



THRUST BALL, CYLINDRICAL AND SPHERICAL ROLLER BEARINGS

JVN Bearings FZE



Introduction

Thrust bearings are designed to support a predominantly axial load, depending up on type of rolling elements it is classified as

- **Thrust Ball Bearings**, composed of bearing balls supported in a ring,
- **Thrust Cylindrical roller bearings**, consist of Cylindrical rollers,
- **Thrust Spherical roller bearings** consist of asymmetrical rollers of spherical shape Rolling elements arranged between a set of washers (a shaft washer and housing washer) and the contact angle is 90°.

1. Thrust Ball Bearings

- Separable axial bearings with both *single* and *double-direction* acting designs are known as Thrust Ball Bearings.
- The *bearing washers, seats, cage, and ball assemblies* may be mounted separately in their arrangement area to aid in simple effective mounting or dismounting.
- The axial loads that thrust ball bearings can handle are rather large, but radial forces must not be applied to them.
- Only *low to medium* working speeds are ideal for thrust ball bearings. They need moderate axial loads to operate at their best.
- Thrust ball bearings are typically used with sphered housing washers and seating washers since they do not compensate for misalignment.
- Single direction and double direction Thrust Ball design are available.
- Shaft washers, housing washers, balls, and cages make up **single direction thrust ball bearings**. Axial loads can only be accommodated by these bearings in one direction. Series 511, 512, 513, and 514 single-direction thrust ball bearings have a plain and sphered housing.
- Double direction thrust ball bearings are excellent for guiding the shaft in both directions. These bearings have one common shaft washer in the middle, between two washers, two ball arrangements, and two cage thrust assemblies. Both types of double direction thrust ball bearings, with flat and sphered housing washers, are also offered.

In Summary, Thrust Ball Bearings can

- Carry only axial loads,
- In one direction or two directions (Depending upon the type selection).
- They are appropriate for low and medium load applications.

JVN can offer following variants

- 511, 512, 513 and 514 - (Single Direction Thrust Ball Bearing)
- 522, 523 and 524 - (Double Direction Thrust Ball Bearing)
- 532,533 and 534 - (Single Direction with Spherical Housing Washer)

2. Thrust Cylindrical Roller Bearings

- Compared to thrust ball bearings, thrust cylindrical roller bearings have a substantially better load carrying capacity.
- They are insensitive to shock loading.
- They don't support radial forces but can support exceptionally high axial loads.
- In a little amount of area, they offer an extremely stiff bearing system for high thrust loading.

Thrust Cylindrical Roller Bearings are:

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.

JVN BEARINGS FZE – Thrust Bearings

- Simple in design and easy to install
- Suitable for operations with medium and high loads
- Ideal for applications requiring medium speed

Cylindrical roller thrust bearings consist of a shaft washer (WS), a housing washer (GS), and a cylindrical roller.

3. Thrust Spherical Roller Bearings

- Thrust Spherical Roller Bearings are sturdy and rigid enough to withstand heavy axial loads and moderate radial loads.
- Convex rollers are present in spherical thrust roller bearings, which can self-align and are unaffected by installation error or shaft displacement.
- machined brass & pressed cages are used for high load capacity.

Nomenclature

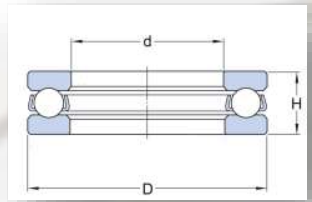
JVN standard suffixes for Thrust Bearings:

A	Modified internal design. Machined Brass Cage.
M	Machined Brass Cage.
P or TN	Plastic / Polyamide / Nylon Cage.
SC	Special Cage design.

Note: Subject to design or manufacturing limitations, the majority of the Bearings specified in the pages that follow in this chapter are available with the aforementioned suffixes.

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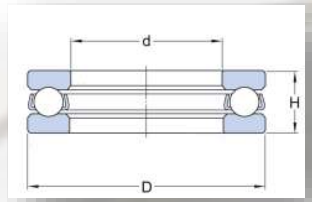


511 Series: Single Direction

Principal Dimensions				Basic Load Ratings		Speed Ratings		Mass
Designation	mm			Dynamic	Static	Reference speed r/min	Limiting speed	
	d	D	H	C	C0			
51100	10	24	9	9950	15300	9,500	13,000	0.020
51101	12	26	9	10400	16600	9,000	13,000	0.020
51102	15	28	9	10600	18300	8,500	12,000	0.020
51103	17	30	9	11400	21200	8,500	12,000	0.030
51104	20	35	10	15100	29000	7,500	10,000	0.040
51105	25	42	11	18200	39000	6,300	9,000	0.060
51106	30	47	11	19000	43000	6,000	8,500	0.060
51107	35	52	12	19900	51000	5,600	7,500	0.080
51108	40	60	13	25500	63000	5,000	7,000	0.120
51109	45	65	14	26500	69500	4,500	6,300	0.140
51110	50	70	14	27000	75000	4,300	6,300	0.160
51111	55	78	16	30200	81500	3,800	5,300	0.230
51112	60	85	17	41600	122000	3,600	5,000	0.270
51113	65	90	18	37700	108000	3,400	4,800	0.330
51114	70	95	18	40300	120000	3,400	4,500	0.350
51115	75	100	19	44200	134000	3,200	4,300	0.400
51116	80	105	19	44900	140000	3,000	4,300	0.420
51117	85	110	19	44900	146000	3,000	4,300	0.440
51118	90	120	22	59200	208000	2,600	3,800	0.670
51120	100	135	25	80600	265000	2,400	3,200	0.970
51122	110	145	25	83200	285000	2,200	3,200	1.050
51124	120	155	25	85200	305000	2,200	3,000	1.150
51126	130	170	30	119000	440000	1,900	2,600	1.850
51128	140	180	31	111000	440000	1,800	2,600	2.050
51130	150	190	31	111000	440000	1,700	2,400	2.200
51132	160	200	31	112000	465000	1,700	2,400	2.350
51134	170	215	34	133000	540000	1,600	2,200	3.300
51136	180	225	34	135000	570000	1,500	2,200	3.500
51138	190	240	37	172000	710000	1,400	2,000	4.050
51140	200	250	37	168000	710000	1,400	1,900	4.250
51144	220	270	37	178000	800000	1,300	1,900	4.600
51148	240	300	45	234000	1040	1,100	1,600	7.550
51152	260	320	45	238000	1100	1,100	1,500	8.100
51156	280	350	53	319000	1460	950	1,300	12.000
51160	300	380	62	364000	1760	850	1,200	17.500
51164	320	400	63	371000	1860	800	1,100	19.000
51168	340	420	64	377000	1960	800	1,100	20.500
51172	360	440	65	390000	2080	750	1,000	22.000
51176	380	460	65	397000	2200	750	1,000	23.000
51180	400	480	65	403000	2280	700	1,000	24.000

Note:

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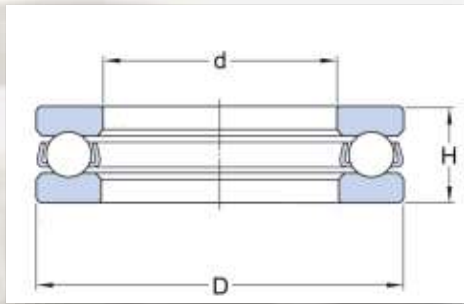
512 Series: Single Direction

Principal Dimensions				Basic Load Ratings		Speed Ratings		Mass
Designation	mm			Dynamic	Static	Reference speed r/min	Limiting speed	
	d	D	H	C	C0			kg
51200	10	26	11	12700	18600	8,000	11,000	0.030
51201	12	28	11	13300	20800	8,000	11,000	0.030
51202	15	32	12	15900	25000	7,000	10,000	0.050
51203	17	35	12	16300	27000	6,700	9,500	0.050
51204	20	40	14	21200	37500	6,000	8,000	0.080
51205	25	47	15	26500	50000	5,300	7,500	0.110
51206	30	52	16	25100	51000	4,800	6,700	0.130
51207	35	62	18	35100	73500	4,000	5,600	0.220
51208	40	68	19	44200	96500	3,800	5,300	0.280
51209	45	73	20	39000	86500	3,600	5,000	0.300
51210	50	78	22	49400	116000	3,400	4,500	0.370
51211	55	90	25	58500	134000	2,800	4,000	0.590
51212	60	95	26	59200	140000	2,800	3,800	0.650
51213	65	100	27	60500	150000	2,600	3,600	0.720
51214	70	105	27	62400	160000	2,600	3,600	0.790
51215	75	110	27	63700	170000	2,400	3,400	0.830
51216	80	115	28	76100	208000	2,400	3,400	0.910
51217	85	125	31	97500	275000	2,200	3,000	1.200
51218	90	135	35	112000	290000	2,000	2,800	1.700
51220	100	150	38	119000	325000	1,800	2,400	2.200
51222	110	160	38	125000	365000	1,700	2,400	2.400
51224	120	170	39	127000	390000	1,600	2,200	2.650
51226	130	190	45	186000	585000	1,400	2,000	4.000
51228	140	200	46	190000	620000	1,400	1,900	4.350
51230	150	215	50	238000	800000	1,300	1,800	6.100
51232	160	225	51	238000	830000	1,200	1,700	6.550
51234	170	240	51	270000	930000	1,200	1,700	8.150
51236	180	250	51	302000	1120	1,200	1,600	8.600
51238	190	270	51	332000	1270	1,100	1,600	12.000
51240	200	280	51	338000	1320	1,100	1,500	12.000
51244	220	300	63	358000	1460	950	1,300	13.000
51248	240	340	78	449000	1960	800	1,100	23.000
51252	260	360	79	488000	2240	750	1,100	25.000
51256	280	380	80	488000	2320	750	1,000	26.500
51260	300	420	95	585000	3000	630	850	42.000

Note:

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513 Series: Single Direction

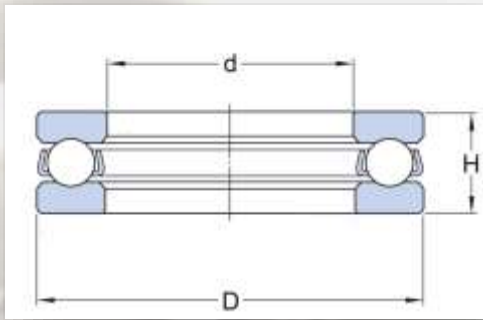


Principal Dimensions			N	Basic Load Ratings		Speed Ratings		Mass
Designation	mm			Dynamic	Static	Reference speed	Limiting speed	
	d	D	H	C	C0	r/min		kg
51305	25	52	18	34500	60000	4,500	6,300	0.170
51306	30	60	21	35800	65500	3,800	5,300	0.260
51307	35	68	24	49400	96500	3,400	4,800	0.390
51308	40	78	26	61800	122000	3,000	4,300	0.530
51309	45	85	28	76100	153000	2,800	4,000	0.660
51310	50	95	31	81900	170000	2,600	3,600	0.940
51311	55	105	35	101000	224000	2,200	3,200	1.300
51312	60	110	35	101000	224000	2,200	3,000	1.350
51313	65	115	36	106000	240000	2,000	3,000	1.500
51314	70	125	40	135000	320000	1,900	2,600	2.000
51315	75	135	44	163000	390000	1,700	2,400	2.600
51316	80	140	44	159000	390000	1,700	2,400	2.700
51317	85	150	49	174000	405000	1,600	2,200	3.550
51318	90	155	50	182000	440000	1,500	2,200	3.800
51320	100	170	55	225000	570000	1,400	1,900	4.950
51322	110	190	63,5	281000	815000	1,200	1,700	7.850
51324	120	210	70	325000	980000	1,100	1,500	11.000
51326	130	225	75	358000	1140	1,000	1,400	13.000
51328	140	240	80	377000	1220	950	1,300	15.500
51330	150	250	80	390000	1290	900	1,300	16.500
51332	160	270	87	449000	1660	850	1,200	21.000
51334	170	280	87	468000	1760	800	1,100	22.000
51336	180	300	95	520000	2000	750	1,100	28.500
51338	190	320	105	559000	2200	700	950	36.500
51340	200	340	110	624000	2600	630	900	44.500

Note:

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514 Series: Single Direction

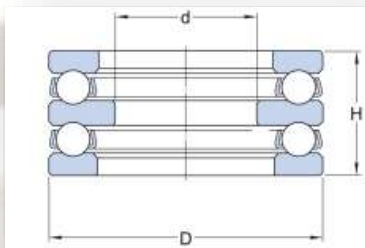


Principal Dimensions				Basic Load Ratings		Speed Ratings		Mass
Designation	mm			N		Reference speed r/min	Limiting speed	kg
	d	D	H	Dynamic C	Static C0			
51405	25	60	24	42300	67000	3,600	5,000	0.340
51406	30	70	28	70200	122000	3,000	4,300	0.520
51407	35	90	32	76100	137000	2,600	3,600	0.790
51408	40	90	36	95600	183000	2,400	3,400	1.100
51409	45	100	39	124000	240000	2,200	3,000	1.400
51410	50	110	43	159000	340000	2,000	2,800	2.000
51411	55	120	48	195000	400000	1,800	2,400	2.550
51412	60	130	51	199000	430000	1,600	2,200	3.100
51413	65	140	56	216000	490000	1,500	2,200	4.000
51414	70	150	60	234000	550000	1,400	2,000	5.000
51415	75	160	65	251000	610000	1,300	1,800	6.750
51416	80	170	68	302000	750000	1,200	1,700	7.950
51417	85	180	72	286000	750000	1,200	1,600	9.450
51418	90	190	77	307000	815000	1,100	1,500	11.000
51420	100	210	85	371000	1060	950	1,400	15.000
51422	110	230	95	410000	1220	900	1,300	20.000
51424	120	250	102	432000	1320	800	1,100	25.500
51426	130	270	110	520000	1730	750	1,000	32.000
51428	140	280	112	520000	1730	700	1,000	34.500
51430	150	300	120	559000	1960	670	950	42.500

Note:

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522 Series: Double Direction

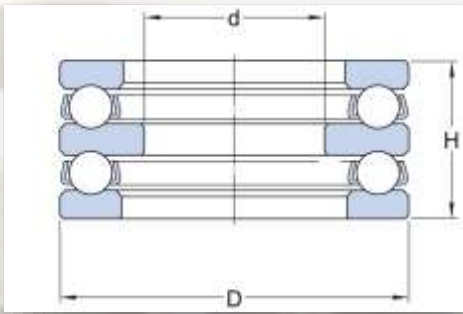


Principal Dimensions				Basic Load Ratings		Speed Ratings		Mass
Designation	mm			N	Static	Reference speed	Limiting speed	
	d	D	H	Dynamic C	C0	r/min		kg
52202	10	32	22	15900	25000	7,000	10,000	0.080
52204	15	40	26	21200	37500	4,300	6,000	0.150
52205	20	47	28	26500	50000	3,800	5,300	0.220
52206	25	52	29	24700	46500	3,600	5,000	0.250
52207	30	62	34	35100	73500	3,000	4,300	0.410
52208	30	68	36	44200	96500	2,800	3,800	0.550
52209	35	73	37	39000	86500	2,600	3,600	0.600
52210	40	78	39	49400	116000	2,400	3,400	0.710
52211	45	90	45	58500	134000	2,200	3,000	1.100
52212	50	95	46	59200	140000	2,000	2,800	1.200
52213	55	100	47	60500	150000	2,000	2,800	1.350
52214	55	105	47	62400	160000	1,900	2,600	1.500
52215	60	110	47	63700	170000	1,900	2,600	1.550
52216	65	115	48	76100	208000	2,400	3,400	1.700
52217	70	125	55	97500	275000	1,600	2,200	2.400
52218	75	135	62	112000	290000	1,500	2,000	3.200
52220	85	150	67	119000	325000	1,300	1,800	4.200

Note:

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523 Series: Double Direction



Principal Dimensions				Basic		Speed		Mass
Designation	mm			Dynamic	Static	Reference speed r/min	Limiting speed	
	d	D	H	C	C0			kg
52305	20	52	34	34500	60000	3,200	4,500	0.330
52306	25	60	38	35800	65500	2,800	4,000	0.470
52307	30	68	44	49400	96500	2,400	3,400	0.680
52308	30	78	49	61800	122000	2,200	3,000	1.050
52309	35	85	52	76100	153000	2,000	2,800	1.250
52310	40	95	58	81900	170000	1,800	2,600	1.750
52311	45	105	64	101000	224000	1,600	2,200	2.400
52312	50	110	64	101000	224000	1,600	2,200	2.550
52313	55	115	64	106000	240000	1,600	2,200	2.750
52314	55	125	72	135000	320000	1,400	2,000	3.650
52315	60	135	79	163000	390000	1,300	1,800	4.800
52316	65	140	79	159000	390000	1,300	1,800	4.950
52320	85	170	97	225000	570000	1,000	1,400	8.950

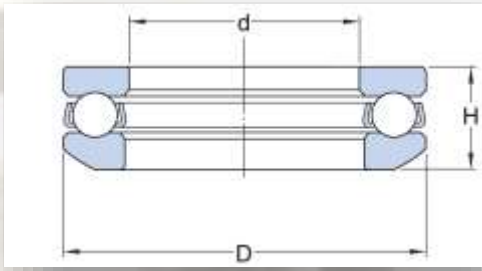
524 Series: Double Direction

Principal Dimensions				Basic		Speed		Mass
Designation	mm			Dynamic	Static	Reference speed r/min	Limiting speed	
	d	D	H	C	C0			kg
52406	20	70	52	70200	122000	2,200	3,200	1.000
52407	25	80	59	76100	137000	2,000	2,800	1.450
52408	30	90	65	95600	183000	1,800	2,400	2.050
52409	35	100	72	124000	240000	1,600	2,200	2.700
52411	45	120	87	195000	400000	1,300	1,800	4.700
52412	50	130	93	199000	430000	1,200	1,700	6.350
52414	55	250	107	234000	550000	800	1,100	9.700

Note:

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532 Series: Single Direction with Spherical Housing Washer

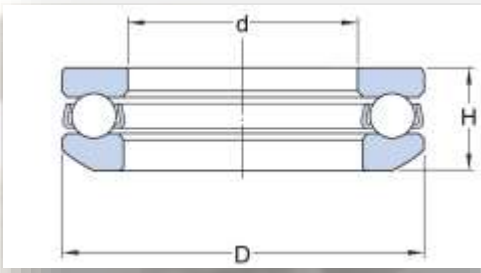


Principal Dimensions				Basic Load Ratings		Speed Ratings		Mass
Designation	mm			N		Reference speed r/min	Limiting speed	
	d	D	H	Dynamic C	Static C0			kg
53202	15	32	15	15900	25000	7,000	10,000	0.060
53203	17	35	15	16300	27000	6,700	9,500	0.070
53204	20	40	17	21200	37500	5,600	8,000	0.100
53205	25	47	19	26500	50000	5,000	7,000	0.150
53206	30	52	20	25100	51000	4,500	6,300	0.180
53207	35	62	22	35100	73500	4,000	5,600	0.280
53208	40	68	23	44200	96500	3,600	5,300	0.350
53209	45	73	24	39000	86500	3,400	4,800	0.390
53210	50	78	26	49400	116000	3,200	4,500	0.470
53211	55	90	30	58500	134000	2,800	3,800	0.750
53212	60	95	31	59200	140000	2,600	3,600	0.820
53213	65	100	32	60500	150000	2,600	3,600	0.910
53214	70	105	32	62400	160000	2,600	3,600	0.970
53215	75	110	32	63700	170000	2,400	3,400	1.000
53216	80	115	33	76100	208000	2,400	3,200	1.100
53217	85	125	37	97500	275000	2,000	3,000	1.500
53218	90	135	42	112000	290000	1,900	2,600	2.100
53220	100	150	45	119000	325000	1,700	2,400	2.700

Note:

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533 Series: Single Direction with Spherical Housing Washer

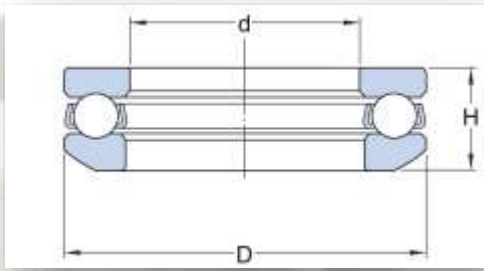


Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	
Designation	mm			N		Reference speed r/min		Limiting speed
	d	D	H	Dynamic C	Static C0		kg	
53306	30	60	25	35800	65500	3,800	5,300	0.330
53307	35	68	28	49400	96500	3,200	4,500	0.460
53308	40	78	31	61800	122000	2,800	4,000	0.670
53309	45	85	33	76100	153000	2,600	3,800	0.830
53310	50	95	37	81900	170000	2,400	3,400	1.200
53311	55	105	42	101000	224000	2,200	3,000	1.700
53312	60	110	42	101000	224000	2,000	3,000	1.700
53313	65	115	43	106000	240000	2,000	2,800	1.900
53314	70	125	48	135000	320000	1,800	2,600	2.500
53315	75	135	52	163000	390000	1,700	2,400	3.200
53316	80	140	52	159000	390000	1,600	2,200	3.200
53317	85	150	58	174000	405000	1,500	2,000	4.350
53318	90	155	59	182000	440000	1,400	2,000	4.700
53320	100	170	64	225000	570000	1,300	1,800	5.950

Note:

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534 Series: Single Direction with Spherical Housing Washer



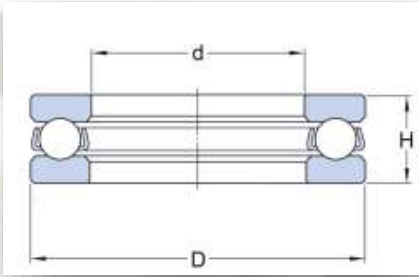
Principal Dimensions			Basic Load Ratings	Speed Ratings		Mass		
Designation	mm			N			Reference speed	Limiting speed
	d	D	H	Dynamic C	Static C0	r/min	kg	
53408	40	90	42	95600	183000	2,400	3,200	1.350
53410	50	110	50	159000	340000	1,900	2,600	2.300
53411	55	120	55	195000	400000	1,700	2,400	3.100
53412	60	130	58	199000	430000	1,600	2,200	3.800
53414	70	150	69	234000	550000	1,400	2,000	6.500
53415	75	160	75	251000	610000	1,300	1,800	8.100
53418	90	190	88	307000	815000	1,100	1,500	13.000
53420	100	210	98	371000	1060	950	1,300	18.000

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.

JVN BEARINGS FZE – Thrust Bearings

Inch Series: Single Row

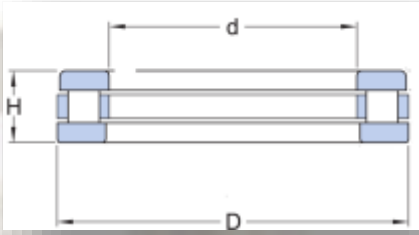


Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	
Designation	mm			Dynamic	Static	Reference speed	Limiting speed	kg
	d	D	H	C	C0	r/min		
O - 3	9.525	25.4	13.494	11800	15200	5,500	8,100	0.036
O - 4	12.7	32.544	15.875	18600	25100	4,300	6,500	0.077
O - 5	15.875	35.719	15.875	19400	28300	4,100	6,200	0.086
O - 6	19.05	38.894	15.875	21400	34500	4,000	6,000	0.095
O - 7	22.225	42.069	15.875	21900	37500	3,800	5,800	0.100
O - 8	25.4	45.244	15.875	22500	41000	3,700	5,500	0.110
O - 9	28.575	48.419	15.875	24100	47000	3,600	5,400	0.128
O - 10	31.75	53.181	18.256	27900	54500	3,200	4,800	0.164
O - 11	34.925	56.356	18.256	28600	58300	3,100	4,600	0.186
O - 12	38.1	59.531	18.256	29500	66300	3,000	4,500	0.200
O - 13	41.275	62.706	18.256	26700	68000	2,900	4,400	0.210
O - 14	44.45	68.262	19.05	32500	77500	2,700	4,100	0.260
O - 15	47.625	71.438	19.05	37500	89300	2,700	4,000	0.285
O - 16	50.8	75.406	19.05	38800	94300	2,600	3,900	0.300
O - 17	53.975	81.756	22.225	49500	118000	2,300	3,500	0.405
O - 18	57.15	84.931	22.225	54500	125000	2,300	3,400	0.45
O - 19	60.325	91.281	25.4	58000	145000	2,000	3,100	0.59
O - 20	63.5	94.456	25.4	59500	152000	2,000	3,000	0.61
O - 21	66.675	97.631	25.4	60500	160000	2,000	3,000	0.66
O - 22	69.85	102.394	25.4	71500	179000	1,900	2,900	0.7
O - 23	73.025	105.569	25.4	75500	199 000	1,900	2,800	0.73
O - 24	76.2	111.125	28.575	77000	209000	1,700	2,600	0.9
O - 26	82.55	122.238	31.75	97500	209000	1,600	2,400	1.3
O - 28	88.9	128.588	31.75	99300	266000	1,500	2,300	1.32
O - 30	95.25	134.938	31.75	98500	289000	1,500	2,200	1.36
O - 32	101.6	147.638	34.925	113000	310000	1,300	2,000	1.88
O - 36	114.3	166.688	44.45	157000	435000	1,100	1,700	3.18
O - 40	127.3	185.738	50.8	193000	545000	1,000	1,500	4.54
O - 44	139.7	204.788	55.562	248000	753000	910	1,300	5.9
O - 48	152.4	220.662	60.325	269000	805000	830	1,200	7.25

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.

811/812 Series: Thrust Cylindrical Roller Bearings

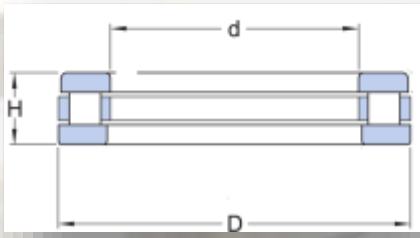


Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	
Designation	mm		Dynamic	Static	Reference speed	Limiting speed		
	d	D	H	C	C0	r/min	kg	
81106	30	47	11	28000	83000	2,600	6,700	0.060
81206	30	52	16	50000	132000	2,400	6,300	0.130
81107	35	52	12	30000	93000	2,200	6,000	0.080
81207	35	62	18	54000	156000	1,900	5,300	0.230
81108	40	60	13	42500	137000	1,900	5,300	0.120
81208	40	68	19	76500	220000	1,700	4,800	0.270
81109	45	65	14	45000	150000	1,700	4,800	0.140
81209	45	73	20	83000	255000	1,600	4,500	0.310
81110	50	70	14	42500	143000	1,500	4,300	0.160
81210	50	78	22	88000	285000	1,400	4,000	0.380
81111	55	78	16	52000	193000	1,400	4,000	0.230
81211	55	90	25	122000	390000	1,200	3,600	0.600
81112	60	85	17	73500	265000	1,200	3,600	0.280
81212	60	95	26	114000	335000	1,100	3,400	0.740
81113	65	90	18	76500	285000	1,100	3,400	0.330
81213	65	100	27	118000	390000	950	3,000	0.820
81114	70	95	18	71000	265000	1,000	3,200	0.360
81214	70	105	27	122000	440000	950	3,000	0.870
81115	75	100	19	75000	285000	950	3,000	0.430
81215	75	110	27	125000	440000	900	2,800	0.920
81116	80	105	19	76500	300000	900	2,800	0.460
81216	80	115	28	129000	455000	850	2,600	1.020
81117	85	110	19	76500	310000	850	2,600	0.480
81217	85	125	31	153000	550000	800	2,400	1.360
81118	90	120	22	104000	415000	800	2,400	0.720
81218	90	135	35	190000	670000	800	2,400	1.850
81120	100	135	25	146000	585000	750	2,200	1.070
81220	100	150	38	224000	815000	700	2,000	2.450
81122	110	145	25	160000	655000	700	2,000	1.120
81222	110	160	38	232000	865000	670	1,900	2.700
81124	120	155	25	160000	680000	670	1,900	1.250
81224	120	170	39	245000	950000	630	1,800	2.980

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.

811/812 Series: Thrust Cylindrical Roller Bearings

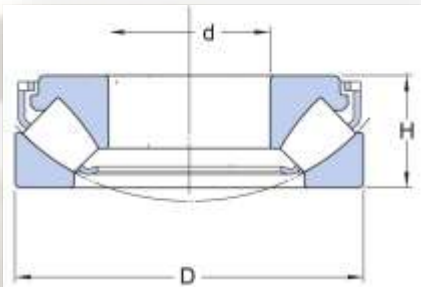


Principal Dimensions				Basic Load Ratings		Speed Ratings		Mass
Designation	mm			Dynamic	Static	Reference speed	Limiting speed	
	d	D	H	C	C0	r/min		kg
81126	130	170	30	186000	780000	600	1,700	1.720
81226	130	190	45	365000	1400000	560	1,600	4.370
81128	140	180	31	196000	865000	560	1,600	2.020
81228	140	200	46	375000	1460000	530	1,500	4.760
81130	150	190	31	204000	930000	530	1,500	2.150
81230	150	215	50	455000	1800000	500	1,400	6.040
81132	160	200	31	212000	980000	500	1,400	2.280
81232	160	225	51	465000	1900000	500	1,400	6.520
81134	170	215	34	265000	1220000	500	1,400	3.010
81234	170	240	55	520000	2080000	480	1,300	8.120
81136	180	225	34	275000	1290000	480	1,300	3.070
81236	180	250	56	520000	2160000	450	1,200	8.690
81138	190	240	37	315000	1500000	450	1,200	3.990
81238	190	270	62	655000	2650000	430	1,100	11.700
81140	200	250	37	325000	1600000	450	1,200	4.170
81240	200	280	62	695000	2900000	430	1,100	12.200
81144	220	270	37	355000	1830000	430	1,100	4.650
81244	220	300	63	735000	3200000	400	1,000	12.200
81148	240	300	45	465000	2360000	380	950	4.650
81248	240	340	78	980000	4250000	360	900	13.400
81152	260	320	45	500000	2650000	360	900	7.990
81252	260	360	79	1040000	4650000	340	850	25.100
81156	280	350	53	670000	3450000	340	850	12.000
81256	280	380	80	1060000	4900000	320	800	27.100
81160	300	380	62	800000	4000000	300	750	17.200
81260	300	420	95	1400000	6200000	280	700	42.500
81172	360	440	65	900000	4900000	240	630	21.400
81272	360	500	110	1960000	9150000	220	600	68.700
81176	380	460	65	880000	4900000	240	630	22.400
81276	380	520	112	2000000	9500000	200	560	73.300

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.

292 Series: Thrust Spherical Roller Bearings

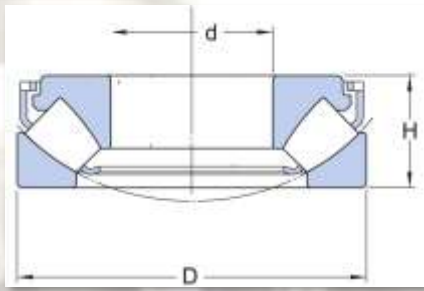


Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	
Designation	mm			Dynamic	Static	Reference speed		Limiting speed
	d	D	H	C	C0	r/min	kg	
29230	150	215	39	408	1600	1,800	2,800	4.300
29236	180	250	42	495	2040	1,600	2,600	5.800
29240	200	280	48	656	2650	1,400	2,200	9.300
29244	220	300	48	690	3000	1,300	2,200	10.000
29248	240	340	60	799	3450	1,100	1,800	16.500
29252	260	360	60	817	3650	1,100	1,700	18.500
29256	280	380	60	863	4000	1,000	1,700	19.500
29260	300	420	73	1070	4800	900	1,400	30.500
29264	320	440	73	1110	5100	850	1,400	33.000
29268	340	460	73	1130	5400	850	1,300	33.500
29272	360	500	85	1460	6800	750	1,200	52.000
29276	380	520	85	1580	7650	700	1,100	53.000
29280	400	540	85	1610	8000	700	1,100	55.500
29284	420	580	95	1990	9800	630	1,000	75.500
29288	440	600	95	2070	10400	630	1,000	78.000
29292	460	620	95	2070	10600	600	950	81.000
29296	480	650	103	2350	11800	560	900	98.000
292/500	500	670	103	2390	12500	560	900	100.000

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.

293 Series: Thrust Spherical Roller Bearings

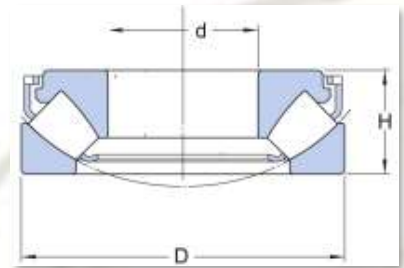


Principal Dimensions				Basic Load Ratings	Speed Ratings		Mass	
Designation	mm				N			Reference speed r/min
	d	D	H	Dynamic C	Static C0	kg		
29317	85	150	39	380	1060	2,400	4,000	2.750
29318	90	155	39	400	1080	2,400	4,000	2.850
29320	100	170	42	465	1290	2,200	3,600	3.650
29322	110	190	48	610	1730	1,900	3,200	5.300
29324	120	210	54	765	2120	1,700	2,800	7.350
29326	130	225	58	865	2500	1,600	2,600	9.000
29328	140	240	60	980	2850	1,500	2,600	10.500
29330	150	250	60	1000	2850	1,500	2,400	11.000
29332	160	270	67	1180	3450	1,300	2,200	14.500
29334	170	280	67	1200	3550	1,300	2,200	15.000
29336	180	300	73	1430	4300	1,200	2,000	19.500
29338	190	320	78	1630	4750	1,100	1,900	23.500
29340	200	340	85	1860	5500	1,000	1,700	28.500
29344	220	360	85	2000	6300	1,000	1,700	31.000
29348	240	380	85	2040	6550	1,000	1,600	35.500
29352	260	420	95	2550	8300	850	1,400	49.000
29356	280	440	95	2550	8650	850	1,400	53.000
29360	300	480	109	3100	10600	750	1,200	75.000

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.

294 Series: Thrust Spherical Roller Bearings



Principal Dimensions				Basic Load Ratings		Speed Ratings		Mass
Designation	mm			Dynamic	Static	Reference speed	Limiting speed	
	d	D	H	C	C0	r/min		kg
29412	60	130	42	390	915	2,800	5,000	2.600
29413	65	140	45	455	1080	2,600	4,800	3.200
29414	70	150	48	520	1250	2,400	4,300	3.900
29415	75	160	51	600	1430	2,400	4,000	4.700
29416	80	170	54	670	1630	2,200	3,800	5.600
29417	85	180	58	735	1800	2,000	3,600	6.800
29418	90	190	60	815	2000	1,900	3,400	7.800
29420	100	210	67	980	2500	1,700	3,000	10.500
29422	110	230	73	1180	3000	1,600	2,800	13.500
29424	120	250	78	1370	3450	1,500	2,600	17.500
29426	130	270	85	1560	4050	1,300	2,400	22.000
29428	140	280	85	1630	4300	1,300	2,400	23.000
29430	150	300	90	1860	5100	1,200	2,200	28.000
29432	160	320	95	2080	5600	1,100	2,000	32.000
29434	170	340	103	2360	6550	1,100	1,900	44.500
29436	180	360	109	2600	7350	1,000	1,800	52.500
29438	190	380	115	2850	8000	950	1,700	60.500
29440	200	400	122	3200	9000	850	1,600	72.000
29444	220	420	122	3350	9650	850	1,500	75.000
29448	240	440	122	3400	10200	850	1,500	80.000
29452	260	480	132	4050	12900	750	1,300	105.000
29456	280	520	145	4900	15300	670	1,200	135.000
29460	300	540	145	5000	16600	670	1,200	140.000
29464	320	580	155	5700	19000	600	1,100	175.000
29468	340	620	170	6700	22400	560	1,000	220.000
29472	360	640	170	6200	21200	560	950	230.000
29476	380	670	175	6800	24000	530	900	260.000
29480	400	710	185	7650	26500	480	850	310.000
29484	420	730	185	7800	27500	480	850	325.000
29488	440	780	206	9000	32000	430	750	410.000
29492	460	800	206	9300	33500	430	750	425.000
29496	480	850	224	9550	39000	340	670	550.000
294/500	500	870	224	9370	40000	340	670	560.000
294/530	530	920	236	10500	44000	320	630	650.000
294/560	560	980	250	12000	51000	300	560	810.000
294/600	600	1030	258	13100	56000	280	530	845.000

Note:

For Reference Purpose Only. Mentioned Speed Ratings are with Oil Lubrication. For Grease Lubrication, please use 75% of the indicated values.