



PRODUCT CATALOG

THRUST BALL BEARING DOUBLE ACTING

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Thrust Ball Bearing

DOUBLE ACTING

DESIGN | CHARACTERISTICS | APPLICATIONS

DOUBLE ACTING THRUST BALL BEARING

Differs from the Single - acting thrust ball bearings in a way that it can carry the thrust load in 2 directions with a low to medium speeds. The thrust load is always carried between the central shaft washer and one of the housing washers. They are sensitive to angular deflection and characterized by extremely rigid guidance in axial direction.

Thrust ball bearings are separable bearings. The double acting bearing is made of 5 separable parts and consists of one shaft washer, two housing washers and 2 ball sets with cage.

The standard cage is made of a steel sheet

Double – acting thrust ball bearing

The double-acting type consists of a shaft washer (center washer) and two housing washer and two ball sets with cages. This bearing can carry thrust loadings in both directions.



Brass Cage M



Steel Cage

ANGULAR MISALIGNMENT

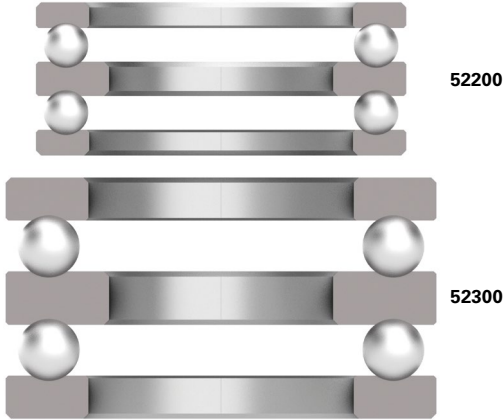
These are sensitive for axial deflection and cannot accommodate misalignment.

ISO SPECIFICATIONS

- Dimensions in accordance with ISO 104 (latest version)
- Precision class in accordance with ISO 199 (latest version)

SERIES

The standard series are 52200 | 52300.



NOMENCLATURE

Suffixes:

M : Brass cage. Typically for bore size over 100 mm

P0 - P6 : Precision class

EQUIVALENT LOAD EQUATIONS

Equivalent dynamic load P_e

$P = F_a$ [KN] where F_a = the axial load

Equivalent static load P_o

$P_o = F_a$ [KN]

Ball thrust bearings must have a minimum thrust load to function correctly. This ensures that sliding does not occur due to centrifugal forces acting on the ball and cage assembly.

Minimum load

For a thrust ball bearing to function correctly it requires an axial load to ensure that the rolling elements maintain contact with the raceways. This prevents wear due to sliding. F_{am} can be obtained from the formula below.

$$F_{am} = M \left(\frac{n \text{ Max}}{1000} \right)^2 \text{ [N]}$$

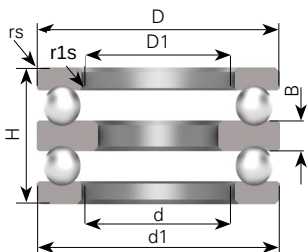
where F_{am} = minimum thrust load (N)

M = Factor for minimum load

n = speed in RPM

Thrust Ball Bearing

DATA TABLE - DOUBLE ACTING



Part number	Principal dimensions			Basic load ratings			Speed limits		Weight	Radius		Dimensions	
	d	D	H	Dynamic	Static	Fatigue	Grease	Oil		rs min	r1s min	D1	B
	mm			Cr	Cor	Pu	rpm		Kg	mm			
							1 min ⁻¹						
52202	10	32	22	17	25	1,14	5000	6700	0,09	0,6	0,3	17	5
52204	15	40	26	22	38	1,73	4300	5600	0,15	0,6	0,3	22	6
52405	15	60	45	56	89	4,05	2600	3600	0,63	1,0	0,3	27	11
52205	20	47	28	28	50	2,27	3800	5000	0,23	0,6	0,3	27	7
52305	20	52	34	36	61	2,77	3200	4300	0,33	1,0	0,3	27	8
52406	20	70	52	73	126	5,73	2000	3000	1,00	1,0	0,6	32	12
52206	25	52	29	28	54	2,45	3600	4800	0,27	0,6	0,3	32	7
52306	25	60	38	43	79	3,59	2800	3800	0,49	1,0	0,3	32	9
52407	25	80	59	87	155	7,05	1800	2600	1,44	1,1	0,6	37	14
52207	30	62	34	41	84	3,82	3000	4000	0,42	1,0	0,3	37	8
52208	30	68	36	47	98	4,45	2800	3800	0,54	1,0	0,6	42	9
52307	30	68	44	56	105	4,77	2400	3400	0,71	1,0	0,3	37	10
52308	30	78	49	69	135	6,14	2000	3000	1,06	1,0	0,6	42	12
52408	30	90	65	113	205	9,32	1700	2400	2,08	1,1	0,6	42	15
52209	35	73	37	48	105	4,77	2600	3600	0,62	1,0	0,6	47	9
52309	35	85	52	81	163	7,41	1900	2800	1,29	1,0	0,6	47	12
52409	35	100	72	130	242	11,00	1600	2200	2,71	1,1	0,6	47	17
52210	40	78	39	49	111	5,05	2400	3400	0,71	1,0	0,6	52	9
52310	40	95	58	92	186	8,45	1800	2600	1,86	1,1	0,6	52	14
52410	40	110	78	148	283	12,86	1500	2000	3,56	1,5	0,6	52	18
52211	45	90	45	69	159	7,23	1900	2800	1,12	1,0	0,6	57	10
52311	45	105	64	119	246	11,18	1600	2200	2,51	1,1	0,6	57	15
52411	45	120	87	178	359	16,32	1300	1800	4,70	1,5	0,6	57	20
52212	50	95	46	74	179	8,14	1900	2800	1,25	1,0	0,6	62	10
52312	50	110	64	124	267	12,14	1600	2200	2,68	1,1	0,6	62	15
52412	50	130	93	201	397	18,05	1100	1600	6,33	1,5	0,6	62	21
52413	50	140	101	232	493	22,41	1000	1500	8,03	2,0	1,0	68	23
52213	55	100	47	75	189	8,59	1800	2600	1,36	1,0	0,6	67	10
52214	55	105	47	74	189	8,59	1800	2600	1,48	1,0	1,0	72	10
52313	55	115	65	128	287	13,05	1500	2000	2,90	1,1	0,6	67	15
52314	55	125	72	148	339	15,41	1400	1900	3,90	1,1	1,0	72	16
52215	60	110	47	77	209	9,50	1700	2400	1,57	1,0	1,0	77	10
52315	60	135	79	171	396	18,00	1200	1700	4,83	1,5	1,0	77	18
52216	65	115	48	79	218	9,91	1700	2400	1,69	1,0	1,0	82	10
52316	65	140	79	176	424	19,04	1200	1700	5,06	1,5	1,0	82	18

Thrust Ball Bearing

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Part number	Principal dimensions			Basic load ratings			Speed limits		Weight	Radius		Dimensions	
	d	D	H	Dynamic	Static	Fatigue	Grease	Oil		rs min	r1s min	D1	B
				Cr	Cor	Pu							
	mm			kN			rpm		Kg	mm			
52217	70	125	55	92	251	11,41	1600	2200	2,34	1,0	1,0	88	12
52317	70	150	87	206	489	21,19	1100	1600	6,43	1,5	1,0	88	19
52218	75	135	62	117	326	14,46	1500	2000	3,22	1,1	1,0	93	14
52318	75	155	88	213	524	22,21	1000	1500	6,60	1,5	1,0	93	19
52420	80	210	150	368	983	37,11	700	950	26,60	2,0	1,0	103	33
52220	85	150	67	147	410	17,19	1300	1800	4,29	1,1	1,0	103	15
52320	85	170	97	236	596	23,99	950	1400	8,90	1,5	1,0	103	21
52322	95	90	110	280	754	34,27	850	1200	13,80	2,0	1,0	113	24
52222	95	160	67	148	431	17,35	1200	1700	4,68	1,1	1,0	113	15
52224	100	170	68	154	472	18,47	1100	1600	5,24	1,1	1,1	123	15
52324	100	210	123	325	931	33,99	800	1100	17,20	2,1	1,1	123	27
52226	110	190	80	203	622	23,08	950	1400	7,74	1,5	1,1	133	18
52228 M	120	200	81	215	669	24,04	950	1400	8,95	1,5	1,1	143	18
52230 M	130	215	89	244	768	26,58	900	1300	10,60	1,5	1,1	153	20
52330 M	130	250	140	377	1200	39,57	670	900	27,10	2,1	1,1	154	31
52232 M	140	225	90	247	803	27,02	850	1200	12,20	1,5	1,1	163	20
52332 M	140	250	140	470	1570	51,10	630	850	26,20	2,1	1,1	154	31
52234 M	150	240	97	269	874	28,45	800	1100	15,20	1,5	1,1	173	21