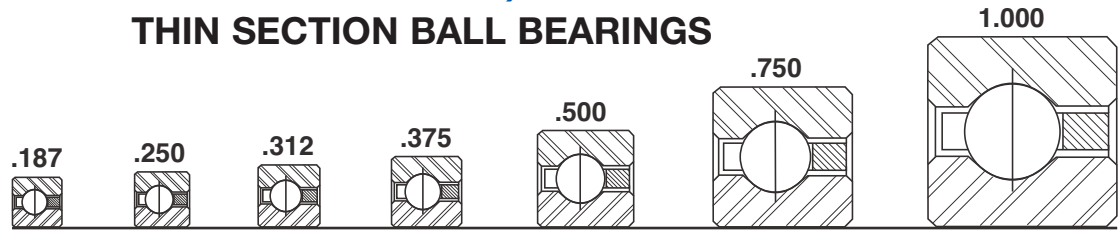
- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	21	0.03	0.014	290	1,290	300	1,330	480	2,140	880	3,910	110	10	210	25	16,840
	29	0.04	0.018	400	1,780	350	1,560	650	2,890	1,020	4,540	220	25	350	40	11,850
	33	0.06	0.027	540	2,402	455	2,033	865	3,847	1,330	5,916	355	40	545	62	10,320
	27	0.10	0.045	680	3,020	560	2,490	1,080	4,800	1,640	7,300	490	55	740	80	8,890
	23	0.16	0.073	930	4,140	800	3,560	1,460	6,490	2,320	10,320	680	80	1,070	120	8,650
	33	0.13	0.059	830	3,690	610	2,710	1,310	5,830	1,770	7,870	720	80	970	110	7,270
	28	0.20	0.091	1,140	5,070	860	3,830	1,750	7,780	2,510	11,170	990	110	1,410	160	7,110
	39	0.15	0.068	990	4,400	650	2,890	1,530	6,810	1,880	8,360	990	110	1,220	140	6,150
	33	0.24	0.109	1,340	5,960	920	4,090	2,050	9,120	2,680	11,920	1,360	150	1,770	200	6,040
	45	0.18	0.082	1,140	5,070	690	3,070	1,750	7,780	1,990	8,850	1,320	150	1,490	170	5,330
	38	0.27	0.122	1,540	6,850	970	4,310	2,340	10,410	2,810	12,500	1,780	200	2,140	240	5,250
	51	0.19	0.086	1,290	5,740	720	3,200	1,980	8,810	2,080	9,250	1,680	190	1,770	200	4,710
	43	0.30	0.136	1,750	7,780	1,020	4,540	2,630	11,700	2,950	13,120	2,270	260	2,550	290	4,640
	35	0.45	0.204	2,100	9,340	1,290	5,740	3,110	13,830	3,740	16,640	2,720	310	3,280	370	4,570
	27	0.78	0.354	3,080	13,700	2,250	10,010	4,950	22,020	6,520	29,000	4,450	500	5,870	660	4,440
	19	1.90	0.862	5,360	23,840	3,940	17,530	7,980	35,500	11,420	50,800	7,580	860	10,850	1,230	4,210
	15	3.60	1.633	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	12,960	1,460	19,440	2,200	4,000
	54	0.20	0.091	1,370	6,090	730	3,250	2,090	9,300	2,110	9,390	1,880	210	1,900	210	4,440
	45	0.31	0.141	1,830	8,140	1,030	4,580	2,740	12,190	3,000	13,340	2,500	280	2,730	310	4,380
	37	0.47	0.213	2,220	9,880	1,320	5,870	3,270	14,550	3,830	17,040	3,030	340	3,550	400	4,320
	28	0.83	0.376	3,190	14,190	2,270	10,100	5,110	22,730	6,580	29,270	4,860	550	6,250	710	4,210
	20	2.00	0.907	5,640	25,090	4,070	18,100	8,400	37,370	11,810	52,530	8,400	950	11,810	1,330	4,000
	15	3.80	1.724	8,210	36,520	6,700	29,800	12,960	57,650	19,440	86,470	13,600	1,540	20,410	2,310	3,810
	57	0.22	0.100	1,440	6,410	750	3,340	2,200	9,790	2,170	9,650	2,090	240	2,060	230	4,210
	48	0.33	0.150	1,950	8,670	1,060	4,720	2,920	12,990	3,080	13,700	2,810	320	2,960	330	4,160
	39	0.48	0.218	2,340	10,410	1,350	6,010	3,440	15,300	3,910	17,390	3,360	380	3,810	430	4,100
	30	0.88	0.399	3,420	15,210	2,350	10,450	5,460	24,290	6,820	30,340	5,460	620	6,820	770	4,000
	21	2.10	0.953	5,930	26,380	4,210	18,730	8,820	39,230	12,200	54,270	9,270	1,050	12,810	1,450	3,810
	16	4.00	1.814	8,760	38,970	7,000	31,140	13,820	61,470	20,290	90,250	15,200	1,720	22,320	2,520	3,640
	60	0.23	0.104	1,520	6,760	760	3,380	2,310	10,280	2,220	9,880	2,310	260	2,220	250	4,000
	50	0.34	0.154	2,030	9,030	1,070	4,760	3,030	13,480	3,110	13,830	3,070	350	3,140	350	3,950
	41	0.50	0.227	2,460	10,940	1,370	6,090	3,610	16,060	3,970	17,660	3,700	420	4,070	460	3,900
	31	0.94	0.426	3,530	15,700	2,360	10,500	5,620	25,000	6,840	30,430	5,910	670	7,180	810	3,810
	22	2.20	0.998	6,210	27,620	4,310	19,170	9,220	41,010	12,490	55,560	10,140	1,150	13,740	1,550	3,640
	17	4.10	1.860	9,300	41,370	7,290	32,430	14,680	65,300	21,130	93,990	16,890	1,910	24,300	2,750	3,480
	63	0.24	0.109	1,590	7,070	770	3,430	2,420	10,760	2,240	9,960	2,540	290	2,350	270	3,810
	53	0.38	0.172	2,150	9,560	1,100	4,890	3,210	14,280	3,190	14,190	3,410	390	3,390	380	3,760
	43	0.58	0.263	2,590	11,520	1,390	6,180	3,780	16,810	4,040	17,970	4,060	460	4,340	490	3,720
	33	1.00	0.454	3,760	16,730	2,430	10,810	5,970	26,560	7,040	31,320	6,570	740	7,740	870	3,640
	23	2.30	1.043	6,490	28,870	4,380	19,480	9,600	42,700	12,710	56,540	11,050	1,250	14,620	1,650	3,480
	18	4.30	1.950	9,850	43,810	7,570	33,670	15,550	69,170	21,950	97,640	18,660	2,110	26,340	2,980	3,330
	69	0.25	0.113	1,750	7,780	800	3,560	2,650	11,790	2,320	10,320	3,040	340	2,660	300	3,480
	58	0.41	0.186	2,360	10,500	1,130	5,030	3,500	15,570	3,280	14,590	4,070	460	3,810	430	3,440
	47	0.59	0.268	2,830	12,590	1,440	6,410	4,110	18,280	4,170	18,550	4,830	550	4,900	550	3,400
	36	1.06	0.481	4,100	18,240	2,510	11,170	6,480	28,820	7,270	32,340	7,780	880	8,720	990	3,330
	25	2.50	1.134	7,050	31,360	4,540	20,190	10,370	46,130	13,170	58,580	12,970	1,470	16,460	1,860	3,200

RADIAL CONTACT, C-TYPE

THIN SECTION BALL BEARINGS

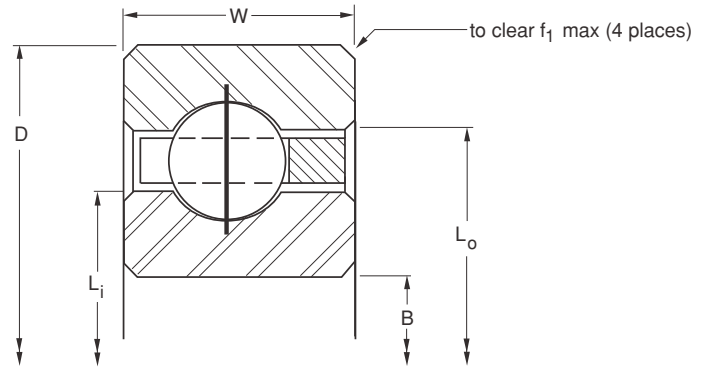


Series:	SAA	SA	SB	SC	SD	SF	SG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet			Ball Diameter	
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm			
SG055CP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	0.080	2.03	1/2
SA060CP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	0.025	0.64	1/8
SB060CP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	0.032	0.81	5/32
SC060CP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	0.040	1.02	3/16
SD060CP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	0.060	1.52	1/4
SF060CP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	0.080	2.03	3/8
SG060CP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	0.080	2.03	1/2
SA065CP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	0.025	0.64	1/8
SB065CP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	0.032	0.81	5/32
SC065CP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	0.040	1.02	3/16
SD065CP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	0.060	1.52	1/4
SF065CP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	0.080	2.03	3/8
SG065CP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	0.080	2.03	1/2
SA070CP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	0.025	0.64	1/8
SB070CP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	0.032	0.81	5/32
SC070CP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	0.040	1.02	3/16
SD070CP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	0.060	1.52	1/4
SF070CP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	0.080	2.03	3/8
SG070CP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	0.080	2.03	1/2
SA075CP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	0.025	0.64	1/8
SB075CP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	0.032	0.81	5/32
SC075CP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	0.040	1.02	3/16
SD075CP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	0.060	1.52	1/4
SF075CP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	0.080	2.03	3/8
SG075CP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	0.080	2.03	1/2
SA080CP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	0.025	0.64	1/8
SB080CP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	0.032	0.81	5/32
SC080CP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	0.040	1.02	3/16
SD080CP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	0.060	1.52	1/4
SF080CP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	0.080	2.03	3/8
SG080CP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	0.080	2.03	1/2
SA090CP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	0.025	0.64	1/8
SB090CP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	0.032	0.81	5/32
SC090CP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	0.040	1.02	3/16
SD090CP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	0.060	1.52	1/4
SF090CP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	0.080	2.03	3/8
SG090CP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	0.080	2.03	1/2
SA100CP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	0.025	0.64	1/8
SB100CP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	0.032	0.81	5/32
SC100CP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	0.040	1.02	3/16
SD100CP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	0.060	1.52	1/4
SF100CP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	0.080	2.03	3/8
SG100CP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	0.080	2.03	1/2



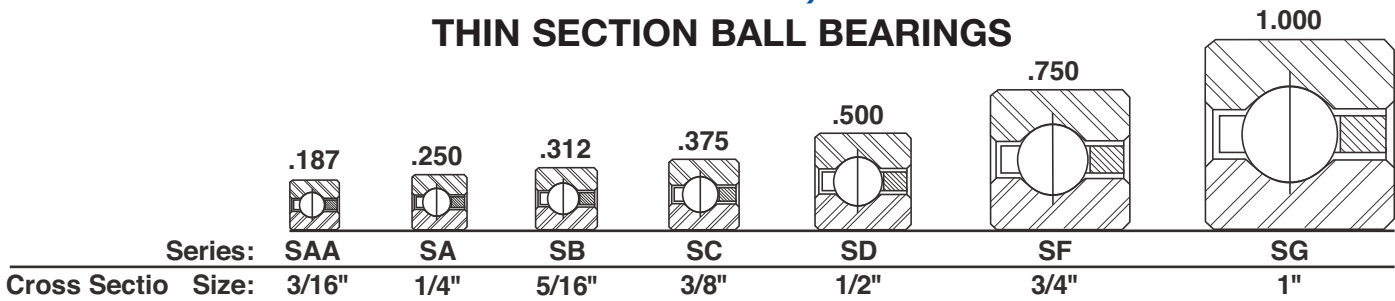
- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	19	4.70	2.132	10,400	46,260	7,850	34,920	16,410	73,000	22,750	101,200	21,330	2,410	29,580	3,340	3,080
	75	0.28	0.127	1,900	8,450	830	3,690	2,870	12,770	2,420	10,760	3,590	410	3,020	340	3,200
	63	0.44	0.200	2,560	11,390	1,170	5,200	3,790	16,860	3,380	15,030	4,790	540	4,270	480	3,170
	51	0.63	0.286	3,070	13,660	1,490	6,630	4,450	19,790	4,320	19,220	5,670	640	5,510	620	3,140
	39	1.16	0.526	4,450	19,790	2,580	11,480	6,990	31,090	7,500	33,360	9,090	1,030	9,740	1,100	3,080
	27	2.70	1.225	7,620	33,900	4,660	20,730	11,130	49,510	13,530	60,180	15,030	1,700	18,260	2,060	2,960
	21	5.10	2.313	11,490	51,110	8,390	37,320	18,140	80,690	24,320	108,180	25,390	2,870	34,050	3,850	2,860
	81	0.30	0.136	2,050	9,120	850	3,780	3,100	13,790	2,450	10,900	4,180	470	3,310	370	2,960
	68	0.47	0.213	2,760	12,280	1,200	5,340	4,080	18,150	3,470	15,440	5,560	630	4,730	530	2,940
	55	0.68	0.308	3,310	14,720	1,530	6,810	4,790	21,310	4,440	19,750	6,580	740	6,110	690	2,910
	42	1.22	0.553	4,790	21,310	2,650	11,790	7,500	33,360	7,680	34,160	10,500	1,190	10,760	1,220	2,860
	29	2.90	1.315	8,180	36,390	4,790	21,310	11,900	52,930	13,900	61,830	17,250	1,950	20,160	2,280	2,760
	22	5.40	2.449	12,040	53,560	8,520	37,900	18,910	84,120	24,700	109,870	28,360	3,200	37,050	4,190	2,670
	87	0.31	0.141	2,200	9,790	870	3,870	3,320	14,770	2,520	11,210	4,810	540	3,660	410	2,760
	73	0.50	0.227	2,970	13,210	1,240	5,520	4,380	19,480	3,600	16,010	6,400	720	5,260	590	2,740
	59	0.73	0.331	3,550	15,790	1,570	6,980	5,120	22,770	4,550	20,240	7,550	850	6,710	760	2,710
	45	1.31	0.594	5,130	22,820	2,730	12,140	8,020	35,670	7,910	35,190	12,030	1,360	11,870	1,340	2,670
	31	3.20	1.451	8,750	38,920	4,920	21,890	12,670	56,360	14,280	63,520	19,640	2,220	22,130	2,500	2,580
	24	5.80	2.631	13,130	58,410	8,880	39,500	20,520	91,280	25,750	114,540	32,840	3,710	41,210	4,660	2,500
	93	0.34	0.154	2,350	10,450	890	3,960	3,540	15,750	2,580	11,480	5,490	620	4,000	450	2,580
	78	0.53	0.240	3,170	14,100	1,280	5,690	4,670	20,770	3,710	16,500	7,300	820	5,800	660	2,560
	63	0.78	0.354	3,790	16,860	1,600	7,120	5,450	24,240	4,640	20,640	8,590	970	7,300	820	2,540
	48	1.41	0.640	5,470	24,330	2,800	12,460	8,530	37,940	8,120	36,120	13,650	1,540	12,990	1,470	2,500
	33	3.40	1.542	9,310	41,410	5,040	22,420	13,440	59,780	14,610	64,990	22,170	2,500	24,100	2,720	2,420
	25	6.10	2.767	10,640	47,330	8,960	39,860	21,270	94,610	25,990	115,610	36,160	4,090	44,190	4,990	2,350
	99	0.38	0.172	2,500	11,120	910	4,050	3,770	16,770	2,640	11,740	6,220	700	4,350	490	2,420
	83	0.57	0.259	3,370	14,990	1,280	5,690	4,960	22,060	3,720	16,550	8,240	930	6,190	700	2,410
	67	0.84	0.381	4,030	17,930	1,650	7,340	5,790	25,760	4,770	21,220	9,700	1,100	7,990	900	2,390
	51	1.53	0.694	5,810	25,840	2,860	12,720	9,040	40,210	8,290	36,880	15,370	1,740	14,090	1,590	2,350
	35	3.50	1.588	9,880	43,950	5,140	22,860	14,200	63,160	14,900	66,280	24,840	2,810	26,070	2,950	2,290
	27	6.50	2.948	14,770	65,700	9,300	41,370	22,890	101,820	26,960	119,920	41,200	4,650	48,520	5,480	2,220
	111	0.44	0.200	2,810	12,500	940	4,180	4,210	18,730	2,730	12,140	7,800	880	5,050	570	2,160
	93	0.66	0.299	3,780	16,810	1,330	5,920	5,540	24,640	3,860	17,170	10,320	1,170	7,190	810	2,150
	75	0.94	0.426	4,510	20,060	1,730	7,700	6,470	28,780	5,020	22,330	12,120	1,370	9,410	1,060	2,130
	57	1.72	0.780	6,500	28,910	2,970	13,210	10,060	44,750	8,620	38,340	19,120	2,160	16,390	1,850	2,110
	39	3.90	1.769	11,000	48,930	5,360	23,840	15,740	70,020	15,550	69,170	30,690	3,470	30,320	3,430	2,050
	30	7.20	3.266	16,420	73,040	9,720	43,240	25,270	112,410	28,200	125,440	50,540	5,710	56,390	6,370	2,000
	123	0.50	0.227	3,110	13,830	990	4,400	4,660	20,730	2,860	12,720	9,560	1,080	5,860	660	1,950
	103	0.73	0.331	4,190	18,640	1,400	6,230	6,130	27,270	4,050	18,020	12,630	1,430	8,350	940	1,940
	83	1.06	0.481	4,990	22,200	1,781	7,920	7,140	31,760	5,170	23,000	14,810	1,670	10,730	1,210	1,930
	63	1.88	0.853	7,180	31,940	3,070	13,660	11,080	49,290	8,900	39,590	23,270	2,630	18,680	2,110	1,900
	43	4.30	1.950	12,130	53,960	5,550	24,690	17,260	76,780	16,060	71,440	37,110	4,190	34,530	3,900	1,860
	33	7.90	3.583	18,060	80,330	10,040	44,660	27,620	122,860	29,110	129,490	60,760	6,860	64,040	7,240	1,820

RADIAL CONTACT, C-TYPE

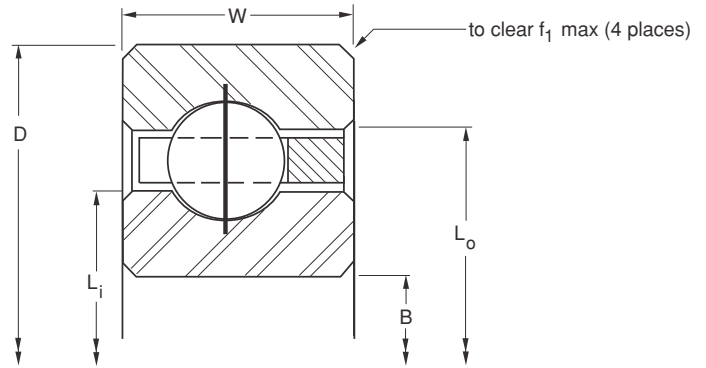
THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
SA110CP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	11.313	287.35	0.025	0.64	1/8
SB110CP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	11.391	289.33	0.032	0.81	5/32
SC110CP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	11.469	291.31	0.040	1.02	3/16
SD110CP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	11.625	295.28	0.060	1.52	1/4
SF110CP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	11.938	303.23	0.080	2.03	3/8
SG110CP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	12.250	311.15	0.080	2.03	1/2
SA120CP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	12.313	312.75	0.025	0.64	1/8
SB120CP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	12.391	314.73	0.032	0.81	5/32
SC120CP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	12.469	316.71	0.040	1.02	3/16
SD120CP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	12.625	320.68	0.060	1.52	1/4
SF120CP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	12.938	328.63	0.080	2.03	3/8
SG120CP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	13.250	336.55	0.080	2.03	1/2
SB140CP0	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	14.391	365.53	0.032	0.81	5/32
SC140CP0	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	14.469	367.51	0.040	1.02	3/16
SD140CP0	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	14.625	371.48	0.060	1.52	1/4
SF140CP0	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	14.938	379.43	0.080	2.03	3/8
SG140CP0	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	15.250	387.35	0.080	2.03	1/2
SB160CP0	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	16.391	416.33	0.032	0.81	5/32
SC160CP0	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	16.469	418.31	0.040	1.02	3/16
SD160CP0	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	16.625	422.28	0.060	1.52	1/4
SF160CP0	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	16.938	430.23	0.080	2.03	3/8
SG160CP0	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	17.250	438.15	0.080	2.03	1/2
SB180CP0	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	18.391	467.13	0.032	0.81	5/32
SC180CP0	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	18.469	469.11	0.040	1.02	3/16
SD180CP0	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	18.625	473.08	0.060	1.52	1/4
SF180CP0	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	18.938	481.03	0.080	2.03	3/8
SG180CP0	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	19.250	488.95	0.080	2.03	1/2
SB200CP0	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	20.391	517.93	0.032	0.81	5/32
SC200CP0	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	20.469	519.91	0.040	1.02	3/16
SD200CP0	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	20.625	523.88	0.060	1.52	1/4
SF200CP0	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	20.938	531.83	0.080	2.03	3/8
SG200CP0	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	21.250	539.75	0.080	2.03	1/2
SC250CP0	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	25.469	646.91	0.040	1.02	3/16
SD250CP0	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	25.625	650.88	0.060	1.52	1/4
SF250CP0	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	25.938	658.83	0.080	2.03	3/8
SG250CP0	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	26.250	666.75	0.080	2.03	1/2
SC300CP0	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	30.469	773.91	0.040	1.02	3/16
SD300CP0	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	30.625	777.88	0.060	1.52	1/4
SF300CP0	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	30.938	785.83	0.080	2.03	3/8
SG300CP0	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	31.250	793.75	0.080	2.03	1/2
SF350CP0	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	35.938	912.83	0.080	2.03	3/8
SG350CP0	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	36.250	920.75	0.080	2.03	1/2
SF400CP0	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	40.938	1039.83	0.080	2.03	3/8
SG400CP0	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	41.250	1047.75	0.080	2.03	1/2

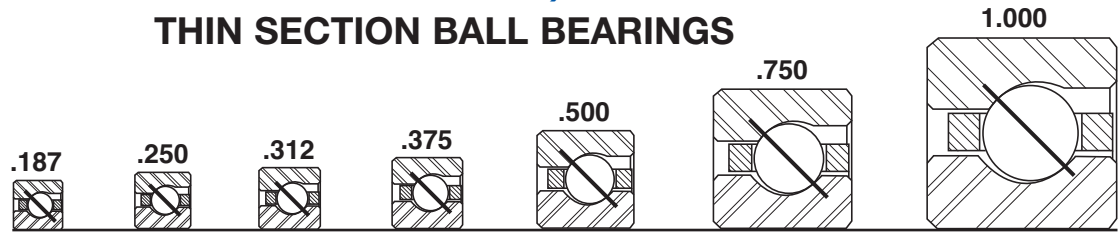


- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	135	0.52	0.236	3,410	15,170	1,030	4,580	5,110	22,730	2,980	13,260	11,500	1,300	6,700	760	1,780
	113	0.75	0.340	4,590	20,420	1,464	6,510	6,700	29,800	4,130	18,370	15,160	1,710	9,340	1,060	1,770
	91	1.16	0.526	5,470	24,330	1,879	8,360	7,800	34,700	5,280	23,490	17,750	2,010	12,020	1,360	1,760
	69	2.06	0.934	7,870	35,010	3,180	14,150	12,100	53,820	9,220	41,010	27,830	3,140	21,210	2,400	1,740
	47	4.80	2.177	13,260	58,980	5,833	25,950	18,790	83,580	16,610	73,880	44,160	4,990	39,040	4,410	1,700
	36	8.60	3.901	19,700	87,630	10,360	46,080	29,980	133,360	30,060	133,710	71,940	8,130	72,140	8,150	1,670
	147	0.56	0.254	3,720	16,550	1,078	4,800	5,560	24,730	3,080	13,700	13,620	1,540	7,550	850	1,630
	123	0.83	0.376	5,000	22,240	1,539	6,850	7,290	32,430	4,270	18,990	17,940	2,030	10,530	1,190	1,620
	99	1.25	0.567	5,950	26,470	1,974	8,780	8,480	37,720	5,470	24,330	20,980	2,370	13,550	1,530	1,620
	75	2.25	1.021	8,550	38,030	3,320	14,770	13,140	58,450	9,630	42,840	32,840	3,710	24,070	2,720	1,600
	51	5.20	2.359	14,390	64,010	6,105	27,160	20,340	90,480	17,200	76,510	51,860	5,860	43,850	4,950	1,570
	39	9.30	4.218	21,340	94,930	10,690	47,550	32,350	143,900	30,990	137,850	84,100	9,500	80,580	9,100	1,540
	143	1.05	0.476	5,810	25,840	1,680	7,470	8,450	37,590	4,520	20,110	24,180	2,730	12,930	1,460	1,400
	115	1.52	0.689	6,910	30,740	2,154	9,580	9,820	43,680	5,800	25,800	28,240	3,190	16,680	1,880	1,390
	87	2.73	1.238	9,920	44,130	3,460	15,390	15,180	67,520	10,030	44,620	44,020	4,970	29,100	3,290	1,380
	59	6.00	2.722	16,650	74,060	6,620	29,450	23,410	104,130	18,090	80,470	69,050	7,800	53,380	6,030	1,360
	45	10.80	4.899	24,620	109,520	11,280	50,180	37,080	164,940	32,710	145,500	111,250	12,570	98,140	11,090	1,330
	163	1.20	0.544	6,620	29,450	1,812	8,060	9,620	42,790	4,800	21,350	31,370	3,540	15,670	1,770	1,230
	131	1.73	0.785	7,880	35,050	2,321	10,320	11,160	49,640	6,050	26,910	36,550	4,130	19,830	2,240	1,220
	99	3.10	1.406	11,290	50,220	3,688	16,410	17,230	76,640	10,500	46,710	56,850	6,420	34,660	3,920	1,210
	67	7.10	3.221	18,900	84,070	7,104	31,600	26,480	117,790	19,000	84,520	88,690	10,020	63,630	7,190	1,190
	51	12.30	5.579	27,910	124,150	11,820	52,580	41,810	185,980	34,270	152,440	142,150	16,060	116,530	13,170	1,180
	183	1.35	0.612	7,440	33,090	1,936	8,610	10,780	47,950	5,050	22,460	39,490	4,460	18,490	2,090	1,090
	147	1.94	0.880	8,840	39,320	2,478	11,020	12,510	55,650	6,390	28,420	45,960	5,190	23,480	2,650	1,090
	111	3.48	1.579	12,650	56,270	3,933	17,490	19,260	85,670	10,870	48,350	71,270	8,050	40,200	4,540	1,080
	75	7.90	3.583	21,160	94,120	7,557	33,620	29,560	131,490	19,980	88,880	110,840	12,520	74,910	8,460	1,070
	57	13.70	6.214	31,190	138,740	12,367	55,010	46,540	207,020	35,660	158,620	176,870	19,980	135,510	15,310	1,050
	203	1.50	0.680	8,250	36,700	2,053	9,130	11,940	53,110	5,260	23,400	48,520	5,480	21,370	2,410	980
	163	2.16	0.980	9,800	43,590	2,626	11,680	13,850	61,610	6,670	29,670	56,430	6,380	27,170	3,070	980
	123	3.85	1.746	14,020	62,360	4,164	18,520	21,320	94,840	11,380	50,620	87,400	9,870	46,680	5,270	980
	83	8.90	4.037	23,420	104,180	7,986	35,520	32,620	145,100	20,570	91,500	135,390	15,300	85,380	9,650	960
	63	15.80	7.167	34,470	153,330	13,044	58,020	51,240	227,930	36,780	163,610	215,210	24,320	154,490	17,460	950
	203	2.69	1.220	12,200	54,270	2,962	13,180	17,200	76,510	7,300	32,470	87,290	9,860	37,070	4,190	790
	153	4.79	2.173	17,440	77,580	4,689	20,860	26,410	117,480	12,260	54,540	134,690	15,220	62,530	7,060	780
	103	10.90	4.944	29,060	129,270	8,963	39,870	40,270	179,130	21,910	97,460	207,390	23,430	112,830	12,750	780
	78	19.50	8.845	42,680	189,850	14,591	64,900	63,110	280,730	40,100	178,370	328,150	37,080	208,540	23,560	770
	243	3.21	1.456	14,610	64,990	3,260	14,500	20,560	91,460	8,000	35,590	124,910	14,110	48,610	5,490	660
	183	5.73	2.599	20,860	92,790	5,153	22,920	31,540	140,300	13,440	59,780	192,420	21,740	82,010	9,270	660
	123	13.00	5.897	34,700	154,350	9,828	43,720	47,960	213,340	23,620	105,070	294,970	33,330	145,270	16,410	650
	93	23.30	10.569	50,890	226,370	15,963	71,010	74,940	333,350	42,510	189,090	464,640	52,500	263,580	29,780	650
	143	15.10	6.849	40,350	179,490	10,603	47,160	55,610	247,370	24,970	111,070	397,620	44,930	178,510	20,170	560
	108	27.10	12.292	59,100	262,890	17,195	76,490	86,680	385,570	44,120	196,260	624,100	70,510	317,650	35,890	560
	163	17.20	7.802	45,990	204,570	11,302	50,270	63,300	281,570	26,530	118,010	515,930	58,290	216,240	24,430	490
	123	30.80	13.971	67,310	299,410	18,307	81,430	98,590	438,550	47,080	209,420	808,420	91,340	386,040	43,620	490

ANGULAR CONTACT, A-TYPE THIN SECTION BALL BEARINGS



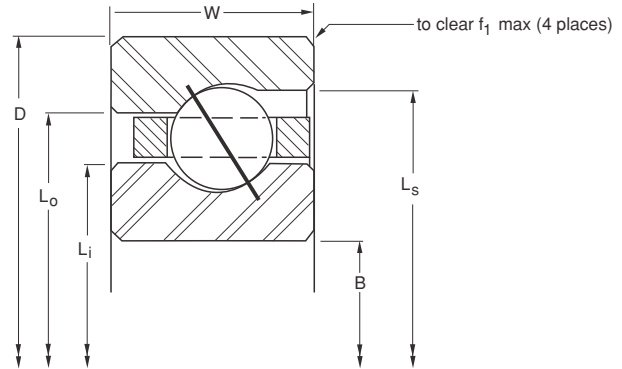
Series: SAA SA SB SC SD SF SG

Cross Section Size: 3/16" 1/4" 5/16" 3/8" 1/2" 3/4" 1"

PART NUMBER*	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter						f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring		L _s -Counter Bore				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
SAA10AGO	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	1.235	31.37	0.015	0.38	3/32
SAA15AGO	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	1.735	44.07	0.015	0.38	3/32
SAA17AGO	1.7500	44.450	2.1250	53.975	0.1875	4.763	1.890	48.01	1.985	50.42	2.024	51.41	0.015	0.38	3/32
SA020ARO	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	2.375	60.33	0.025	0.64	1/8
SB020ARO	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	2.469	62.71	0.032	0.81	5/32
SA025ARO	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	2.875	73.03	0.025	0.64	1/8
SB025ARO	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	2.969	75.41	0.032	0.81	5/32
SA030ARO	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	3.375	85.73	0.025	0.64	1/8
SB030ARO	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	3.469	88.11	0.032	0.81	5/32
SA035ARO	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	3.875	98.43	0.025	0.64	1/8
SB035ARO	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.891	98.83	3.969	100.81	0.032	0.81	5/32
SA040ARO	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	4.375	111.13	0.025	0.64	1/8
SB040ARO	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	4.469	113.51	0.032	0.81	5/32
SC040ARO	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	4.563	115.90	0.040	1.02	3/16
SD040ARO	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	4.750	120.65	0.060	1.52	1/4
SF040ARO	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	5.125	130.18	0.080	2.03	3/8
SG040ARO	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	5.500	139.70	0.080	2.03	1/2
SA042ARO	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	4.625	117.48	0.025	0.64	1/8
SB042ARO	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	4.719	119.86	0.032	0.81	5/32
SC042ARO	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	4.813	122.25	0.040	1.02	3/16
SD042ARO	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	5.000	127.00	0.060	1.52	1/4
SF042ARO	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	5.375	136.53	0.080	2.03	3/8
SG042ARO	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	5.750	146.05	0.080	2.03	1/2
SA045ARO	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	4.875	123.83	0.025	0.64	1/8
SB045ARO	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	4.969	126.21	0.032	0.81	5/32
SC045ARO	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	5.063	128.60	0.040	1.02	3/16
SD045ARO	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	5.250	133.35	0.060	1.52	1/4
SF045ARO	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	5.625	142.88	0.080	2.03	3/8
SG045ARO	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	6.000	152.40	0.080	2.03	1/2
SA047ARO	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	5.125	130.18	0.025	0.64	1/8
SB047ARO	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	5.219	132.56	0.032	0.81	5/32
SC047ARO	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	5.313	134.95	0.040	1.02	3/16
SD047ARO	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	5.500	139.70	0.060	1.52	1/4
SF047ARO	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	5.875	149.23	0.080	2.03	3/8
SG047ARO	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	6.250	158.75	0.080	2.03	1/2
SA050ARO	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	5.375	136.53	0.025	0.64	1/8
SB050ARO	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	5.469	138.91	0.032	0.81	5/32
SC050ARO	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	5.563	141.30	0.040	1.02	3/16
SD050ARO	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	5.750	146.05	0.060	1.52	1/4
SF050ARO	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	6.125	155.58	0.080	2.03	3/8
SG050ARO	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	6.500	165.10	0.080	2.03	1/2
SA055ARO	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	5.875	149.23	0.025	0.64	1/8
SB055ARO	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	5.969	151.61	0.032	0.81	5/32
SC055ARO	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	6.063	154.00	0.040	1.02	3/16
SD055ARO	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	6.250	158.75	0.060	1.52	1/4
SF055ARO	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	6.625	168.28	0.080	2.03	3/8

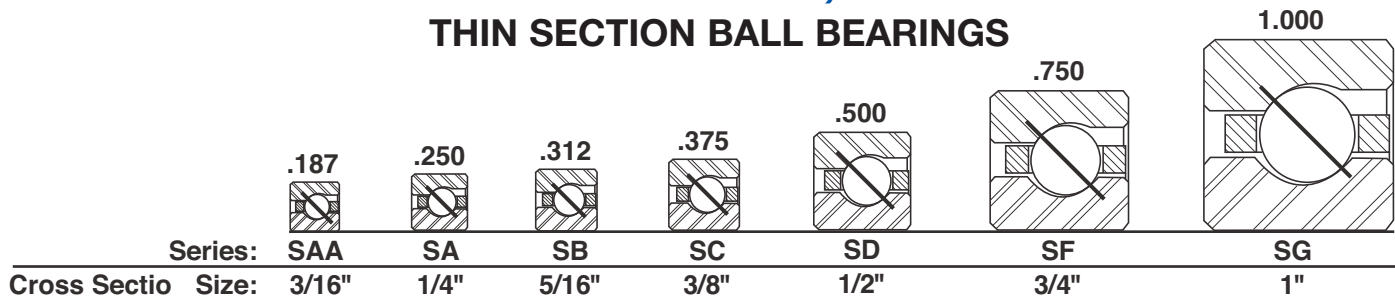


- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	28	0.03	0.014	340	1,510	330	1,470	970	4,310	960	4,270	N/A	N/A	N/A	N/A	16,840
	40	0.04	0.018	480	2,140	380	1,690	1,380	6,140	1,100	4,890	N/A	N/A	N/A	N/A	11,850
	44	0.06	0.027	635	2,824	520	2,313	1,830	8,140	1,415	6,294	N/A	N/A	N/A	N/A	10,320
	36	0.10	0.045	790	3,510	600	2,670	2,280	10,140	1,730	7,700	N/A	N/A	N/A	N/A	8,890
	31	0.16	0.073	1,090	4,850	850	3,780	3,150	14,010	2,460	10,940	N/A	N/A	N/A	N/A	8,650
	44	0.13	0.059	960	4,270	640	2,850	2,780	12,370	1,860	8,270	N/A	N/A	N/A	N/A	7,270
	38	0.20	0.091	1,340	5,960	920	4,090	3,860	17,170	2,680	11,920	N/A	N/A	N/A	N/A	7,110
	52	0.15	0.068	1,140	5,070	680	3,020	3,290	14,630	1,980	8,810	N/A	N/A	N/A	N/A	6,150
	44	0.24	0.109	1,550	6,890	970	4,310	4,470	19,880	2,800	12,460	N/A	N/A	N/A	N/A	6,040
	60	0.18	0.082	1,310	5,830	720	3,200	3,790	16,860	2,070	9,210	N/A	N/A	N/A	N/A	5,330
	51	0.27	0.122	1,790	7,960	1,020	4,540	5,180	23,040	2,970	13,210	N/A	N/A	N/A	N/A	5,250
	68	0.19	0.086	1,490	6,630	750	3,340	4,300	19,130	2,180	9,700	N/A	N/A	N/A	N/A	4,710
	58	0.30	0.136	2,040	9,070	1,080	4,800	5,890	26,200	3,130	13,920	N/A	N/A	N/A	N/A	4,640
	49	0.45	0.204	2,550	11,340	1,410	6,270	7,360	32,740	4,080	18,150	N/A	N/A	N/A	N/A	4,570
	36	0.78	0.354	3,550	15,790	2,070	9,210	10,260	45,640	6,020	26,780	N/A	N/A	N/A	N/A	4,440
	26	1.90	0.862	6,350	28,250	4,350	19,350	18,340	81,580	12,620	56,140	N/A	N/A	N/A	N/A	4,210
	20	3.60	1.633	9,480	42,170	7,340	32,650	27,360	121,700	21,290	94,700	N/A	N/A	N/A	N/A	4,000
	72	0.20	0.091	1,580	7,030	770	3,430	4,550	20,240	2,240	9,960	N/A	N/A	N/A	N/A	4,440
	61	0.31	0.141	2,150	9,560	1,090	4,850	6,200	27,580	3,170	14,100	N/A	N/A	N/A	N/A	4,380
	52	0.47	0.213	2,710	12,050	1,440	6,410	7,820	34,790	4,180	18,590	N/A	N/A	N/A	N/A	4,320
	38	0.83	0.376	3,750	16,680	2,410	10,720	10,830	48,170	6,990	31,090	N/A	N/A	N/A	N/A	4,210
	27	2.00	0.907	6,600	29,360	4,390	19,530	19,050	84,740	12,740	56,670	N/A	N/A	N/A	N/A	4,000
	21	3.80	1.724	9,950	44,260	7,580	33,720	28,730	127,800	21,990	97,820	N/A	N/A	N/A	N/A	3,810
	76	0.22	0.100	1,660	7,380	780	3,470	4,810	21,400	2,260	10,050	N/A	N/A	N/A	N/A	4,210
	64	0.33	0.150	16,801	74,730	1,120	4,980	6,500	28,910	3,240	14,410	N/A	N/A	N/A	N/A	4,160
	55	0.48	0.218	2,860	12,720	1,470	6,540	8,270	36,790	4,260	18,950	N/A	N/A	N/A	N/A	4,100
	40	0.88	0.399	3,950	17,570	2,460	10,940	11,400	50,710	7,140	31,760	N/A	N/A	N/A	N/A	4,000
	29	2.10	0.953	7,090	31,540	4,550	20,240	20,460	91,010	13,200	58,720	N/A	N/A	N/A	N/A	3,810
	22	4.00	1.814	10,430	46,390	7,820	34,790	30,100	133,890	22,690	100,930	N/A	N/A	N/A	N/A	3,640
	80	0.23	0.104	1,750	7,780	800	3,560	5,060	22,510	2,310	10,280	N/A	N/A	N/A	N/A	4,000
	68	0.34	0.154	2,390	10,630	1,140	5,070	6,910	30,740	3,290	14,630	N/A	N/A	N/A	N/A	3,950
	58	0.50	0.227	3,020	13,430	1,500	6,670	8,720	38,790	4,340	19,310	N/A	N/A	N/A	N/A	3,900
	42	0.94	0.426	4,150	18,460	2,510	11,170	11,970	53,250	7,280	32,380	N/A	N/A	N/A	N/A	3,810
	30	2.20	0.998	7,330	32,610	4,610	20,510	21,160	94,120	13,380	59,520	N/A	N/A	N/A	N/A	3,640
	23	4.10	1.860	10,900	48,490	8,060	35,850	31,460	139,940	23,370	103,950	N/A	N/A	N/A	N/A	3,480
	84	0.24	0.109	1,840	8,180	810	3,600	5,310	23,620	2,360	10,500	N/A	N/A	N/A	N/A	3,810
	71	0.38	0.172	2,500	11,120	1,160	5,160	7,210	32,070	3,350	14,900	N/A	N/A	N/A	N/A	3,760
	61	0.58	0.263	3,180	14,150	1,540	6,850	9,170	40,790	4,450	19,790	N/A	N/A	N/A	N/A	3,720
	44	1.00	0.454	4,340	19,310	2,550	11,340	12,540	55,780	7,400	32,920	N/A	N/A	N/A	N/A	3,640
	31	2.30	1.043	7,570	33,670	4,650	20,680	21,870	97,280	13,480	59,960	N/A	N/A	N/A	N/A	3,480
	24	4.30	1.950	11,370	50,580	8,290	36,880	32,830	146,040	24,040	106,940	N/A	N/A	N/A	N/A	3,330
	92	0.25	0.113	2,020	8,990	830	3,690	5,820	25,890	2,410	10,720	N/A	N/A	N/A	N/A	3,480
	78	0.41	0.186	2,740	12,190	1,200	5,340	7,920	35,230	3,480	15,480	N/A	N/A	N/A	N/A	3,440
	66	0.59	0.268	3,440	15,300	1,560	6,940	9,920	44,130	4,540	20,190	N/A	N/A	N/A	N/A	3,400
	48	1.06	0.481	4,740	21,080	2,640	11,740	13,680	60,850	7,660	34,070	N/A	N/A	N/A	N/A	3,330
	34	2.50	1.134	8,310	36,960	4,820	21,440	23,980	106,670	13,980	62,190	N/A	N/A	N/A	N/A	3,200

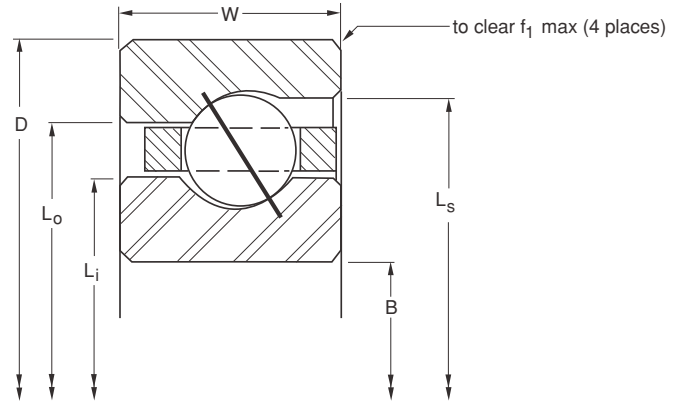
ANGULAR CONTACT, A-TYPE THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter						f1 Housing Fillet		Ball Diameter
							Li -Inner Ring		Lo -Outer Ring		Ls -Counter Bore				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
SG055ARO	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	7.000	177.80	0.080	2.03	1/2
SA060ARO	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	6.375	161.93	0.025	0.64	1/8
SB060ARO	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	6.469	164.31	0.032	0.81	5/32
SC060ARO	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	6.563	166.70	0.040	1.02	3/16
SD060ARO	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	6.750	171.45	0.060	1.52	1/4
SF060ARO	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	7.125	180.98	0.080	2.03	3/8
SG060ARO	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	7.500	190.50	0.080	2.03	1/2
SA065ARO	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	6.875	174.63	0.025	0.64	1/8
SB065ARO	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	6.969	177.01	0.032	0.81	5/32
SC065ARO	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	7.063	179.40	0.040	1.02	3/16
SD065ARO	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	7.250	184.15	0.060	1.52	1/4
SF065ARO*	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	7.625	193.68	0.080	2.03	3/8
SG065ARO	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	8.000	203.20	0.080	2.03	1/2
SA070ARO	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	7.375	187.33	0.025	0.64	1/8
SB070ARO	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	7.469	189.71	0.032	0.81	5/32
SC070ARO	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	7.563	192.10	0.040	1.02	3/16
SD070ARO	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	7.750	196.85	0.060	1.52	1/4
SF070ARO	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	8.125	206.38	0.080	2.03	3/8
SG070ARO	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	8.500	215.90	0.080	2.03	1/2
SA075ARO	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	7.875	200.03	0.025	0.64	1/8
SB075ARO	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	7.969	202.41	0.032	0.81	5/32
SC075ARO	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	8.063	204.80	0.040	1.02	3/16
SD075ARO	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	8.250	209.55	0.060	1.52	1/4
SF075ARO	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	8.625	219.08	0.080	2.03	3/8
SG075ARO	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	9.000	228.60	0.080	2.03	1/2
SA080ARO	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	8.375	212.73	0.025	0.64	1/8
SB080ARO	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	8.469	215.11	0.032	0.81	5/32
SC080ARO	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	8.563	217.50	0.040	1.02	3/16
SD080ARO	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	8.750	222.25	0.060	1.52	1/4
SF080ARO	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	9.125	231.78	0.080	2.03	3/8
SG080ARO	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	9.500	241.30	0.080	2.03	1/2
SA090ARO	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	9.375	238.13	0.025	0.64	1/8
SB090ARO	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	9.469	240.51	0.032	0.81	5/32
SC090ARO	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	9.563	242.90	0.040	1.02	3/16
SD090ARO	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	9.750	247.65	0.060	1.52	1/4
SF090ARO	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	10.125	257.18	0.080	2.03	3/8
SG090ARO	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	10.500	266.70	0.080	2.03	1/2
SA100ARO	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	10.375	263.53	0.025	0.64	1/8
SB100ARO	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	10.469	265.91	0.032	0.81	5/32
SC100ARO	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	10.563	268.30	0.040	1.02	3/16
SD100ARO	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	10.750	273.05	0.060	1.52	1/4
SF100ARO	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	11.125	282.58	0.080	2.03	3/8
SG100ARO	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	11.500	292.10	0.080	2.03	1/2

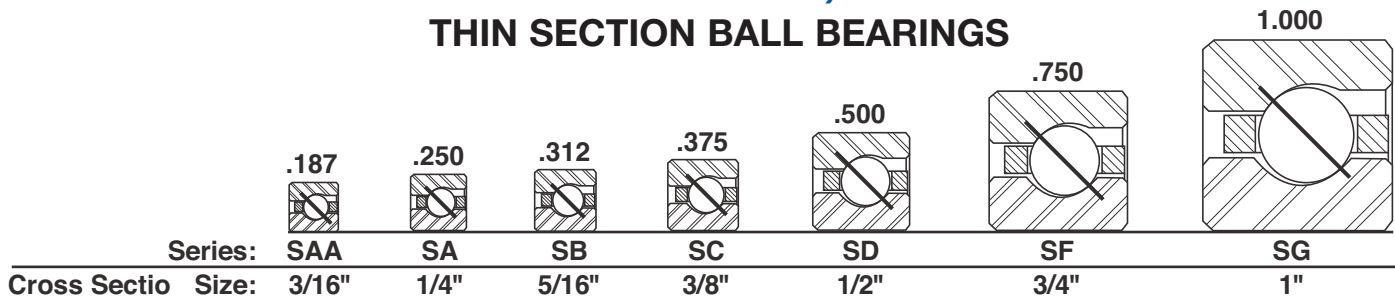


- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	26	4.70	2.132	12,320	54,800	8,610	38,300	35,570	158,220	24,960	111,030	N/A	N/A	N/A	N/A	3,080
	100	0.28	0.127	2,190	9,740	860	3,830	6,320	28,110	2,500	11,120	N/A	N/A	N/A	N/A	3,200
	85	0.44	0.200	2,990	13,300	1,240	5,520	8,630	38,390	3,600	16,010	N/A	N/A	N/A	N/A	3,170
	72	0.63	0.286	3,750	16,680	1,620	7,210	10,820	48,130	4,690	20,860	N/A	N/A	N/A	N/A	3,140
	52	1.16	0.526	5,130	22,820	2,720	12,100	14,820	65,920	7,880	35,050	N/A	N/A	N/A	N/A	3,080
	37	2.70	1.225	9,040	40,210	5,010	22,290	26,100	116,100	14,530	64,630	N/A	N/A	N/A	N/A	2,960
	28	5.10	2.313	13,270	59,030	8,860	39,410	38,300	170,370	25,700	114,320	N/A	N/A	N/A	N/A	2,860
	108	0.30	0.136	2,370	10,540	890	3,960	6,830	30,380	2,580	11,480	N/A	N/A	N/A	N/A	2,960
	91	0.47	0.213	3,200	14,230	1,260	5,600	9,240	41,100	3,650	16,240	N/A	N/A	N/A	N/A	2,940
	78	0.68	0.308	4,060	18,060	1,670	7,430	11,720	52,130	4,830	21,480	N/A	N/A	N/A	N/A	2,910
	56	1.22	0.553	5,530	24,600	2,780	12,370	15,960	70,990	8,070	35,900	N/A	N/A	N/A	N/A	2,860
	40	2.90	1.315	9,770	43,460	5,140	22,860	28,220	125,530	14,920	66,370	N/A	N/A	N/A	N/A	2,760
	30	5.40	2.449	14,220	63,250	9,110	40,520	41,040	182,560	26,410	117,480	N/A	N/A	N/A	N/A	2,670
	116	0.31	0.141	2,540	11,300	900	4,000	7,340	32,650	2,600	11,570	N/A	N/A	N/A	N/A	2,760
	98	0.50	0.227	3,450	15,350	1,300	5,780	9,960	44,300	3,760	16,730	N/A	N/A	N/A	N/A	2,740
	83	0.73	0.331	4,320	19,220	1,720	7,650	12,470	55,470	4,980	22,150	N/A	N/A	N/A	N/A	2,710
	60	1.31	0.594	5,920	26,330	2,850	12,680	17,100	76,060	8,260	36,740	N/A	N/A	N/A	N/A	2,670
	43	3.20	1.451	10,510	46,750	5,290	23,530	30,330	134,910	15,350	68,280	N/A	N/A	N/A	N/A	2,580
	32	5.80	2.631	15,160	67,440	9,370	41,680	43,780	194,740	27,160	120,810	N/A	N/A	N/A	N/A	2,500
	124	0.34	0.154	2,720	12,100	920	4,090	7,840	34,870	2,660	11,830	N/A	N/A	N/A	N/A	2,580
	105	0.53	0.240	3,700	16,460	1,330	5,920	10,670	47,460	3,860	17,170	N/A	N/A	N/A	N/A	2,560
	89	0.78	0.354	4,630	20,600	1,750	7,780	13,380	59,520	5,090	22,640	N/A	N/A	N/A	N/A	2,540
	64	1.41	0.640	6,320	28,110	2,940	13,080	18,240	81,140	8,520	37,900	N/A	N/A	N/A	N/A	2,500
	45	3.40	1.542	11,000	48,930	5,380	23,930	31,740	141,190	15,590	69,350	N/A	N/A	N/A	N/A	2,420
	34	6.10	2.767	16,110	71,660	9,560	42,530	46,510	206,890	27,710	123,260	N/A	N/A	N/A	N/A	2,350
	132	0.38	0.172	2,890	12,860	960	4,270	8,350	37,140	2,770	12,320	N/A	N/A	N/A	N/A	2,420
	112	0.57	0.259	3,940	17,530	1,360	6,050	11,380	50,620	3,950	17,570	N/A	N/A	N/A	N/A	2,410
	95	0.84	0.381	4,950	22,020	1,800	8,010	14,280	63,520	5,210	23,180	N/A	N/A	N/A	N/A	2,390
	68	1.53	0.694	6,710	29,850	2,990	13,300	19,380	86,210	8,670	38,570	N/A	N/A	N/A	N/A	2,350
	48	3.50	1.588	11,730	52,180	5,520	24,550	33,860	150,620	16,020	71,260	N/A	N/A	N/A	N/A	2,290
	36	6.50	2.948	17,060	75,890	9,800	43,590	49,250	219,070	28,430	126,460	N/A	N/A	N/A	N/A	2,220
	148	0.44	0.200	3,240	14,410	990	4,400	9,360	41,640	2,860	12,720	N/A	N/A	N/A	N/A	2,160
	125	0.66	0.299	4,400	19,570	1,410	6,270	12,700	56,490	4,080	18,150	N/A	N/A	N/A	N/A	2,150
	106	0.94	0.426	5,520	24,550	1,860	8,270	15,930	70,860	5,400	24,020	N/A	N/A	N/A	N/A	2,130
	76	1.72	0.780	7,500	33,360	3,100	13,790	21,660	96,350	9,000	40,030	N/A	N/A	N/A	N/A	2,110
	54	3.90	1.769	13,190	58,670	5,780	25,710	38,090	169,430	16,760	74,550	N/A	N/A	N/A	N/A	2,050
	40	7.20	3.266	18,960	84,340	10,190	45,330	54,720	243,410	29,540	131,400	N/A	N/A	N/A	N/A	2,000
	164	0.50	0.227	3,590	15,970	1,030	4,580	10,370	46,130	3,000	13,340	N/A	N/A	N/A	N/A	1,950
	139	0.73	0.331	4,890	21,750	1,480	6,580	14,120	62,810	4,290	19,080	N/A	N/A	N/A	N/A	1,940
	118	1.06	0.481	6,140	27,310	1,942	8,640	17,730	78,870	5,570	24,780	N/A	N/A	N/A	N/A	1,930
	84	1.88	0.853	8,290	36,880	3,240	14,410	23,940	106,490	9,390	41,770	N/A	N/A	N/A	N/A	1,900
	59	4.30	1.950	14,420	64,140	5,980	26,600	41,620	185,130	17,330	77,090	N/A	N/A	N/A	N/A	1,860
	44	7.90	3.583	20,850	92,750	10,560	46,970	60,190	267,740	30,620	136,200	N/A	N/A	N/A	N/A	1,820

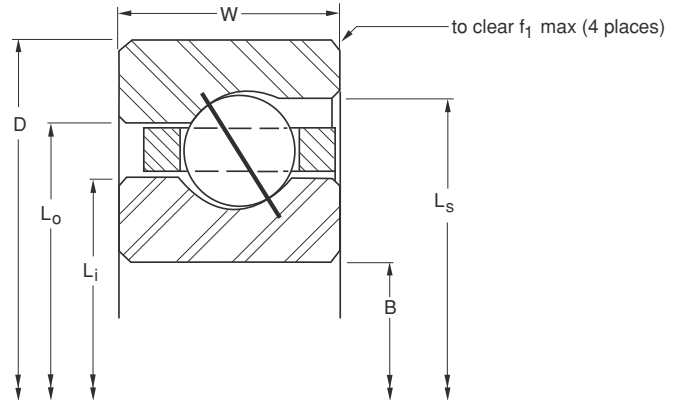
ANGULAR CONTACT, A-TYPE THIN SECTION BALL BEARINGS



PART NUMBER	NOMINAL DIMENSIONS														
	B Bore		D Outside Diameter		W Width		Land Diameter						f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring		L _s -Counter Bore				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
SA110ARO	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	11.313	287.35	11.375	288.93	0.025	0.64	1/8
SB110ARO	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	11.391	289.33	11.469	291.31	0.032	0.81	5/32
SC110ARO	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	11.469	291.31	11.563	293.70	0.040	1.02	3/16
SD110ARO	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	11.625	295.28	11.750	298.45	0.060	1.52	1/4
SF110ARO	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	11.938	303.23	12.125	307.98	0.080	2.03	3/8
SG110ARO	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	12.250	311.15	12.500	317.50	0.080	2.03	1/2
SA120ARO	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	12.313	312.75	12.375	314.33	0.025	0.64	1/8
SB120ARO	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	12.391	314.73	12.469	316.71	0.032	0.81	5/32
SC120ARO	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	12.469	316.71	12.563	319.10	0.040	1.02	3/16
SD120ARO	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	12.625	320.68	12.750	323.85	0.060	1.52	1/4
SF120ARO	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	12.938	328.63	13.125	333.38	0.080	2.03	3/8
SG120ARO	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	13.250	336.55	13.500	342.90	0.080	2.03	1/2
SB140ARO	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	14.391	365.53	14.469	367.51	0.032	0.81	5/32
SC140ARO	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	14.469	367.51	14.563	369.90	0.040	1.02	3/16
SD140ARO	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	14.625	371.48	14.750	374.65	0.060	1.52	1/4
SF140ARO	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	14.938	379.43	15.125	384.18	0.080	2.03	3/8
SG140ARO	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	15.250	387.35	15.500	393.70	0.080	2.03	1/2
SB160ARO	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	16.391	416.33	16.469	418.31	0.032	0.81	5/32
SC160ARO	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	16.469	418.31	16.563	420.70	0.040	1.02	3/16
SD160ARO	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	16.625	422.28	16.750	425.45	0.060	1.52	1/4
SF160ARO	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	16.938	430.23	17.125	434.98	0.080	2.03	3/8
SG160ARO	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	17.250	438.15	17.500	444.50	0.080	2.03	1/2
SB180ARO	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	18.391	467.13	18.469	469.11	0.032	0.81	5/32
SC180ARO	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	18.469	469.11	18.563	471.50	0.040	1.02	3/16
SD180ARO	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	18.625	473.08	18.750	476.25	0.060	1.52	1/4
SF180ARO	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	18.938	481.03	19.125	485.78	0.080	2.03	3/8
SG180ARO	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	19.250	488.95	19.500	495.30	0.080	2.03	1/2
SB200ARO	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	20.391	517.93	20.469	519.91	0.032	0.81	5/32
SC200ARO	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	20.469	519.91	20.563	522.30	0.040	1.02	3/16
SD200ARO	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	20.625	523.88	20.750	527.05	0.060	1.52	1/4
SF200ARO	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	20.938	531.83	21.125	536.58	0.080	2.03	3/8
SG200ARO	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	21.250	539.75	21.500	546.10	0.080	2.03	1/2
SC250ARO	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	25.469	646.91	25.563	649.30	0.040	1.02	3/16
SD250ARO	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	25.625	650.88	25.750	654.05	0.060	1.52	1/4
SF250ARO	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	25.938	658.83	26.125	663.58	0.080	2.03	3/8
SG250ARO	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	26.250	666.75	26.500	673.10	0.080	2.03	1/2
SC300ARO	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	30.469	773.91	30.563	776.30	0.040	1.02	3/16
SD300ARO	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	30.625	777.88	30.750	781.05	0.060	1.52	1/4
SF300ARO	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	30.938	785.83	31.125	790.58	0.080	2.03	3/8
SG300ARO	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	31.250	793.75	31.500	800.10	0.080	2.03	1/2
SF350ARO	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	35.938	912.83	36.125	917.58	0.080	2.03	3/8
SG350ARO	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	36.250	920.75	36.500	927.10	0.080	2.03	1/2
SF400ARO	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	40.938	1039.83	41.125	1044.58	0.080	2.03	3/8
SG400ARO	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	41.250	1047.75	41.500	1054.10	0.080	2.03	1/2



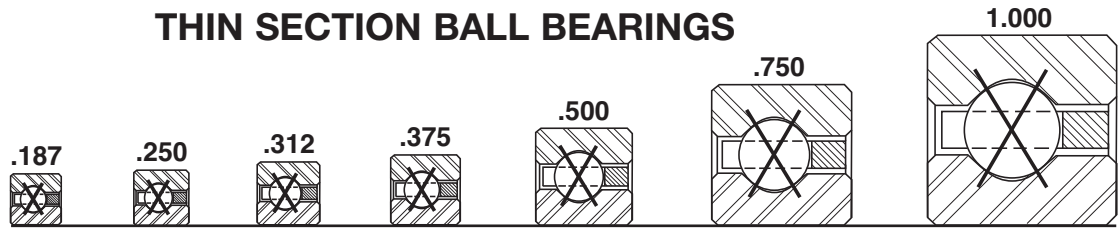
- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Circular Pocket Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS										Limiting Speed (RPM)		
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static			Dynamic	
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm			
	180	0.52	0.236	3,940	17,530	1,072	4,770	11,380	50,620	3,100	13,790	N/A	N/A	N/A	N/A	1,780
	152	0.75	0.340	5,350	23,800	1,540	6,850	15,440	68,680	4,350	19,350	N/A	N/A	N/A	N/A	1,770
	129	1.16	0.526	6,720	29,890	2,047	9,110	19,390	86,250	5,780	25,710	N/A	N/A	N/A	N/A	1,760
	92	2.06	0.934	9,080	40,390	3,310	14,720	26,220	116,630	9,600	42,700	N/A	N/A	N/A	N/A	1,740
	65	4.80	2.177	15,880	70,640	6,227	27,700	45,850	203,950	17,870	79,490	N/A	N/A	N/A	N/A	1,700
	48	8.60	3.901	22,750	101,200	10,920	48,570	65,660	292,070	31,660	140,830	N/A	N/A	N/A	N/A	1,670
	196	0.56	0.254	4,290	19,080	1,128	5,020	12,390	55,110	3,200	14,230	N/A	N/A	N/A	N/A	1,630
	166	0.83	0.376	5,840	25,980	1,623	7,220	16,860	75,000	4,510	20,060	N/A	N/A	N/A	N/A	1,620
	140	1.25	0.567	7,290	32,430	2,147	9,550	21,040	93,590	5,980	26,600	N/A	N/A	N/A	N/A	1,620
	100	2.25	1.021	9,870	43,900	3,430	15,260	28,500	126,770	9,950	44,260	N/A	N/A	N/A	N/A	1,600
	70	5.20	2.359	17,100	76,060	6,487	28,860	49,380	219,650	18,340	81,580	N/A	N/A	N/A	N/A	1,570
	52	9.30	4.218	24,640	109,600	11,230	49,950	71,140	316,450	32,570	144,880	N/A	N/A	N/A	N/A	1,540
	192	1.05	0.476	6,760	30,070	1,767	7,860	19,500	86,740	4,840	21,530	N/A	N/A	N/A	N/A	1,400
	163	1.52	0.689	8,490	37,770	2,347	10,440	24,500	108,980	6,330	28,160	N/A	N/A	N/A	N/A	1,390
	116	2.73	1.238	11,450	50,930	3,582	15,930	33,060	147,060	10,340	45,990	N/A	N/A	N/A	N/A	1,380
	81	6.00	2.722	19,790	88,030	7,043	31,330	57,140	254,170	19,490	86,700	N/A	N/A	N/A	N/A	1,360
	60	10.80	4.899	28,430	126,460	11,770	52,360	82,080	365,110	34,150	151,910	N/A	N/A	N/A	N/A	1,330
	219	1.20	0.544	7,710	34,300	1,907	8,480	22,250	98,970	5,150	22,910	N/A	N/A	N/A	N/A	1,230
	186	1.73	0.785	9,680	43,060	2,533	11,270	27,950	124,330	6,730	29,940	N/A	N/A	N/A	N/A	1,220
	132	3.10	1.406	13,030	57,960	3,856	17,150	37,620	167,340	11,030	49,060	N/A	N/A	N/A	N/A	1,210
	92	7.10	3.221	22,480	100,000	7,563	33,640	64,890	288,650	20,310	90,340	N/A	N/A	N/A	N/A	1,190
	68	12.30	5.579	32,220	143,320	12,360	54,980	93,020	413,770	35,850	159,470	N/A	N/A	N/A	N/A	1,180
	246	1.35	0.612	8,660	38,520	2,038	9,070	24,990	111,160	5,510	24,510	N/A	N/A	N/A	N/A	1,090
	209	1.94	0.880	10,880	48,400	2,707	12,040	31,410	139,720	7,280	32,380	N/A	N/A	N/A	N/A	1,090
	148	3.48	1.579	14,610	64,990	4,113	18,300	42,180	187,630	11,390	50,670	N/A	N/A	N/A	N/A	1,080
	104	7.90	3.583	25,410	113,030	8,103	36,040	73,360	326,320	21,210	94,350	N/A	N/A	N/A	N/A	1,070
	76	13.70	6.214	36,020	160,220	12,898	57,370	104,000	462,620	37,230	165,610	N/A	N/A	N/A	N/A	1,050
	273	1.50	0.680	9,610	42,750	2,162	9,620	27,730	123,350	5,900	26,240	N/A	N/A	N/A	N/A	980
	231	2.16	0.980	12,030	53,510	2,863	12,740	34,720	154,440	7,780	34,610	N/A	N/A	N/A	N/A	980
	164	3.85	1.746	16,190	72,020	4,356	19,380	46,740	207,910	11,920	53,020	N/A	N/A	N/A	N/A	980
	115	8.90	4.037	28,100	125,000	8,562	38,090	81,120	360,840	22,680	100,890	N/A	N/A	N/A	N/A	960
	84	15.80	7.167	39,810	177,080	13,612	60,550	114,900	511,100	38,830	172,720	N/A	N/A	N/A	N/A	950
	288	2.69	1.220	14,900	66,280	3,233	14,380	43,280	192,520	9,010	40,080	N/A	N/A	N/A	N/A	790
	204	4.79	2.173	20,140	89,590	4,908	21,830	58,140	258,620	13,540	60,230	N/A	N/A	N/A	N/A	780
	142	10.90	4.944	34,700	154,350	9,585	42,640	100,200	445,710	26,100	116,100	N/A	N/A	N/A	N/A	780
	104	19.50	8.845	49,280	219,210	15,239	67,790	142,300	632,980	41,420	184,250	N/A	N/A	N/A	N/A	770
	345	3.21	1.456	17,960	79,890	3,561	15,840	51,850	230,640	10,160	45,190	N/A	N/A	N/A	N/A	660
	244	5.73	2.599	24,090	107,160	5,397	24,010	69,540	309,330	15,260	67,880	N/A	N/A	N/A	N/A	660
	170	13.00	5.897	41,540	184,780	10,533	46,850	119,900	533,340	29,430	130,910	N/A	N/A	N/A	N/A	650
	124	23.30	10.569	58,760	261,380	16,687	74,230	169,600	754,420	46,020	204,710	N/A	N/A	N/A	N/A	650
	198	15.10	6.849	48,380	215,200	11,382	50,630	139,700	621,420	32,580	144,920	N/A	N/A	N/A	N/A	560
	144	27.10	12.292	68,240	303,550	17,982	79,990	197,000	876,300	50,840	226,150	N/A	N/A	N/A	N/A	560
	226	17.20	7.802	55,220	245,630	12,147	54,030	159,400	709,050	35,580	158,270	N/A	N/A	N/A	N/A	490
	164	30.80	13.971	77,720	345,720	19,153	85,200	224,400	998,180	55,440	246,610	N/A	N/A	N/A	N/A	490

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

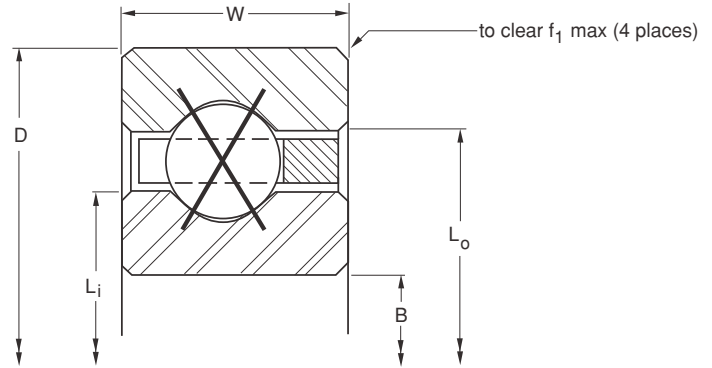


Series:	SAA	SA	SB	SC	SD	SF	SG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS										
	B Bore		D Outside Diameter		W Width		Land Diameter		f ₁ Housing Fillet		Ball Diameter
	in.	mm	in.	mm	in.	mm	L _i -Inner Ring	L _o -Outer Ring	in.	mm	
SAA10XL0	1.0000	25.400	1.3750	34.925	0.1875	4.763	1.141	28.98	1.234	31.34	3/32
SAA15XL0	1.5000	38.100	1.8750	47.625	0.1875	4.763	1.641	41.68	1.734	44.04	3/32
SAA17XL0	1.7500	50.800	2.1250	53.975	0.1875	4.763	1.890	48.01	1.985	50.42	3/32
SA020XP0	2.0000	50.800	2.5000	63.500	0.2500	6.350	2.188	55.58	2.313	58.75	1/8
SB020XP0	2.0000	50.800	2.6250	66.675	0.3125	7.938	2.234	56.74	2.391	60.73	5/32
SA025XP0	2.5000	63.500	3.0000	76.200	0.2500	6.350	2.688	68.28	2.813	71.45	1/8
SB025XP0	2.5000	63.500	3.1250	79.375	0.3125	7.938	2.734	69.44	2.891	73.43	5/32
SA030XP0	3.0000	76.200	3.5000	88.900	0.2500	6.350	3.188	80.98	3.313	84.15	1/8
SB030XP0	3.0000	76.200	3.6250	92.075	0.3125	7.938	3.234	82.14	3.391	86.13	5/32
SA035XP0	3.5000	88.900	4.0000	101.600	0.2500	6.350	3.688	93.68	3.813	96.85	1/8
SB035XP0	3.5000	88.900	4.1250	104.775	0.3125	7.938	3.734	94.84	3.891	98.83	5/32
SA040XP0	4.0000	101.600	4.5000	114.300	0.2500	6.350	4.188	106.38	4.313	109.55	1/8
SB040XP0	4.0000	101.600	4.6250	117.475	0.3125	7.938	4.234	107.54	4.391	111.53	5/32
SC040XP0	4.0000	101.600	4.7500	120.650	0.3750	9.525	4.281	108.74	4.469	113.51	3/16
SD040XP0	4.0000	101.600	5.0000	127.000	0.5000	12.700	4.375	111.13	4.625	117.48	1/4
SF040XP0	4.0000	101.600	5.5000	139.700	0.7500	19.050	4.563	115.90	4.938	125.43	3/8
SG040XP0	4.0000	101.600	6.0000	152.400	1.0000	25.400	4.750	120.65	5.250	133.35	1/2
SA042XP0	4.2500	107.950	4.7500	120.650	0.2500	6.350	4.438	112.73	4.563	115.90	1/8
SB042XP0	4.2500	107.950	4.8750	123.825	0.3125	7.938	4.484	113.89	4.641	117.88	5/32
SC042XP0	4.2500	107.950	5.0000	127.000	0.3750	9.525	4.531	115.09	4.719	119.86	3/16
SD042XP0	4.2500	107.950	5.2500	133.350	0.5000	12.700	4.625	117.48	4.875	123.83	1/4
SF042XP0	4.2500	107.950	5.7500	146.050	0.7500	19.050	4.813	122.25	5.188	131.78	3/8
SG042XP0	4.2500	107.950	6.2500	158.750	1.0000	25.400	5.000	127.00	5.500	139.70	1/2
SA045XP0	4.5000	114.300	5.0000	127.000	0.2500	6.350	4.688	119.08	4.813	122.25	1/8
SB045XP0	4.5000	114.300	5.1250	130.175	0.3125	7.938	4.734	120.24	4.891	124.23	5/32
SC045XP0	4.5000	114.300	5.2500	133.350	0.3750	9.525	4.781	121.44	4.969	126.21	3/16
SD045XP0	4.5000	114.300	5.5000	139.700	0.5000	12.700	4.875	123.83	5.125	130.18	1/4
SF045XP0	4.5000	114.300	6.0000	152.400	0.7500	19.050	5.063	128.60	5.438	138.13	3/8
SG045XP0	4.5000	114.300	6.5000	165.100	1.0000	25.400	5.250	133.35	5.750	146.05	1/2
SA047XP0	4.7500	120.650	5.2500	133.350	0.2500	6.350	4.938	125.43	5.063	128.60	1/8
SB047XP0	4.7500	120.650	5.3750	136.525	0.3125	7.938	4.984	126.59	5.141	130.58	5/32
SC047XP0	4.7500	120.650	5.5000	139.700	0.3750	9.525	5.031	127.79	5.219	132.56	3/16
SD047XP0	4.7500	120.650	5.7500	146.050	0.5000	12.700	5.125	130.18	5.375	136.53	1/4
SF047XP0	4.7500	120.650	6.2500	158.750	0.7500	19.050	5.313	134.95	5.688	144.48	3/8
SG047XP0	4.7500	120.650	6.7500	171.450	1.0000	25.400	5.500	139.70	6.000	152.40	1/2
SA050XP0	5.0000	127.000	5.5000	139.700	0.2500	6.350	5.188	131.78	5.313	134.95	1/8
SB050XP0	5.0000	127.000	5.6250	142.875	0.3125	7.938	5.234	132.94	5.391	136.93	5/32
SC050XP0	5.0000	127.000	5.7500	146.050	0.3750	9.525	5.281	134.14	5.469	138.91	3/16
SD050XP0	5.0000	127.000	6.0000	152.400	0.5000	12.700	5.375	136.53	5.625	142.88	1/4
SF050XP0	5.0000	127.000	6.5000	165.100	0.7500	19.050	5.563	141.30	5.938	150.83	3/8
SG050XP0	5.0000	127.000	7.0000	177.800	1.0000	25.400	5.750	146.05	6.250	158.75	1/2
SA055XP0	5.5000	139.700	6.0000	152.400	0.2500	6.350	5.688	144.48	5.813	147.65	1/8
SB055XP0	5.5000	139.700	6.1250	155.575	0.3125	7.938	5.734	145.64	5.891	149.63	5/32
SC055XP0	5.5000	139.700	6.2500	158.750	0.3750	9.525	5.781	146.84	5.969	151.61	3/16
SD055XP0	5.5000	139.700	6.5000	165.100	0.5000	12.700	5.875	149.23	6.125	155.58	1/4
SF055XP0	5.5000	139.700	7.0000	177.800	0.7500	19.050	6.063	154.00	6.438	163.53	3/8



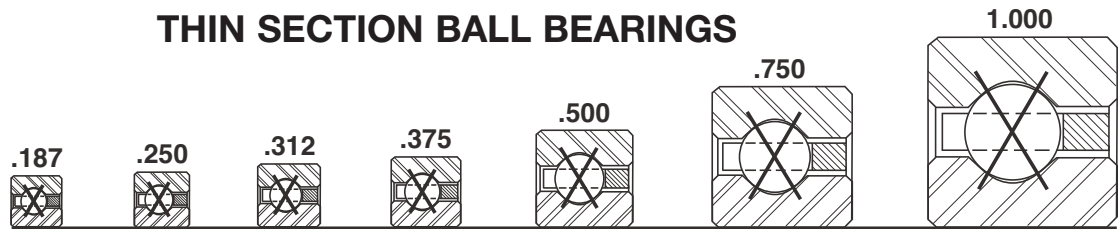
- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	21	0.03	0.014	290	1,290	270	1,200	730	3,250	680	3,020	170	20	160	20	10,110
	29	0.04	0.018	400	1,780	310	1,380	1,000	4,450	770	3,430	340	40	260	30	7,110
	33	0.06	0.027	540	2,402	412	1,832	1,355	6,027	1,000	4,448	555	63	405	46	6,190
	27	0.10	0.045	680	3,020	514	2,290	1,710	7,610	1,230	5,470	770	90	550	60	5,330
	23	0.16	0.073	930	4,140	758	3,370	2,340	10,410	1,740	7,740	1,080	120	800	90	5,190
	33	0.13	0.059	830	3,690	583	2,590	2,090	9,300	1,320	5,870	1,150	130	730	80	4,360
	28	0.20	0.091	1,140	5,070	848	3,770	2,840	12,630	1,880	8,360	1,600	180	1,060	120	4,270
	39	0.15	0.068	990	4,400	643	2,860	2,470	10,990	1,410	6,270	1,600	180	920	100	3,690
	33	0.24	0.109	1,340	5,960	933	4,150	3,350	14,900	1,990	8,850	2,220	250	1,320	150	3,620
	45	0.18	0.082	1,140	5,070	701	3,120	2,850	12,680	1,480	6,580	2,130	240	1,110	130	3,200
	38	0.27	0.122	1,540	6,850	1,014	4,510	3,860	17,170	2,100	9,340	2,940	330	1,600	180	3,150
	51	0.19	0.086	1,290	5,740	756	3,360	3,220	14,320	1,550	6,890	2,740	310	1,320	150	2,820
	43	0.30	0.136	1,750	7,780	1,091	4,850	4,370	19,440	2,210	9,830	3,770	430	1,900	210	2,780
	35	0.45	0.204	2,100	9,340	1,417	6,300	5,260	23,400	2,810	12,500	4,600	520	2,460	280	2,740
	27	0.78	0.354	3,080	13,700	2,311	10,280	7,700	34,250	4,890	21,750	6,930	780	4,400	500	2,670
	19	1.90	0.862	5,360	23,840	4,665	20,750	13,400	59,610	8,830	39,280	12,730	1,440	8,390	950	2,530
	15	3.60	1.633	8,210	36,520	7,979	35,490	20,520	91,280	15,150	67,390	20,520	2,320	15,150	1,710	2,400
	54	0.20	0.091	1,370	6,090	783	3,480	3,410	15,170	1,590	7,070	3,070	350	1,430	160	2,670
	45	0.31	0.141	1,830	8,140	1,120	4,980	4,570	20,330	2,230	9,920	4,170	470	2,040	230	2,630
	37	0.47	0.213	2,220	9,880	1,464	6,510	5,560	24,730	2,870	12,770	5,140	580	2,650	300	2,590
	28	0.83	0.376	3,190	14,190	2,355	10,480	7,980	35,500	4,920	21,890	7,580	860	4,670	530	2,530
	20	2.00	0.907	5,640	25,090	4,795	21,330	14,110	62,760	8,990	39,990	14,110	1,590	8,993	1,020	2,400
	15	3.80	1.724	8,210	36,520	7,917	35,220	20,520	91,280	15,150	67,390	21,550	2,430	15,910	1,800	2,290
	57	0.22	0.100	1,440	6,410	809	3,600	3,600	16,010	1,610	7,160	3,420	390	1,530	170	2,530
	48	0.33	0.150	1,950	8,670	1,165	5,180	4,880	21,710	2,300	10,230	4,690	530	2,220	250	2,490
	39	0.48	0.218	2,340	10,410	1,510	6,720	5,860	26,070	2,920	12,990	5,710	650	2,850	320	2,460
	30	0.88	0.399	3,420	15,210	2,454	10,920	8,550	38,030	5,080	22,600	8,550	970	5,080	570	2,400
	21	2.10	0.953	5,930	26,380	4,923	21,900	14,810	65,880	9,180	40,830	15,550	1,760	9,695	1,100	2,290
	16	4.00	1.814	8,760	38,970	8,205	36,500	21,890	97,370	15,820	70,370	24,080	2,720	17,400	1,970	2,180
	60	0.23	0.104	1,520	6,760	834	3,710	3,790	16,860	1,650	7,340	3,790	430	1,650	190	2,400
	50	0.34	0.154	2,030	9,030	1,193	5,310	5,080	22,600	2,310	10,280	5,140	580	2,340	260	2,370
	41	0.50	0.227	2,460	10,940	1,556	6,920	6,160	27,400	2,970	13,210	6,320	710	3,040	340	2,340
	31	0.94	0.426	3,530	15,700	2,496	11,100	8,840	39,320	5,130	22,820	9,280	1,050	5,380	610	2,290
	22	2.20	0.998	6,210	27,620	5,048	22,450	15,520	69,040	9,380	41,720	17,070	1,930	10,416	1,180	2,180
	17	4.10	1.860	9,300	41,370	8,487	37,750	23,260	103,470	16,470	73,260	26,740	3,020	18,940	2,140	2,090
	63	0.24	0.109	1,590	7,070	859	3,820	3,980	17,700	1,680	7,470	4,180	470	1,760	200	2,290
	53	0.38	0.172	2,150	9,560	1,236	5,500	5,380	23,930	2,380	10,590	5,720	650	2,520	280	2,260
	43	0.58	0.263	2,590	11,520	1,600	7,120	6,460	28,740	3,040	13,520	6,950	790	3,270	370	2,230
	33	1.00	0.454	3,760	16,730	2,592	11,530	9,410	41,860	5,270	23,440	10,350	1,170	5,800	660	2,180
	23	2.30	1.043	6,490	28,870	5,172	23,010	16,220	72,150	9,520	42,350	18,660	2,110	11,157	1,260	2,090
	18	4.30	1.950	9,850	43,810	8,762	38,980	24,620	109,520	17,110	76,110	29,550	3,340	20,530	2,320	2,000
	69	0.25	0.113	1,750	7,780	908	4,040	4,360	19,390	1,720	7,650	5,020	570	1,970	220	2,090
	58	0.41	0.186	2,360	10,500	1,304	5,800	5,890	26,200	2,460	10,940	6,850	770	2,860	320	2,060
	47	0.59	0.268	2,830	12,590	1,687	7,500	7,060	31,400	3,120	13,880	8,300	940	3,717	420	2,040
	36	1.06	0.481	4,100	18,240	2,725	12,120	10,260	45,640	5,450	24,240	12,310	1,390	6,540	740	2,000
	25	2.50	1.134	7,050	31,360	5,415	24,090	17,630	78,420	9,820	43,680	22,040	2,490	12,696	1,430	1,920

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

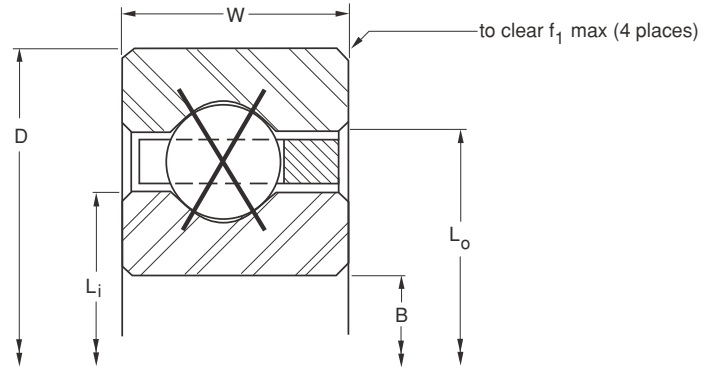


Series:	SAA	SA	SB	SC	SD	SF	SG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
SG055XP0	5.5000	139.700	7.5000	190.500	1.0000	25.400	6.250	158.75	6.750	171.45	0.080	2.03	1/2
SA060XP0	6.0000	152.400	6.5000	165.100	0.2500	6.350	6.188	157.18	6.313	160.35	0.025	0.64	1/8
SB060XP0	6.0000	152.400	6.6250	168.275	0.3125	7.938	6.234	158.34	6.391	162.33	0.032	0.81	5/32
SC060XP0	6.0000	152.400	6.7500	171.450	0.3750	9.525	6.281	159.54	6.469	164.31	0.040	1.02	3/16
SD060XP0	6.0000	152.400	7.0000	177.800	0.5000	12.700	6.375	161.93	6.625	168.28	0.060	1.52	1/4
SF060XP0	6.0000	152.400	7.5000	190.500	0.7500	19.050	6.563	166.70	6.938	176.23	0.080	2.03	3/8
SG060XP0	6.0000	152.400	8.0000	203.200	1.0000	25.400	6.750	171.45	7.250	184.15	0.080	2.03	1/2
SA065XP0	6.5000	165.100	7.0000	177.800	0.2500	6.350	6.688	169.88	6.813	173.05	0.025	0.64	1/8
SB065XP0	6.5000	165.100	7.1250	180.975	0.3125	7.938	6.734	171.04	6.891	175.03	0.032	0.81	5/32
SC065XP0	6.5000	165.100	7.2500	184.150	0.3750	9.525	6.781	172.24	6.969	177.01	0.040	1.02	3/16
SD065XP0	6.5000	165.100	7.5000	190.500	0.5000	12.700	6.875	174.63	7.125	180.98	0.060	1.52	1/4
SF065XP0	6.5000	165.100	8.0000	203.200	0.7500	19.050	7.063	179.40	7.438	188.93	0.080	2.03	3/8
SG065XP0	6.5000	165.100	8.5000	215.900	1.0000	25.400	7.250	184.15	7.750	196.85	0.080	2.03	1/2
SA070XP0	7.0000	177.800	7.5000	190.500	0.2500	6.350	7.188	182.58	7.313	185.75	0.025	0.64	1/8
SB070XP0	7.0000	177.800	7.6250	193.675	0.3125	7.938	7.234	183.74	7.391	187.73	0.032	0.81	5/32
SC070XP0	7.0000	177.800	7.7500	196.850	0.3750	9.525	7.281	184.94	7.469	189.71	0.040	1.02	3/16
SD070XP0	7.0000	177.800	8.0000	203.200	0.5000	12.700	7.375	187.33	7.625	193.68	0.060	1.52	1/4
SF070XP0	7.0000	177.800	8.5000	215.900	0.7500	19.050	7.563	192.10	7.938	201.63	0.080	2.03	3/8
SG070XP0	7.0000	177.800	9.0000	228.600	1.0000	25.400	7.750	196.85	8.250	209.55	0.080	2.03	1/2
SA075XP0	7.5000	190.500	8.0000	203.200	0.2500	6.350	7.688	195.28	7.813	198.45	0.025	0.64	1/8
SB075XP0	7.5000	190.500	8.1250	206.375	0.3125	7.938	7.734	196.44	7.891	200.43	0.032	0.81	5/32
SC075XP0	7.5000	190.500	8.2500	209.550	0.3750	9.525	7.781	197.64	7.969	202.41	0.040	1.02	3/16
SD075XP0	7.5000	190.500	8.5000	215.900	0.5000	12.700	7.875	200.03	8.125	206.38	0.060	1.52	1/4
SF075XP0	7.5000	190.500	9.0000	228.600	0.7500	19.050	8.063	204.80	8.438	214.33	0.080	2.03	3/8
SG075XP0	7.5000	190.500	9.5000	241.300	1.0000	25.400	8.250	209.55	8.750	222.25	0.080	2.03	1/2
SA080XP0	8.0000	203.200	8.5000	215.900	0.2500	6.350	8.188	207.98	8.313	211.15	0.025	0.64	1/8
SB080XP0	8.0000	203.200	8.6250	219.075	0.3125	7.938	8.234	209.14	8.391	213.13	0.032	0.81	5/32
SC080XP0	8.0000	203.200	8.7500	222.250	0.3750	9.525	8.281	210.34	8.469	215.11	0.040	1.02	3/16
SD080XP0	8.0000	203.200	9.0000	228.600	0.5000	12.700	8.375	212.73	8.625	219.08	0.060	1.52	1/4
SF080XP0	8.0000	203.200	9.5000	241.300	0.7500	19.050	8.563	217.50	8.938	227.03	0.080	2.03	3/8
SG080XP0	8.0000	203.200	10.0000	254.000	1.0000	25.400	8.750	222.25	9.250	234.95	0.080	2.03	1/2
SA090XP0	9.0000	228.600	9.5000	241.300	0.2500	6.350	9.188	233.38	9.313	236.55	0.025	0.64	1/8
SB090XP0	9.0000	228.600	9.6250	244.475	0.3125	7.938	9.234	234.54	9.391	238.53	0.032	0.81	5/32
SC090XP0	9.0000	228.600	9.7500	247.650	0.3750	9.525	9.281	235.74	9.469	240.51	0.040	1.02	3/16
SD090XP0	9.0000	228.600	10.0000	254.000	0.5000	12.700	9.375	238.13	9.625	244.48	0.060	1.52	1/4
SF090XP0	9.0000	228.600	10.5000	266.700	0.7500	19.050	9.563	242.90	9.938	252.43	0.080	2.03	3/8
SG090XP0	9.0000	228.600	11.0000	279.400	1.0000	25.400	9.750	247.65	10.250	260.35	0.080	2.03	1/2
SA100XP0	10.0000	254.000	10.5000	266.700	0.2500	6.350	10.188	258.78	10.313	261.95	0.025	0.64	1/8
SB100XP0	10.0000	254.000	10.6250	269.875	0.3125	7.938	10.234	259.94	10.391	263.93	0.032	0.81	5/32
SC100XP0	10.0000	254.000	10.7500	273.050	0.3750	9.525	10.281	261.14	10.469	265.91	0.040	1.02	3/16
SD100XP0	10.0000	254.000	11.0000	279.400	0.5000	12.700	10.375	263.53	10.625	269.88	0.060	1.52	1/4
SF100XP0	10.0000	254.000	11.5000	292.100	0.7500	19.050	10.563	268.30	10.938	277.83	0.080	2.03	3/8
SG100XP0	10.0000	254.000	12.0000	304.800	1.0000	25.400	10.750	273.05	11.250	285.75	0.080	2.03	1/2



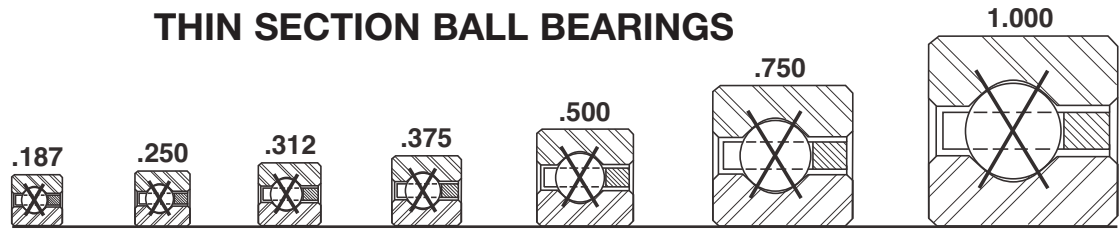
- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	19	4.70	2.132	10,400	46,260	8,979	39,940	25,990	115,610	17,460	77,670	33,790	3,820	22,700	2,560	1,850
	75	0.28	0.127	1,900	8,450	955	4,250	4,740	21,080	1,780	7,920	5,930	670	2,240	250	1,920
	63	0.44	0.200	2,560	11,390	1,371	6,100	6,400	28,470	2,540	11,300	8,080	910	3,247	370	1,900
	51	0.63	0.286	3,070	13,660	1,770	7,870	7,660	34,070	3,220	14,320	9,770	1,100	4,234	480	1,880
	39	1.16	0.526	4,450	19,790	2,855	12,700	11,120	49,460	5,610	24,950	14,450	1,630	7,290	820	1,850
	27	2.70	1.225	7,620	33,900	5,651	25,140	19,050	84,740	10,150	45,150	25,710	2,900	14,311	1,620	1,780
	21	5.10	2.313	11,490	51,110	9,503	42,270	28,730	127,800	18,290	81,360	40,220	4,540	25,610	2,890	1,710
	81	0.30	0.136	2,050	9,120	1,001	4,450	5,120	22,770	1,840	8,180	6,910	780	2,535	290	1,780
	68	0.47	0.213	2,760	12,280	1,435	6,380	6,910	30,740	2,590	11,520	9,410	1,060	3,668	410	1,760
	55	0.68	0.308	3,310	14,720	1,851	8,230	8,270	36,790	3,300	14,680	11,370	1,280	4,775	540	1,750
	42	1.22	0.553	4,790	21,310	2,980	13,260	11,970	53,250	5,740	25,530	16,760	1,890	8,040	910	1,710
	29	2.90	1.315	8,180	36,390	5,880	26,160	20,460	91,010	10,380	46,170	29,660	3,350	15,993	1,810	1,660
	22	5.40	2.449	12,040	53,560	9,713	43,210	30,100	133,890	18,520	82,380	45,140	5,100	27,770	3,140	1,600
	87	0.31	0.141	2,200	9,790	1,046	4,650	5,500	24,470	1,850	8,230	7,980	900	2,844	320	1,660
	73	0.50	0.227	2,970	13,210	1,498	6,660	7,420	33,010	2,660	11,830	10,850	1,230	4,109	460	1,640
	59	0.73	0.331	3,550	15,790	1,931	8,590	8,870	39,460	3,420	15,210	13,080	1,480	5,341	600	1,630
	45	1.31	0.594	5,130	22,820	3,103	13,800	12,830	57,070	5,880	26,160	19,240	2,170	8,810	1,000	1,600
	31	3.20	1.451	8,750	38,920	6,103	27,150	21,870	97,280	10,640	47,330	33,890	3,830	17,744	2,000	1,550
	24	5.80	2.631	13,130	58,410	10,208	45,410	32,830	146,040	19,330	85,980	52,530	5,940	30,930	3,490	1,500
	93	0.34	0.154	2,350	10,450	1,089	4,840	5,880	26,160	1,890	8,410	9,120	1,030	3,165	360	1,550
	78	0.53	0.240	3,170	14,100	1,559	6,930	7,920	35,230	2,730	12,140	12,380	1,400	4,568	520	1,540
	63	0.78	0.354	3,790	16,860	2,007	8,930	9,470	42,120	3,480	15,480	14,910	1,680	5,930	670	1,520
	48	1.41	0.640	5,470	24,330	3,222	14,330	13,680	60,850	6,060	26,960	21,890	2,470	9,700	1,100	1,500
	33	3.40	1.542	9,310	41,410	6,323	28,130	23,280	103,550	10,930	48,620	38,410	4,340	19,568	2,210	1,450
	25	6.10	2.767	13,680	60,850	10,410	46,310	34,200	152,130	19,460	86,560	58,140	6,570	33,196	3,750	1,410
	99	0.38	0.172	2,500	11,120	1,131	5,030	6,260	27,850	1,970	8,760	10,330	1,170	3,499	400	1,450
	83	0.57	0.259	3,370	14,990	1,618	7,200	8,430	37,500	2,790	12,410	14,020	1,580	5,045	570	1,440
	67	0.84	0.381	4,030	17,930	2,082	9,260	10,070	44,790	3,560	15,840	16,870	1,910	6,542	740	1,430
	51	1.53	0.694	5,810	25,840	3,338	14,850	14,540	64,680	6,170	27,450	24,710	2,790	10,643	1,200	1,410
	35	3.50	1.588	9,880	43,950	6,535	29,070	24,690	109,830	11,190	49,780	43,200	4,880	21,453	2,420	1,370
	27	6.50	2.948	14,770	65,700	10,882	48,410	36,940	164,320	20,230	89,990	66,480	7,510	36,743	4,150	1,330
	111	0.44	0.200	2,810	12,500	1,212	5,390	7,020	31,230	2,040	9,070	12,990	1,470	4,204	470	1,300
	93	0.66	0.299	3,780	16,810	1,732	7,700	9,450	42,040	2,890	12,860	17,600	1,990	6,050	680	1,290
	75	0.94	0.426	4,510	20,060	2,226	9,900	11,270	50,130	3,690	16,410	21,130	2,390	7,830	880	1,280
	57	1.72	0.780	6,500	28,910	3,561	15,840	16,250	72,280	6,410	28,510	30,870	3,490	12,693	1,430	1,260
	39	3.90	1.769	11,000	48,930	6,947	30,900	27,510	122,370	11,630	51,730	53,640	6,060	25,410	2,870	1,230
	30	7.20	3.266	16,420	73,040	11,526	51,270	41,040	182,560	21,020	93,500	82,080	9,270	43,240	4,890	1,200
	123	0.50	0.227	3,110	13,830	1,289	5,730	7,780	34,610	2,180	9,700	15,940	1,800	4,956	560	1,170
	103	0.73	0.331	4,190	18,640	1,841	8,190	10,460	46,530	3,080	13,700	21,580	2,440	7,121	800	1,160
	83	1.06	0.481	4,990	22,200	2,364	10,520	12,470	55,470	3,930	17,480	25,880	2,920	9,201	1,040	1,160
	63	1.88	0.853	7,180	31,940	3,776	16,800	17,960	79,890	6,680	29,710	37,710	4,260	14,872	1,680	1,140
	43	4.30	1.950	12,130	53,960	7,342	32,660	30,330	134,910	12,100	53,820	65,210	7,370	29,608	3,350	1,120
	33	7.90	3.583	18,060	80,330	12,147	54,030	45,140	200,790	21,790	96,930	99,320	11,220	50,124	5,660	1,090

4-POINT CONTACT, X-TYPE

THIN SECTION BALL BEARINGS

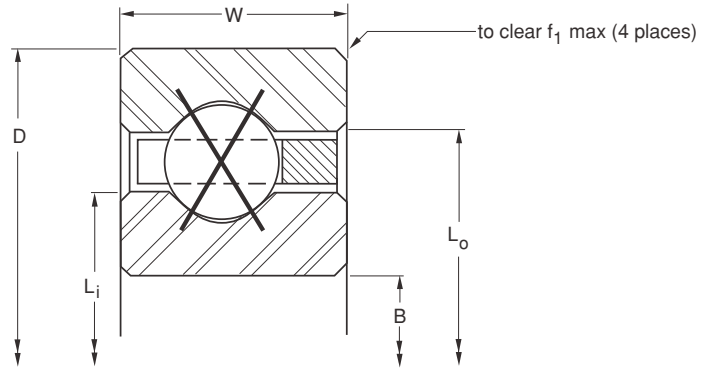


Series:	SAA	SA	SB	SC	SD	SF	SG
Cross Section Size:	3/16"	1/4"	5/16"	3/8"	1/2"	3/4"	1"

PART NUMBER	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		Land Diameter				f ₁ Housing Fillet		Ball Diameter
							L _i -Inner Ring		L _o -Outer Ring				
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
SA110XP0	11.0000	279.400	11.5000	292.100	0.2500	6.350	11.188	284.18	11.313	287.35	0.025	0.64	1/8
SB110XP0	11.0000	279.400	11.6250	295.275	0.3125	7.938	11.234	285.34	11.391	289.33	0.032	0.81	5/32
SC110XP0	11.0000	279.400	11.7500	298.450	0.3750	9.525	11.281	286.54	11.469	291.31	0.040	1.02	3/16
SD110XP0	11.0000	279.400	12.0000	304.800	0.5000	12.700	11.375	288.93	11.625	295.28	0.060	1.52	1/4
SF110XP0	11.0000	279.400	12.5000	317.500	0.7500	19.050	11.563	293.70	11.938	303.23	0.080	2.03	3/8
SG110XP0	11.0000	279.400	13.0000	330.200	1.0000	25.400	11.750	298.45	12.250	311.15	0.080	2.03	1/2
SA120XP0	12.0000	304.800	12.5000	317.500	0.2500	6.350	12.188	309.58	12.313	312.75	0.025	0.64	1/8
SB120XP0	12.0000	304.800	12.6250	320.675	0.3125	7.938	12.234	310.74	12.391	314.73	0.032	0.81	5/32
SC120XP0	12.0000	304.800	12.7500	323.850	0.3750	9.525	12.281	311.94	12.469	316.71	0.040	1.02	3/16
SD120XP0	12.0000	304.800	13.0000	330.200	0.5000	12.700	12.375	314.33	12.625	320.68	0.060	1.52	1/4
SF120XP0	12.0000	304.800	13.5000	342.900	0.7500	19.050	12.563	319.10	12.938	328.63	0.080	2.03	3/8
SG120XP0	12.0000	304.800	14.0000	355.600	1.0000	25.400	12.750	323.85	13.250	336.55	0.080	2.03	1/2
SB140XP0	14.0000	355.600	14.6250	371.475	0.3125	7.938	14.234	361.54	14.391	365.53	0.032	0.81	5/32
SC140XP0	14.0000	355.600	14.7500	374.650	0.3750	9.525	14.281	362.74	14.469	367.51	0.040	1.02	3/16
SD140XP0	14.0000	355.600	15.0000	381.000	0.5000	12.700	14.375	365.13	14.625	371.48	0.060	1.52	1/4
SF140XP0	14.0000	355.600	15.5000	393.700	0.7500	19.050	14.563	369.90	14.938	379.43	0.080	2.03	3/8
SG140XP0	14.0000	355.600	16.0000	406.400	1.0000	25.400	14.750	374.65	15.250	387.35	0.080	2.03	1/2
SB160XP0	16.0000	406.400	16.6250	422.275	0.3125	7.938	16.234	412.34	16.391	416.33	0.032	0.81	5/32
SC160XP0	16.0000	406.400	16.7500	425.450	0.3750	9.525	16.281	413.54	16.469	418.31	0.040	1.02	3/16
SD160XP0	16.0000	406.400	17.0000	431.800	0.5000	12.700	16.375	415.93	16.625	422.28	0.060	1.52	1/4
SF160XP0	16.0000	406.400	17.5000	444.500	0.7500	19.050	16.563	420.70	16.938	430.23	0.080	2.03	3/8
SG160XP0	16.0000	406.400	18.0000	457.200	1.0000	25.400	16.750	425.45	17.250	438.15	0.080	2.03	1/2
SB180XP0	18.0000	457.200	18.6250	473.075	0.3125	7.938	18.234	463.14	18.391	467.13	0.032	0.81	5/32
SC180XP0	18.0000	457.200	18.7500	476.250	0.3750	9.525	18.281	464.34	18.469	469.11	0.040	1.02	3/16
SD180XP0	18.0000	457.200	19.0000	482.600	0.5000	12.700	18.375	466.73	18.625	473.08	0.060	1.52	1/4
SF180XP0	18.0000	457.200	19.5000	495.300	0.7500	19.050	18.563	471.50	18.938	481.03	0.080	2.03	3/8
SG180XP0	18.0000	457.200	20.0000	508.000	1.0000	25.400	18.750	476.25	19.250	488.95	0.080	2.03	1/2
SB200XP0	20.0000	508.000	20.6250	523.875	0.3125	7.938	20.234	513.94	20.391	517.93	0.032	0.81	5/32
SC200XP0	20.0000	508.000	20.7500	527.050	0.3750	9.525	20.281	515.14	20.469	519.91	0.040	1.02	3/16
SD200XP0	20.0000	508.000	21.0000	533.400	0.5000	12.700	20.375	517.53	20.625	523.88	0.060	1.52	1/4
SF200XP0	20.0000	508.000	21.5000	546.100	0.7500	19.050	20.563	522.30	20.938	531.83	0.080	2.03	3/8
SG200XP0	20.0000	508.000	22.0000	558.800	1.0000	25.400	20.750	527.05	21.250	539.75	0.080	2.03	1/2
SC250XP0	25.0000	635.000	25.7500	654.050	0.3750	9.525	25.281	642.14	25.469	646.91	0.040	1.02	3/16
SD250XP0	25.0000	635.000	26.0000	660.400	0.5000	12.700	25.375	644.53	25.625	650.88	0.060	1.52	1/4
SF250XP0	25.0000	635.000	26.5000	673.100	0.7500	19.050	25.563	649.30	25.938	658.83	0.080	2.03	3/8
SG250XP0	25.0000	635.000	27.0000	685.800	1.0000	25.400	25.750	654.05	26.250	666.75	0.080	2.03	1/2
SC300XP0	30.0000	762.000	30.7500	781.050	0.3750	9.525	30.281	769.14	30.469	773.91	0.040	1.02	3/16
SD300XP0	30.0000	762.000	31.0000	787.400	0.5000	12.700	30.375	771.53	30.625	777.88	0.060	1.52	1/4
SF300XP0	30.0000	762.000	31.5000	800.100	0.7500	19.050	30.563	776.30	30.938	785.83	0.080	2.03	3/8
SG300XP0	30.0000	762.000	32.0000	812.800	1.0000	25.400	30.750	781.05	31.250	793.75	0.080	2.03	1/2
SF350XP0	35.0000	889.000	36.5000	927.100	0.7500	19.050	35.563	903.30	35.938	912.83	0.080	2.03	3/8
SG350XP0	35.0000	889.000	37.0000	939.800	1.0000	25.400	35.750	908.05	36.250	920.75	0.080	2.03	1/2
SF400XP0	40.0000	1016.000	41.5000	1054.100	0.7500	19.050	40.563	1030.30	40.938	1039.83	0.080	2.03	3/8
SG400XP0	40.0000	1016.000	42.0000	1066.800	1.0000	25.400	40.750	1035.05	41.250	1047.75	0.080	2.03	1/2



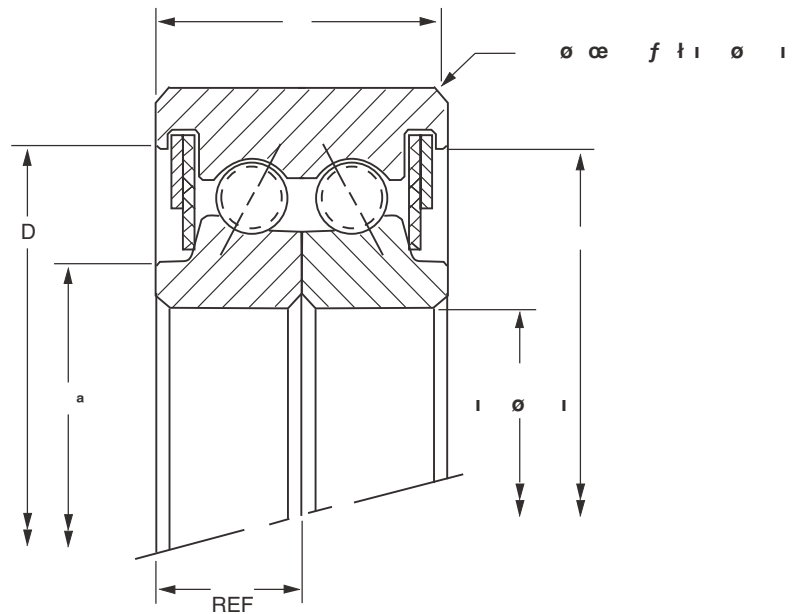
- 440C Stainless Steel
- Large Diameter
- Light Weight
- Small Cross Section
- Snap-Over Ball Separator



	Ball Quantity	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)
				Radial				Thrust				Moment				
				Static		Dynamic		Static		Dynamic		Static		Dynamic		
		lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm	
	135	0.52	0.236	3,410	15,170	1,362	6,060	8,540	37,990	2,320	10,320	19,210	2,170	5,750	650	1,070
	113	0.75	0.340	4,590	20,420	1,945	8,650	11,480	51,070	3,280	14,590	25,970	2,930	8,254	930	1,060
	91	1.16	0.526	5,470	24,330	2,496	11,100	13,680	60,850	4,180	18,590	31,110	3,510	10,651	1,200	1,050
	69	2.06	0.934	7,870	35,010	3,981	17,710	19,670	87,500	6,830	30,380	45,230	5,110	17,173	1,940	1,040
	47	4.80	2.177	13,260	58,980	7,721	34,340	33,150	147,460	12,490	55,560	77,910	8,800	34,032	3,850	1,020
	36	8.60	3.901	19,700	87,630	12,739	56,670	49,250	219,070	22,530	100,220	118,200	13,350	57,347	6,480	1,000
	147	0.56	0.254	3,720	16,550	1,433	6,370	9,300	41,370	2,450	10,900	22,770	2,570	6,587	740	980
	123	0.83	0.376	5,000	22,240	2,045	9,100	12,500	55,600	3,470	15,440	30,770	3,480	9,446	1,070	970
	99	1.25	0.567	5,950	26,470	2,622	11,660	14,880	66,190	4,420	19,660	36,830	4,160	12,174	1,380	970
	75	2.25	1.021	8,550	38,030	4,178	18,580	21,380	95,100	7,080	31,490	53,440	6,040	19,590	2,210	960
	51	5.20	2.359	14,390	64,010	8,084	35,960	35,970	160,000	13,190	58,670	91,730	10,360	38,666	4,370	940
	39	9.30	4.218	21,340	94,930	13,315	59,230	53,350	237,310	23,180	103,110	138,700	15,670	64,935	7,340	920
	143	1.05	0.476	5,810	25,840	2,234	9,940	14,530	64,630	3,840	17,080	41,580	4,700	11,994	1,360	840
	115	1.52	0.689	6,910	30,740	2,862	12,730	17,280	76,870	4,890	21,750	49,690	5,610	15,434	1,740	830
	87	2.73	1.238	9,920	44,130	4,551	20,240	24,800	110,320	7,670	34,120	71,910	8,120	24,755	2,800	830
	59	6.00	2.722	16,650	74,060	8,775	39,030	41,620	185,130	14,530	64,630	122,800	13,870	48,556	5,490	810
	45	10.80	4.899	24,620	109,520	14,404	64,070	61,560	273,830	24,300	108,090	184,700	20,870	81,056	9,160	800
	163	1.20	0.544	6,620	29,450	2,410	10,720	16,560	73,660	4,190	18,640	54,020	6,100	14,750	1,670	740
	131	1.73	0.785	7,880	35,050	3,086	13,730	19,690	87,590	5,330	23,710	64,480	7,290	18,955	2,140	730
	99	3.10	1.406	11,290	50,220	4,899	21,790	28,220	125,530	8,360	37,190	93,110	10,520	30,325	3,430	730
	67	7.10	3.221	18,900	84,070	9,421	41,910	47,260	210,220	15,820	70,370	158,300	17,890	59,200	6,690	720
	51	12.30	5.579	27,910	124,150	15,425	68,610	69,770	310,350	25,510	113,470	237,200	26,800	98,373	11,110	710
	183	1.35	0.612	7,440	33,090	2,576	11,460	18,590	82,690	4,520	20,110	68,090	7,690	17,694	2,000	660
	147	1.94	0.880	8,840	39,320	3,295	14,660	22,090	98,260	5,760	25,620	81,190	9,170	22,712	2,570	650
	111	3.48	1.579	12,650	56,270	5,226	23,250	31,640	140,740	9,030	40,170	117,000	13,220	36,268	4,100	650
	75	7.90	3.583	21,160	94,120	10,028	44,610	52,900	235,310	17,060	75,890	198,400	22,420	70,537	7,970	640
	57	13.70	6.214	31,190	138,740	16,386	72,890	77,980	346,870	27,410	121,930	296,300	33,480	116,793	13,200	630
	203	1.50	0.680	8,250	36,700	2,731	12,150	20,620	91,720	4,850	21,570	83,780	9,470	20,813	2,350	590
	163	2.16	0.980	9,800	43,590	3,492	15,530	24,500	108,980	6,170	27,450	99,830	11,280	26,695	3,020	590
	123	3.85	1.746	14,020	62,360	5,534	24,620	35,060	155,950	9,670	43,010	143,700	16,240	42,561	4,810	590
	83	8.90	4.037	23,420	104,180	10,602	47,160	58,550	260,440	18,250	81,180	243,000	27,460	82,528	9,320	580
	63	15.80	7.167	34,470	153,330	17,293	76,920	86,180	383,350	29,300	130,330	362,000	40,900	136,238	15,390	570
	203	2.69	1.220	12,200	54,270	3,941	17,530	30,510	135,720	7,140	31,760	154,800	17,490	37,518	4,240	470
	153	4.79	2.173	17,440	77,580	6,235	27,730	43,610	193,990	11,180	49,730	222,400	25,130	59,649	6,740	470
	103	10.90	4.944	29,060	129,270	11,909	52,970	72,650	323,160	21,070	93,720	374,200	42,280	115,037	13,000	470
	78	19.50	8.845	42,680	189,850	19,360	86,120	106,700	474,630	33,780	150,260	554,900	62,700	188,838	21,340	460
	243	3.21	1.456	14,610	64,990	4,338	19,300	36,520	162,450	8,050	35,810	221,900	25,070	49,436	5,590	400
	183	5.73	2.599	20,860	92,790	6,856	30,500	52,160	232,020	12,600	56,050	318,100	35,940	78,447	8,860	390
	123	13.00	5.897	34,700	154,350	13,065	58,120	86,760	385,930	23,720	105,510	533,600	60,290	150,708	17,030	390
	93	23.30	10.569	50,890	226,370	21,200	94,300	127,200	565,810	37,980	168,940	788,800	89,120	246,541	27,860	390
	143	15.10	6.849	40,350	179,490	14,100	62,720	100,900	448,830	26,220	116,630	721,200	81,480	189,106	21,370	340
	108	27.10	12.292	59,100	262,890	22,845	101,620	147,700	657,000	41,970	186,690	1,064,000	120,220	308,527	34,860	330
	163	17.20	7.802	45,990	204,570	15,034	66,870	115,000	511,550	28,620	127,310	937,100	105,880	229,832	25,970	290
	123	30.80	13.971	67,310	299,410	24,332	108,230	168,300	748,640	45,770	203,600	1,380,000	155,920	374,256	42,290	290

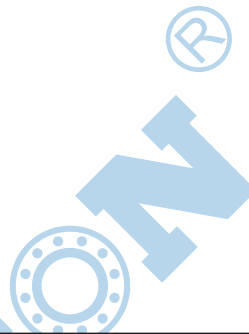
SIMPLEX™ BEARING SERIES

SUPERDUPLEX™ SEALED BEARINGS



PART NUMBER*	NOMINAL DIMENSIONS												
	B Bore		D Outside Diameter		W Width		M _i		M _o			Ball Diameter	Ball Quantity
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		in.	per row
ZU040MZ3	4.0000	101.600	4.7500	120.650	0.5000	12.700	4.155	105.54	4.550	115.57	1/8	54	
ZU042MZ3	4.2500	107.950	5.0000	127.000	0.5000	12.700	4.405	111.89	4.800	121.92	1/8	57	
ZU045MZ3	4.5000	114.300	5.2500	133.350	0.5000	12.700	4.655	118.24	5.050	128.27	1/8	60	
ZU047MZ3	4.7500	120.650	5.5000	139.700	0.5000	12.700	4.905	124.59	5.300	134.62	1/8	63	
ZU050MZ3	5.0000	127.000	5.7500	146.050	0.5000	12.700	5.155	130.94	5.550	140.97	1/8	66	
ZU055MZ3	5.5000	139.700	6.2500	158.750	0.5000	12.700	5.655	143.64	6.050	153.67	1/8	72	
ZU060MZ3	6.0000	152.400	6.7500	171.450	0.5000	12.700	6.155	156.34	6.550	166.37	1/8	79	
ZU065MZ3	6.5000	165.100	7.2500	184.150	0.5000	12.700	6.655	169.04	7.050	179.07	1/8	85	
ZU070MZ3	7.0000	177.800	7.7500	196.850	0.5000	12.700	7.155	181.74	7.550	191.77	1/8	91	
ZU075MZ3	7.5000	190.500	8.2500	209.550	0.5000	12.700	7.655	194.44	8.050	204.47	1/8	97	
ZU080MZ3	8.0000	203.200	8.7500	222.250	0.5000	12.700	8.155	207.14	8.550	217.17	1/8	104	
ZU090MZ3	9.0000	228.600	9.7500	247.650	0.5000	12.700	9.155	232.54	9.550	242.57	1/8	116	
ZU100MZ3	10.0000	254.000	10.7500	273.050	0.5000	12.700	10.155	257.94	10.550	267.97	1/8	129	
ZU110MZ3	11.0000	279.400	11.7500	298.450	0.5000	12.700	11.155	283.34	11.550	293.37	1/8	141	
ZU120MZ3	12.0000	304.800	12.7500	323.850	0.5000	12.700	12.155	308.74	12.550	318.77	1/8	154	

*The alphanumeric identification system is used under license.
ZU Series are also available in low-torque design using PTFE seals.



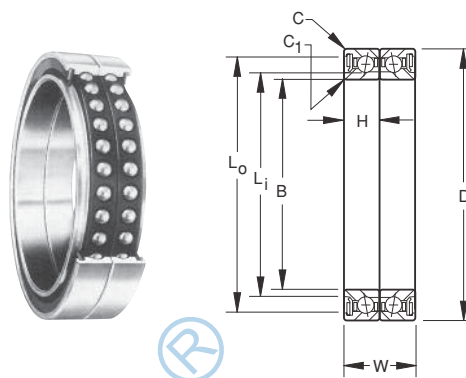
	Approx. Weight		LOAD RATINGS												Limiting Speed (RPM)		
			Radial†						Thrust				Moment†				
			Static			Dynamic			Static		Dynamic		Static			Dynamic	
lbs.	kg	lbf	N	lbf	N	lbf	N	lbf	N	lbf - in	Nm	lbf - in	Nm				
	0.55	0.249	(2x) 905	(2x) 4,030	(2x) 640	(2x) 2,850	2,710	12,050	1,850	8,230	4,130	470	1,555	180	3,660		
	0.58	0.263	(2x) 950	(2x) 4,230	(2x) 655	(2x) 2,910	2,850	12,680	1,900	8,450	4,540	510	1,670	190	3,460		
	0.61	0.277	(2x) 995	(2x) 4,430	(2x) 660	(2x) 2,940	2,990	13,300	1,915	8,520	5,070	570	1,840	210	3,280		
	0.65	0.295	(2x) 1,050	(2x) 4,670	(2x) 675	(2x) 3,000	3,140	13,970	1,955	8,700	5,575	630	1,990	220	3,120		
	0.68	0.308	(2x) 1,090	(2x) 4,850	(2x) 685	(2x) 3,050	3,285	14,610	1,995	8,870	6,105	690	2,130	240	2,980		
	0.74	0.336	(2x) 1,190	(2x) 5,290	(2x) 700	(2x) 3,110	3,580	15,920	2,035	9,050	7,235	820	2,450	280	2,720		
	0.81	0.367	(2x) 1,305	(2x) 5,800	(2x) 730	(2x) 3,250	3,925	17,460	2,125	9,450	8,575	970	2,835	320	2,510		
	0.87	0.395	(2x) 1,400	(2x) 6,230	(2x) 755	(2x) 3,360	4,210	18,730	2,185	9,720	9,910	1,120	3,200	360	2,330		
	0.93	0.422	(2x) 1,500	(2x) 6,670	(2x) 760	(2x) 3,380	4,495	19,990	2,200	9,790	11,340	1,280	3,565	400	2,170		
	0.99	0.449	(2x) 1,600	(2x) 7,120	(2x) 775	(2x) 3,450	4,780	21,260	2,250	10,010	12,870	1,450	3,950	450	2,030		
	1.06	0.481	(2x) 1,710	(2x) 7,610	(2x) 815	(2x) 3,630	5,130	22,820	2,350	10,450	14,630	1,650	4,405	500	1,910		
	1.18	0.535	(2x) 1,905	(2x) 8,470	(2x) 840	(2x) 3,740	5,705	25,380	2,420	10,760	18,180	2,050	5,275	600	1,700		
	1.31	0.594	(2x) 2,110	(2x) 9,390	(2x) 875	(2x) 3,890	6,330	28,160	2,550	11,340	22,290	2,520	6,250	710	1,540		
	1.43	0.649	(2x) 2,300	(2x) 10,230	(2x) 905	(2x) 4,030	6,915	30,760	2,625	11,680	26,620	3,010	7,235	820	1,410		
	1.56	0.708	(2x) 2,515	(2x) 11,190	(2x) 935	(2x) 4,160	7,545	33,560	2,720	12,100	31,560	3,570	8,330	940	1,300		

[†]Radial load rating is two times the value per row ideally if both rows share load equally.
Refer to the Engineering section for load and speed limitations.

Y-PWI SERIES

TOLERANCE TABLES & RECOMMENDED FITS

- Mounted in duplex pairs
- Seal types as follows:
 1. Composition washer with synthetic rubber seal bonded to it.
 2. Synthetic rubber seal retained by composition washer.
 3. Synthetic rubber seal retained by cadmium plated spring steel or stainless steel washer.
- Exposed surfaces except bore are cadmium plated
- Prepacked with lubricant conforming to MIL-G-25537



DIMENSIONS — TOLERANCES

Bearing Number	B Bore		D Outside Diameter		W Widths		H		Li		Lo		C ₁ ⁽¹⁾ Inner Ring Radius		C ⁽¹⁾ Outer Ring Radius		Balls No. Size		Weight (Ea. Bearing)		Type of Seal
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			lbs.	kg	
Y64PWI-CR DB	4.0000	101.600	5.1250	130.175	1.250	31.75	.625	15.88	4.252	108.00	4.846	123.09	.031	0.79	.031	0.79	36	5/16	.97	.440	2
Y80PWI-CR DB	5.0000	127.000	6.1250	155.575	1.250	31.75	.625	15.88	5.252	133.40	5.846	148.49	.031	0.79	.031	0.79	44	5/16	1.18	.535	2
Y96PWI-CR DB	6.0000	152.400	7.1250	180.975	1.250	31.75	.625	15.88	6.252	158.80	6.846	173.89	.031	0.79	.031	0.79	52	5/16	1.39	.630	3
Y128PWI-CR DB	8.0000	203.200	9.1250	231.775	1.250	31.75	.625	15.88	8.252	209.60	8.846	224.69	.031	0.79	.031	0.79	66	5/16	1.82	.826	3
Y176PWI-CR DB	11.0000	279.400	12.500	317.500	1.500	38.10	.750	19.05	11.363	288.62	12.117	307.77	.031	0.79	.031	0.79	76	3/8	4.37	1.98	2
Y224PWI-CR DB	14.0000	355.600	15.500	393.700	1.500	38.10	.750	19.05	14.363	364.82	15.117	383.97	.031	0.79	.031	0.79	95	3/8	5.81	2.64	2
Y288PWI-2-MBR DB	18.0000	457.200	20.0000	508.000	2.000	50.80	1.000	25.40	18.500	469.90	19.500	495.30	.031	0.79	.031	0.79	92	1/2	13.20	5.99	1
	17.9983	457.157	19.9981	507.952																	

(1)Maximum shaft or housing fillet radius which bearing corners will clear.

LOAD RATINGS

Bearing Number	Radial Limit Load Rating		Thrust Limit Load Rating		Limit Moment Rating		Moment Constant		Rated Radial Capacity at Various RPM Based on 7500 Hours Average Life ⁽²⁾						Nominal Preload	
	lbs.	N	lbs.	N	lb.-inch	N-cm	1/inch	1/cm	100rpm ⁽³⁾	300rpm ⁽³⁾	500rpm ⁽³⁾				lbs.	N
Y64PWI-CR DB	38500	170000	17500	78000	29700	335550	.589	.232	3480	15600	2410	10800	2030	9000	100	440
Y80PWI-CR DB	47300	212000	21500	95000	42100	475650	.511	.200	3770	16600	2610	11600	2200	9800	100	440
Y96PWI-CR DB	55800	250000	25400	112000	56800	641730	.447	.175	4030	18000	2800	12500	2360	10400	100	440
Y128PWI-CR DB	70900	315000	32200	143000	89100	1006652	.361	.142	4280	19000	2960	13200	2500	11200	100	440
Y176PWI-CR DB	117500	520000	53400	236000	199000	2248300	.268	.105	6180	27500	4280	19000	3610	16000	100	440
Y224PWI-CR DB	147000	655000	66800	300000	302600	3418775	.221	.088	7090	31500	4920	22000	4140	18300	200	900
Y288PWI-2-MBR DB	253000	1120000	115000	510000	1357500	15337000	.085	.033	10090	45000	7000	31000	5900	26000	300	1340

The limit load ratings shown apply only to Airframe Control position where bearings are used for oscillatory service.

Note: These bearings should not be used as track rollers, cam follower rolls, and the like.

Equivalent Radial Load = .52 x Radial Load + 1.91 x Thrust Load or = Radial Load, whichever is greater.

Pure Thrust Rating = .84 Radial Rating at operating speed.

(2)These ratings are for single bearings.

(3)Heavy line indicates limiting speeds recommended for sealed bearings; for higher speeds, seals should be removed.

THERMAL-COMP™ BEARINGS

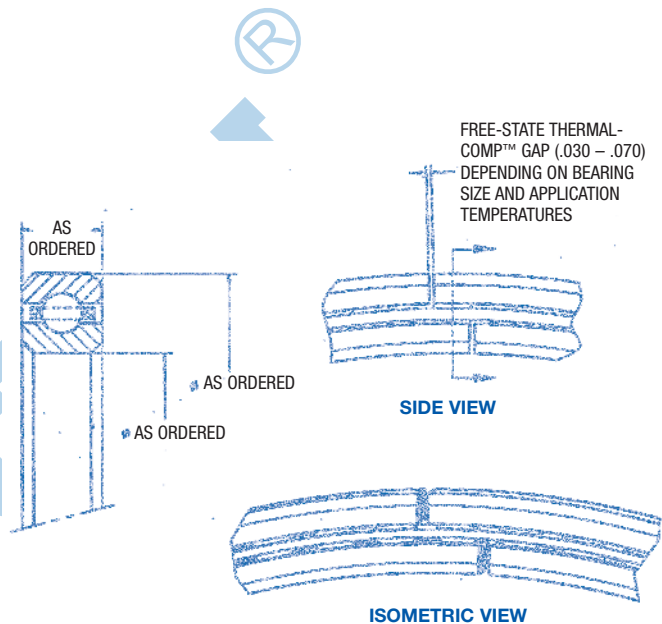
THERMAL-COMP™ Bearings are custom designed to compensate for adverse effects of temperature extremes on bearing performance in airborne applications.

THERMAL-COMP™ Bearings have a double-split rings design and once properly installed in bearing support structure at ambient temperature, they will maintain steady and predictable stiffness and torque characteristics throughout a temperature range, regardless of differences in coefficient of thermal expansion (CTE) of the bearing and the support structure materials.

In most airborne systems, large azimuth bearings are installed in support structures (shaft and housing), which have to be made from light aluminum alloys in order to control weight. While conventional bearings may be installed and fitted for optimum stiffness and rotational torque at ambient temperature, significant variations in bearing performance will be experienced at extremes of temperature in actual application. Such variations are caused by differences in CTE of bearing materials (hardened steels) and the aluminum alloys used for the support structure. At one temperature extreme, the bearing will be internally over-loaded to a much higher stiffness and rolling friction torque; yet at another extreme, the bearing internal preload may be compromised resulting in loss of stiffness or excessive deflection. Such undesirable variations in conventional bearing performance at extremes of temperature will have to be carefully analyzed and consequences mitigated, often necessitating utilization of larger drive motors and/or using more expensive support structure alloys with CTE properties as close to bearing steel as possible. With **THERMAL-COMP™ Bearings** such uncertainties in performance are greatly reduced.

The following is a typical illustration of **THERMAL-COMP™ Bearings** manufactured at Industrial Tectonics Bearings.

Note that the free-state gap in ring split is determined based on bearing size and application temperatures involved. The gap will be closed to near zero when the bearing is operating at the coldest temperature in the application. The gap will be slightly wider when bearing is operating at higher temperatures. However, bearing performance will remain consistent.



THIN SECTION BALL BEARINGS

TOLERANCE TABLES & RECOMMENDED FITS

Precision Tolerances

The Thin Section Ball Bearings shown in this catalog are manufactured to ABEC 1F precision tolerances. Where required, thin section ball bearings can be manufactured to ABEC 3F, ABEC 5F and ABEC 7F precision tolerances.

PRECISION CLASS 0

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 1F C-TYPE												
	Diameters		Race Runout Radial & Axial		Width	Radial Play		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal				Before Installation		Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID	
			Inner Max	Outer Max	Nominal	Min	Max			Max	Min	Max	Min
1.00	-4	-5	5	8	-50	10	16	+4	+5	-4	-8	-5	-10
1.50	-5	-5	6	8	-50	12	18	+5	+5	-5	-10	-5	-10
2.00	-6	-5	8	10	-50	12	24	+6	+5	-6	-12	-5	-10
2.50	-6	-5	8	10	-50	12	24	+6	+5	-6	-12	-5	-10
3.00	-6	-6	8	10	-50	12	24	+6	+6	-6	-12	-6	-12
3.50	-8	-6	10	12	-50	16	28	+8	+6	-8	-16	-6	-12
4.00	-8	-6	10	12	-50	16	28	+8	+6	-8	-16	-6	-12
4.25	-8	-8	10	14	-50	16	28	+8	+8	-8	-16	-8	-16
4.50	-8	-8	10	14	-50	16	28	+8	+8	-8	-16	-8	-16
4.75	-10	-8	12	14	-50	20	34	+10	+8	-10	-20	-8	-16
5.00	-10	-8	12	14	-50	20	34	+10	+8	-10	-20	-8	-16
5.50	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
6.00	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
6.50	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
7.00	-10	-10	12	16	-50	20	34	+10	+10	-10	-20	-10	-20
7.50	-12	-12	16	18	-50	24	42	+12	+12	-12	-24	-12	-24
8.00	-12	-12	16	18	-50	24	42	+12	+12	-12	-24	-12	-24
9.00	-12	-12	16	18	-50	24	42	+12	+12	-12	-24	-12	-24
10.00	-14	-14	18	20	-50	28	48	+14	+14	-14	-28	-14	-28
11.00	-14	-14	18	20	-50	28	48	+14	+14	-14	-28	-14	-28
12.00	-14	-14	18	20	-50	28	48	+14	+14	-14	-28	-14	-28
14.00	-16	-16	18	20	-100	32	52	+16	+16	-16	-32	-16	-32
16.00	-18	-18	18	20	-100	36	56	+18	+18	-18	-36	-18	-36
18.00	-18	-18	20	20	-100	36	56	+18	+18	-18	-36	-18	-36
20.00	-20	-20	20	20	-100	40	60	+20	+20	-20	-40	-20	-40
25.00	-30	-30	20	20	-100	60	80	+30	+30	-30	-60	-30	-60
30.00	-30	-30	20	20	-100	60	80	+30	+30	-30	-60	-30	-60
35.00	-40	-40	20	20	-100	80	100	+40	+40	-40	-80	-40	-80
40.00	-40	-40	20	20	-100	80	100	+40	+40	-40	-80	-40	-80

Does not apply to bearings with preload.

DUPLEX PAIR WIDTH TOLERANCES

Values in 0.0001 inches

Bearing Bore Size (Inches)		Width	
Over	Including	Max	Min
-	2.00	0	-200
2.00	5.00	0	-300
5.00	14.00	0	-400
14.00	40.00	0	-500



THIN SECTION BALL BEARINGS

TOLERANCE TABLES & RECOMMENDED FITS

PRECISION CLASS 0

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 1F A-TYPE & X-TYPE												
	Diameters		Race Runout		Width	Radial Play		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Radial & Axial			Before Installation*	Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID		
			Inner Max	Outer Max					Min	Max	Max	Min	Max
1.00	-4	-5	3	4	-50	10	15	+4	+5	-4	-8	-5	-10
1.50	-5	-5	4	4	-50	12	17	+5	+5	-5	-10	-5	-10
2.00	-6	-5	5	5	-50	12	22	+6	+5	-6	-12	-5	-10
2.50	-6	-5	5	5	-50	12	22	+6	+5	-6	-12	-5	-10
3.00	-6	-6	6	6	-50	12	22	+6	+6	-6	-12	-6	-12
3.50	-8	-6	6	6	-50	16	26	+8	+6	-8	-16	-6	-12
4.00	-8	-6	6	6	-50	16	26	+8	+6	-8	-16	-6	-12
4.25	-8	-8	6	8	-50	16	26	+8	+8	-8	-16	-8	-16
4.50	-8	-8	6	8	-50	16	26	+8	+8	-8	-16	-8	-16
4.75	-10	-8	8	8	-50	20	30	+10	+8	-10	-20	-8	-16
5.00	-10	-8	8	8	-50	20	30	+10	+8	-10	-20	-8	-16
5.50	-10	-10	10	10	-50	20	30	+10	+10	-10	-20	-10	-20
6.00	-10	-10	10	10	-50	20	30	+10	+10	-10	-20	-10	-20
6.50	-10	-10	10	10	-50	20	30	+10	+10	-10	-20	-10	-20
7.00	-10	-12	10	10	-50	20	30	+10	+12	-10	-20	-12	-24
7.50	-12	-12	12	12	-50	24	34	+12	+12	-12	-24	-12	-24
8.00	-12	-12	12	12	-50	24	34	+12	+12	-12	-24	-12	-24
9.00	-12	-12	12	12	-50	24	34	+12	+12	-12	-24	-12	-24
10.00	-14	-14	14	14	-50	28	38	+14	+14	-14	-28	-14	-28
11.00	-14	-14	14	14	-50	28	38	+14	+14	-14	-28	-14	-28
12.00	-14	-14	14	14	-50	28	38	+14	+14	-14	-28	-14	-28
14.00	-14	-14	14	14	-100	28	38	+14	+14	-14	-28	-14	-28
16.00	-16	-16	16	16	-100	32	42	+16	+16	-16	-32	-16	-32
18.00	-16	-16	16	16	-100	32	42	+16	+16	-16	-32	-16	-32
20.00	-18	-18	18	18	-100	36	46	+18	+18	-18	-36	-18	-36
25.00	-18	-18	18	18	-100	36	46	+18	+18	-18	-36	-18	-36
30.00	-18	-18	18	18	-100	36	46	+18	+18	-18	-36	-18	-36
35.00	-20	-20	20	20	-100	40	50	+20	+20	-20	-40	-20	-40
40.00	-20	-20	20	20	-100	40	50	+20	+20	-20	-40	-20	-40

Does not apply to bearings with preload.

*X-Type Only

PRECISION CLASS 3

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 3F ALL TYPES												
	Diameters		Race Runout		Width	Radial Play		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Radial & Axial			Before Installation†	Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID		
			Inner Max	Outer Max					Min	Max	Max	Min	Max
1.00	-2	-3	3	4	-50	7	11	+2	+3	-2	-4	-3	-6
1.50	-3	-3	4	4	-50	8	12	+3	+3	-3	-6	-3	-6
2.00	-4	-4	4	5	-50	8	18	+4	+4	-4	-8	-4	-8
2.50	-4	-4	4	5	-50	8	18	+4	+4	-4	-8	-4	-8
3.00	-4	-4	4	6	-50	8	18	+4	+4	-4	-8	-4	-8
3.50	-5	-4	5	6	-50	10	20	+5	+4	-5	-10	-4	-8
4.00	-5	-4	5	6	-50	10	20	+5	+4	-5	-10	-4	-8
4.25	-5	-5	5	8	-50	10	20	+5	+5	-5	-10	-5	-10
4.50	-5	-5	5	8	-50	10	20	+5	+5	-5	-10	-5	-10
4.75	-6	-5	6	8	-50	12	22	+6	+5	-6	-12	-5	-10
5.00	-6	-5	6	8	-50	12	22	+6	+5	-6	-12	-5	-10
5.50	-6	-6	6	9	-50	12	22	+6	+6	-6	-12	-6	-12
6.00	-6	-6	6	9	-50	12	22	+6	+6	-6	-12	-6	-12
6.50	-6	-6	6	9	-50	12	22	+6	+6	-6	-12	-6	-12
7.00	-6	-7	6	10	-50	14	24	+6	+7	-6	-12	-7	-14
7.50	-7	-7	8	10	-50	14	24	+7	+7	-7	-14	-7	-14
8.00	-7	-7	8	10	-50	14	24	+7	+7	-7	-14	-7	-14
9.00	-7	-7	8	10	-50	14	24	+7	+7	-7	-14	-7	-14
10.00	-8	-8	10	12	-50	16	26	+8	+8	-8	-16	-8	-16
11.00	-8	-8	10	12	-50	16	26	+8	+8	-8	-16	-8	-16
12.00	-8	-9	10	14	-50	18	28	+8	+9	-8	-16	-9	-18
14.00	-8	-9	12	14	-100	18	28	+8	+9	-8	-16	-9	-18
16.00	-9	-10	14	16	-100	20	30	+9	+10	-9	-18	-10	-20
18.00	-9	-10	14	16	-100	20	30	+9	+10	-9	-18	-10	-20
20.00	-10	-12	16	18	-100	24	34	+10	+12	-10	-20	-12	-24

Does not apply to bearings with preload.

†C & X-Type Only

THIN SECTION BALL BEARINGS

TOLERANCE TABLES & RECOMMENDED FITS

PRECISION CLASS 4

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 5F ALL TYPES														
	Diameters		Race Runout				Width Nominal	Bearing Radial Play Before Installation (C & X-Type Only)		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Radial		Axial			Min	Max	Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID	
			Inner Max	Outer Max	Inner Max	Outer Max						Max	Min	Max	Min
1.00	-2	-2	2	2	3	3	-50	5	9	+2	+2	-2	-4	-2	-4
1.50	-2	-2	2	2	3	3	-50	5	9	+2	+2	-2	-4	-2	-4
2.00	-3	-3	2	3	3	4	-50	5	9	+3	+3	-3	-6	-3	-6
2.50	-3	-3	2	3	3	4	-50	5	9	+3	+3	-3	-6	-3	-6
3.00	-3	-3	2	4	3	5	-50	6	12	+3	+3	-3	-6	-3	-6
3.50	-3	-3	3	4	4	5	-50	6	12	+3	+3	-3	-6	-3	-6
4.00	-3	-3	3	4	4	5	-50	6	12	+3	+3	-3	-6	-3	-6
4.25	-3	-4	3	4	4	5	-50	8	14	+3	+4	-3	-6	-4	-8
4.50	-3	-4	3	4	4	5	-50	8	14	+3	+4	-3	-6	-4	-8
4.75	-4	-4	3	4	4	5	-50	8	14	+4	+4	-4	-8	-4	-8
5.00	-4	-4	3	4	4	5	-50	8	14	+4	+4	-4	-8	-4	-8
5.50	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
6.00	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
6.50	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
7.00	-4	-5	3	5	4	6	-50	10	16	+4	+5	-4	-8	-5	-10
7.50	-5	-5	4	5	5	6	-50	10	16	+5	+5	-5	-10	-5	-10
8.00	-5	-5	4	5	5	6	-50	10	16	+5	+5	-5	-10	-5	-10
9.00	-5	-5	4	5	5	6	-50	10	16	+5	+5	-5	-10	-5	-10
10.00	-5	-5	5	6	6	7	-50	10	16	+5	+5	-5	-10	-5	-10
11.00	-5	-5	5	6	6	7	-50	10	16	+5	+5	-5	-10	-5	-10
12.00	-5	-6	5	7	6	8	-50	12	18	+5	+6	-5	-10	-6	-12
14.00	-6	-6	5	7	7	8	-100	12	18	+6	+6	-6	-12	-6	-12
16.00	-6	-7	7	8	8	9	-100	14	20	+6	+7	-6	-12	-7	-14
18.00	-6	-7	7	8	8	9	-100	14	20	+6	+7	-6	-12	-7	-14
20.00	-7	-8	8	9	9	10	-100	14	22	+7	+8	-7	-14	-8	-16

Does not apply to bearings with preload.

PRECISION CLASS 6

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 7F ALL TYPES													
	Diameters		Race Runout Radial & Axial		Width	Radial Play		Rotating Shaft		Stationary Shaft				
	Bore	O.D.				Before Installation [†]		Shaft OD	Housing ID	Shaft OD		Housing ID		
	Nominal	Nominal	Inner Max	Outer Max	Nominal	Min	Max	Nominal	Nominal	Max	Min	Max	Min	
1.00	-1.5	-2	1.5	2	-50	4	8	+2	+2	-2	-4	-2	-4	
1.50	-2	-2	1.5	2	-50	5	9	+2	+2	-2	-4	-2	-4	
2.00	-2	-2	1.5	2	-50	5	10	+2	+2	-2	-4	-2	-4	
2.50	-2	-2	1.5	2	-50	5	10	+2	+2	-2	-4	-2	-4	
3.00	-2	-3	1.5	2	-50	6	12	+2	+3	-2	-4	-3	-6	
3.50	-2.5	-3	2	2	-50	6	12	+3	+3	-3	-5	-3	-6	
4.00	-2.5	-3	2	2	-50	6	12	+3	+3	-3	-5	-3	-6	
4.25	-2.5	-4	2	3	-50	8	14	+3	+4	-3	-5	-4	-8	
4.50	-2.5	-4	2	3	-50	8	14	+3	+4	-3	-5	-4	-8	
4.75	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8	
5.00	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8	
5.50	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8	
6.00	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8	
6.50	-3	-4	3	3	-50	8	14	+3	+4	-3	-6	-4	-8	
7.00	-3	-4	3	4	-50	8	14	+3	+4	-3	-6	-4	-8	
7.50	-4	-4	3	4	-50	8	14	+4	+4	-4	-8	-4	-8	
8.00	-4	-4	3	4	-50	8	14	+4	+4	-4	-8	-4	-8	
9.00	-4	-4	3	4	-50	8	14	+4	+4	-4	-8	-4	-8	
10.00	-5	-5	4	4	-50	10	16	+5	+5	-5	-10	-5	-10	
11.00	-5	-5	4	4	-50	10	16	+5	+5	-5	-10	-5	-10	
12.00	-5	-5	4	5	-50	10	16	+5	+5	-5	-10	-5	-10	
14.00	-5	-6	4	5	-100	12	18	+5	+6	-5	-10	-6	-12	

Does not apply to bearings with preload.

[†]C & X-Type Only

THIN SECTION BALL BEARINGS

TOLERANCE TABLES & RECOMMENDED FITS

FOR THIN DENSE CHROME COATED BEARINGS - N-SERIES

PRECISION CLASS 0

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 1F A-TYPE & X-TYPE												
	Diameters		Race Runout Radial & Axial		Width	Radial Play		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal				Before Installation		Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID	
			Min	Max		Max	Min			Max	Min		
1.00	-6	-7	3	4	-50	10	15	6	7	-6	-12	-7	-14
1.50	-7	-7	4	4	-50	12	17	7	7	-7	-14	-7	-14
2.00	-8	-7	5	5	-50	12	22	8	7	-8	-16	-7	-14
2.50	-8	-7	5	5	-50	12	22	8	7	-8	-16	-8	-14
3.00	-8	-8	6	6	-50	12	22	8	8	-8	-16	-7	-16
3.50	-10	-8	6	6	-50	16	26	10	8	-10	-20	-8	-16
4.00	-9	-7	6	6	-50	16	26	9	7	-9	-18	-7	-14
4.25	-9	-9	8	8	-50	16	26	9	9	-9	-18	-9	-18
4.50	-9	-9	8	8	-50	16	26	9	9	-9	-18	-9	-18
4.75	-11	-9	8	8	-50	20	30	11	9	-11	-22	-9	-18
5.00	-11	-9	8	8	-50	20	30	11	9	-11	-22	-9	-18
5.50	-11	-11	10	10	-50	20	30	11	11	-11	-22	-11	-22
6.00	-11	-11	10	10	-50	20	30	11	11	-11	-22	-11	-22
6.50	-11	-11	10	10	-50	20	30	11	11	-11	-22	-11	-22
7.00	-11	-13	10	10	-50	24	34	11	13	-11	-22	-13	-26
7.50	-13	-13	12	12	-50	24	34	13	13	-13	-26	-13	-26
8.00	-13	-13	12	12	-50	24	34	13	13	-13	-26	-13	-26
9.00	-13	-13	12	12	-50	24	34	13	13	-13	-26	-13	-26
10.00	-15	-15	14	14	-50	28	38	15	15	-15	-30	-15	-30
11.00	-15	-15	14	14	-50	28	38	15	15	-15	-30	-15	-30
12.00	-15	-15	14	14	-50	28	38	15	15	-15	-30	-15	-30
14.00	-15	-15	14	14	-100	28	38	15	15	-15	-30	-15	-30
16.00	-17	-17	16	16	-100	32	42	17	17	-17	-34	-17	-34
18.00	-17	-17	16	16	-100	32	42	17	17	-17	-34	-17	-34
20.00	-19	-19	18	18	-100	36	46	19	19	-19	-38	-19	-38
25.00	-19	-19	18	18	-100	36	46	19	19	-19	-38	-19	-38
30.00	-19	-19	18	18	-100	36	46	19	19	-19	-38	-19	-38
35.00	-21	-21	20	20	-100	40	50	21	21	-21	-42	-21	-42
40.00	-21	-21	20	20	-100	40	50	21	21	-21	-42	-21	-42

Does not apply to bearings with preload.

THIN SECTION BALL BEARINGS

TOLERANCE TABLES & RECOMMENDED FITS

FOR THIN DENSE CHROME COATED BEARINGS - N-SERIES

PRECISION CLASS 0

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 1F C-TYPE												
	Diameters		Race Runout		Width Nominal	Radial Play		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal	Radial & Axial			Before Installation*	Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID		
			Inner Max	Outer Max					Max	Min	Max	Min	
1.00	6	-7	5	8	-50	10	16	6	7	-6	-12	-7	-14
1.50	-7	-7	6	8	-50	12	18	7	7	-7	-14	-7	-14
2.00	-8	-7	8	10	-50	12	24	8	7	-8	-16	-7	-14
2.50	-8	-7	8	10	-50	12	24	8	7	-8	-16	-7	-14
3.00	-8	-8	8	10	-50	12	24	8	8	-8	-16	-8	-16
3.50	-10	-8	10	12	-50	16	28	10	8	-10	-20	-8	-16
4.00	-9	-7	10	12	-50	16	28	9	7	-9	-18	-7	-14
4.25	-9	-9	10	14	-50	16	28	9	9	-9	-18	-9	-18
4.50	-9	-9	10	14	-50	16	28	9	9	-9	-18	-9	-18
4.75	-11	-9	12	14	-50	20	34	11	9	-11	-22	-9	-18
5.00	-11	-9	12	14	-50	20	34	11	9	-11	-22	-9	-18
5.50	-11	-11	12	16	-50	20	34	11	11	-11	-22	-11	-22
6.00	-11	-11	12	16	-50	20	34	11	11	-11	-22	-11	-22
6.50	-11	-11	12	16	-50	20	34	11	11	-11	-22	-11	-22
7.00	-11	-13	12	16	-50	24	42	11	13	-11	-22	-13	-26
7.50	-13	-13	16	18	-50	24	42	13	13	-13	-26	-13	-26
8.00	-13	-13	16	18	-50	24	42	13	13	-13	-26	-13	-26
9.00	-13	-13	16	18	-50	24	42	13	13	-13	-26	-13	-26
10.00	-15	-15	18	20	-50	28	48	15	15	-15	-30	-15	-30
11.00	-15	-15	18	20	-50	28	48	15	15	-15	-30	-15	-30
12.00	-15	-15	18	20	-50	28	48	15	15	-15	-30	-15	-30
14.00	-17	-17	18	20	-100	32	52	17	17	-17	-34	-17	-34
16.00	-19	-19	18	20	-100	36	56	19	19	-19	-38	-19	-38
18.00	-19	-19	20	20	-100	36	56	19	19	-19	-38	-19	-38
20.00	-21	-21	20	20	-100	40	60	21	21	-21	-42	-21	-42
25.00	-31	-31	20	20	-100	60	80	31	31	-31	-62	-31	-62
30.00	-31	-31	20	20	-100	60	80	31	31	-31	-62	-31	-62
35.00	-41	-41	20	20	-100	80	100	41	41	-41	-82	-41	-82
40.00	-41	-41	20	20	-100	80	100	41	41	-41	-82	-41	-82

Does not apply to bearings with preload.

*X-Type Only

PRECISION CLASS 3

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 3F ALL TYPES												
	Diameters		Race Runout Radial & Axial		Width Nominal	Radial Play		Rotating Shaft		Stationary Shaft			
	Bore Nominal	O.D. Nominal				Before Installation [†]		Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID	
			Min	Max		Max	Min			Max	Min		
1.00	-4	-5	3	4	-50	7	11	4	5	-4	-8	-5	-10
1.50	-5	-5	4	4	-50	8	12	5	5	-5	-10	-5	-10
2.00	-6	-6	4	5	-50	8	18	6	6	-6	-12	-6	-12
2.50	-6	-6	4	5	-50	8	18	6	6	-6	-12	-6	-12
3.00	-6	-6	4	6	-50	8	18	6	6	-6	-12	-6	-12
3.50	-7	-6	5	6	-50	10	20	7	6	-7	-14	-6	-12
4.00	-7	-6	5	6	-50	10	20	7	6	-7	-14	-6	-12
4.25	-7	-7	5	8	-50	10	20	7	7	-7	-14	-7	-14
4.50	-7	-7	5	8	-50	10	20	7	7	-7	-14	-7	-14
4.75	-8	-7	6	8	-50	12	22	8	7	-8	-16	-7	-14
5.00	-8	-7	6	8	-50	12	22	8	7	-8	-16	-7	-14
5.50	-8	-8	6	9	-50	12	22	8	8	-8	-16	-8	-16
6.00	-8	-8	6	9	-50	12	22	8	8	-8	-16	-8	-16
6.50	-8	-8	6	9	-50	12	22	8	8	-8	-16	-8	-16
7.00	-8	-9	6	10	-50	14	24	8	9	-8	-16	-9	-18
7.50	-9	-9	8	10	-50	14	24	9	9	-9	-18	-9	-18
8.00	-9	-9	8	10	-50	14	24	9	9	-9	-18	-9	-18
9.00	-9	-9	8	10	-50	14	24	9	9	-9	-18	-9	-18
10.00	-10	-10	10	12	-50	16	26	10	10	-10	-20	-10	-20
11.00	-10	-10	10	12	-50	16	26	10	10	-10	-20	-10	-20
12.00	-10	-11	10	14	-50	18	28	10	11	-10	-20	-11	-22
14.00	-10	-11	12	14	-100	18	28	10	11	-10	-20	-11	-22
16.00	-11	-12	14	16	-100	20	30	11	12	-11	-22	-12	-24
18.00	-11	-12	14	16	-100	20	30	11	12	-11	-22	-12	-24
20.00	-12	-14	16	18	-100	24	34	12	14	-12	-24	-14	-28

126 Does not apply to bearings with preload.

†C & X-Type Only

THIN SECTION BALL BEARINGS

TOLERANCE TABLES & RECOMMENDED FITS FOR THIN DENSE CHROME COATED BEARINGS - N-SERIES

PRECISION CLASS 4

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 5F ALL TYPES														
	Diameters		Race Runout				Width Nominal	Bearing Radial Play Before Installation (C & X-Type Only)		Rotating Shaft		Stationary Shaft			
			Radial		Axial					Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID	
	Bore Nominal	O.D. Nominal	Inner Max	Outer Max	Inner Max	Outer Max		Max	Min			Max	Min	Max	Min
1.00	-4	-4	2	2	3	3	-50	5	9	4	4	-4	-8	-4	-8
1.50	-4	-4	2	2	3	3	-50	5	9	4	4	-4	-8	-4	-8
2.00	-5	-5	2	3	3	4	-50	6	12	5	5	-5	-10	-5	-10
2.50	-5	-5	2	3	3	4	-50	6	12	5	5	-5	-10	-5	-10
3.00	-5	-5	2	4	3	5	-50	6	12	5	5	-5	-10	-5	-10
3.50	-5	-5	3	4	4	5	-50	6	12	5	5	-5	-10	-5	-10
4.00	-5	-5	3	4	4	5	-50	6	12	5	5	-5	-10	-5	-10
4.25	-5	-6	3	4	4	5	-50	8	14	5	6	-5	-10	-6	-12
4.50	-5	-6	3	4	4	5	-50	8	14	5	6	-5	-10	-6	-12
4.75	-6	-6	3	4	4	5	-50	8	14	6	6	-6	-12	-6	-12
5.00	-6	-6	3	4	4	5	-50	8	14	6	6	-6	-12	-6	-12
5.50	-6	-7	3	5	4	6	-50	10	16	6	7	-6	-12	-7	-14
6.00	-6	-7	3	5	4	6	-50	10	16	6	7	-6	-12	-7	-14
6.50	-6	-7	3	5	4	6	-50	10	16	6	7	-6	-12	-7	-14
7.00	-6	-7	3	5	4	6	-50	10	16	6	7	-6	-12	-7	-14
7.50	-7	-7	4	5	5	6	-50	10	16	7	7	-7	-14	-7	-14
8.00	-7	-7	4	5	5	6	-50	10	16	7	7	-7	-14	-7	-14
9.00	-7	-7	4	5	5	6	-50	10	16	7	7	-7	-14	-7	-14
10.00	-7	-7	5	6	6	7	-50	10	16	7	7	-7	-14	-7	-14
11.00	-7	-7	5	6	6	7	-50	10	16	7	7	-7	-14	-7	-14
12.00	-7	-8	5	7	6	8	-50	12	18	7	8	-7	-14	-8	-16
14.00	-8	-8	5	7	7	8	-100	12	18	8	8	-8	-16	-8	-16
16.00	-8	-9	7	8	8	9	-100	14	20	8	9	-8	-16	-9	-18
18.00	-8	-9	7	8	8	9	-100	14	20	8	9	-8	-16	-9	-18
20.00	-9	-10	8	9	9	10	-100	16	22	9	10	-9	-18	-10	-20

Does not apply to bearings with preload.

PRECISION CLASS 6

Values in 0.0001 inches

Bearing Bore Size Inches	ABEC 6F ALL TYPES													
	Diameters		Race Runout Radial & Axial		Width	Radial Play		Rotating Shaft		Stationary Shaft				
	Bore Nominal	O.D. Nominal				Before Installation [†]		Shaft OD Nominal	Housing ID Nominal	Shaft OD		Housing ID		
			Inner Max	Outer Max	Min	Max	Max			Min	Max	Min		
1.00	-3.5	-4	1.5	2	-50	4	8	3.5	4	-3.5	-7	-4	-8	
1.50	-4	-4	1.5	2	-50	4	8	4	4	-4	-8	-4	-8	
2.00	-4	-4	1.5	2	-50	4	10	4	4	-4	-8	-4	-8	
2.50	-4	-4	1.5	2	-50	4	10	4	4	-4	-8	-4	-8	
3.00	-4	-5	1.5	2	-50	6	12	4	5	-4	-8	-5	-10	
3.50	-4.5	-5	2	2	-50	6	12	4.5	5	-4.5	-9	-5	-10	
4.00	-4.5	-5	2	2	-50	6	12	4.5	5	-4.5	-9	-5	-10	
4.25	-4.5	-6	2	3	-50	8	14	4.5	6	-4.5	-9	-6	-12	
4.50	-4.5	-6	2	3	-50	8	14	4.5	6	-4.5	-9	-6	-12	
4.75	-5	-6	3	3	-50	8	14	5	6	-5	-10	-6	-12	
5.00	-5	-6	3	3	-50	8	14	5	6	-5	-10	-6	-12	
5.50	-5	-6	3	3	-50	8	14	5	6	-5	-10	-6	-12	
6.00	-5	-6	3	3	-50	8	14	5	6	-5	-10	-6	-12	
6.50	-5	-6	3	3	-50	8	14	5	6	-5	-10	-6	-12	
7.00	-5	-6	3	4	-50	8	14	5	6	-5	-10	-6	-12	
7.50	-6	-6	3	4	-50	8	14	6	6	-6	-12	-6	-12	
8.00	-6	-6	3	4	-50	8	14	6	6	-6	-12	-6	-12	
9.00	-6	-6	3	4	-50	8	14	6	6	-6	-12	-6	-12	
10.00	-7	-7	4	4	-50	10	16	7	7	-7	-14	-7	-14	
11.00	-7	-7	4	4	-50	10	16	7	7	-7	-14	-7	-14	
12.00	-7	-7	4	5	-50	10	16	7	7	-7	-14	-7	-14	
14.00	-7	-8	4	5	-100	12	18	7	8	-7	-14	-8	-16	

Does not apply to bearings with preload.

[†]C & X-Type Only

THIN SECTION BALL BEARING ENGINEERING DATA

The methods, equations, and technical data presented in this section allow the user to select the correct bearings and estimate their performance for a wide range of applications. For applications with severe or unusual operating conditions,

Where standard bearings cannot be used, you can meet the application requirements with a special bearing design specifically tailored for optimum performance. Contact your Sales Engineer for special sizes, materials, application requirements, dimensions and tolerances.

Capacity and Fatigue Life of Ball Bearings

The BASIC DYNAMIC RADIAL LOAD RATING, C, or "dynamic capacity", for a ball bearing is the calculated, constant radial load at which 90% of a group of apparently identical bearings with stationary outer rings can statistically endure 10^6 revolution of the inner ring. ANSI/ABMA Standard 9 with correction factors for race curvatures was used to calculate the catalog ratings.

The DYNAMIC THRUST and DYNAMIC MOMENT LOAD RATINGS are also shown in the product tables. The ratings shown are a guide for the maximum loads under which these bearings should be operated with either pure thrust or pure moment loading. Thrust ratings are 2.5 to 3.0 times the radial ratings depending on the bearing type and cross section. These load ratings are not additive. For combined radial and thrust loads, an equivalent radial load is to be calculated.

The BASIC STATIC LOAD RATING, C_0 , or "static capacity", is that uniformly distributed load, which produces a maximum theoretical contact stress of 609,000 psi. At this contact stress permanent deformation of ball and raceway occurs. This deformation is approximately .0001% of the ball diameter.

The RATING LIFE, L_{10} , is a statistical measure of the life which 90% of a large group of apparently identical ball bearings will achieve or exceed. For a single bearing, L_{10} also refers to the life associated with 90% reliability. Median Life, L_{50} , is the life which 50% of the group of ball bearings will achieve or exceed. Median life is approximately five times the rating life.

The relationship between rating life, load rating, and load is:

$$L_{10} = (C/P)^3 \text{ with } L_{10} = \text{rating life (} 10^6 \text{ rev)}$$

C = basic dynamic radial load rating (lbf)

P = equivalent radial load (lbf)

To obtain the rating life in hours, use:

$$L_{10 \text{ hrs}} = 16667/N \cdot (C/P)^3 \text{ with } N = \text{speed (rpm)}$$

The Equivalent Radial Load is defined as:

$$P = XF_r + YF_a \text{ with } F_r = \text{radial load (lbf)}$$

F_a = axial load (lbf)

X - see below

Y - see below

Radial Contact Bearing Calculations

For radial contact bearings calculate P with X = 1 and Y = 0. Then recalculate P with X = 0.56 and Y = (see chart below). Use the larger value of P to determine L_{10} life.

F_a nd^2	Y
25	2.30
50	1.99
100	1.71
150	1.55
200	1.45
300	1.31
500	1.15
750	1.04
1000	1.00

n = number of balls

d = diameter of balls (in.)

Angular or 4-Point Contact Bearing Calculations

For angular contact and 4-point contact bearings calculate P with $X = 1.0$ and $Y = 0$. Then recalculate P with $X = 0.39$ and $Y = 0.76$. Use the larger value of P to determine L_{10} life.

The equations are valid in the range of approximately 100 hrs to 100,000 hrs of life. Extreme loads or speeds may result in a shorter life; while in less demanding applications, metal fatigue may never affect bearing service life.

Capacity and fatigue life information is based on ANSI/ABMA Standard 9-1990 published by: The American Bearing Manufacturers Association, Inc., 1200 19th Street, NW, Suite 300, Washington, DC 20036-2401

Adjustment Factors for Rating Life

If a bearing design and operation deviates significantly from normal, it may be necessary to use additional factors to estimate the fatigue life L_n .

$$L_n = a_1 * a_2 * a_3 * L_{10 \text{ hrs}}$$

with a_1 = reliability factor
 a_2 = material & processing factor
 a_3 = application factor

Reliability Factor a_1

Reliability is the percentage of a group of apparently identical ball bearings that is expected to attain or exceed a specified life. For an individual bearing it is the probability that the bearing will attain or exceed a specified life. Typical bearing fatigue life is calculated for 90% reliability. The life adjustment factors for other reliability numbers are shown below.

Reliability %	L_n	Reliability Factor a_1
90	L_{10}	1.00
95	L_5	.62
96	L_4	.53
97	L_3	.44
98	L_2	.33
99	L_1	.21

Material Factor a_2

For standard bearings the material factor a_2 is equal to 1.00. Factor a_2 is determined by material processing, forming methods, heat treatment, and other manufacturing methods. Some commonly used material factors are listed below:

Material, Condition	a_2 max
52100, Air melt	1.00
52100, Vacuum degassed	1.50
52100, Air melt & TDC Plate	2.00
52100, Vacuum melt, (CEVM)	3.00
440C, Air melt	1.00
440C, Vacuum melt (CEVM)	3.00
M50, Vacuum melt (CEVM)	5.00
M50, Vacuum re-melt (VIM-VAR)	8.00

Application Factor a_3

The application factor a_3 is equal to 1.0 for most applications. Unusual or extreme conditions in certain applications such as low speed, shock loading, vibration, and extreme temperature may lower the application factor to 0.50. Contact your Sales Engineer for help in determining this factor for your special applications.

Load and Speed Limitations

The load ratings shown in the product tables are not additive. For combined simultaneous loading, an equivalent radial or thrust load must be considered. In general, C-Type bearings are designed for radial loading applications; moderate thrust and/or moment loading may be applied in combination with radial loading. For thrust loading applications use the A-Type bearing; any radial loading should only be applied in combination with thrust loading. X-Type bearings are primarily for reversing thrust and moment loading, pure radial loading should not be applied.

The limiting speeds shown in the product tables are based on standard lubrication. The unsealed bearing speeds are calculated assuming the bearings are lubricated with MIL-PRF-6085. Limiting speeds for sealed bearings are calculated assuming the bearings are lubricated with MIL-PRF-23827 grease. If bearings are lubricated with alternate oils or greases, new limiting speeds must be calculated, see page 113.

OPERATING CONDITIONS

Lubrication

Lubricants serve a number of very important purposes in ball bearings, including:

- protecting bearing surfaces from corrosion
- reducing rolling and sliding friction
- preventing metal-to-metal contact between balls and raceway
- providing a barrier against external contaminants (grease)
- removing heat (oil)

Lack of lubrication or inadequate lubrication is the most common cause of bearing failure.

Standard Thin Section Ball Bearings are lubricated with either oil or grease. The unsealed bearings, the K series, are thoroughly coated in MIL-PRF-3150 or MIL-PRF-6085 oil and drained of excess. Sealed bearings are lubricated with MIL-PRF-23827 grease. The external surfaces of sealed bearings are lightly coated with the same grease for corrosion resistance. Additional lubricants are also available. Your Sales Engineer can help select the appropriate lubricant for special applications.

Temperature

Standard Thin Section Ball Bearings can operate at temperatures from -65°F to 250°F. Temperatures up to 350°F can be reached if the bearings are temperature stabilized. By the use of special materials can provide bearings for operation to 900°F. Contact your Sales Engineer for recommendations on bearings operating above 250°F.

Limiting Speed

The limiting speed of a bearing is dependent upon a number of different factors including bearing size, bearing type, ball separator design, lubrication and loading. The limiting speeds for the bearings shown in this catalog are determined using the following:

$$N = \frac{1000 * k}{E} \text{ with } N = \text{Speed (RPM)}$$

$$E = \frac{D+B}{2} \text{ (Bearing Pitch Diameter)}$$

k = constant, see table below

Bearing Type	Load Condition	k Value	
		Grease	Oil
C or A	Radial or Thrust	16	20
X	Thrust	10	12
X	Radial, Combined Radial & Thrust, or Moment	3	4

The k values shown give the maximum speeds at which a typical thin section ball bearing can operate. It is recommended that operating speeds of large diameter bearings in a given series be reduced up to 40% of the calculated rating to avoid high bearing temperatures.

Speed ratings can also be impacted by load conditions, lubrication, alignment and ambient temperature. All of these factors must be considered when designing thin section ball bearings into your application.

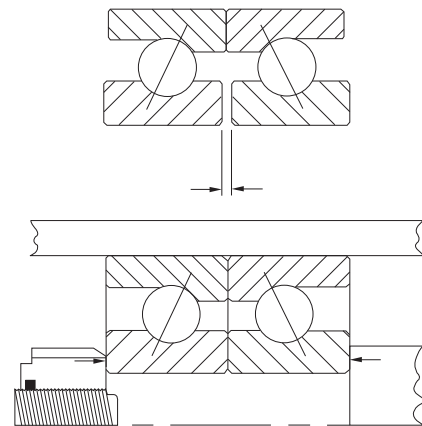
DUPLEX PAIRS AND AXIAL PRELOADING

Duplex Pairs

Duplex bearings are a pair of angular contact Thin Section Ball Bearings specially ground for use as a matched set. A duplexed pair can be used to provide accurate shaft location, to increase capacity or to increase stiffness of the bearing assembly. A duplex pair of Thin Section Ball Bearings is ground so that when mounted using recommended fits, there will be no internal clearance in the bearings. There are three basic mounting methods to accommodate different loading requirements:

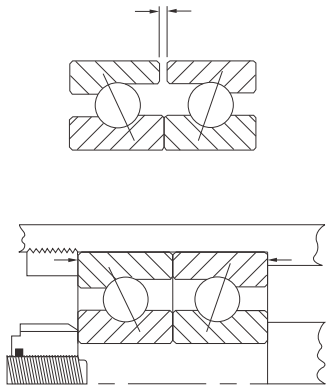
- Back-to-Back (DB), B-Type
- Face-to-Face (DF), F-Type
- Tandem (DT), T-Type

**Back-to-Back, DB
B-Type**



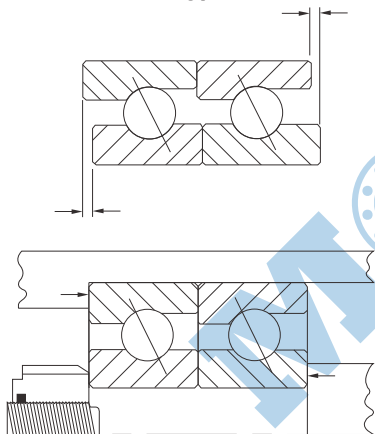
- Heavy radial loads
- Combined thrust & radial loads
- Reversing thrust load
- Excellent rigidity
- Moment loads

Face-to-Face, DF F-Type



- Heavy radial loads
- Combined thrust & radial loads
- Reversing thrust load
- Moment loads

Tandem, DT T-Type



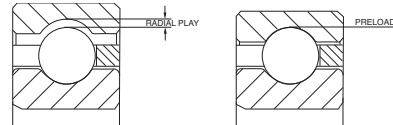
- High one-direction thrust loads
- Minimum axial shaft deflection
- Heavy radial loads

Axial Preloading

Standard duplex bearings are ground so that there will be a light axial preload induced on the bearing at nominal conditions. In some applications increased bearing stiffness may be required. In these cases the duplex grinding can be done such that a heavier axial load is induced in the mounted bearing. This load can be increased or decreased to meet the requirements of a particular application. Consult your Sales Engineer for special requirements.

Radial Play

Radial play (diametral clearance) is the distance the inner ring can be moved radially from one extreme position to the other. Standard Thin Section Ball Bearings are manufactured with enough radial play that some clearance remains after the bearing is properly installed.



When there is negative radial play (diametral preload) there is interference rather than clearance between the balls and the races. As the interference increases, the friction, stiffness and torque also increase. Thin Section Ball Bearings can be manufactured with customer specified diametral preload or clearance. Consult your Sales Engineer for design assistance.

Radial and Axial Runout

Radial runout of Thin Section Ball Bearings is a measurement of the thickness variation of the bearing rings. The outer ring is measured from the ball path to the outer diameter of the ring, the inner ring is measured from the ball path to the bore. Radial runout is defined as the wall thickness variation of the rotating ring.

Axial runout is measured from the ball path to the face of the bearing rings. The variation in thickness measured is the axial runout.

TOLERANCES

Precision Grades

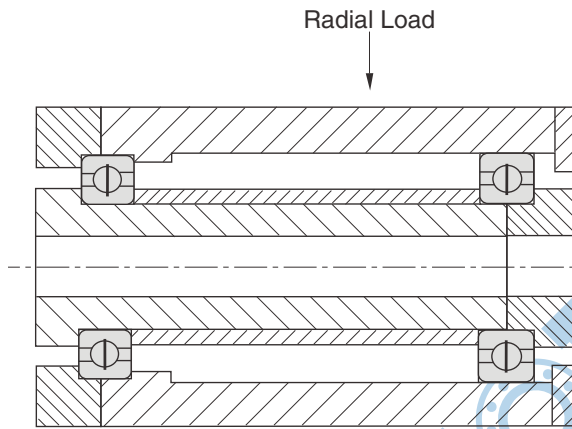
Thin Section Ball Bearings are available in four precision grades. Precision classes 0, 3, 4, and 6 correspond to ABMA ABEC grades 1F, 3F, 5F and 7F respectively. The tolerances for the bearing bores, outer diameters, radial runouts, axial runouts and radial plays are shown in the Tolerance Tables on pages 108 through 110.

Shaft and Housing Fits

Proper shaft and housing fits are critical to the successful operation of a thin section ball bearing. The internal clearance of the bearing will be reduced proportionally by an interference fit. In addition, the roundness of the shaft and housing will directly affect the roundness of the inner and outer ring raceways. For most applications the inner ring is rotating and the load is stationary with respect to the outer ring. In this circumstance a light press fit onto the shaft is recommended. The recommended shaft and housing fits are shown in the Tolerance Tables on pages 108 through 110.

MOUNTING ARRANGEMENTS

When selecting a mounting arrangement for Thin Section Ball Bearings, you must first consider the loading condition. A duplex pair of angular contact bearings may be used for combined loading, moment loading, or heavy thrust loading. Combination A and C-Type, A and X-Type, or C and X-Type bearings are common mounting arrangements. Two X-Type bearings should never be mounted on the same shaft. There may be many different bearing arrangements for carrying the same load, some typical mounting arrangements are shown below.

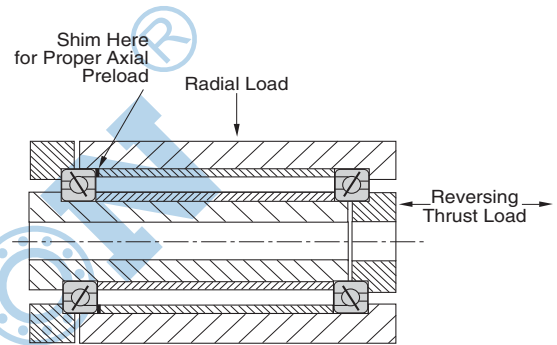


Heavy Radial Loads

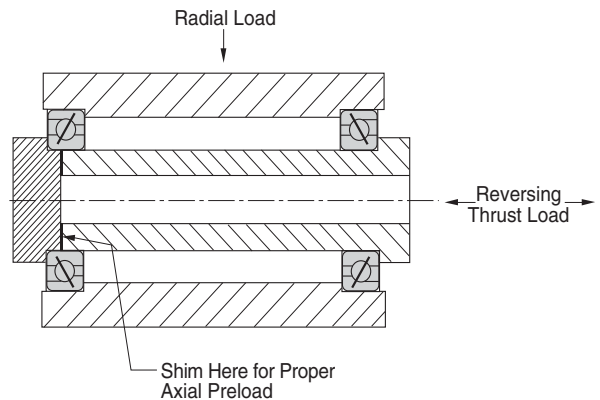
The C-Type bearing is designed primarily for heavy radial loads. Two bearings can be installed on the same shaft as shown. By axially fixing one bearing and allowing the other to float, this configuration allows differential expansion between the housing and shaft, such as caused by temperature difference, without adding axial stress to the bearings. Although the C-Type bearing is designed for radial loads, they can withstand moderate thrust, moment and reversing loads.

Reversing Loads

The duplex pair of A-Type bearings offers several configurations. For reversing loads, either Back-to-Back, B-Type, or Face-to-Face, F-Type, should be used. The F-Type mounting method demonstrates reversing thrust load. Combined radial and thrust loads are shown on the B-Type configuration. Both of these methods can be used for heavy radial loads, combined thrust and radial loads, or moment loads.



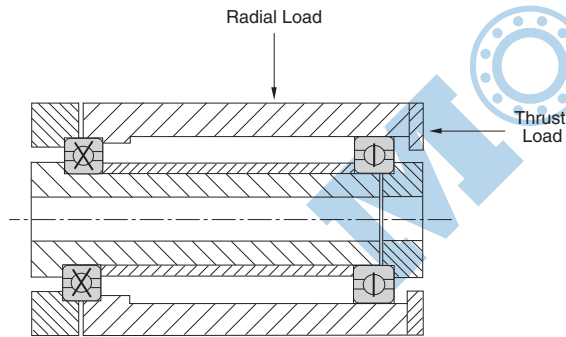
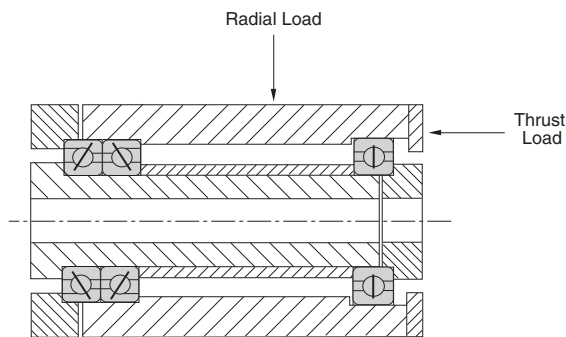
F-Type Configuration



B-Type Configuration

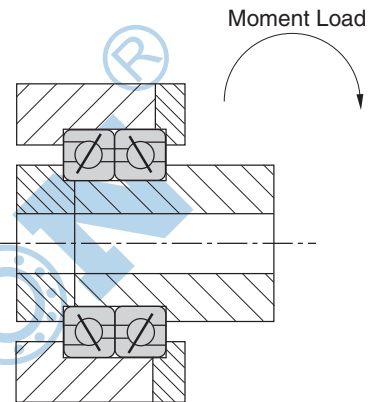
Heavy Combined Loading

For heavy combined loading other special mounting arrangements may be employed. As shown in the top drawing, a duplex pair of A-Type bearings can be used with a floating C-Type bearing. In this configuration the A-Type bearings will carry the thrust load and part of the radial load while the C-Type carries only radial load. An X-Type bearing can replace the duplex pair of A-Type bearings to carry lower thrust loads as shown in the second drawing.

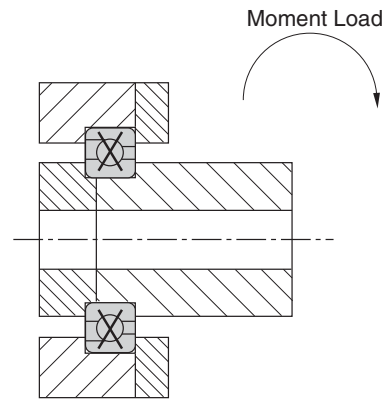


Heavy Combined Loading or Moment Loading

Alternate mountings for heavy combined loading or moment loading are shown below. A duplex pair of B-Type bearings resists high thrust, radial and moment loads. An X-Type bearing may replace the duplex pair in less heavily loaded applications for weight, space and cost savings.



B-Type Configuration



Single Bearing X-Type Configuration

CUSTOM FEATURES

we manufactures many custom bearings designed to optimize bearing performance for specific applications. Special features include changes in radial play, lubricants, materials, preloading and design. Contact your Sales Engineer for your custom bearing needs.

Challenge us: There are many design options available to solve difficult application problems.

Materials

The standard bearings shown in the catalog have SAE 52100 steel rings and balls. Thin Section Ball Bearings can be manufactured from other specialty bearing steels to provide corrosion resistance, high temperature capability, alternative load capacity or chemical compatibility.

Rings. Company manufactured thin section ball bearings from SAE 440C stainless steel to provide corrosion resistance. As an alternative to stainless steel rings, the entire surface of the rings can be coated with nodular thin dense chrome (TDC). This coating, which meets AMS 2438, achieves a molecular bond that will not flake, peel or separate from the base material. The TDC coat has a hardness of HRC 70 - 78 and can withstand temperatures well beyond the range of the base material.

Special Thin Section Ball Bearings have been manufactured from Aluminum, 300 Series Stainless Steel, 17-4 Stainless Steel, and other metals.

Balls. Some special ball materials available include 440C Stainless Steel, 300 Series Stainless Steel, Silicon Nitride and M-50 Steel.

Lubrication

Many different lubricants are available for special applications. Greases which are designed specifically for high speed, low torque, water resistance, high temperature, oscillatory motion and food machinery can be provided. Additional lubricants, such as dry film, are suitable for use in vacuums and space applications.

Sealing

Standard seals for thin section ball bearings are molded from elastomers. Polytetrafluoroethylene (PTFE) seals, fiber glass reinforced PTFE seals, stainless steel shields and many other options are available for low torque and other special applications.

Radial Play

The radial play (diametral clearance) of a thin section ball bearing will need to be predetermined if mounting fits other than those recommended are used. Special radial play may be required for a temperature differential across the bearing, for housing and shaft materials that have different coefficients of thermal expansion, or to change operating characteristics of the bearing. Radial preloaded bearings are measured to meet bore and O.D. tolerances prior to preload.

Preloading of Duplex Bearings

Standard duplex bearings are ground so that there will be a light axial preload induced on the bearing at nominal conditions. In some applications increased bearing stiffness may be required. In these cases the duplex grinding can be done such that a heavier axial load is induced in the mounted bearing. This load can be increased or decreased to meet the requirements of a particular application. Consult your Sales Engineer for special requirements.

Mounting Features

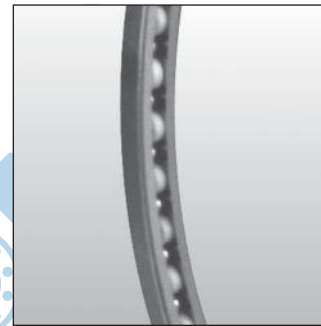
Mounting features, such as flanges, anti-rotation tabs and mounting holes can be incorporated on the inner and outer rings. Mating parts, such as gears and housings, may be integrated into the bearing rings for improved performance and cost.

Separators

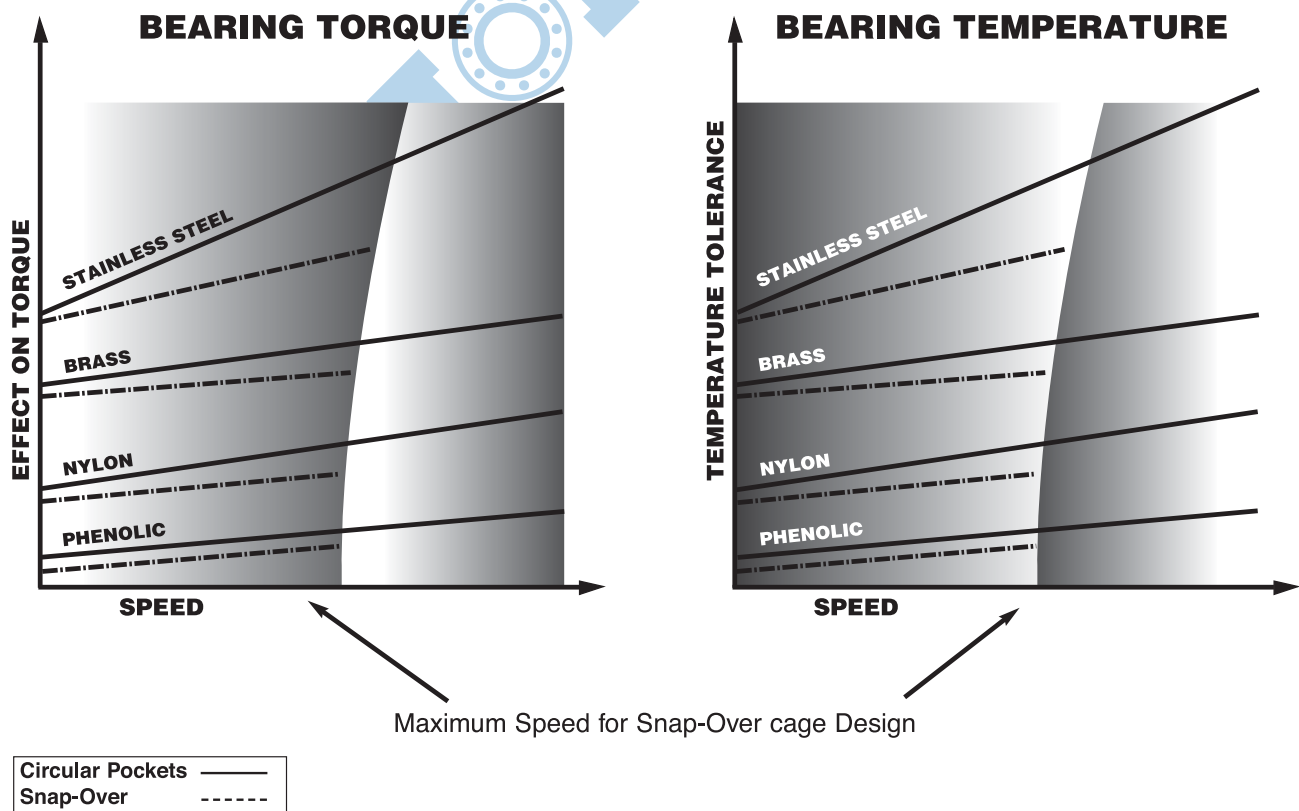
Standard Thin Section Ball Bearings, KA through KG and JU series, are manufactured with brass or nylon separators. The KAA series contains nylon separators. The A-Type bearings contain one piece circular pocket separators, while the C- and X-Types have snap-over separators. The four basic separator materials are brass, nylon, phenolic and stainless steel.

The graph below schematically illustrates the effects of cage design and material on bearing performance. For example, the one piece circular pocket design may reach roughly two times the speed of the snap-over design.

Likewise, a brass separator design will generate more torque and withstand higher temperatures than a phenolic separator. Exact speed limits depend on bearing size, bearing type, lubrication and loading. Specific material advantages and limitations are illustrated below. For assistance in selecting the appropriate separator for special applications, contact your Sales Engineer.



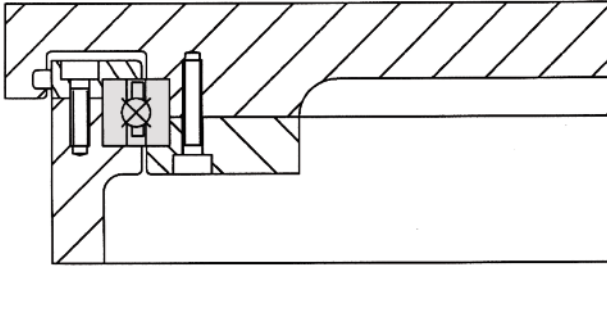
Schematic Illustration of Effects of Cage Design and Material on Bearing Torque, Speed and Temperature.



TYPICAL APPLICATIONS

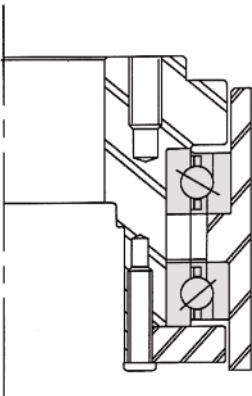
Thin section ball bearings are generally used in applications with space, weight, and load constraints. Some typical applications for standard Thin Section Ball Bearings include:

Medical Equipment	Machine Tools
Radar Equipment	Textile Machinery
Material Handling	Satellite Systems
Antenna Pedestals	Packaging Machinery
Aerospace	Scanning Equipment
Optical Equipment	Semi-Conductor
Rotary Joints	Manufacturing Equipment
Military Turrets	Slip Ring Assemblies
Robotics	Harmonic Drives
	Speed Reducers



Rotary Table

Using a 4-point contact bearing provides high stiffness with minimum deflection resulting in a streamlined and lightweight design.

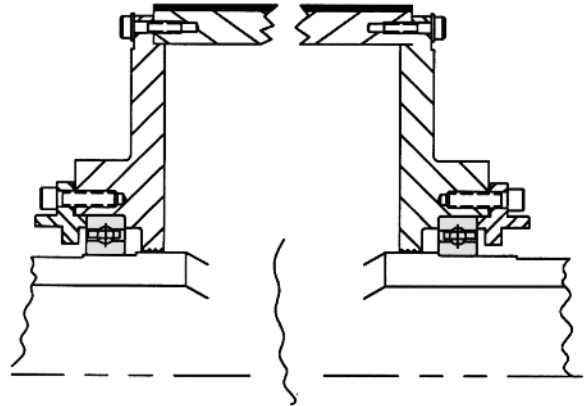
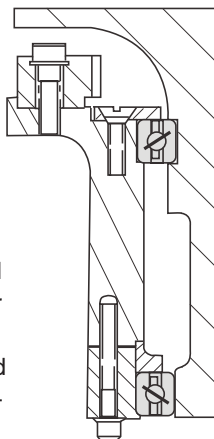


Direct Drive Assembly

A duplex pair of angular contact Thin Section Ball Bearings provide the optimal load carrying capabilities in a compact design.

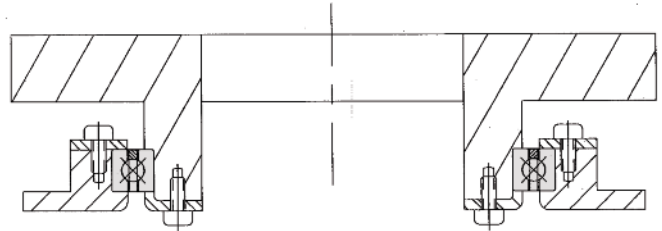
Lightweight Airborne Electro-Optical Imaging Equipment

This application requires bearings with combined load carrying capabilities and minimal added weight. A pair of angular contact Thin Section Ball Bearings provides high stiffness and multiple load carrying capabilities in a compact, lightweight envelope.



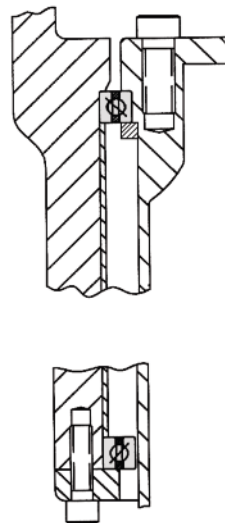
Paper Making Machine

A pair of radial contact Thin Section Ball Bearings is the ideal choice for applications with severe space constraints and significant loads.



Rotating Polishing Table

To provide necessary stiffness with a more compact, lighter weight machine design, use the 4-point contact Thin Section Ball Bearing.

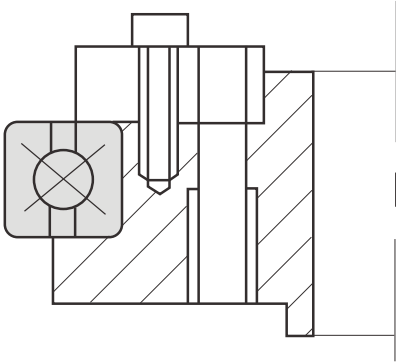


Rotary Joint

By using a pair of angular contact Thin Section Ball Bearings, this design can carry radial, axial and moment loads.

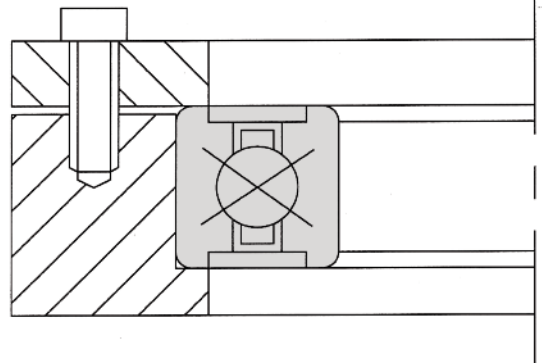
CUSTOM BEARINGS

In addition to the standard Thin Section Ball Bearings, we also manufacture specially designed bearings for specific applications. Sales Engineers and Customer Service Representatives are available for consultation.



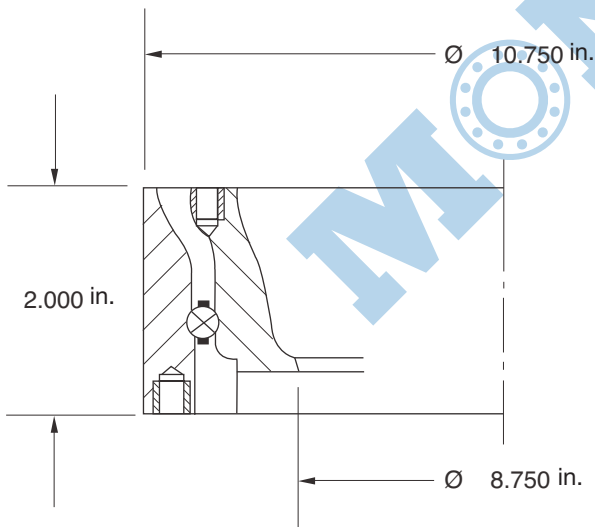
Continuous Rotating Machine Tool Table

Using a 4-point contact Thin Section Ball Bearing provides stiffness for accurate positioning as well as carrying multiple loads. supplied this assembly as shown.



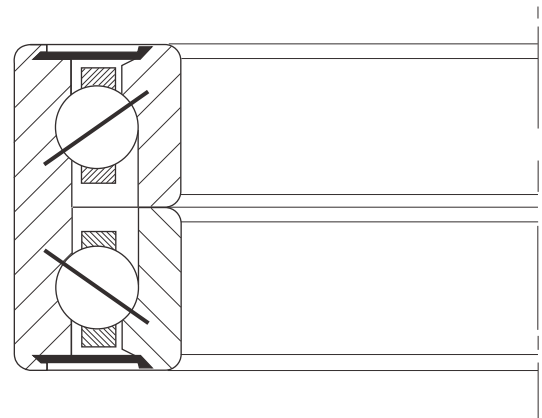
Machine Tool Indexing Table

Running at slow speeds with combined load carrying capabilities and minimal space determined the use of this 4-point Thin Section Ball Bearing. we supplied this assembly as shown.



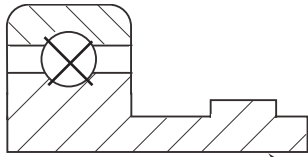
Aerial Camera Assembly

For use in an aerial camera assembly, an extra-light, low torque bearing was required. By redesigning a standard Thin Section Ball Bearing 4-point contact design, the overall assembly weight was lowered from 7 lbs. to 3.8 lbs. In addition to weight reduction, this design, also reduced the running torque below 1 in.-lbs. with the starting torque below 2 in.-lbs.



Airborne Radar System

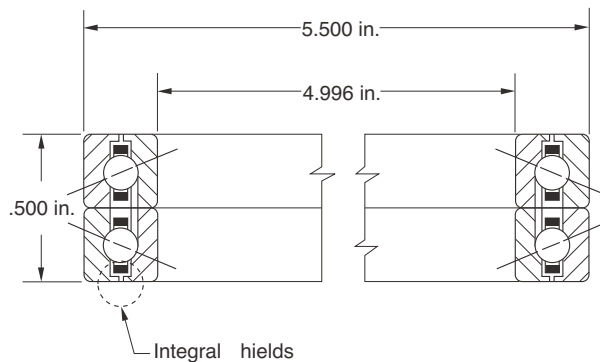
A duplex pair of angular contact Thin Section Ball Bearings was designed for an airborne radar system. This bearing application required combined load carrying capabilities, low temperature compatibility, and relatively low torque. Different from a standard Thin Section, this duplex bearing was designed with one outer ring and two inner rings with a slight preload. This design provided low torque and multiple loading capabilities.



integral gear

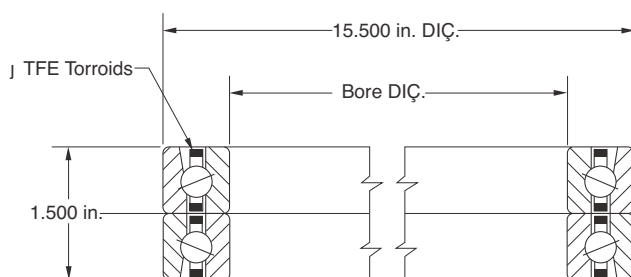
Radar Antenna Drive

An Thin Section Ball Bearing designed with a gear integrated with the inner ring, achieved both a significant weight reduction and improved accuracy as well as simplicity of assembly. This bearing is used in a radar antenna drive which has limited space available for its support bearing. Coil springs were used as spacers between balls to lower bearing torque and further reduce weight.



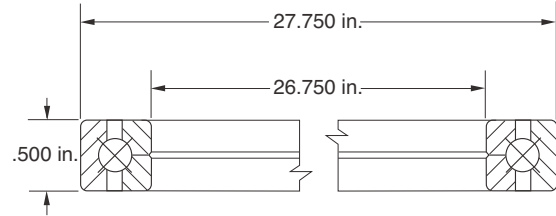
Instrument Gimbal Assembly

A preloaded duplex pair of angular contact Thin Section Ball Bearings were designed to meet the low torque and corrosion resistant requirements in a combined load application. Designed for an instrument gimbal assembly in a missile, the duplex pair of bearings are subjected to combined radial, axial and moment loads. These special Thin Section Ball Bearings have a light preload and were manufactured with integral shields as part of the rings.



Vacuum Operation

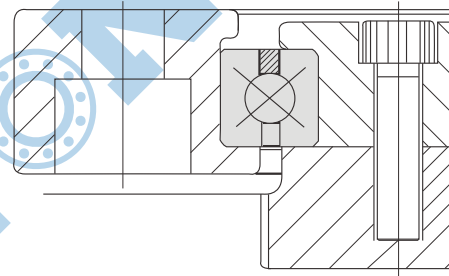
Bearing requirements included minimal radial runout, low torque, corrosion resistance, combined load capabilities and vacuum operation capabilities. Special designed duplex stainless steel angular Thin Section Ball Bearings, provided the capabilities required.



Aircraft Gun Turret

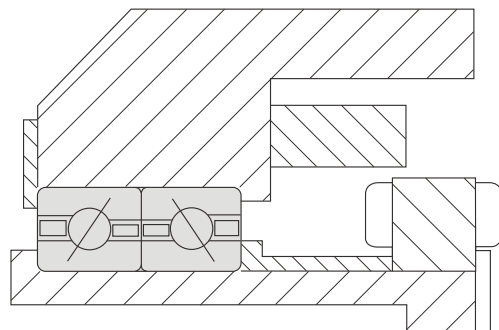
A bearing was required which would take radial, axial, and moment loading, to support an aircraft gun turret. It was desirable to have the bearing match the coefficient of expansion of the aluminum with a split inner ring and special balls to absorb shock and vibration loading.

This bearing performed at 25% of the torque of the steel bearings previously used.



Semiconductor Automated Test Equipment

Semiconductor automated test equipment required an Thin Section Ball Bearing to accurately position a table. In this application the bearing oscillates to $\pm 10^\circ$, this bearing was designed as a 4-point contact bearing.



Airborne Turret Azimuth

A low torque, high stiffness, multiple load capacity, corrosion resistant bearing was required for an airborne turret azimuth drive assembly. For this application a duplexed pair of angular contact Thin Section Ball Bearings was designed with toroid separators and stainless steel rings. This design maintained low torque, but still allowed multiple load carrying capabilities.

EXTREME ANGULAR ACCURACY BEARINGS

Client Problem

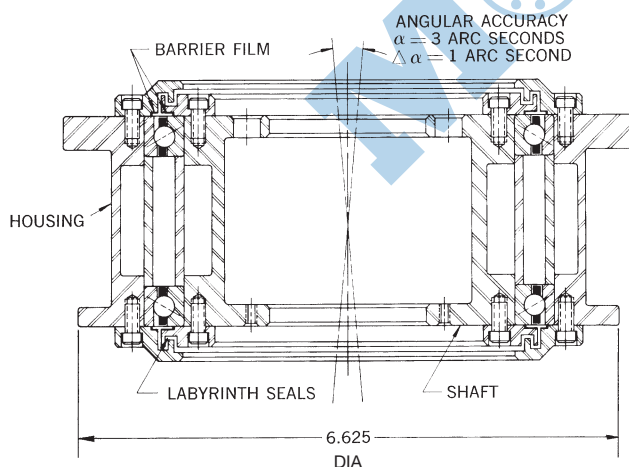
To provide a set of bearings which maintain an extreme precise angular accuracy of the center line of the shaft to the housing. The angular accuracy requirement was a non-repeatable error (α) of one arc second, and a repeatable error ($\Delta\alpha$) of three arc seconds.

Recommendation

Bearings should be made to the most precise geometric tolerances possible. The bearings should be preloaded to overcome the minor surface imperfections of the balls and raceways. They should also be part of a cartridge incorporating the housing and shaft.

Bearing Solution

Bearings were made as part of the cartridge assembly and all angular measurements for accuracy were made relative to the housing and shaft. Bearings were preloaded and spaced axially to help overcome geometric inaccuracies of the bearing. The bearing raceways and balls were made from Consumable Electrode Vacuum Melted AISI 440-C material. As the bearings had to operate in a vacuum, the separator material necessitated a special open weave phenolic material impregnated with a special silicone oil. To prevent migration of the oil from the cartridge assembly, the labyrinth seal was coated with a barrier film.



INTEGRAL BEARING ASSEMBLY

Client Problem

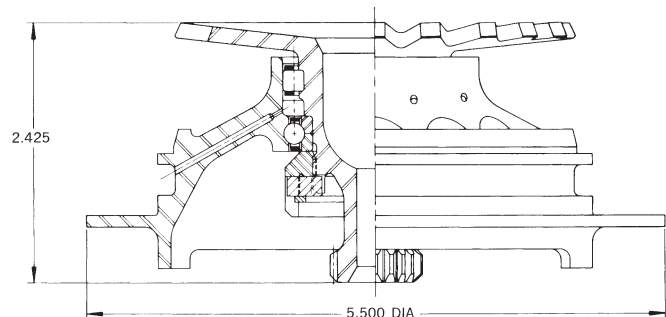
Save space and weight in an application involving a power take-off drive from a high speed gearbox.

Recommendation

Make the races of the bearing integral with the housing and possibly with the gear shaft.

Bearing Solution

The bearing housing was designed to incorporate the outer raceway of the roller bearing and the outer raceway of the split inner race ball bearing. In order to increase the reliability of the rolling contact surfaces in the housing, the housing was manufactured from AISI M-50 material Consumable Electrode Vacuum Melted. The gear was made integral with the shaft which also contained the inner raceway of the roller bearing. The gear shaft was manufactured from Consumable Electrode Vacuum Melted AISI-9310 material; case hardened to Rc 61-64 on the gear tooth surface and in the roller bearing raceway. In order to facilitate lubrication of the bearings in the restricted area, lubrication holes were drilled through the housing into the space between the two bearings. The lubrication was fed through these holes from an annular groove in the housing. The two halves of the split inner race were retained to the gear shaft by the use of a lock nut, clamping the races axially. The combined integral assembly of bearings, gear shaft and housing provided the desired space and weight reduction and gained improved operational accuracy. In addition, it afforded easier installation into the gearbox.



THIN SECTION GEARED BEARING

Client Problem

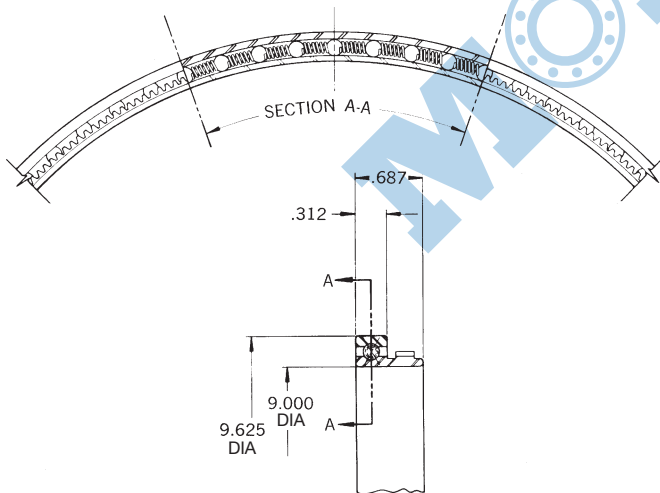
A radar antenna drive had only limited space available for its support bearings.

Recommendation

Use a thin section rather than a standard section radial ball bearing, thus achieving a significant weight reduction. Incorporate a gear as part of the inner ring to obtain improved accuracy and simplify the assembly.

Bearing Solution

The thin section bearing utilizes coil springs as spacers between the balls instead of a conventional separator to further reduce weight and lower bearing torque. The inner race of the bearing was extended and the gear was cut on this extended portion of the inner race. The incorporation of the gear into the inner race eliminated the necessity of a shaft clamping mechanism, etc., which would be required if the gear were separate from the bearing. Integrating the gear profile into the inner race increased the accuracy of the gear to bearing concentricity. The bearing was manufactured of the following materials: the balls and outer race are from AISI-440-material; the inner race manufactured from AISI-8620 material, carburized and hardened in the raceway area to Rc 58-60.



ROLLER, THRUST AND ANGULAR CONTACT BALL BEARING

Client Problem

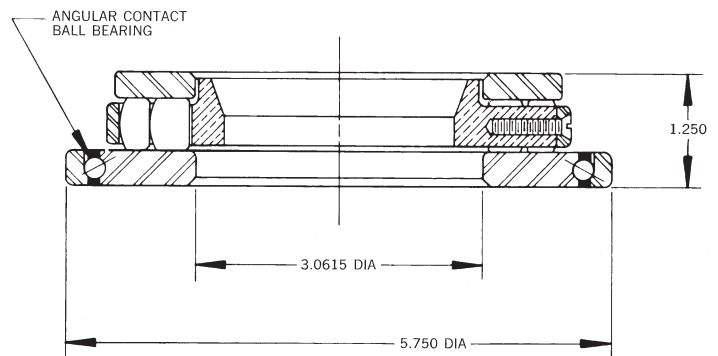
Cost reduction of an existing hydraulic pump swash plate assembly.

Recommendation

Utilize an integral bearing assembly which combines a roller thrust bearing and an angular contact ball bearing.

Bearing Solution

The original swash plate design in the hydraulic pump utilized a roller thrust bearing to handle the thrust load and a separate angular contact radial ball bearing to handle radial loads; and radially locate the swash plate assembly. The usage of two separate bearings required complex machining of the housing and swash plate with close control of tolerances, to eliminate excessive radial eccentricity of the swash plate assembly. In the original design, which utilized two separate bearings, it was necessary to mount the bearings axially adjacent to each other. The recommended bearing design decreased the axial space required for bearings, resulting in a size and weight savings. A combined bearing assembly is usually lower in cost than two separate bearings. The technique of integrating two bearings usually simplifies an assembly where two bearings had been utilized, or where problems have arisen relative to running accuracy, overall size or weight.



SELF-ALIGNING BEARING OPERATING IN LIQUID POLYETHYLENE

Client Problem

A rolling contact bearing was required on a vertical shaft which rotated in a catalytic-polyethylene autoclave. Blind assembly of the bearing and shaft which weighed approximately 10,000 pounds was necessary, due to the autoclave design.

Recommendation

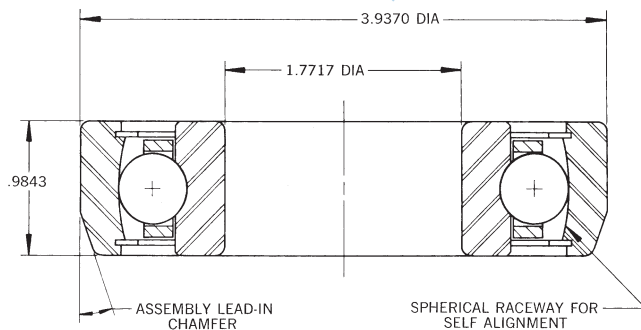
Use radial ball bearing incorporating a self-aligning raceway made from corrosion resistant materials. The bearings should be capable of withstanding operating temperatures as high as 650°F, and capable of operating with liquid polyethylene as the lubricant.

Bearing Solution

The bearing was manufactured from AISI-440-C material, specially heat treated to resist softening at the high operating temperatures. The separator material was L-605 cobalt alloy which offered the necessary wear resistance.

To solve the client's problem of inserting the eighteen foot long assembly into a blind housing, a large lead-in chamfer was formed on the outside of the bearing. This lead-in chamfer provided for easy insertion of the bearing into the housing.

The previous bearing installation did not allow any shaft misalignment, resulting in bent shafts which were then unacceptable for further use. The self-aligning feature of the outer raceway permitted the bearing to misalign while rotating, allowing for shaft distortion as the shaft went through critical speeds.



SENBAL BEARING

Client Problem

A fluidic gyroscope required a gimballing, self-aligning bearing which would rotate at high speed. The bore of the bearing was to form part of the fluidic metering and sensing system.

Recommendation

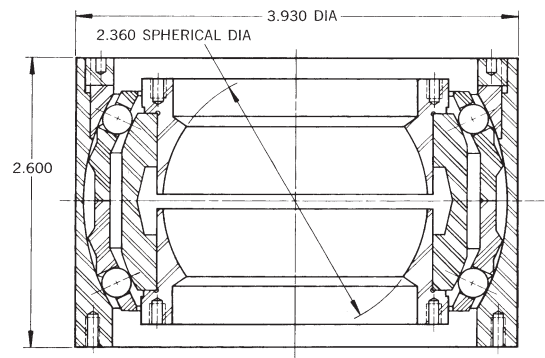
Use a double row, self-aligning spherical ball bearing with spherical outer and inner raceways. The two rows of balls should be preloaded to obtain the running accuracy needed for the fluidic metering system in the bore of the bearing.

Bearing Solution

The double row spherical self-aligning ball bearing was designed with a removable portion of the spherical outer raceway to allow for preloading of the two rows of balls.

With the possibility of different rotational speeds of the two rows of balls, each row of balls had its own separator. To guide the separators, a special configuration was machined on the outside of the separator to allow for each separator to be guided at two points of contact with the spherical outer raceway.

The fluidic metering portion was made as a separate unit, press fitted into the bore of the bearing.



1200°F OSCILLATING BEARING

Client Problem

A high temperature rolling contact, oscillating bearing for operation at 1200°F, subjected to high vibration loads.

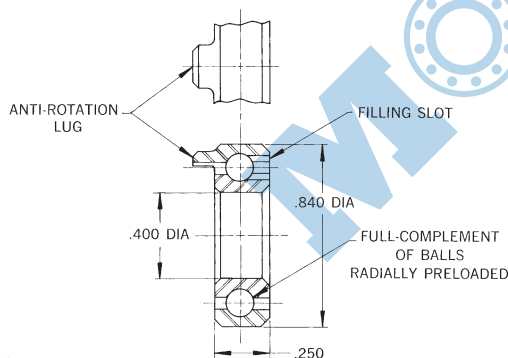
Recommendation

Design a rolling contact bearing with radial preload to overcome false brinelling which may occur in the high vibration environment. Bearings should be made from a corrosion resistant, high-temperature alloy.

Bearing Solution

The bearing was manufactured of Stellite® 6B material which was cold worked by an proprietary process to obtain a hardness of Rockwell C-53 minimum in the raceway areas. The balls of this bearing were made from L-605 cobalt alloy. The bearing was of full complement design with a filling slot for insertion of the balls, and negative radial clearance of line to line to .0003" tight.

The lubricating film which is generated by the cobalt alloy races and balls permitted this bearing to operate without any additional lubricant. The increased hardness of the raceways to Rockwell C-53 minimum produced a bearing which was capable of operating up to 1200°F with extreme wear resistance.



GEARBOX BEARINGS WITH SELF LUBRICATING SEPARATORS

Client Problem

Bearings were needed for operation in high-temperature gearboxes at 600°F to 650°F. Conventional lubrication such as oil was not available, therefore the bearings would have to be self-lubricating.

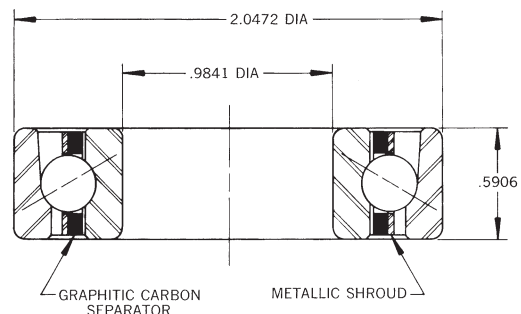
Recommendation

Use bearings of high-temperature, heat treated AISI-440-C material. Incorporate in these bearings developed proprietary graphitic carbon separators, to act as the bearing lubricant.

Bearing Solution

Angular contact ball bearings were designed, utilizing an inner land guided separator of graphitic carbon material. The separator was reinforced on its outside diameter with a metallic shroud to withstand the centrifugal forces from high operating speeds and resist fracturing, which could result from the tremendous acceleration rate of the bearing rotation.

To facilitate a break-in period required for transfer of the self-lubricating material from the graphitic carbon separator to the rolling contact surfaces, the balls and raceways were coated with an impinged, tungsten-disulfide dry-film lubricant of approximately .000020" in thickness. With the dry film lubricant on the raceways and balls, the bearings were capable of operating at the required speed without any break-in period normally required for bearings incorporating dry, self-lubricating separators.



HIGH TEMPERATURE, ACTUATOR THRUST BEARINGS

Client Problem

A high temperature thrust bearing was needed to support the reactive thrust of a ball screw actuator. Bearings had to be capable of operating at approximately 850°F.

Recommendation

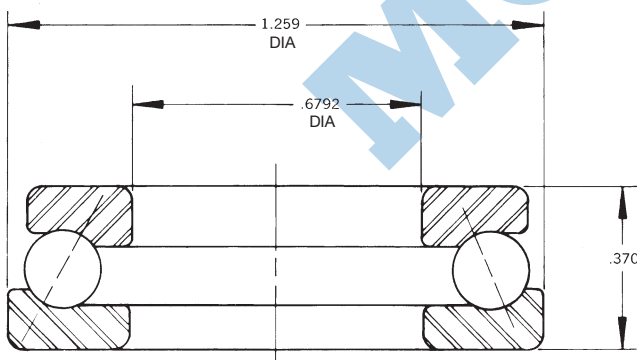
Use bearings of high temperature tool steel to withstand the applied loads at the high operating temperature.

Bearing Solution

Bearings were manufactured from CEVM M-2 tool steel with a full complement of sixteen .187 diameter tungsten carbide balls. The bearing was designed having a contact angle of 60° to handle the high thrust load and some radial loading.

The races were coated with a proprietary dry-film lubricant applied to the raceways of the bearings prior to installation of the bearing in the application.

The significant design feature which allows the bearings to operate at 850°F and at speeds up to 750 RPM without excessive wear is the combination of the tungsten carbide balls running against the M-2 tool steel raceways. Similar designs using M-2 tool steel balls had worn very rapidly at relatively short periods of application at the operating temperatures.



NON-MAGNETIC BEARING

Client Problem

A newly designed rotating magnetometer for ore analysis required a non-magnetic bearing.

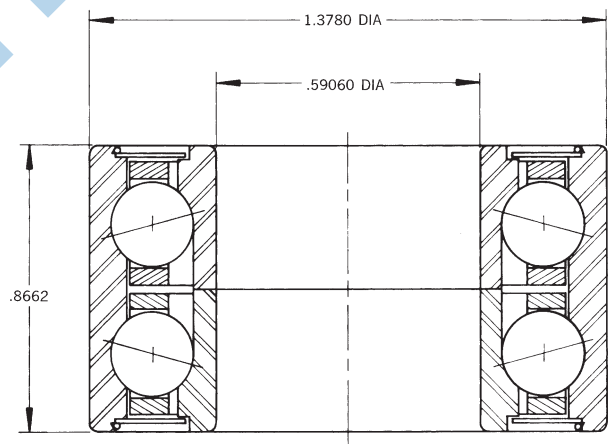
Recommendation

Use a bearing with the raceways and balls made of a material which would be capable of operating under the loads and possess the lowest magnetic permeability. The loading combined thrust, radial and moment loads which required a duplex pair of bearings.

Bearing Solution

Manufactured the bearing from Berylco 25 material. This material was used for the inner and outer races, balls and shields. The separator was manufactured of a phenolic material.

The bearing was designed as a common outer duplex DB pair, lightly preloaded. To reduce contamination possibility, shields were incorporated. The bearing was lubricated by grease plating the raceways with MIL-PRF-23827 lubricant.



1400°F SELF-ALIGNING BALL BEARING

Client Problem

A hinge bearing on the exhaust ducts of a jet engine used to propel and lift a ground effect vehicle machine.

Recommendation

Use a double row angular contact ball bearing in a self-aligning housing. Bearing materials to be made of corrosion and heat resistant material.

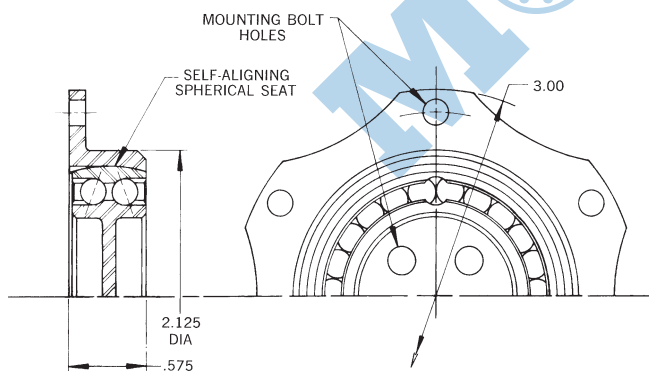
Bearing Solution

The double row ball bearing cartridge unit utilizes L-605 material for the raceway and balls. The bearing was mounted in a self-contained spherical housing to compensate for misalignment of the shaft during operation, which occurs due to temperature differentials between the frame and the exhaust nozzles.

The races were made by a special developed proprietary race hardening technique.

With this technique the L-605 cobalt alloy material is work hardened and then heat treated to a Rockwell C-53 minimum.

The bearing operated for 50 hours with 1400°F exhaust gas passing through the bearing without any significant wear.



SPHERICAL, METAL-TO-METAL BEARINGS

Client Problem

A manufacturer of commercial aircraft required a landing gear support trunion bearing.

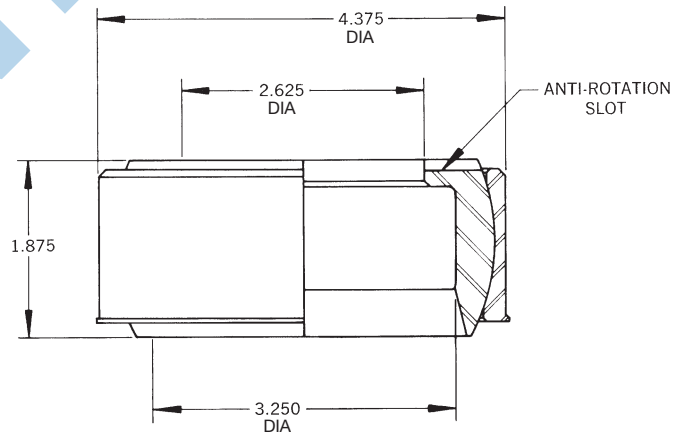
Bearing must have low radial and axial clearances.

Recommendation

Use a metal-to-metal spherical plain bearing. It should have a dry film lubricant on its spherical bearing surfaces. The bearing should be fabricated from corrosion resistant material.

Bearing Solution

With the clearances required, .0010/.0030 radial and .009 max. axial, assembly of match ground components was necessary. Swaging a bearing of this size would not result in reliable clearance control. The outer race was assembled to the ball by deforming it under radial pressure to an elliptical shape to allow the insertion of the ball. Once the ball is inserted, the pressure is removed from the outer race, allowing it to return to its original shape.



FOOD PROCESSING EQUIPMENT BEARINGS

Client Problem

Relatively short life was obtained on bearings made of 316 stainless steel in food processing equipment. 316 stainless steel was required to prevent contamination of the food products.

Recommendation

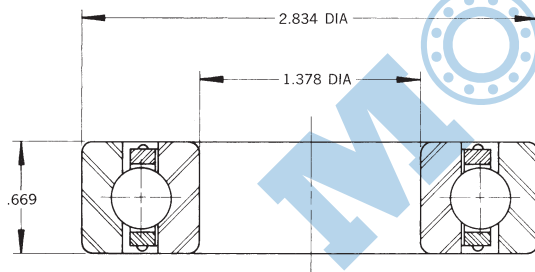
Use a harder, more wear resistant material which would still be resistant to the corrosive fluids of the processed food and prevent contamination.

Bearing Solution

A search of various materials which were resistant to the food products handled by this particular piece of equipment brought to light that certain cobalt alloys could be used without any fear of contamination or corrosion.

In order to increase the wear resistance of the cobalt alloys, they were cold worked in the raceways to increase the hardness and thereby increase the wear resistance.

The alloy used for the raceways and the balls was L-605. Separator material was 17-4 PH.



CHEMICAL PROCESSING EQUIPMENT BEARINGS

Client Problem

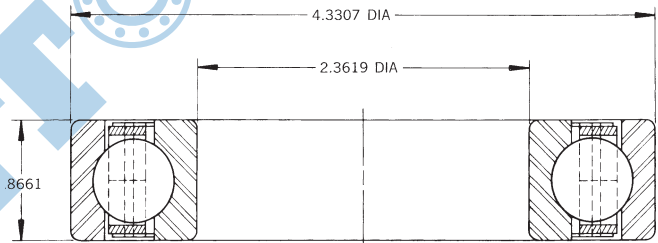
Bearings exposed to photographic-processing chemical solutions were failing. Bearings being used were made of AISI-440-C material, sealed, and grease lubricated.

Recommendation

Use a bearing of a different alloy; make the separator self-lubricating and run the bearing in the chemical solutions.

Bearing Solution

The bearing used cobalt alloy balls and races and a self-lubricating separator of Fiberglass reinforced TFE. To give additional strength to the riveted separator in this bearing, side plates of 300 series stainless steel were added to the separator.



CRYOGENIC BEARINGS

Client Problem

High speed ball and roller bearings for use in cryogenic equipment. Bearings should also operate in cryogenic liquid or gaseous environment.

Recommendation

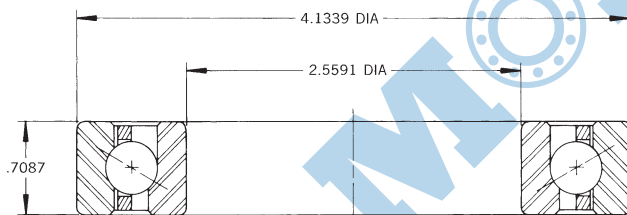
Use bearings of a corrosion resistant material such as AISI-440-C and incorporate a self-lubricating material for the separators.

Bearing Solution

Ball and roller bearings of ABEC-5 tolerance grade were made of AISI-440-C material, with special sub-zero treatment in liquid nitrogen. This sub-zero treatment gave the bearings the dimensional stability necessary for operating in cryogenic equipment.

The bearing separators were made of Teflon® reinforced Fiberglass.

This basic bearing design criterion has been used in almost all liquid hydrogen and oxygen turbo pumps used in present day rocket engines.



SELF-LUBRICATING MAIN SHAFT BEARING

Client Problem

Mainshaft bearing for a vertical lift engine. For weight reduction, the bearing should be self-lubricating to eliminate a portion of the engine lubricating system.

Speed of the 85mm bore bearing was 16,000 RPM. The bearing, located in turbine end of the jet engine, accommodates axial shaft expansion.

Recommendation

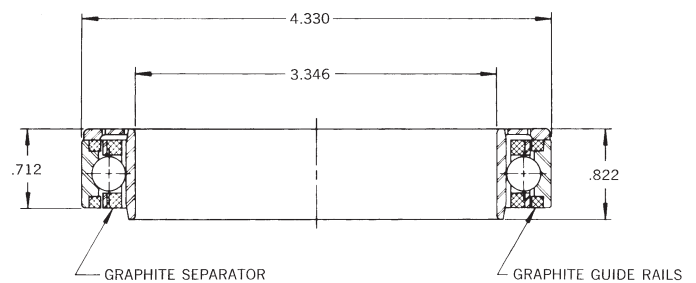
Use a ball bearing with races and balls made from wear-resistant materials. Lubricate the bearing with a shrouded self-lubricating graphite separator. Make the inner race cylindrical to accommodate the axial shaft expansion.

Bearing Solution

Bearing was manufactured from CEVM AISI-M50 material for the races and balls.

The separator of shrouded graphite was outer land guided on two graphite rings, pressed into the outer race ring.

To prevent damage to the graphite while inserting the shaft into the bearing, a side plate was added which prevented any accidental contact of the shaft with the graphite separator. To allow for the excess graphite to purge from the bearing, holes were put in the protective side plate.



NUCLEAR REACTOR BEARING

Client Problem

Bearing to accommodate the thrust load in a control rod drive mechanism. Bearing is lubricated with chemically pure water, de-ionized and de-oxygenated.

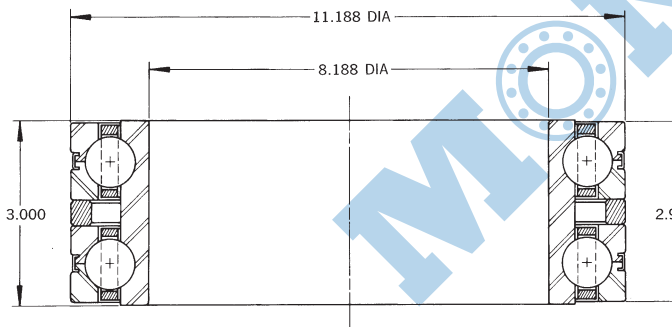
Recommendation

Use a double row ball bearing, tandem ground for thrust sharing to obtain the life required. Because radial support of the inner race is marginal, the inner race for both rows should be ground on the same ring.

Bearing Solution

The double row ball bearing was made of cobalt alloy materials, the separator of 17-4 PH.

To obtain the maximum capacity in this double gothic arch thrust bearing, the outer races are split, permitting the maximum quantity of balls in each row. Thrust sharing of two rows is accomplished by accurate match grinding of the spacer ring to fit the gap between the outer races, and by matching the contact angle in both rows equal within two degrees.



BALL BEARINGS FOR VACUUM OPERATION

Client Problem

A high speed ball bearing, to run at temperatures up to 1000°F

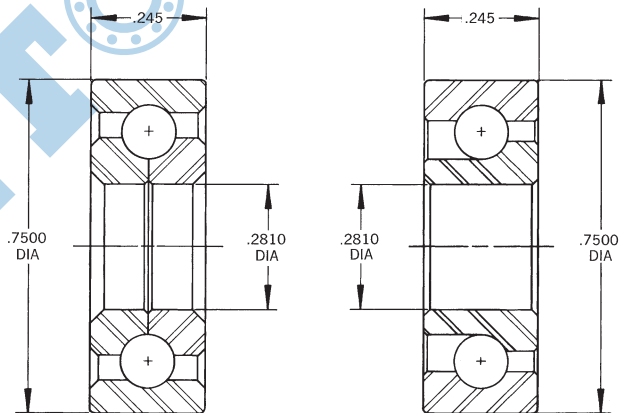
Recommendation

Use bearing of wear resistant, high temperature tool steel. Bearing lubricant should be dry and not sublime.

Bearing Solution

The bearings were made of T-5 tool steel which has high hardness and wear resistance at 1000°F. The bearings contain a full complement of balls and no separator.

The lubricant was an ultra-thin layer of silver deposited on the balls. The bearings were manufactured without any snap which may abrade the silver on the balls.



TURBO-MACHINERY ROLLER BEARING

Client Problem

A high speed mainshaft roller bearing was failing due to skidding. Insufficient load on the bearing was the cause of skidding.

Recommendation

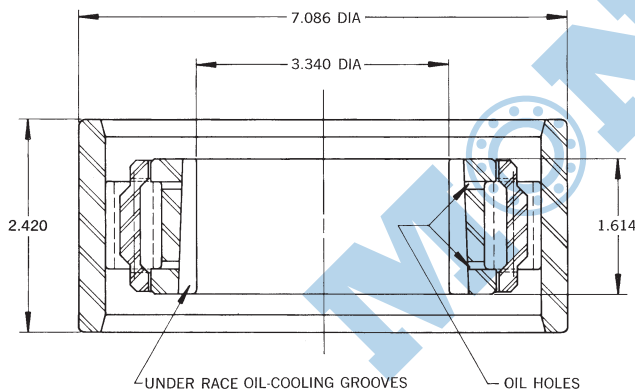
Use a pre-loaded roller bearing to overcome the skidding problem.

Bearing Solution

The roller bearing was designed with hollow rollers which provided a radial internal preload between the inner and outer races.

The bearing has an inner land guided separator. The viscous drag between the separator and the inner race land diameter promotes the rotation of the separator.

To provide for cooling the inner race, under race cooling grooves were located in the bore of the inner race.



DRUSBA BEARING

Client Problem

A large diameter bearing to support a platform. The platform and portion of the bearing operate in an anisotropic quantum electrodynamic field, while in a vacuum.

Recommendation

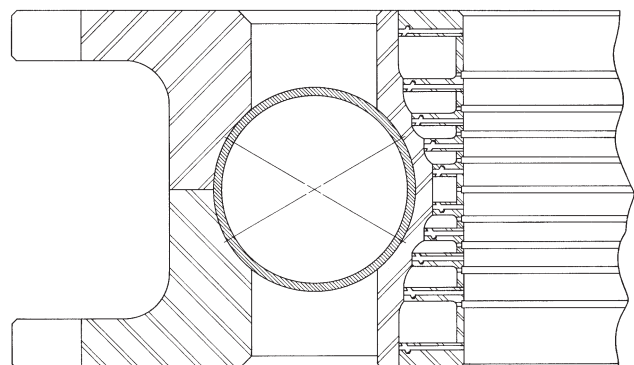
A 4-point contact pre-loaded ball bearing. Provide means for heat addition or removal to maintain the desired pre-load. Temperature variations occur due to the field; the outer ring normally has a higher temperature than the inner ring.

Bearing Solution

A split outer race, full-complement ball bearing to be made of Cobenium rings, and sodium filled Cobenium balls. The raceways and balls were gold plated. The gold is the lubricant.

The inner ring of the bearing contains heating or cooling chambers. These are formed by electron beam welding the annular members to the ring. The fluid flowing through the chambers is controlled relative to rate of flow and temperature, depending upon the specific race area temperature serviced by that chamber. This permits control of the geometric configuration of the inner race and preload.

The sodium filled balls are used for heat transfer between the rings.



WATER-LUBRICATED BEARINGS

Client Problem

Long-life, wear-resistant bearings for running in water.

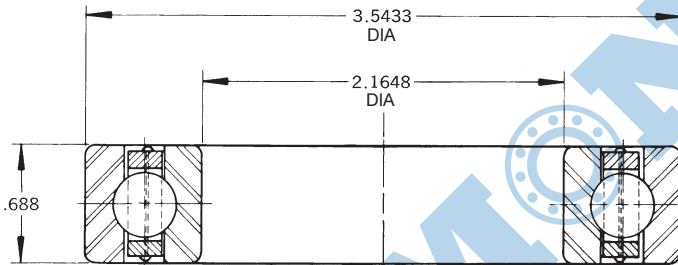
Recommendation

Use bearings of cobalt alloys for maximum corrosion and wear resistance. Design the bearing with race curvatures and clearances to compensate for the lack of lubricity of the water.

Bearing Solution

Bearing rings were made of L-605 cobalt alloy. A Bearing developed cold working technique was used to increase the hardness of the alloy to Rc 53 minimum after heat treatment, for increased wear resistance. Normal cold worked and heat treated hardness of this alloy is Rc 47.

The separators in the bearings were made from 17-4 PH corrosion resistant material, heat treated to increase wear resistance.



OPTICAL PRECISION BEARINGS

Client Problem

Support a 14" diameter rotating tube which contained lenses. Minimal radial runout was required to prevent distortion of the image by the lenses. Bearings should be low in torque and corrosion resistant, pre-lubricated, suitable for a vacuum operation.

Recommendation

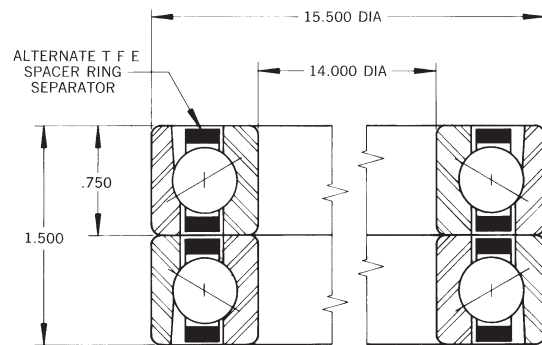
The rotating tube should be supported with duplex pairs of bearings, DB mounted, preloaded, with minimal lubrication of a low vapor pressure lubricant.

Bearing Solution

Duplex DB pair of bearings, pre-loaded, were manufactured of passivated AISI-440-C corrosion resistant steel.

The radial and axial runouts were held to the following: radial runout, inner, .0002 T.I.R.; outer, .0003 T.I.R.; axial runout, inner, .0002 T.I.R.; outer, .0003 T.I.R. The separator consisted of TFE rings around alternate balls for low starting and running torque.

Bearings were lubricated with a special lubricant and then centrifuged at 100 g's for 10 minutes to remove the excess oil.



CAMERA MOUNT BEARING

Client Problem

A lightweight, low torque bearing for use in an aerial camera assembly.

Recommendation

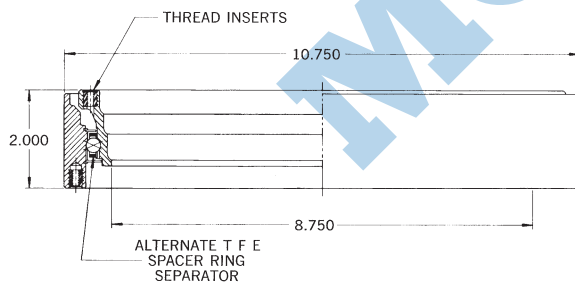
Use a bearing with rings made of aluminum, and hard anodize the raceway areas.

Bearing Solution

The original steel bearing design which was a double row angular contact ball bearing in an aluminum housing was replaced with a single row, 4 point contact bearing, with the rings manufactured of 7075-T-651 aluminum. The raceways of both rings were hard anodized and ground after hard anodizing. Balls were of passivated AISI-440-C.

This construction utilizing the aluminum material, reduced the overall weight of the bearing assembly from over 7 lbs. in the original design to 3.8 lbs. in the finished unit.

In order to obtain a low running and starting torque, alternate balls in the raceway were surrounded with TFE separator and the raceways were grease-plated. The bearing running torque was below 1 inch lbs. with the starting torque being below 2 inch lbs.



TURBO-MACHINERY BALL BEARING

Client Problem

A ball bearing running at 2.2 million DN*, with no load, was failing due to the fatigue of the outer race, and ball skidding. Fatigue failures had been occurring due to the large number of stress cycles, caused solely by the centrifugal force of the balls.

Recommendation

Reduce the number of balls in the bearing, thereby reducing the number of stress cycles on the outer race.

Make the separator a lightweight steel design. Reduction of the separator and ball mass would reduce the inertial resistance, thereby reducing skidding. Change material from AISI-52100 to a tool steel to increase resistance to skid damage.

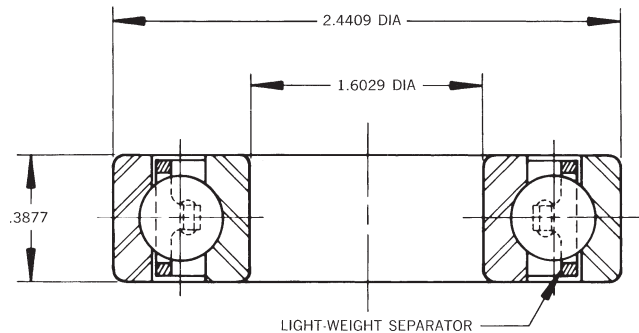
Bearing Solution

Bearing races and balls were made from CEVM AISI-M50 tool steel. The separator was manufactured from AISI-4340 material, hardened to Rc 26-32 and silver plated.

The number of balls was reduced from twenty to eight balls, reducing the number of stress cycles by sixty percent.

The separator configuration permitted an increase of lubricant flow through the bearing for cooling and lubrication.

*DN = D, bearing bore in (mm) - N, shaft speed in (RPM).



THIN SECTION BALL BEARING ENGINEERING DATA

BEARING TYPE		BORE SIZE IN INCHES																													
Cross Section		1.00	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.25	4.50	4.75	5.00	5.50	6.00	6.50	7.00	7.50	8.00	9.00	10.00	11.00	12.00	14.00	16.00	18.00	20.00	25.00	30.00		
KAA Series	A	▲	▲	▲																											
3/16" X 3/16"	C	▲	▲	✓																											
	X	▲	▲	✓																											
JHA Series	A																														
3/16" X 1/4"	C	▲	▲	▲																											
	X	▲	▲	▲																											
KA Series	A				▲	▲	▲	▲		✓	✓		▲	✓	✓			✓	✓	✓	✓	✓		✓							
1/4" X 1/4"	C				▲	▲	▲	▲		✓	✓	✓	▲	✓	▲	✓	✓	✓	✓	✓	✓	✓		✓							
	X				▲	▲	▲	▲		✓	✓	✓	▲	▲	▲	✓	✓	✓	✓	✓	✓	✓		▲							
**JA Series	A																														
3/16" X 1/4"	C				▲	▲	▲	▲	▲	▲			✓	✓	✓																
	X				▲	▲	▲	▲	▲	✓			✓	✓	▲																
KB Series	A				▲	✓	✓	▲	✓				✓	✓																	
5/16" X 5/16"	C				▲	✓	✓	✓	✓	✓			✓		✓	✓				✓	✓										
	X				✓	✓	✓	✓	▲	▲	✓		✓	✓	✓	✓			✓	✓											
**JB Series	A																														
5/16" X 5/16"	C				▲	▲	▲	▲	▲	▲			✓	✓	✓																
	X				▲	▲	▲	▲	▲	▲			✓	✓	✓																
**JU Series	A																														
3/8" X 1/2"	C								✓		▲	▲	▲	▲	▲	▲	✓	▲	▲	▲	▲	✓	✓								
	X								▲		▲	✓	▲	▲	✓	▲		▲	✓	✓	✓	✓	✓								
KC Series	A								✓		✓		▲		✓																
3/8" X 3/8"	C								▲		▲		✓	✓	✓	✓	✓	▲	✓	✓	✓	✓	✓	✓							
	X								✓		▲		▲	✓	▲	✓	✓	✓	✓	✓	✓	✓	✓	✓							
KD Series	A								▲	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	▲		✓								
1/2" X 1/2"	C								▲	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
	X									✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
KF Series	A											✓	✓	▲	▲	▲	✓			▲					✓						
3/4" X 3/4"	C								✓			✓	✓	✓	▲	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
	X								✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
KG Series	A												✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
1" X 1"	C												✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	X												✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		1.00	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.25	4.50	4.75	5.00	5.50	6.00	6.50	7.00	7.50	8.00	9.00	10.00	11.00	12.00	14.00	16.00	18.00	20.00	25.00	30.00		

LOAD CONDITION						
Bearing Type	Contact	Radial	Axial	Moment	Reversing Axial	Combined Radial-Thrust
A	Angular	Good	Excellent	Do Not Use	Do Not Use	Good
C	Radial	Excellent	Good	Good	Good	Good
X	4-Point	Fair	Good	Excellent	Excellent	Fair

** Sealed bearings ▲ Bearings in stock ✓ Bearings with limited availability

All other bearings check availability

NOTES

MONITON[®]

ENGINEERING APPLICATION DATA FAST FAX

For assistance in selecting the correct bearings for your design, complete this form and fax or mail it to:

Company Name: _____ Date: _____
Street Address: _____
City: _____ State: _____ Zip: _____
Name: _____ Title: _____
Phone: _____ Fax: _____ e-mail: _____
Description of application: _____

Speed:

Rotational _____ rpm ☐ Inner Ring Rotating
Oscillatory _____ cpm ☐ Outer Ring Rotating

Temperature:

Average running _____ min _____ max _____

Loading:

☐ Shock ☐ Vibration ☐ Safety factor (Please specify) _____
Dynamic radial _____ Lbs./N ☐ Stationary Load ☐ Rotating Load
Dynamic thrust _____ Lbs./N
Dynamic moment _____ Ft. Lbs./N.m ☐ Stationary Load ☐ Rotating Load
(show application of load on sketch)
Static radial _____ Lbs./N
Static thrust _____ Lbs./N
Static moment _____ Ft. Lbs./N.m (show application of load on sketch)

Life: _____

Lubricant:

☐ Grease ☐ Oil ☐ Special (Please specify) _____

Size limitations:

Max. OD _____ inches/mm Min. bore _____ inches/mm Max. Width _____ inches/mm

Other data:

☐ Seals ☐ Shields ☐ Special (Please specify) _____
Housing material: _____ Shaft material: _____

Further description of application and/or special requirements:

☐ Sketch included

(continue on second sheet if necessary)