

BMV Series Hydraulic Motors

BMV series motor adapt the advanced Geroler gear set designed with disc distribution flow and high pressure. The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

Characteristic features:

- * Advanced manufacturing devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
- * The output shaft adapts in tapered roller bearings that permit high axial and radial forces. The case can offer capacities of high pressure and high torque in the wide of applications.
- * Advanced design in disc distribution flow, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.

Main Specifications

| Type | | BMV 315 | BMV 400 | BMV 500 | BMV 630 | BMV 800 | BMV 1000 |
|--|-------|---------|---------|---------|---------|---------|----------|
| Geometric displacement (cm ³ /rev.) | | 333 | 419 | 518 | 666 | 801 | 990 |
| Max. speed (rpm) | cont. | 510 | 500 | 400 | 320 | 250 | 200 |
| | int. | 630 | 600 | 480 | 380 | 300 | 240 |
| Max. torque (N•m) | cont. | 920 | 1180 | 1460 | 1660 | 1880 | 2015 |
| | int. | 1110 | 1410 | 1760 | 1940 | 2110 | 2280 |
| | peak | 1290 | 1640 | 2050 | 2210 | 2470 | 2400 |
| Max. output (kW) | cont. | 38.0 | 47.0 | 47.0 | 40.0 | 33.0 | 28.6 |
| | int. | 46.0 | 56.0 | 56.0 | 56.0 | 44.0 | 40.0 |
| Max. pressure drop (MPa) | cont. | 20 | 20 | 20 | 18 | 16 | 14 |
| | int. | 24 | 24 | 24 | 21 | 18 | 16 |
| | peak | 28 | 28 | 28 | 24 | 21 | 18 |
| Max. flow (L/min) | cont. | 160 | 200 | 200 | 200 | 200 | 200 |
| | int. | 200 | 240 | 240 | 240 | 240 | 240 |
| Weight (kg) | | 31.8 | 32.6 | 33.5 | 34.9 | 36.5 | 38.6 |

* Continuous pressure: Max. value of operating motor continuously.

* Intermittent pressure: Max. value of operating motor in 6 seconds per minute.

* Peak pressure: Max. value of operating motor in 0.6 second per minute.



Performance Data

BMV 315 [333cm³/rev.]

| Pressure (MPa) | | Max.cont. | | Max.int. | | |
|----------------|---|-----------|----|----------|----|----|
| 3.5 | 7 | 10 | 14 | 18 | 20 | 24 |

| Flow (L/min) | Pressure (MPa) | | Max.cont. | | Max.int. | | |
|---------------|----------------|------------|------------|------------|------------|------------|------------|
| | 3.5 | 7 | 10 | 14 | 18 | 20 | 24 |
| 10 | 140 | 294 | 440 | 610 | 742 | 845 | 1000 |
| | 26 | 24 | 23 | 22 | 20 | 17 | 14 |
| 20 | 153 | 314 | 466 | 636 | 787 | 895 | 1070 |
| | 55 | 54 | 53 | 52 | 51 | 48 | 44 |
| 50 | 149 | 312 | 465 | 654 | 815 | 935 | 1112 |
| | 145 | 144 | 142 | 140 | 137 | 133 | 127 |
| 75 | 143 | 304 | 458 | 642 | 816 | 940 | 1119 |
| | 220 | 218 | 215 | 211 | 207 | 202 | 195 |
| 100 | 136 | 297 | 452 | 636 | 810 | 936 | 1108 |
| | 294 | 292 | 290 | 287 | 283 | 278 | 270 |
| 125 | 123 | 286 | 442 | 626 | 799 | 921 | 1093 |
| | 368 | 366 | 364 | 361 | 357 | 352 | 345 |
| 150 | 114 | 275 | 435 | 615 | 788 | 906 | 1078 |
| | 445 | 443 | 441 | 437 | 430 | 422 | 410 |
| Max.cont. 160 | 107 | 268 | 430 | 608 | 780 | 895 | 1070 |
| | 475 | 473 | 470 | 466 | 460 | 452 | 439 |
| Max.int. 200 | 82 | 249 | 412 | 593 | 758 | 871 | 1047 |
| | 596 | 594 | 590 | 584 | 576 | 565 | 544 |

BMV 400 [419cm³/rev.]

| Pressure (MPa) | | Max.cont. | | Max.int. | | |
|----------------|---|-----------|----|----------|----|----|
| 3.5 | 7 | 10 | 14 | 18 | 20 | 24 |

| Flow (L/min) | Pressure (MPa) | | Max.cont. | | Max.int. | | |
|---------------|----------------|------------|------------|------------|------------|------------|------------|
| | 3.5 | 7 | 10 | 14 | 18 | 20 | 24 |
| 10 | 183 | 385 | 568 | 776 | 968 | 1101 | 1292 |
| | 20 | 20 | 19 | 18 | 17 | 16 | 14 |
| 20 | 196 | 398 | 590 | 815 | 1010 | 1152 | 1346 |
| | 44 | 44 | 43 | 42 | 40 | 39 | 37 |
| 50 | 200 | 402 | 603 | 842 | 1040 | 1186 | 1430 |
| | 114 | 113 | 113 | 112 | 110 | 108 | 103 |
| 75 | 195 | 394 | 596 | 838 | 1043 | 1188 | 1432 |
| | 175 | 173 | 170 | 166 | 163 | 157 | 152 |
| 100 | 172 | 385 | 593 | 827 | 1036 | 1184 | 1425 |
| | 236 | 235 | 233 | 231 | 227 | 223 | 215 |
| 125 | 167 | 374 | 583 | 816 | 1021 | 1177 | 1413 |
| | 296 | 294 | 291 | 288 | 282 | 275 | 268 |
| 150 | 158 | 361 | 559 | 801 | 1008 | 1165 | 1390 |
| | 355 | 354 | 352 | 349 | 344 | 335 | 324 |
| 175 | 143 | 346 | 553 | 784 | 989 | 1145 | 1377 |
| | 416 | 414 | 411 | 407 | 403 | 396 | 388 |
| Max.cont. 200 | 118 | 331 | 536 | 770 | 969 | 1128 | 1356 |
| | 475 | 473 | 469 | 463 | 455 | 448 | 439 |
| Max.int. 240 | 82 | 301 | 506 | 740 | 943 | 1104 | 1332 |
| | 571 | 569 | 565 | 548 | 539 | 530 | 520 |

BMV 500 [518cm³/rev.]

| Pressure (MPa) | | Max.cont. | | Max.int. | | |
|----------------|---|-----------|----|----------|----|----|
| 3.5 | 7 | 10 | 14 | 18 | 20 | 24 |

| Flow (L/min) | Pressure (MPa) | | Max.cont. | | Max.int. | | |
|---------------|----------------|------------|------------|------------|------------|------------|------------|
| | 3.5 | 7 | 10 | 14 | 18 | 20 | 24 |
| 10 | 242 | 468 | 696 | 959 | 1190 | 1353 | 1607 |
| | 17 | 17 | 16 | 16 | 15 | 13 | 11 |
| 20 | 245 | 501 | 738 | 1003 | 1232 | 1394 | 1658 |
| | 36 | 35 | 35 | 34 | 33 | 32 | 29 |
| 50 | 240 | 500 | 758 | 1025 | 1270 | 1449 | 1743 |
| | 93 | 92 | 91 | 90 | 88 | 85 | 80 |
| 75 | 233 | 498 | 752 | 1030 | 1288 | 1475 | 1766 |
| | 140 | 139 | 137 | 135 | 132 | 127 | 120 |
| 100 | 228 | 491 | 748 | 1026 | 1289 | 1472 | 1760 |
| | 189 | 187 | 185 | 182 | 178 | 173 | 166 |
| 125 | 220 | 483 | 742 | 1014 | 1280 | 1460 | 1745 |
| | 237 | 236 | 234 | 231 | 227 | 223 | 216 |
| 150 | 201 | 465 | 723 | 1008 | 1250 | 1429 | 1736 |
| | 287 | 286 | 284 | 281 | 276 | 270 | 260 |
| 175 | 182 | 446 | 711 | 997 | 1238 | 1406 | 1715 |
| | 335 | 334 | 332 | 329 | 325 | 320 | 310 |
| Max.cont. 200 | 161 | 423 | 676 | 974 | 1218 | 1385 | 1697 |
| | 384 | 383 | 381 | 378 | 374 | 366 | 354 |
| Max.int. 240 | 120 | 378 | 622 | 921 | 1172 | 1340 | 1650 |
| | 461 | 459 | 457 | 454 | 450 | 444 | 432 |

BMV 630 [666cm³/rev.]

| Pressure (MPa) | | Max.cont. | | Max.int. | | |
|----------------|---|-----------|----|----------|----|----|
| 3.5 | 6 | 9 | 12 | 15 | 18 | 21 |

| Flow (L/min) | Pressure (MPa) | | Max.cont. | | Max.int. | | |
|---------------|----------------|------------|------------|------------|------------|------------|------------|
| | 3.5 | 6 | 9 | 12 | 15 | 18 | 21 |
| 10 | 280 | 522 | 812 | 1100 | 1268 | 1549 | 1784 |
| | 14 | 13 | 13 | 12 | 12 | 11 | 10 |
| 20 | 288 | 552 | 839 | 1101 | 1315 | 1607 | 1864 |
| | 28 | 28 | 27 | 27 | 26 | 24 | 22 |
| 50 | 289 | 555 | 868 | 1137 | 1364 | 1682 | 1956 |
| | 72 | 72 | 71 | 69 | 68 | 66 | 62 |
| 75 | 270 | 548 | 863 | 1120 | 1352 | 1680 | 1964 |
| | 109 | 108 | 106 | 104 | 102 | 99 | 94 |
| 100 | 264 | 538 | 856 | 1093 | 1350 | 1674 | 1965 |
| | 146 | 145 | 143 | 141 | 138 | 135 | 130 |
| 125 | 251 | 516 | 837 | 1071 | 1336 | 1659 | 1950 |
| | 184 | 183 | 181 | 179 | 177 | 173 | 168 |
| 150 | 240 | 495 | 817 | 1063 | 1330 | 1650 | 1928 |
| | 221 | 220 | 219 | 217 | 215 | 212 | 205 |
| 175 | 210 | 485 | 796 | 1052 | 1300 | 1636 | 1908 |
| | 259 | 258 | 257 | 254 | 250 | 246 | 241 |
| Max.cont. 200 | 182 | 469 | 751 | 1018 | 1280 | 1611 | 1883 |
| | 297 | 297 | 295 | 293 | 290 | 284 | 273 |
| Max.int. 240 | 130 | 416 | 712 | 978 | 1237 | 1563 | 1835 |
| | 358 | 357 | 355 | 351 | 346 | 340 | 332 |

Torque (N*m) 1340
Speed (rpm) 444

cont.
int.



Performance Data

BMV 800 [801cm³/rev.]

Pressure (MPa) Max.cont. Max.int.

| | 2.5 | 5 | 8 | 10 | 13 | 16 | 18 |
|---------------|------------|------------|------------|------------|------------|------------|------------|
| 10 | 278 | 565 | 830 | 1095 | 1405 | 1712 | 1915 |
| | 11 | 10 | 10 | 9 | 8 | 8 | 7 |
| 20 | 282 | 571 | 845 | 1150 | 1456 | 1783 | 1994 |
| | 23 | 22 | 22 | 21 | 20 | 18 | 16 |
| 50 | 288 | 582 | 856 | 1162 | 1463 | 1790 | 2001 |
| | 60 | 59 | 57 | 56 | 54 | 52 | 48 |
| 75 | 269 | 580 | 855 | 1165 | 1465 | 1786 | 1993 |
| | 91 | 90 | 89 | 87 | 84 | 81 | 77 |
| 100 | 251 | 566 | 840 | 1140 | 1448 | 1767 | 1985 |
| | 122 | 121 | 120 | 118 | 115 | 111 | 105 |
| 125 | 242 | 535 | 824 | 1118 | 1427 | 1739 | 1976 |
| | 153 | 152 | 150 | 147 | 143 | 139 | 133 |
| 150 | 236 | 526 | 808 | 1102 | 1401 | 1714 | 1959 |
| | 185 | 183 | 181 | 178 | 174 | 169 | 163 |
| 175 | 215 | 504 | 793 | 1079 | 1377 | 1698 | 1936 |
| | 216 | 214 | 212 | 209 | 206 | 203 | 196 |
| Max.cont. 200 | 197 | 468 | 765 | 1063 | 1362 | 1681 | 1913 |
| | 247 | 245 | 243 | 240 | 237 | 232 | 225 |
| Max.int. 240 | 118 | 388 | 713 | 1020 | 1318 | 1637 | 1838 |
| | 297 | 296 | 295 | 293 | 288 | 283 | 277 |

Flow (L/min)

Max.cont.

Max.int.

cont.
 int.

BMV 1000 [990cm³/rev.]

Pressure (MPa) Max.cont. Max.int.

| | 2.5 | 5 | 7 | 10 | 14 | 16 |
|---------------|------------|------------|------------|------------|------------|------------|
| 10 | 312 | 640 | 971 | 1400 | 1978 | 2259 |
| | 9 | 9 | 9 | 8 | 7 | 6 |
| 30 | 320 | 648 | 978 | 1410 | 1980 | 2270 |
| | 28 | 27 | 26 | 25 | 23 | 21 |
| 50 | 326 | 655 | 992 | 1422 | 2015 | 2280 |
| | 47 | 46 | 45 | 43 | 41 | 38 |
| 75 | 318 | 642 | 987 | 1425 | 2003 | 2276 |
| | 72 | 71 | 70 | 68 | 66 | 63 |
| 100 | 309 | 634 | 983 | 1418 | 1994 | 2243 |
| | 98 | 97 | 95 | 93 | 90 | 86 |
| 125 | 303 | 624 | 975 | 1409 | 1988 | 2224 |
| | 123 | 122 | 120 | 117 | 114 | 110 |
| 150 | 278 | 602 | 961 | 1368 | 1963 | 2208 |
| | 149 | 148 | 146 | 144 | 140 | 133 |
| 175 | 264 | 580 | 946 | 1338 | 1925 | 2159 |
| | 174 | 172 | 170 | 166 | 162 | 155 |
| Max.cont. 200 | 230 | 556 | 912 | 1300 | 1891 | 2105 |
| | 199 | 196 | 193 | 190 | 185 | 178 |
| Max.int. 240 | 166 | 513 | 867 | 1267 | 1825 | 2034 |
| | 240 | 237 | 233 | 229 | 225 | 218 |

Flow (L/min)

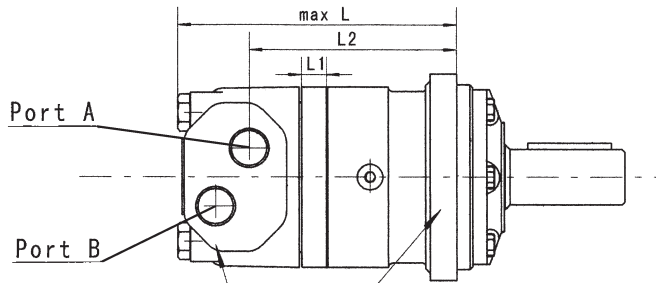
Max.cont.

Max.int.

Torque (N•m) 1825
Speed (rpm) 225

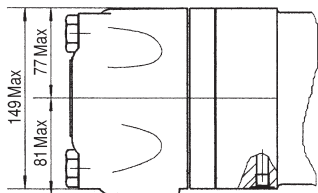


BMV Dimensions & Mounting Data

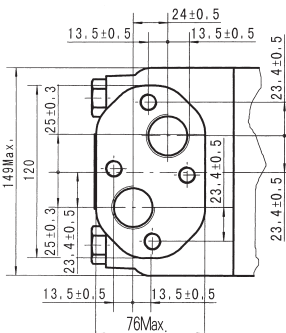


| Model | L | L1 | L2 |
|---------|-----|----|-------|
| BMV315 | 217 | 20 | 161.5 |
| BMV400 | 224 | 27 | 168.5 |
| BMV500 | 232 | 35 | 176.5 |
| BMV630 | 244 | 47 | 188.5 |
| BMV800 | 255 | 58 | 199.5 |
| BMV1000 | 271 | 74 | 215.5 |

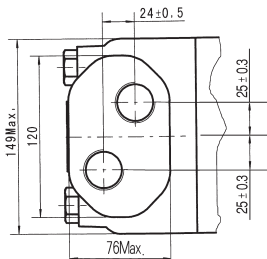
BMV Mounting Flanges



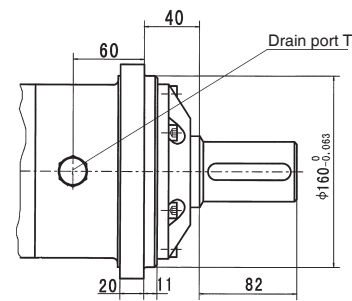
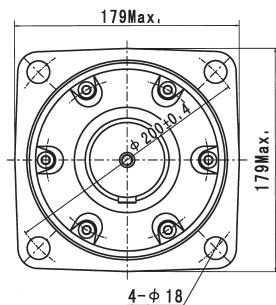
BMV Porting D, M



S, G, M5, S1

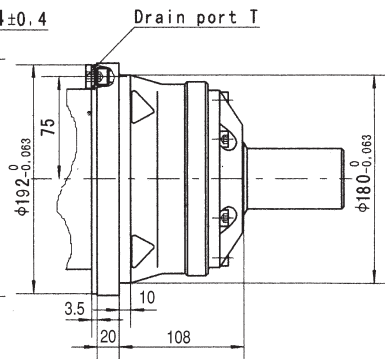
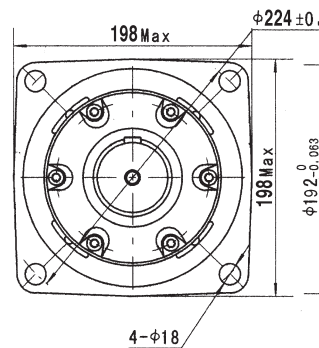


Flange 4



4

Flange W



W

| Model | L | L1 | L2 |
|------------|-------|----|-------|
| BMV-315-W | 148.5 | 20 | 93.5 |
| BMV-400-W | 155.5 | 27 | 100.5 |
| BMV-500-W | 163.5 | 35 | 108.5 |
| BMV-630-W | 175.5 | 47 | 120.5 |
| BMV-800-W | 186.5 | 58 | 131.5 |
| BMV-1000-W | 202.5 | 74 | 147.5 |

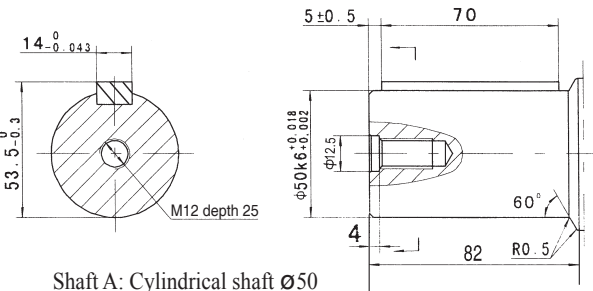
Note: The thickness of the stator and rotor is the dimension of L1 adding on 7mm.

| Content | Code | | | | | |
|---------|------------|----------------|-----------------|-----------|----------------|-----------------|
| | D (depth) | M (depth) | S (depth) | G (depth) | M5 (depth) | S1 (depth) |
| P(A,B) | G1 (18) | M33 x 2 (18) | 1-5/16-12UN(18) | G1 (18) | M33 x 2 (18) | 1-5/16-12UN(18) |
| T | G1/4 (12) | M14 x 1.5 (12) | 9/16-18UNF(12) | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF(12) |
| C | 4-M12 (10) | 4-M12 (10) | -- | -- | -- | -- |



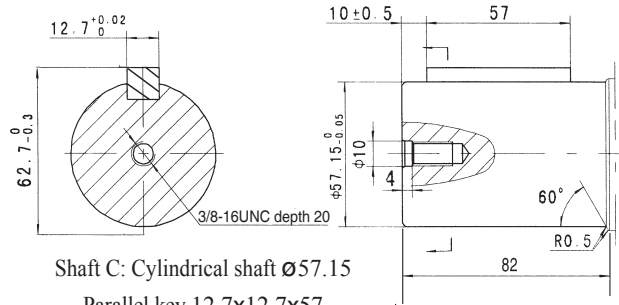
BMV Shaft Extensions & Dimensions

**BMV
SHAFT
A**



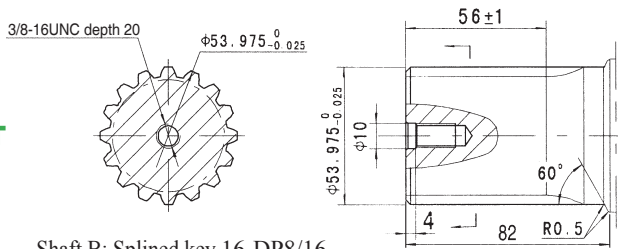
Shaft A: Cylindrical shaft Ø50
Parallel key 14x9x70

**BMV
SHAFT
C**



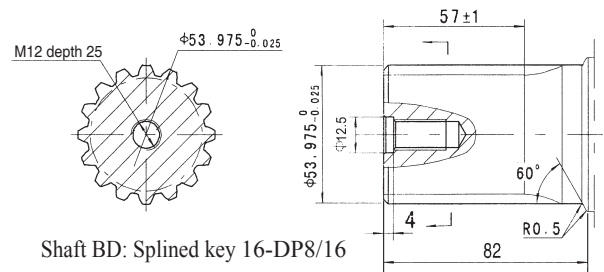
Shaft C: Cylindrical shaft Ø57.15
Parallel key 12.7x12.7x57

**BMV
SHAFT
B**



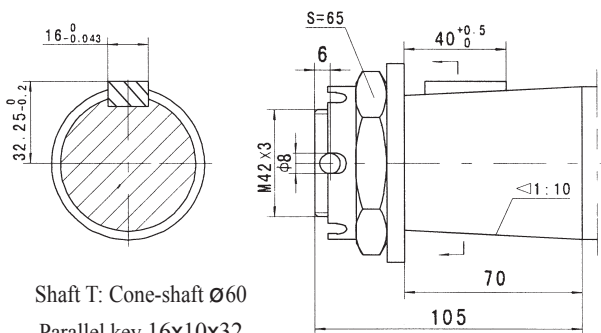
Shaft B: Splined key 16-DP8/16

**BMV
SHAFT
BD**



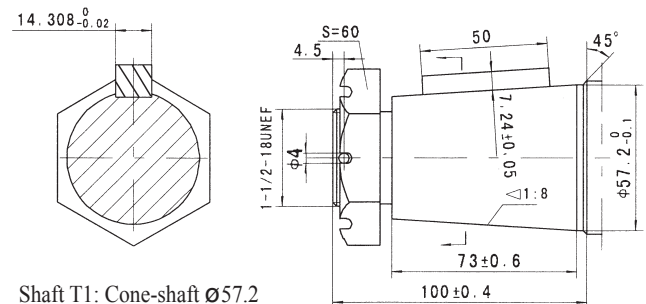
Shaft BD: Splined key 16-DP8/16

**BMV
SHAFT
T**



Shaft T: Cone-shaft Ø60
Parallel key 16x10x32
Tightening torque: 750±50Nm

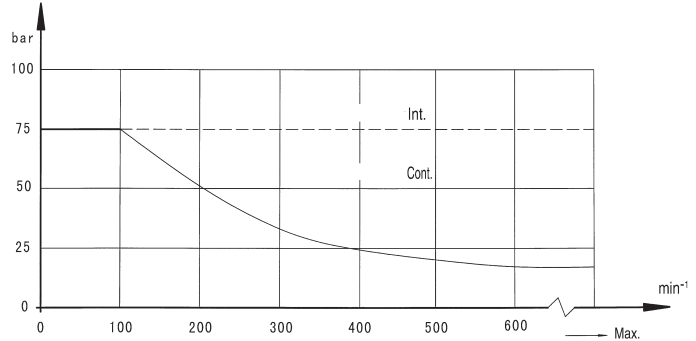
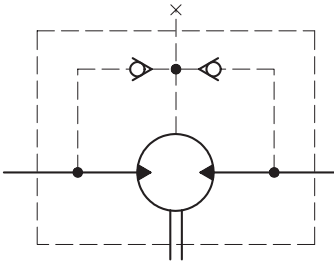
**BMV
SHAFT
T1**



Shaft T1: Cone-shaft Ø57.2
Parallel key 14.308x14.308x50
Tightening torque: 750±50Nm

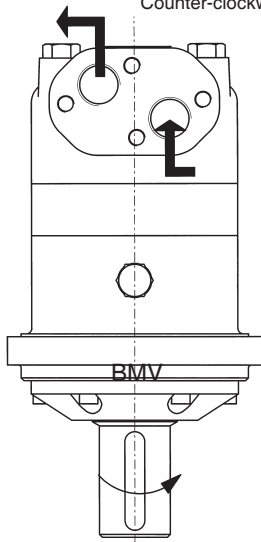


BMV Permissible Shaft Seal Pressure



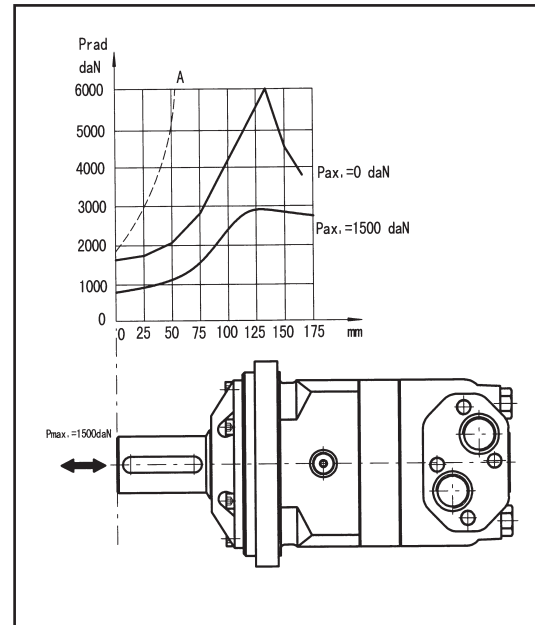
BMV Direction of Shaft Rotation, Standard

When facing shaft end of motor, shaft to rotate:
 Clockwise when port "A" is pressurized.
 Counter-clockwise port "B" is pressurized.



In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

BMV Axial and Radial Forces



BMV Oil Flow In Drain Line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

| Pressure drop (MPa) | Viscosity (mm ² /s) | Oil flow in the drain line (L/min.) |
|---------------------|--------------------------------|-------------------------------------|
| 14 | 20 | 3 |
| | 35 | 2 |
| 21 | 20 | 6 |
| | 35 | 4 |

The output shaft runs in tapered bearings that permit high axial and radial forces, Curve "A" shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage, The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.

Order Information

1 - 2 - 3 - 4 - 5 - 6 - 7 - 8

BMV

| Pos.1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------|--------------|--|--|----------------------------------|--------------------|----------|--------------------|
| Code | Displacement | Flange | Output shaft | Ports and drain port | Rotation direction | Paint | Unusually function |
| 315 | 4 | 4-Ø18 Square-flangeØ200, pilot Ø160x11 | A Shaft Ø50 , parallel key 14x9x70 | D G1 Manifold 4x M12, G1/4 | | | |
| 400 | W | 4-Ø18 Wheel-flange Ø224, pilot Ø180x10 | BD Shaft Ø53.975, splined key 16-DP8/16 | M M33x2 Manifold 4x M12, M14x1.5 | | | |
| 500 | | | B Shaft Ø53.975, splined key 16-DP8/16 | S 1-5/16-12UN, 9/16-18UNF | Omit Standard | Black | Omit |
| 630 | | | C Shaft Ø57.15, parallel key 12.7x12.7x57.15 | G G1, G1/4 | R Opposite | No paint | Standard |
| 800 | | | T Cone shaft Ø60, parallel key 16x10x32 | M5 M33x2, M14x1.5 | | | |
| 1000 | | | T1 Cone shaft Ø57.2, parallel key 14.308x14.308x50.8 | S1 1-5/16-12UN ,7/16-20UNF | | | |

Note: When the table is used, please fill the code from left, which consists of displacement first, then mounting flange, then output shaft and lastly ports. If the specification is not in the table or you have specific requirements, please contact Anfield.