



Setscrew VSC Ball Bearings

| Recommended Torque | | | | | | | | | | | | | |
|--------------------|----------------------|------------------------------|------------|-------------------------------------|----------------|---------------|------------------------|----------------|-----------------------------|----------------------------------------------|------------|----------------------------------------------|------------|
| Setscrews | | | | | D-LOK | | | Mounting Bolts | | | | | |
| Setscrew Size | Key Hex Across Flats | ◆ Recommended Torque | | | Cap Screw Size | Recom. Torque | EZ-KLEEN Recom. Torque | Metal Housings | | EZ-KLEEN Housed Bearings | | | |
| | | Standard Ball Bearing Insert | | Corrosion Resistant Stainless Steel | | | | Bolt Size | Recom. Dry Torque (Grade 2) | 2-Bolt PB, 2 & 4 Bolt Fig. and Fig. Brackets | | Tapped Base PB | |
| | | Min | Max | | | | | | | Bolt Size | Torque ① | Bolt Size | Torque ② |
| (in.) | (in.) | (in.-lbs.) | (in.-lbs.) | (in.-lbs.) | (in.) | (in.Olbs.) | (in.-lbs.) | (in.) | (in.Olbs.) | (in.) | (in.-lbs.) | (in.) | (in.-lbs.) |
| #10 | 3/32 | 28 | 33 | 25 | #8-32 | 58 | 46 | 3/8-16 | 240 | 3/8-16 | 225 | 3/8-16 | 175 |
| 1/4 | 1/8 | 66 | 80 | 60 | #10-32 | 90 | 72 | 7/16-14 | 384 | 7/16-14 | 350 | 7/16-14 | 350 |
| 5/16 | 5/32 | 126 | 156 | 117 | 1/4-28 | 180 | 144 | 1/2-13 | 600 | 1/2-13 | 500 | 1/2-13 | 400 |
| 3/8 | 3/16 | 228 | 275 | 206 | 5/16-24 | 400 | 320 | 5/8-11 | 1200 | 9/16-12 | 650 | | |
| 7/16 | 7/32 | 342 | 428 | 321 | 3/8-24 | 750 | 600 | 3/4-10 | 1950 | 5/8-11 | 1000 | | |
| | | | | | | | | 7/8-9 | 2890 | | | | |
| (mm) | (mm) | (N-m) | (N-m) | (N-m) | (mm) | (N-m) | (N-m) | (mm) | (N-m) | (mm) | (N-m) | | |
| M5 | 2.5 | 3.2 | 3.7 | 2.8 | M4 | 585 | 4.68 | M10 | 29 | M8 | 15 | ①Torque for Austenitic (18-8) Stainless | |
| M6 | 3 | 6.2 | 7.7 | 5.8 | M5 | 10.75 | 8.6 | M12 | 50 | M10 | 25 | ②Max. torque values published. Do not exceed | |
| M8 | 4 | 14.2 | 17.8 | 13.4 | M6 | 20.5 | 16.4 | M16 | 124 | M12 | 50 | | |
| M10 | 5 | 26 | 31 | 23 | M8 | 45 | 36 | M20 | 238 | M14 | 75 | | |
| M12 | 6 | 46 | 57 | 43 | | | | M22 | 322 | M18 | 125 | | |

Lubrication

High Speed Operation - In the higher speed ranges, too much grease will cause over-heating. The amount of grease that the bearing will take for a particular high speed application can only be determined by experience. If excess grease in the bearing causes overheating, it will be necessary to remove grease fitting to permit excess grease to escape. The bearing has been greased at the factory and is ready to run. When establishing a relubrication schedule, note that a small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals.

◆ **Note:** Dodge does not recommend the use of oils or locking agents on setscrew threads. However, if utilized, the minimum installation torque values should be followed.

Lubrication Guide

Use a No. 2 Lithium complex base grease or equivalent*

| Hours Run per Day | Suggested Lubrication Period in Weeks | | | | | | | |
|-------------------|---------------------------------------|----------------|----------------|-----------------|------------------|------------------|------------------|------------------|
| | 1 to 250 RPM | 251 to 500 RPM | 501 to 750 RPM | 751 to 1000 RPM | 1001 to 1500 RPM | 1501 to 2000 RPM | 2001 to 2500 RPM | 2501 to 3000 RPM |
| 8 | 12 | 12 | 10 | 7 | 5 | 4 | 3 | 2 |
| 16 | 12 | 7 | 5 | 4 | 2 | 2 | 1 | 1 |
| 24 | 10 | 5 | 3 | 2 | 1 | 1 | 1 | 1 |

* For EZ-KLEEN series bearings, use an aluminum complex base grease.

Lubrication recommendations are intended for standard products applied in general operating conditions. For modified products, high temperature applications, and other anomalous applications contact product engineering at 864-284-5700.

Note: Bearing analysis program "BEST" is available on www.ptwizard.com

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SELECTION



Setscrew VSC Ball Bearings Inch

Table 2 (continued): Easy Selection Table for Ball Bearing Mounted Units

| Ring Size | Shaft Size | | Dynamic Capacity C, Lbs. | Static Capacity Co, Lbs. | L ₁₀ LIFE HOURS | Allowable Equivalent Radial Load Rating (Lbs.) At Various Rpm* | | | | | | | | | |
|-----------|------------------------------------|-------------------|--------------------------|--------------------------|----------------------------|----------------------------------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|--|
| | SC, VSC, SL, CC | SCM | | | | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 | 6500 | 7500 | |
| 203 | 1/2 5/8 | | 2158 | 1079 | 20000 | 150 | 140 | 135 | 130 | 125 | 120 | 115 | 110 | 105 | |
| | | | | | 30000 | 130 | 125 | 115 | 110 | 105 | 105 | 100 | 95 | 90 | |
| | | | | | 40000 | 120 | 110 | 105 | 100 | 95 | 95 | 90 | 85 | 80 | |
| | | | | | 60000 | 105 | 95 | 95 | 90 | 85 | 80 | 80 | 75 | 70 | |
| | | | | | 100000 | 85 | 80 | 80 | 75 | 70 | 70 | 65 | 65 | 60 | |
| 204 | 1/2 5/8 3/4 13/16 | | 2899 | 1482 | 20000 | 200 | 190 | 180 | 170 | 165 | 160 | 155 | 145 | 140 | |
| | | | | | 30000 | 175 | 165 | 155 | 150 | 145 | 140 | 135 | 130 | 120 | |
| | | | | | 40000 | 160 | 150 | 145 | 135 | 130 | 125 | 125 | 115 | 110 | |
| | | | | | 60000 | 140 | 130 | 125 | 120 | 115 | 110 | 105 | 100 | 95 | |
| | | | | | 100000 | 115 | 110 | 105 | 100 | 90 | 95 | 90 | 85 | 80 | |
| 205 | 7/8 15/16 1 | | 3146 | 1769 | 20000 | 220 | 205 | 195 | 185 | 180 | 175 | 170 | 160 | 150 | |
| | | | | | 30000 | 190 | 180 | 170 | 165 | 155 | 150 | 145 | 140 | 130 | |
| | | | | | 40000 | 175 | 165 | 155 | 150 | 140 | 135 | 135 | 125 | 120 | |
| | | | | | 60000 | 150 | 140 | 135 | 130 | 125 | 120 | 115 | 110 | 105 | |
| | | | | | 100000 | 125 | 120 | 115 | 110 | 105 | 100 | 100 | 95 | 90 | |
| 206 | 1-1/16 1-1/8 1-3/16 1-1/4 | 1 | 4368 | 2538 | 20000 | 305 | 285 | 270 | 260 | 250 | 240 | 235 | 200 | | |
| | | | | | 30000 | 265 | 250 | 235 | 225 | 220 | 210 | 205 | 195 | | |
| | | | | | 40000 | 240 | 225 | 215 | 205 | 200 | 190 | 185 | 175 | | |
| | | | | | 60000 | 210 | 200 | 190 | 180 | 175 | 165 | 160 | 155 | | |
| | | | | | 100000 | 175 | 165 | 160 | 150 | 145 | 140 | 135 | 130 | | |
| 207 | 1-1/4 1-5/16 1-3/8 1-7/16 | 1-3/16 1-1/4 | 5759 | 3461 | 20000 | 400 | 375 | 355 | 340 | 330 | 315 | 305 | | | |
| | | | | | 30000 | 350 | 330 | 310 | 300 | 285 | 275 | 270 | | | |
| | | | | | 40000 | 315 | 300 | 285 | 270 | 260 | 250 | 245 | | | |
| | | | | | 60000 | 275 | 260 | 250 | 235 | 230 | 220 | 225 | | | |
| | | | | | 100000 | 235 | 220 | 210 | 200 | 190 | 185 | 180 | | | |
| 208 | 1-1/2 1-5/8 | 1-7/16 1-1/2** | 7332 | 4475 | 20000 | 510 | 480 | 455 | 435 | 420 | 405 | | | | |
| | | | | | 30000 | 445 | 420 | 400 | 380 | 365 | 355 | | | | |
| | | | | | 40000 | 405 | 380 | 360 | 345 | 330 | 320 | | | | |
| | | | | | 60000 | 355 | 330 | 315 | 300 | 290 | 280 | | | | |
| | | | | | 100000 | 300 | 280 | 265 | 255 | 245 | 235 | | | | |
| 209 | 1-5/8 1-11/16 1-3/4 | 1-1/2 | 7891 | 4906 | 20000 | 550 | 515 | 490 | 470 | 450 | 435 | | | | |
| | | | | | 30000 | 480 | 450 | 430 | 410 | 395 | 380 | | | | |
| | | | | | 40000 | 435 | 410 | 390 | 370 | 360 | 345 | | | | |
| | | | | | 60000 | 380 | 360 | 340 | 325 | 310 | 300 | | | | |
| | | | | | 100000 | 320 | 300 | 285 | 275 | 265 | 255 | | | | |
| 210 | 1-15/16 2 | 1-11/16 1-3/4 | 7891 | 5213 | 20000 | 550 | 515 | 490 | 470 | 450 | | | | | |
| | | | | | 30000 | 480 | 450 | 430 | 410 | 395 | | | | | |
| | | | | | 40000 | 435 | 410 | 390 | 370 | 360 | | | | | |
| | | | | | 60000 | 380 | 360 | 340 | 325 | 310 | | | | | |
| | | | | | 100000 | 320 | 300 | 285 | 275 | 265 | | | | | |
| 211 | 2 2-3/16 2-1/4 | 1-15/16 2 | 9755 | 6588 | 20000 | 676 | 636 | 604 | 578 | | | | | | |
| | | | | | 30000 | 591 | 556 | 528 | 505 | | | | | | |
| | | | | | 40000 | 537 | 505 | 480 | 459 | | | | | | |
| | | | | | 60000 | 469 | 441 | 419 | 401 | | | | | | |
| | | | | | 100000 | 395 | 372 | 353 | 338 | | | | | | |
| 212 | 2-1/4 2-7/16 | 2-3/16 2-1/4 | 11791 | 8100 | 20000 | 820 | 770 | 730 | | | | | | | |
| | | | | | 30000 | 715 | 675 | 640 | | | | | | | |
| | | | | | 40000 | 650 | 610 | 580 | | | | | | | |
| | | | | | 60000 | 570 | 535 | 510 | | | | | | | |
| | | | | | 100000 | 480 | 450 | 430 | | | | | | | |
| 214 | 2 11/16 | 2-7/16 2-1/2 | 13995 | 9838 | 20000 | 970 | 915 | | | | | | | | |
| | | | | | 30000 | 850 | 800 | | | | | | | | |
| | | | | | 40000 | 770 | 725 | | | | | | | | |
| | | | | | 60000 | 675 | 635 | | | | | | | | |
| | | | | | 100000 | 570 | 535 | | | | | | | | |
| 215 | 2-15/16 | 2-11/16 | 14872 | 11108 | 20000 | 1035 | 975 | | | | | | | | |
| | | | | | 30000 | 905 | 850 | | | | | | | | |
| | | | | | 40000 | 820 | 770 | | | | | | | | |
| | | | | | 60000 | 715 | 675 | | | | | | | | |
| | | | | | 100000 | 605 | 570 | | | | | | | | |
| 216 | | 2-15/16 3 | 17407 | 13102 | 20000 | 1210 | | | | | | | | | |
| | | | | | 30000 | 1055 | | | | | | | | | |
| | | | | | 40000 | 960 | | | | | | | | | |
| | | | | | 60000 | 840 | | | | | | | | | |
| | | | | | 100000 | 705 | | | | | | | | | |
| 218 | | 3-7/16 3-1/2 | 21451 | 16641 | 20000 | | | | | | | | | | |
| | | | | | 30000 | | | | | | | | | | |
| | | | | | 40000 | | | | | | | | | | |
| | | | | | 60000 | | | | | | | | | | |
| | | | | | 100000 | | | | | | | | | | |

* Slight interference fit required when operating on the right of the heavy line or in the shaded area ** Piloted flange only

Note: Bearing analysis program "BEST" is available on www.ptwizard.com

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SELECTION



Setscrew VSC Ball Bearings Inch

Table 2 (continued): Easy Selection Table for Ball Bearing Mounted Units

| Ring Size | Shaft Size | | Dynamic Capacity C, N. | Static Capacity Co, N. | L ₁₀ Life Hours | Allowable Equivalent Radial Load Rating (N.) At Various Rpm* | | | | | | | | | |
|-----------|----------------|------|------------------------|------------------------|----------------------------|--------------------------------------------------------------|------|------|------|------|------|------|------|------|-----|
| | SC, VSC, SL, C | SCM | | | | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 | 6500 | 7500 | |
| 203 | 17mm | | 9600 | 4800 | 20000 | 667 | 623 | 600 | 578 | 556 | 534 | 512 | 489 | 467 | |
| | | | | | 30000 | 578 | 556 | 512 | 489 | 467 | 467 | 445 | 423 | 400 | |
| | | | | | 40000 | 534 | 489 | 467 | 445 | 423 | 400 | 378 | 356 | 334 | 311 |
| | | | | | 60000 | 467 | 423 | 423 | 400 | 378 | 356 | 358 | 334 | 311 | |
| | | | | | 100000 | 378 | 356 | 356 | 334 | 311 | 311 | 289 | 289 | 267 | |
| 204 | 20mm | | 12895 | 6592 | 20000 | 890 | 845 | 801 | 756 | 734 | 712 | 689 | 645 | 623 | |
| | | | | | 30000 | 778 | 724 | 689 | 667 | 645 | 623 | 600 | 578 | 534 | |
| | | | | | 40000 | 712 | 667 | 645 | 600 | 578 | 556 | 556 | 512 | 489 | |
| | | | | | 60000 | 623 | 578 | 556 | 534 | 512 | 489 | 467 | 445 | 423 | |
| | | | | | 100000 | 512 | 489 | 467 | 445 | 400 | 423 | 400 | 378 | 356 | |
| 205 | 25mm | | 13995 | 7869 | 20000 | 979 | 912 | 867 | 823 | 801 | 778 | 756 | 712 | 667 | |
| | | | | | 30000 | 845 | 801 | 756 | 734 | 689 | 667 | 645 | 623 | 578 | |
| | | | | | 40000 | 778 | 734 | 689 | 667 | 623 | 600 | 600 | 556 | 534 | |
| | | | | | 60000 | 667 | 623 | 600 | 578 | 556 | 534 | 512 | 489 | 467 | |
| | | | | | 100000 | 556 | 534 | 512 | 489 | 467 | 445 | 445 | 423 | 400 | |
| 206 | 30mm | 25mm | 18993 | 11,290 | 20000 | 1357 | 1268 | 1201 | 1156 | 1112 | 1068 | 1045 | 979 | | |
| | | | | | 30000 | 1179 | 1112 | 1045 | 1001 | 979 | 934 | 912 | 867 | | |
| | | | | | 40000 | 1068 | 1001 | 958 | 912 | 890 | 845 | 823 | 778 | | |
| | | | | | 60000 | 934 | 890 | 845 | 801 | 778 | 734 | 712 | 689 | | |
| | | | | | 100000 | 778 | 734 | 712 | 667 | 645 | 623 | 600 | 578 | | |
| 207 | 35mm | 30mm | 25628 | 15,395 | 20000 | 1779 | 1668 | 1579 | 1512 | 1468 | 1401 | 1357 | | | |
| | | | | | 30000 | 1557 | 1468 | 1379 | 1134 | 1268 | 1223 | 1201 | | | |
| | | | | | 40000 | 1401 | 1334 | 1268 | 1201 | 1156 | 1112 | 1090 | | | |
| | | | | | 60000 | 1223 | 1156 | 1112 | 1045 | 1023 | 979 | 956 | | | |
| | | | | | 100000 | 1045 | 979 | 934 | 890 | 845 | 823 | 801 | | | |
| 208 | 40mm | 35mm | 32627 | 19,906 | 20000 | 2268 | 2135 | 2024 | 1935 | 1868 | 1801 | | | | |
| | | | | | 30000 | 1979 | 1868 | 1779 | 1690 | 1624 | 1579 | | | | |
| | | | | | 40000 | 1801 | 1690 | 1601 | 1535 | 1468 | 1423 | | | | |
| | | | | | 60000 | 1576 | 1468 | 1401 | 1334 | 1290 | 1245 | | | | |
| | | | | | 100000 | 1334 | 1245 | 1179 | 1134 | 1090 | 1045 | | | | |
| 209 | 45mm | 40mm | 35115 | 21,823 | 20000 | 2446 | 2291 | 2180 | 2091 | 2002 | 1935 | | | | |
| | | | | | 30000 | 2135 | 2002 | 1913 | 1824 | 1757 | 1690 | | | | |
| | | | | | 40000 | 1935 | 1824 | 1735 | 1646 | 1601 | 1535 | | | | |
| | | | | | 60000 | 1690 | 1601 | 1512 | 1446 | 1379 | 1334 | | | | |
| | | | | | 100000 | 1423 | 1334 | 1268 | 1223 | 1179 | 1134 | | | | |
| 210 | 50mm | 45mm | 35115 | 23,189 | 20000 | 2446 | 2291 | 2180 | 2091 | 2002 | | | | | |
| | | | | | 30000 | 2135 | 2002 | 1913 | 1824 | 1757 | | | | | |
| | | | | | 40000 | 1935 | 1824 | 1735 | 1646 | 1601 | | | | | |
| | | | | | 60000 | 1690 | 1601 | 1512 | 1446 | 1379 | | | | | |
| | | | | | 100000 | 1423 | 1334 | 1268 | 1223 | 1179 | | | | | |
| 211 | 55mm | 50mm | 43394 | 29,305 | 20000 | 3007 | 2830 | 2688 | 2571 | | | | | | |
| | | | | | 30000 | 2627 | 2472 | 2348 | 2246 | | | | | | |
| | | | | | 40000 | 2387 | 2246 | 2134 | 2041 | | | | | | |
| | | | | | 60000 | 2085 | 1962 | 1864 | 1783 | | | | | | |
| | | | | | 100000 | 1759 | 1655 | 1572 | 1504 | | | | | | |
| 212 | 60mm | 55mm | 52470 | 36,031 | 20000 | 3647 | 3425 | 3247 | | | | | | | |
| | | | | | 30000 | 3180 | 3002 | 2847 | | | | | | | |
| | | | | | 40000 | 2891 | 2713 | 2580 | | | | | | | |
| | | | | | 60000 | 2535 | 2380 | 2268 | | | | | | | |
| | | | | | 100000 | 2135 | 2002 | 1913 | | | | | | | |
| 214 | 70mm | 65mm | 62278 | 43,762 | 20000 | 4315 | 4070 | | | | | | | | |
| | | | | | 30000 | 3781 | 3558 | | | | | | | | |
| | | | | | 40000 | 3425 | 3225 | | | | | | | | |
| | | | | | 60000 | 3002 | 2824 | | | | | | | | |
| | | | | | 100000 | 2535 | 2380 | | | | | | | | |
| 215 | 75mm | 70mm | 66180 | 49,411 | 20000 | 4604 | 4337 | | | | | | | | |
| | | | | | 30000 | 4025 | 3781 | | | | | | | | |
| | | | | | 40000 | 3647 | 3425 | | | | | | | | |
| | | | | | 60000 | 3180 | 3002 | | | | | | | | |
| | | | | | 100000 | 2691 | 2535 | | | | | | | | |
| 216 | | 75mm | 77426 | 58,281 | 20000 | 5382 | | | | | | | | | |
| | | | | | 30000 | 4693 | | | | | | | | | |
| | | | | | 40000 | 4270 | | | | | | | | | |
| | | | | | 60000 | 3736 | | | | | | | | | |
| | | | | | 100000 | 3136 | | | | | | | | | |
| 218 | | 85mm | 95371 | 74,023 | 20000 | | | | | | | | | | |
| | | | | | 30000 | | | | | | | | | | |
| | | | | | 40000 | | | | | | | | | | |
| | | | | | 60000 | | | | | | | | | | |
| | | | | | 100000 | | | | | | | | | | |

* Slight interference fit required when operating on the right of the heavy line or in the shaded area

Note: Bearing analysis program "BEST" is available on www.ptwizard.com

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