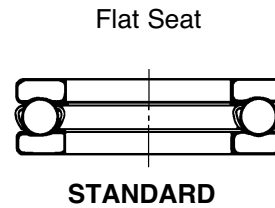


# BEARINGS

## 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  $90^\circ$ . 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  $120^\circ\text{C}$ .

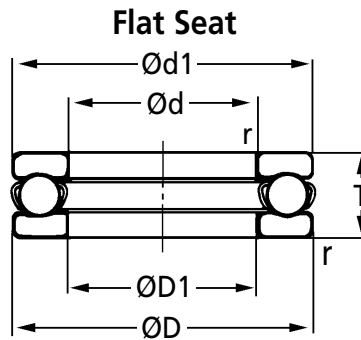
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# BEARINGS

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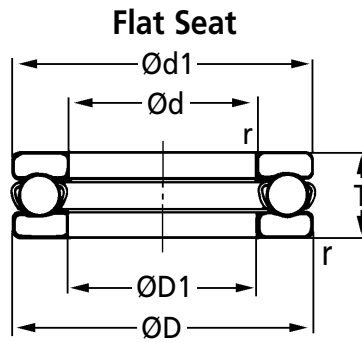
Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

**511 512**  
**513 514**

# BEARINGS

## Single Direction Thrust Ball Bearings

50-80mm Bores



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

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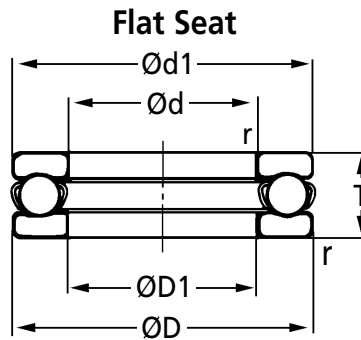
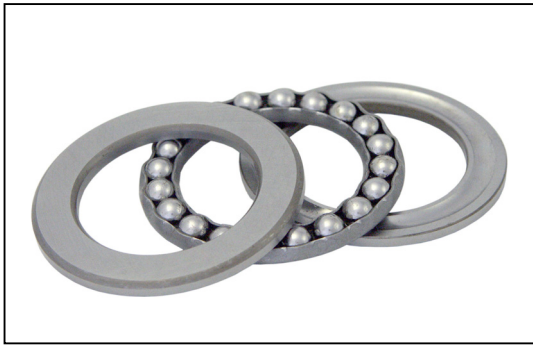
Product information updated 1st April 2011 and subject to change. Please contact Sales for the latest prices and availability.

# 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.

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| 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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