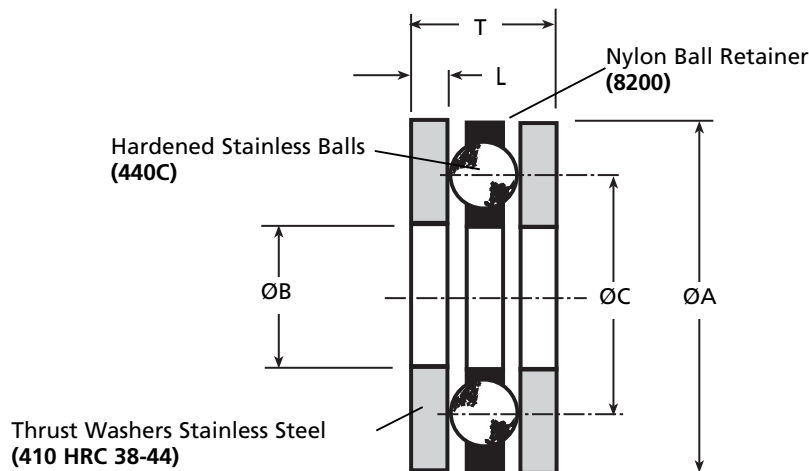


TB

BEARINGS

Ball Thrust Bearing Sets - Stainless

Shaft Diameter 5 - 25mm



Discounts: 6+ -20% 21+ -25% 51+ -30% 200+ -35% 400+ -40% 500+ -45% 1000+ -50%

Part Number	$\text{ØB} \begin{smallmatrix} +0.13 \\ -0.00 \end{smallmatrix}$	$\text{ØA} \begin{smallmatrix} +0.00 \\ -0.13 \end{smallmatrix}$	ØC	$L \begin{smallmatrix} \pm 0.05 \end{smallmatrix}$	T	No. of Balls	Load Rating at 15 Rpm (N)	Price Per Set 1 - 5
TB2SS	5.00	12.00	8.70	1.30	4.98	7	391	£11.46
TB3SS	6.00	14.00	10.30	1.30	4.98	8	404	£12.92
TB4SS	7.00	17.00	11.90	1.30	4.98	9	422	£12.96
TB5SS	8.00	16.00	11.90	1.30	4.98	9	422	£12.69
TB6SS	10.00	21.00	15.10	1.60	6.38	6	542	£13.50
TB7SS	12.00	24.00	18.30	1.60	6.38	8	622	£13.61
TB8SS	16.00	28.00	22.20	2.40	8.80	6	778	£14.56
TB9SS	19.00	32.00	25.40	2.40	8.80	8	912	£23.86
TB10SS	25.00	41.00	33.30	3.18	11.12	10	1428	£43.55

Material

Washer: CR 410 Stainless Steel heat treated to HRC 38-42.

Ball: type 440-C Stainless Steel to HRC 58-65.

Ball Retainer: HS nylon permitting continuous use up to 125°C.

Other Info.

Inch sizes available. **Please ask for a quote.**

Also available in Carbon Steel P.O.A.

Rpm	Load Rating in Newtons (N)							
	15	100	450	900	1200	1800	3600	5000
TB2SS	391	218	124	97	89	75	62	53
TB3SS	404	213	129	102	89	80	62	53
TB4SS	422	178	133	102	93	84	66	57
TB5SS	422	222	133	102	93	84	66	57
TB6SS	542	289	173	133	124	106	84	75
TB7SS	622	329	195	155	142	124	98	89
TB8SS	778	413	248	195	178	155	124	111
TB9SS	912	480	289	227	209	182	146	129
TB10SS	1428	756	458	364	329	289	227	204

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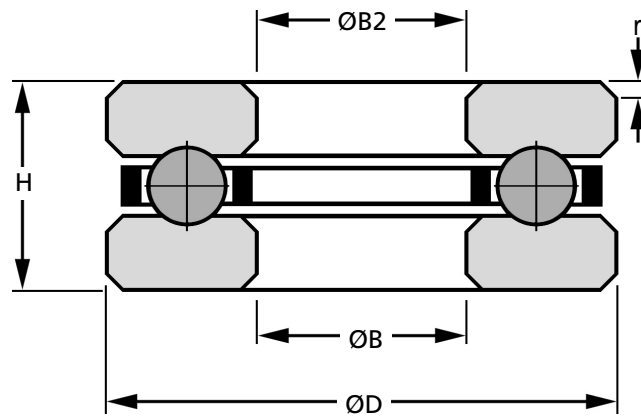
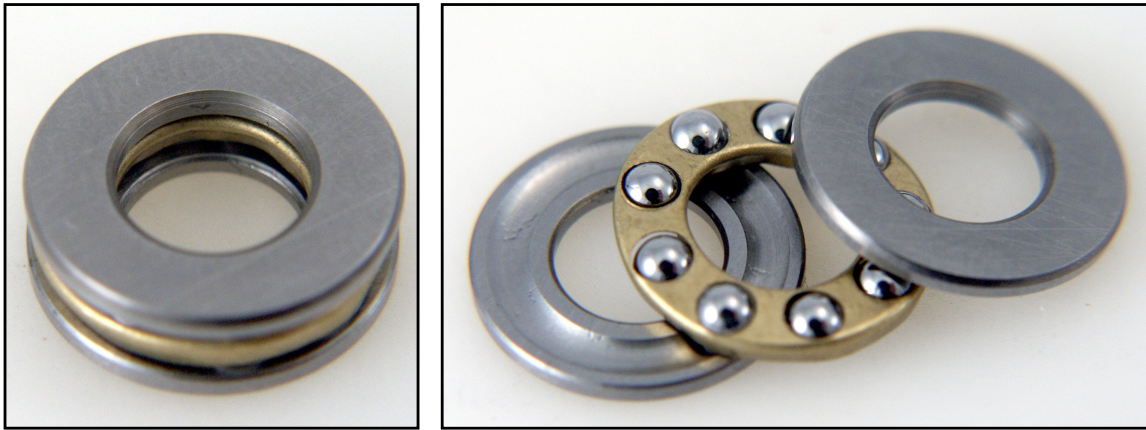
Product information updated 15th June 2011 and subject to change. Please contact Sales for the latest prices and availability.

BEARINGS

Ball Thrust Bearing Sets - Grooved Washers

Shaft Diameter 3 - 10mm

F-G



Discounts: 5+ -5% 10+ -20% 50+ -40% 100+ -50% 250+ -55% 500+ -58% 1000+ -60% 5000+ -65%

Part Number	Bore ØB	ØB2	ØD	Radius r min.	H	Price Per Set 1 - 4
F3-8G	3	3.2	8	0.20	3.5	£10.30
F4-9G	4	4.2	9	0.20	4.0	£10.30
F4-10G	4	4.2	10	0.20	4.0	£10.30
F5-12G	5	5.2	12	0.20	4.0	£9.66
F6-13G	6	6.2	13	0.25	5.0	£6.34
F6-14G	6	6.2	14	0.25	5.0	£10.66
F7-13G	7	7.2	13	0.20	4.5	£10.66
F7-17G	7	7.2	17	0.30	6.0	£10.66
F8-16G	8	8.2	16	0.30	5.0	£10.99
F8-19G	8	8.2	19	0.40	7.0	£10.99
F9-20G	9	9.2	20	0.40	7.0	£12.70
F10-18G	10	10.2	18	0.30	5.5	£12.34

Material

Washer: Steel.

Ball: Chrome Steel.

Ball Retainer: Brass.

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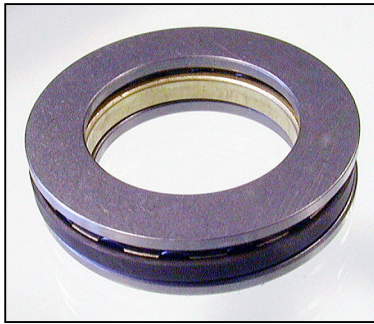
Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

AZ

BEARINGS

Needle Thrust Bearing Sets

Shaft Diameter 10 - 70mm (JIS B 1514-1986)



Part Number	d Shaft Dia. mm	Weight (Ref.) g	Boundary Dimensions (mm)					
			D	T	dw	Dg	Dw	h
AZ10249	10	24.6	24	9	10.04	23.6	3.5	2.75
AZ12269	12	26.5	26	9	12.04	25.6	3.5	2.75
AZ15289	15	28.0	28	9	15.04	27.6	3.5	2.75
AZ17309	17	30.5	30	9	17.04	29.6	3.5	2.75
AZ203510	20	45.5	35	10	20.04	34.6	4.5	2.75
AZ254211	25	70.0	42	11	25.05	41.6	5.0	3.00
AZ304711	30	79.0	47	11	30.05	46.5	5.0	3.00
AZ305216	30	160.0	52	16	30.05	51.5	7.5	4.25
AZ355212	35	99.0	52	12	35.05	51.5	5.0	3.50
AZ356218	35	260.0	62	18	35.05	61.5	7.5	5.25
AZ406013	40	139.0	60	13	40.05	59.5	6.0	3.50
AZ406819	40	310.0	68	19	40.05	67.5	9.0	5.00
AZ456514	45	169.0	65	14	45.05	64.5	6.0	4.00
AZ457320	45	360.0	73	20	45.05	72.5	9.0	5.50
AZ507014	50	185.0	70	14	50.05	69.5	6.0	4.00
AZ507822	50	430.0	78	22	50.05	77.5	11.0	5.50
AZ557816	55	275.0	78	16	55.05	77.5	6.0	5.00
AZ559025	55	725.0	90	25	55.05	89.5	11.0	7.00
AZ608517	60	345.0	85	17	60.05	84.5	7.5	4.75
AZ609526	60	770.0	95	26	60.05	94.5	11.0	7.50
AZ6013026	60	2090.0	130	26	60.05	129.5	10.0	8.00
AZ659018	65	380.0	90	18	65.05	89.5	7.5	5.25
AZ6510027	65	860.0	100	27	65.05	99.5	11.0	8.00
AZ709518	70	420.0	95	18	70.05	94.5	7.5	5.25
AZ7010527	70	905.0	105	27	70.05	104.5	11.0	8.00
AZ7014026	70	2250.0	140	26	70.05	139.5	10.0	8.00

Material

Carbon Steel

Other Info.

Recommended Fit: Shaft h6(h8). Housing Bore H7 (H9).

Notes

- (1) Minimum allowable value of chamfer dimension r
 (2) Allowable rotational speed applies to oil lubrication.
 For grease lubrication, a maximum of 25% of this value is allowable.

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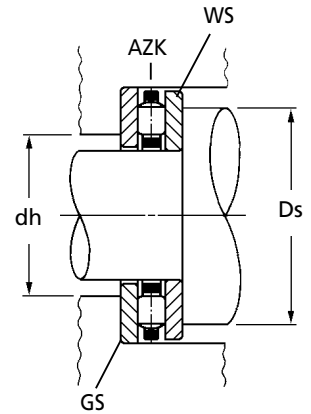
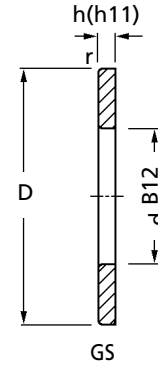
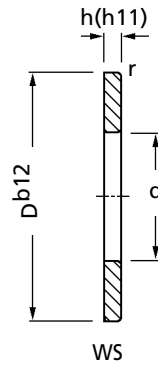
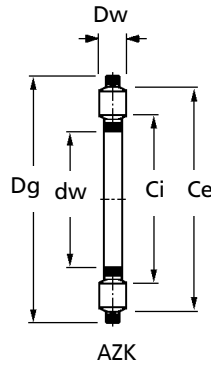
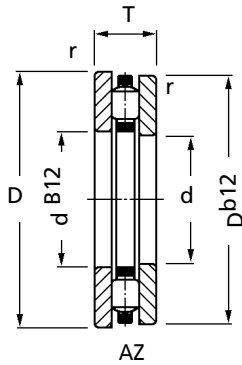
Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

BEARINGS

AZ

Needle Thrust Bearing Sets

Shaft Diameter 10 - 70mm (JIS B 1514-1986)



Part Number	Boundary Dimensions (mm)			Std. Mounting Dimensions (mm)		Basic Dynamic Load Rating C kgf	Basic Static Load Rating Co kgf	Allowable rotational speed rpm (2)	Price Per Set
	r	Ci	Ce	Ds Min.	dh Max.				
AZ10249	0.3	13	21	21	13	930	1950	18000	£19.89
AZ12269	0.3	15	23	23	16	1060	2430	16000	£19.89
AZ15289	0.3	17	25	25	18	1040	2430	14000	£21.67
AZ17309	0.3	19	27	27	20	1160	2920	13000	£23.23
AZ203510	0.3	22	33	33	23	1930	4970	11000	£24.43
AZ254211	0.6	28	39	39	28	2320	6190	9000	£26.79
AZ304711	0.6	33	44	44	33	2790	8260	8000	£28.39
AZ305216	0.6	35	49	48	36	3910	9760	7500	£39.74
AZ355212	0.6	38	49	49	39	2970	9290	7000	£31.09
AZ356218	1.0	42	58	57	43	4880	13700	6500	£44.98
AZ406013	0.6	44	57	57	44	4250	13600	6000	£33.69
AZ406819	1.0	45	64	64	46	7010	19900	5500	£48.45
AZ456514	0.6	49	62	62	49	4160	13600	5500	£38.03
AZ457320	1.0	50	69	69	51	7720	23200	5000	£53.70
AZ507014	0.6	54	67	67	54	4410	15100	5000	£42.51
AZ507822	1.0	55	74	73	56	8600	23700	4500	£60.97
AZ557816	0.6	59	75	75	60	5270	19500	4500	£53.92
AZ559025	1.0	63	85	84	63	11000	33900	4000	£78.86
AZ608517	1.0	65	81	81	66	6580	22900	4000	£60.63
AZ609526	1.0	68	90	89	68	10800	33900	4000	£87.78
AZ6013026	1.5	79	119	119	80	16100	64600	3000	£246.47
AZ659018	1.0	70	86	86	71	6960	25200	4000	£66.91
AZ6510027	1.0	73	95	94	73	11800	38700	3500	£97.50
AZ709518	1.0	75	91	91	76	7340	27500	3500	£73.69
AZ7010527	1.0	78	100	99	78	11600	38700	3500	£114.73
AZ7014026	1.1	89	129	129	90	17200	72700	3000	£267.19

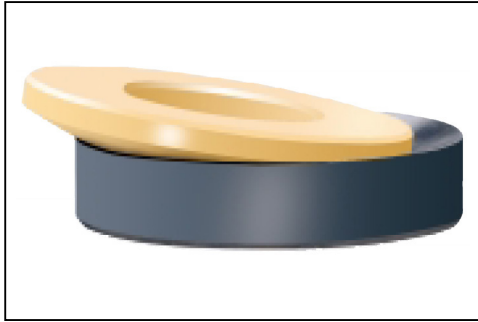
T Tolerance		
AZ10 to AZ17	WS d tol	+ 0.00 - 0.008
	GS D tol	+ 0.00 - 0.013
AZ20 to AZ30	WS d tol	+ 0.00 - 0.01
	GS D tol	+ 0.00 - 0.016
AZ35 to AZ50	WS d tol	+ 0.00 - 0.012
	GS D tol	+ 0.00 - 0.019
AZ55 to AZ70	WS d tol	+ 0.00 - 0.015
	GS D tol	+ 0.00 - 0.025

SAM

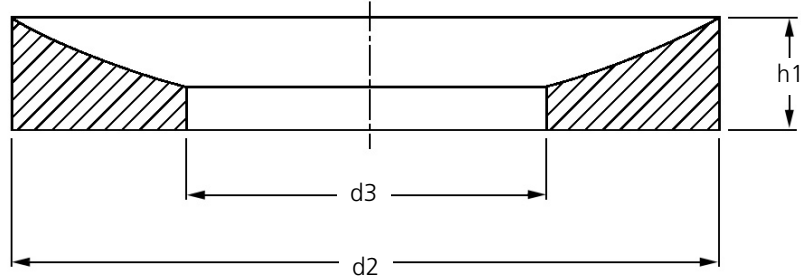
BEARINGS

igubal® Spherical Thrust Bearings

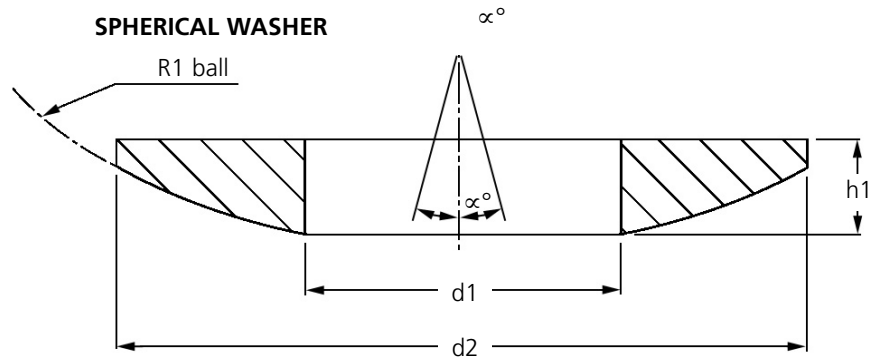
Plastic Self Aligning : To Suit 5 - 20mm Shaft



HOUSING PAD



SPHERICAL WASHER



Discounts: 20+ -10% 50+ -20% 100+ -30%

Part Number	Maximum Static Axial Tensile Strength	
	Short Term (N)	Long Term (N)
SAM-05	4,000	2,000
SAM-06	5,000	2,500
SAM-08	8,000	4,000
SAM-10	10,000	5,000
SAM-12	12,000	6,000
SAM-16	17,000	8,500
SAM-20	22,000	11,000

Part Number	d1 Housing Pad	d3 Spherical Wash	d2	h1 Ball Socket	h2 Spherical Disk	H Total Height	R Radius	Allowable Movement α°	Total Weight (g)	Price per set/pair 1 - 19
SAM-05	5.2	7.0	15.0	3.0	3.5	4.7	15.0	3°	0.9	£6.72
SAM-06	6.2	7.5	16.0	3.0	4.0	5.3	16.0	3°	1.1	£7.08
SAM-08	8.2	10.0	20.0	4.0	5.0	6.8	20.0	2°	2.2	£7.45
SAM-10	10.2	12.0	24.0	4.5	5.5	7.5	24.0	2°	3.4	£7.87
SAM-12	12.5	14.5	30.0	5.0	6.0	8.0	32.0	2°	5.9	£8.43
SAM-16	16.5	19.0	36.0	5.5	6.5	8.1	40.0	2°	8.5	£9.77
SAM-20	20.2	23.0	44.0	6.0	7.0	8.6	45.0	2°	13.1	£10.77

Material

W300 Iglidur®

Other Info.

Available as standard in dimensions from 5 to 20mm.

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Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

BEARINGS

igubal® Spherical Thrust Bearings Plastic Self Aligning

The self aligning igubal spherical thrust bearings are very easy to install and help to compensate for alignment errors and prevent edge loads.

The housing pad is manufactured from the impact resistant, thermoplastic composite material igumid®G. The spherical washer is made from the iglidur® W300 plain bearing material. This combination gives exceptionally good friction and wear properties.

Loads

The loading capacity of igubal® spherical thrust bearings is very high for standard ambient temperatures. For high continuous loads and high temperatures, the loading capacity of the thrust bearings should be tested in an experiment that simulates the application.

Coefficients of Friction and Speeds

Taking into account the radial load, maximum surface speeds up to 0.5m/s rotating are possible.

Installation

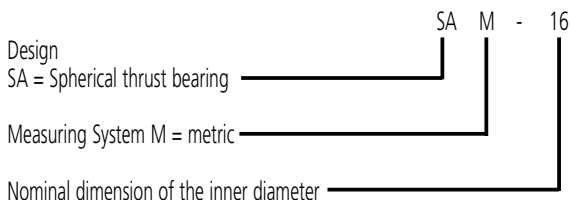
The housing pad is installed so that it is countersunk and secured. The spherical washer is loosely fit in the socket and is held in place by the shaft that is placed into the bearing.

Product Range

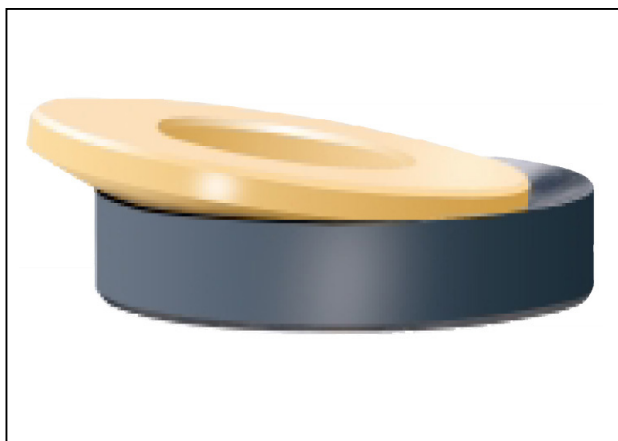
igubal® spherical thrust bearings are available as standard in dimensions from 5 to 20mm Please contact our technical department if you need other dimensions.

Structure for part numbers of igubal® spherical thrust bearings

The part numbers of igubal spherical thrust bearings are designed according to the following system:



The example shows a spherical thrust bearing with metric dimensions and an inner diameter of 16mm.



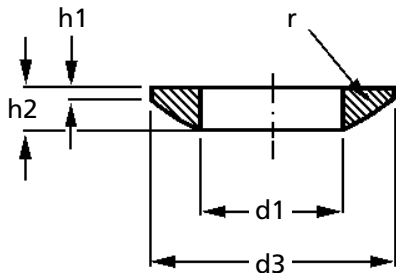
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BEARINGS

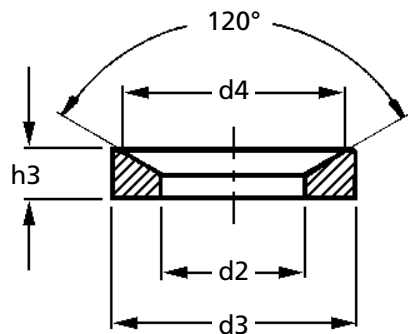
C
D

Self Aligning Washers - DIN 6319

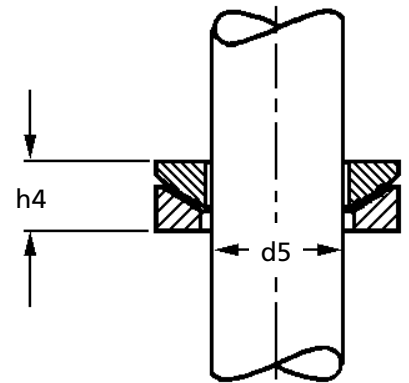
Hardened Steel : Suits 5 - 48mm Shafts



Washer C



Washer D



Discounts: 6+ -10% 20+ -15% 50+ -25% 100+ -30% 200+ -40%

Part Number													Weight (g)		Price Each 1 - 5	
Type C	Type D	d1	d2	d3	d4	d5	h1	h2	h3	h4	r	C	D	Type C	Type D	
C6.4x12	D7.1x12	6.4	7.1	12	11.0	6	0.7	2.3	2.8	4.0	9	0.9	1.4	£0.53	£0.61	
C8.4x17	D9.6x17	8.4	9.6	17	14.5	8	0.6	3.2	3.5	5.0	12	2.5	3.8	£0.80	£0.89	
C10.5x21	D12x21	10.5	12.0	21	18.5	10	0.8	4.0	4.2	6.3	15	4.7	6.5	£1.07	£1.19	
C13x24	D14.2x24	13.0	14.2	24	20.0	12	1.1	4.6	5.0	8.0	17	7.1	10.6	£1.37	£1.41	
C17x30	D19x30	17.0	19.0	30	26.0	16	1.3	5.3	6.2	9.3	22	12.3	18.7	£2.00	£2.26	
C21x36	D23.2x36	21.0	23.2	36	31.0	20	2.0	6.3	7.5	11.5	27	20.8	32.0	£2.98	£3.71	
C25x44	D28x44	25.0	28.0	44	37.0	24	2.4	8.2	9.5	15.0	32	42.0	63.0	£4.75	£5.62	
C31x56	D35x56	31.0	35.0	56	49.0	30	3.6	11.2	12.0	19.7	41	87.0	133.0	£7.87	£9.05	
C37x68	D42x68	37.0	42.0	68	60.0	36	4.6	14.0	15.0	23.0	50	184.0	236.0	£7.87	£15.63	
C43x78	D49x78	43.0	49.0	78	70.0	42	6.5	17.0	18.0	29.0	58	297.0	365.0	£25.72	£27.62	
C50x92	D56x92	50.0	56.0	92	82.0	48	8.0	21.0	22.0	36.0	67	525.0	641.0	£37.19	£39.57	

Material

Hardened steel 9 S Mn Pb 28 K DIN 6319

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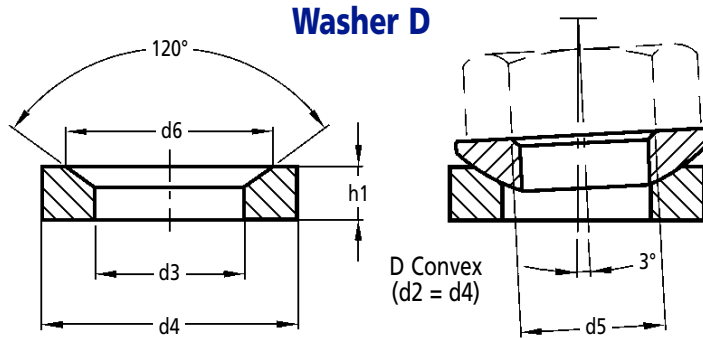
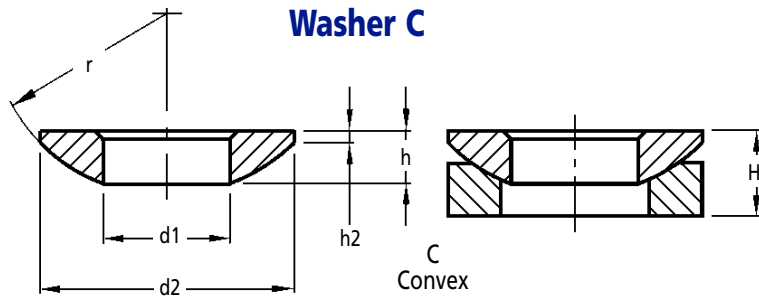
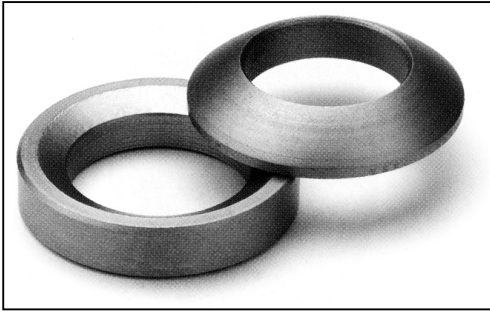
Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

GN.30

BEARINGS

Concave and Convex Washers - DIN 6319

AISI 303 Stainless Steel : Suits M6 - M48

**Discounts:** 20+ -5% 40+ -10% 60+ -15% 100+ -20%

Part Number	d1 H12	d2	d3 H12	d4	d5	d6	h	h1	h2	H	r	Weight g	Price Each 1 - 19
WASHER C													
GN.30832	6.4	12	-	-	M6	-	2.3	-	0.7	4.2	9	1	£3.18
GN.30836	8.4	17	-	-	M8	-	3.2	-	0.6	5.6	12	3	£3.21
GN.30842	10.5	21	-	-	M10	-	4.0	-	0.8	6.5	15	5	£4.29
GN.30846	13.0	24	-	-	M12	-	4.6	-	1.1	8.0	17	8	£4.80
GN.30856	17.0	30	-	-	M16	-	5.3	-	1.3	9.6	22	13	£7.59
GN.30862	21.0	36	-	-	M20	-	6.3	-	2.0	11.7	27	22	£10.46
GN.30866	25.0	44	-	-	M24	-	8.2	-	2.4	15.2	32	43	£16.67
GN.30872	31.0	56	-	-	M30	-	11.2	-	3.6	19.2	41	110	£27.10
GN.30876	37.0	68	-	-	M36	-	14.0	-	4.6	23.5	50	190	£41.39
GN.30882	43.0	78	-	-	M42	-	17.0	-	6.5	29.0	58	305	£79.82
GN.30886	50.0	92	-	-	M48	-	21.0	-	8.0	35.5	67	540	£115.86
WASHER D													
GN.30902	-	-	7.1	12	M6	11.0	-	2.8	-	4.2	9	2	£3.24
GN.30906	-	-	9.6	17	M8	14.5	-	3.5	-	5.6	12	4	£3.24
GN.30912	-	-	12.0	21	M10	18.5	-	4.2	-	6.5	15	7	£4.31
GN.30916	-	-	14.2	24	M12	20.0	-	5.0	-	8.0	17	10	£6.35
GN.30926	-	-	19.0	30	M16	26.0	-	6.2	-	9.6	22	18	£7.95
GN.30932	-	-	23.2	36	M20	31.0	-	7.5	-	11.7	27	31	£15.99
GN.30936	-	-	28.0	44	M24	37.0	-	9.5	-	15.2	32	61	£17.41
GN.30942	-	-	35.0	56	M30	49.0	-	12.0	-	19.2	41	130	£28.45
GN.30946	-	-	42.0	68	M36	60.0	-	15.0	-	23.5	50	230	£42.68
GN.30952	-	-	49.0	78	M42	70.0	-	18.0	-	29.0	58	360	£81.41
GN.30956	-	-	56.0	92	M48	82.0	-	22.0	-	35.5	67	640	£117.43

Material

AISI 303 stainless steel

Other Info.

DIN 6319-NI washers are used for clamping mechanical parts with non-parallel surfaces.

The high corrosion resistance of AISI 303 stainless steel, makes these elements particularly suitable for application on machines and equipment of food processing, chemical and pharmaceutical industry.

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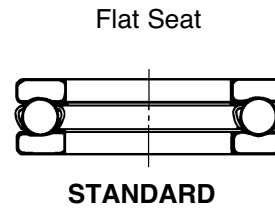
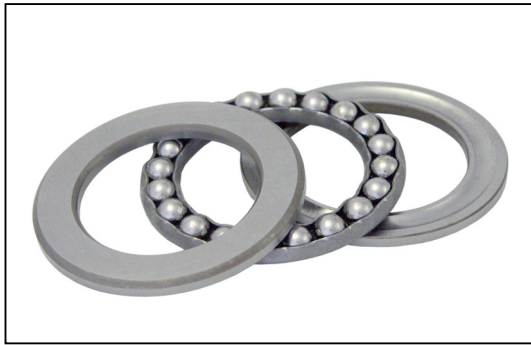
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BEARINGS

Thrust Ball Bearings



Single Direction Thrust Ball Bearings

The steel balls of single direction thrust ball bearings are arranged between a pair of shaft housing washers (bearing shaft washer and housing shaft washer), and the normal contact angle is 90° . Axial loads can be supported in only one direction, radial loads can not be accommodated, therefore these bearings are unsuitable for high speed operation.

Standard cages for single direction thrust ball bearings

Bearing Series	511	512	513	514
Molded resin cage	51100~51107	51200~51207	-	-
Pressed cage	51108~51152	51208~51224	51305~51320	51405~51415
Machined cage	51156~511/530	51226~51260	51322~51340	51416~51420

Note: Due to their material properties, molded resin cages can not be used in applications where temperatures exceed 120°C .

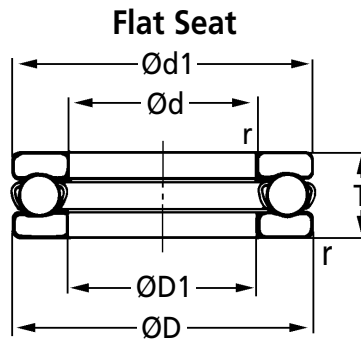
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BEARINGS

Single Direction Thrust Ball Bearings

10-45mm Bores

511 512
513 514



Discounts: 10+ -10% 25+ -20% 50+ -30% 100+ -40%

Part Number	Ød	Ød1	ØD	ØD1	T	T3	T4	r	Basic Radial Load Ratings (N)		Limiting Speeds (rpm)		Price Each 1-5
									dynamic Cr	static Cor	Grease	Oil	
51100	10	24	24	11	9	N/A	N/A	0.3	10100	14000	6700	10000	£13.59
51200	10	26	26	12	11	11.6	13	0.6	12800	17100	6000	9000	£16.64
51101	12	26	26	13	9	N/A	N/A	0.3	10400	15400	6700	10000	£13.67
51201	12	28	28	14	11	11.4	13	0.6	13300	19000	5600	8500	£16.99
51102	15	28	28	16	9	N/A	N/A	0.3	10600	16800	6300	9500	£13.48
51202	15	32	32	17	12	13.3	15	0.6	16700	24800	5000	7500	£16.55
51103	17	30	30	18	9	N/A	N/A	0.3	11400	19500	6000	9000	£13.67
51203	17	35	35	19	12	13.2	15	0.6	17300	27300	4800	7500	£17.38
51104	20	35	35	21	10	N/A	N/A	0.3	15100	26600	5300	8000	£14.08
51204	20	40	40	22	14	14.7	17	0.6	22500	37500	4300	6300	£18.21
51105	25	42	42	26	11	N/A	N/A	0.6	19700	37500	4800	7100	£15.62
51205	25	47	47	27	15	16.7	19	0.6	28000	50500	3800	5600	£20.30
51305	25	52	52	27	18	19.8	22	1.0	36000	61500	3200	5000	£28.04
51405	25	60	60	27	24	26.4	29	1.0	56000	89500	2600	4000	£57.55
51106	30	47	47	32	11	N/A	N/A	0.6	20600	42000	4300	6700	£16.77
51206	30	52	52	32	16	17.8	20	0.6	29500	58000	3400	5300	£22.93
51306	30	60	60	32	21	22.6	25	1.0	43000	78500	2800	4300	£32.01
51406	30	70	70	32	28	30.1	33	1.0	73000	126000	2200	3400	£58.43
51107	35	52	52	37	12	N/A	N/A	0.6	22100	49500	4000	6000	£17.91
51207	35	62	62	37	18	19.9	22	1.0	39500	78000	3000	4500	£28.28
51307	35	68	68	37	24	25.6	28	1.0	56000	105000	2400	3800	£38.81
51407	35	80	80	37	32	34.0	37	1.1	87500	155000	2000	3000	£73.54
51108	40	60	60	42	13	N/A	N/A	0.6	27100	63000	3600	5300	£20.96
51208	40	68	68	42	19	20.3	23	1.0	47500	98500	2800	4300	£P.O.A
51308	40	78	78	42	26	28.5	31	1.0	70000	135000	2200	3400	£47.50
51408	40	90	90	42	36	38.2	42	1.1	103000	188000	1700	2600	£88.39
51109	45	65	65	47	14	N/A	N/A	0.6	28100	69000	3400	5000	£23.96
51209	45	73	73	47	20	21.2	24	1.0	48000	105000	2600	4000	£34.80
51309	45	85	85	47	28	30.1	33	1.0	80500	163000	2000	3000	£55.77
51409	45	100	100	47	39	42.4	46	1.1	128000	246000	1600	2400	£111.73

Material

Steel

Up to 360mm bore diameters are available upon request

Other Info.

The steel balls of single direction thrust ball bearings are arranged between a pair of shaft housing washers (bearing shaft washer and housing shaft washer), and the normal contact angle is 90°. Axial loads can be supported in only one direction, radial loads can not be accommodated, therefore these bearings are unsuitable for high speed operation.

Standard Cages for Single Direction Thrust Ball Bearings				
Bearing Series	511	512	513	514
Molded Resin Cage	51100~51107	51200~51207	-	-
Pressed Cage	51108~51152	51208~51224	51305~51320	51405~51415
Machined Cage	51156~511530	51226~51260	51322~51340	51416~51420

Note: Due to their material properties, molded resin cages can not be used in applications where temperatures exceed 120°C.

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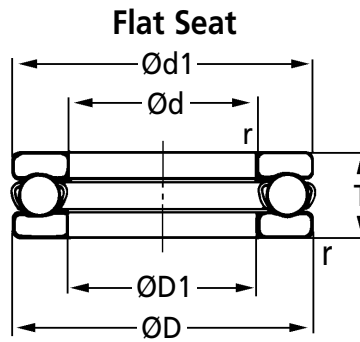
Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

511 512
513 514

BEARINGS

Single Direction Thrust Ball Bearings

50-80mm Bores



Discounts: 10+ -10% 25+ -20% 50+ -30% 100+ -40%

Part Number	$\varnothing d$	$\varnothing d_1$	$\varnothing D$	$\varnothing D_1$	T	T3	T4	r	Basic Radial Load Ratings (N)		Limiting Speeds (rpm)		Price Each 1-5
									dynamic Cr	static Cor	Grease	Oil	
51110	50	70	70	52	14	N/A	N/A	0.6	29000	75500	3200	4800	£26.82
51210	50	78	78	52	22	23.5	26	1.0	49000	111000	2400	3600	£38.81
51310	50	95	95	52	31	34.3	37	1.1	97500	202000	1800	2800	£74.24
51410	50	110	110	52	43	45.6	50	1.5	147000	288000	1400	2200	£141.19
51111	55	78	78	57	16	N/A	N/A	0.6	35000	93000	2800	4300	£32.29
51211	55	90	90	57	25	27.3	30	1.0	70000	159000	2200	3200	£51.81
51311	55	105	105	57	35	39.3	42	1.1	115000	244000	1600	2400	£94.60
51411	55	120	120	57	48	50.5	55	1.5	181000	350000	1300	1900	£196.24
51112	60	85	85	62	17	N/A	N/A	1.0	41500	113000	2600	4000	£35.92
51212	60	95	95	62	26	28.0	31	1.0	71500	169000	2000	3000	£56.65
51312	60	110	110	62	35	38.3	42	1.1	119000	263000	1600	2400	£113.52
51412	60	130	130	62	51	54.0	58	1.5	202000	395000	1200	1800	£365.57
51113	65	90	90	67	18	N/A	N/A	1.0	42000	117000	2400	3800	£38.90
51213	65	100	100	67	27	28.7	32	1.0	75500	189000	1900	2800	£64.91
51313	65	115	115	67	36	39.4	43	1.1	123000	282000	1500	2400	£140.34
51413	65	140	140	68	56	60.2	65	2.0	234000	495000	1100	1700	£454.74
51114	70	95	95	72	18	N/A	N/A	1.0	43500	127000	2400	3600	£42.48
51214	70	105	105	72	27	28.8	32	1.0	74000	189000	1900	2800	£70.54
51314	70	125	125	72	40	44.2	48	1.1	137000	315000	1400	2000	£165.44
51414	70	150	150	73	60	63.6	69	2.0	252000	555000	1000	1500	£P.O.A
51115	75	100	100	77	19	N/A	N/A	1.0	43500	131000	2200	3400	£48.19
51215	75	110	110	77	27	28.3	32	1.0	78000	209000	1800	2800	£78.03
51315	75	135	135	77	44	48.1	52	1.5	159000	365000	1300	1900	£201.09
51415	75	160	160	78	65	69.0	75	2.0	254000	560000	950	1400	£706.11
51116	80	105	105	82	19	N/A	N/A	1.1	45000	141000	2200	3400	£54.64
51216	80	115	115	82	28	29.5	33	1.1	79000	218000	1800	2600	£87.52
51316	80	140	140	82	44	47.6	52	1.5	164000	395000	1300	1900	£221.80
51416	80	170	170	83	68	72.2	78	2.1	272000	620000	900	1300	£868.51

Material

Steel

Up to 360mm bore diameters are available upon request

Other Info.

The steel balls of single direction thrust ball bearings are arranged between a pair of shaft housing washers (bearing shaft washer and housing shaft washer), and the normal contact angle is 90°. Axial loads can be supported in only one direction, radial loads can not be accommodated, therefore these bearings are unsuitable for high speed operation.

Bearing Series	Standard Cages for Single Direction Thrust Ball Bearings			
	511	512	513	514
Molded Resin Cage	51100~51107	51200~51207	-	-
Pressed Cage	51108~51152	51208~51224	51305~51320	51405~51415
Machined Cage	51156~511/530	51226~51260	51322~51340	51416~51420

Note: Due to their material properties, molded resin cages can not be used in applications where temperatures exceed 120°C.

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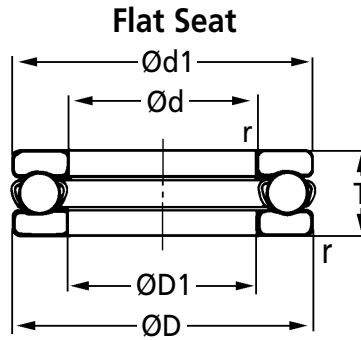
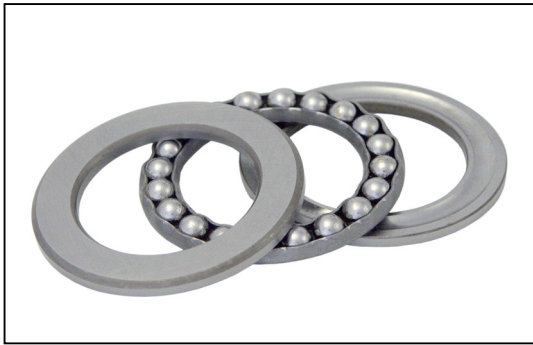
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BEARINGS

Single Direction Thrust Ball Bearings

85-100mm Bores

511 512
513 514



Where X follows the part number then d1 is smaller than D

Discounts: 10+ -10% 25+ -20% 50+ -30% 100+ -40%

Part Number	Ød	Ød1	ØD	ØD1	T	T3	T4	r	Basic Radial Load Ratings (N)		Limiting Speeds (rpm)		Price Each 1-5
									dynamic Cr	static Cor	Grease	Oil	
51117	85	110	110	87	19	N/A	N/A	1.0	46500	150000	2200	3200	£60.62
51217	85	125	125	88	31	33.1	37	1.0	96000	264000	1600	2400	£113.07
51317	85	150	150	88	49	53.1	58	1.5	207000	490000	1100	1700	£265.78
51417X	85	177	180	88	72	77.0	83	2.1	310000	755000	850	1300	£P.O.A
51118	90	135	135	92	22	N/A	N/A	1.0	60000	190000	1900	3000	£73.27
51218	90	150	150	93	35	38.5	42	1.1	114000	310000	1400	2200	£134.64
51318	90	170	170	93	50	54.6	59	1.5	214000	525000	1100	1700	£297.92
51418X	90	205	210	93	77	81.2	88	2.1	330000	825000	800	1200	£P.O.A
51120	100	110	110	102	25	N/A	N/A	1.0	86000	268000	1700	2600	£95.03
51220	100	125	125	103	38	40.9	45	1.1	135000	375000	1300	2000	£179.08
51320	100	150	150	103	55	59.2	64	1.5	239000	595000	1000	1500	£359.55
51420X	100	177	180	103	85	90.0	98	3.0	370000	985000	710	1100	£P.O.A

Material

Steel

Up to 360mm bore diameters are available upon request

Other Info.

The steel balls of single direction thrust ball bearings are arranged between a pair of shaft housing washers (bearing shaft washer and housing shaft washer), and the normal contact angle is 90°. Axial loads can be supported in only one direction, radial loads can not be accommodated, therefore these bearings are unsuitable for high speed operation.

Bearing Series	Standard Cages for Single Direction Thrust Ball Bearings			
	511	512	513	514
Molded Resin Cage	51100~51107	51200~51207	-	-
Pressed Cage	51108~51152	51208~51224	51305~51320	51405~51415
Machined Cage	51156~511530	51226~51260	51322~51340	51416~51420

Note: Due to their material properties, molded resin cages can not be used in applications where temperatures exceed 120°C.

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