

# Orbital Motors

Low Speed, High Torque Motors

## BMK6

Series



ANFIELD Orbital Motor Catalog BMK6 Rev. B (06/25/2024)



Strength in Products,  
Strength in Service

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## DESCRIPTION

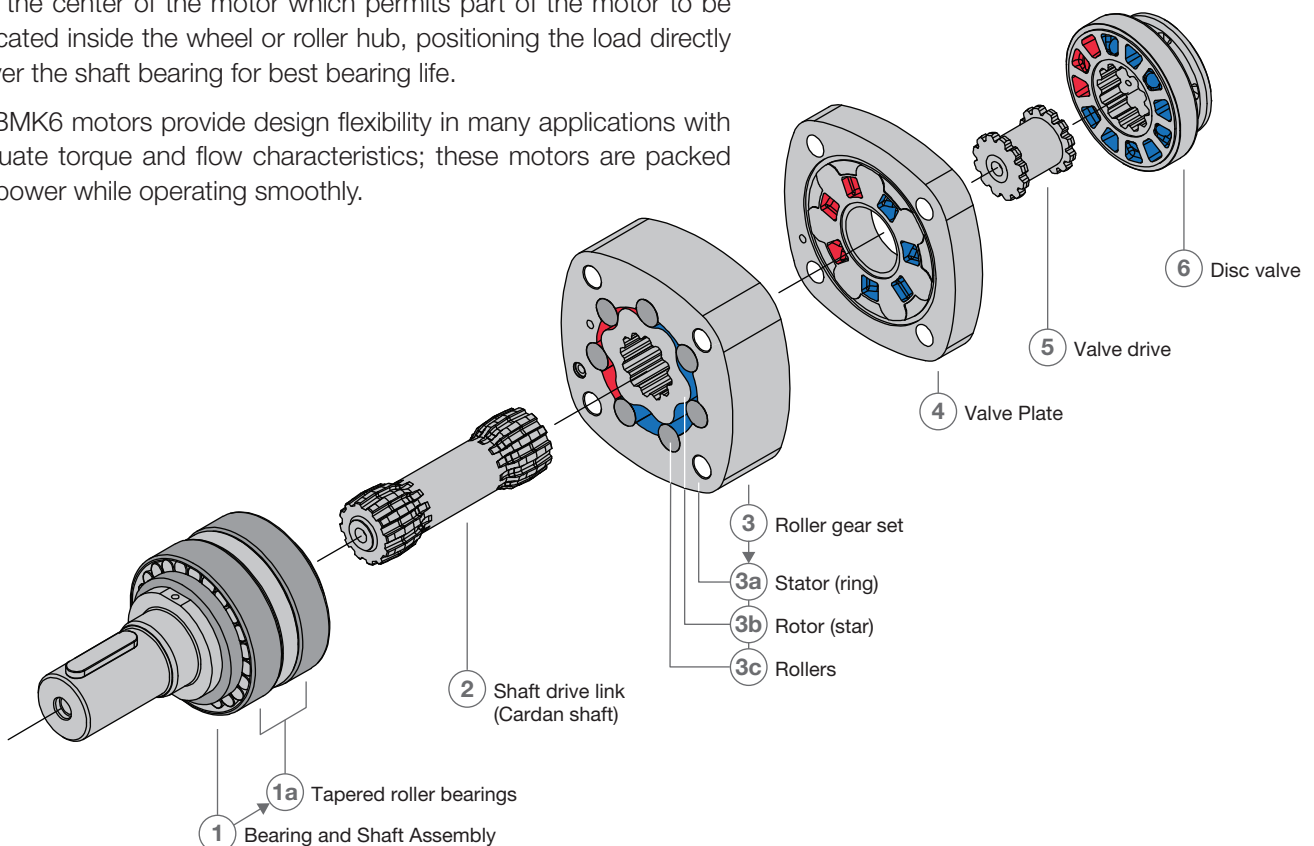
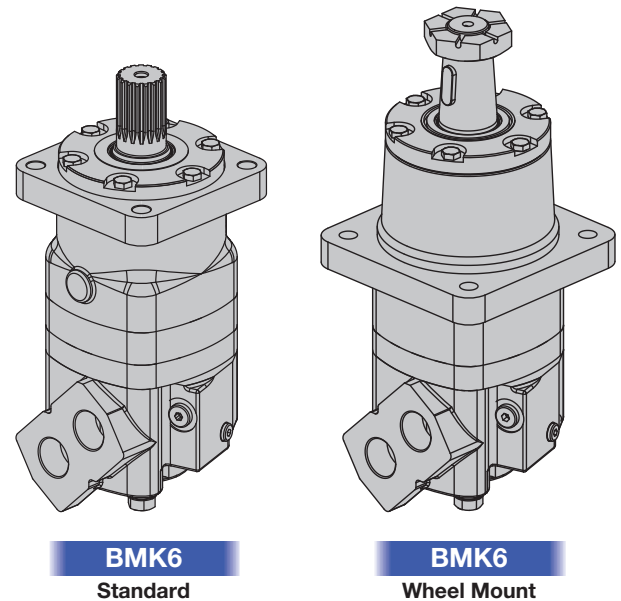
Anfield BMK6 series motors use a two-piece rotor design. Seven precision rollers (fig. 3c) added to the lobes of the outer ring (fig.3a) of the gear set provide sliding contact points which act as roller bearings and reduce friction. This increases mechanical efficiency and reduces wear in systems specially with low fluid viscosity, requiring lower pressure at start-up and providing superior drive life and smoother performance at all speeds.

The disc distributor valve (fig. 6) has been separated from the output shaft (fig. 1) and is driven synchronously by a dedicated short valve drive (fig. 5) ensuring that the individual chambers of the motor are filled and emptied precisely. This allows for higher permissible pressure and torque. The output shaft supported by tapered roller bearings (fig.1a) permit high axial and radial forces offering a smooth operation during low pressure start up and high pressure operation. The BMK6 motors are offered in 8 displacements with torque up to 1230 lbf-ft. and 40 gpm continuous. These motors are packed with power and operate very smoothly.

Anfield BMK6 motors can be supplied with two mounting options:

1. The standard motor mount where the mounting flange is located as close to the output shaft as possible, supporting the motor close to the shaft load.
2. The wheel motor commonly used in traction drive applications. In the BMK6 wheel motor (W) the mounting flange is located closer to the center of the motor which permits part of the motor to be located inside the wheel or roller hub, positioning the load directly over the shaft bearing for best bearing life.

The BMK6 motors provide design flexibility in many applications with adequate torque and flow characteristics; these motors are packed with power while operating smoothly.



## FEATURES

- The BMK6 series motors deliver power for medium to heavy-duty applications
- Disc valve and roller gear set design increases mechanical efficiency and reduces wear in the system
- Output shaft supported in tapered roller bearings for high axial and radial forces.
- Available in 8 displacement sizes. A choice of standard and wheel mounting and straight, splined and tapered shafts provide flexibility in application design.
- Choice of SAE, BSPP, Metric and split flange ports.
- Standard case drain with integral internal drain for extended shaft seal life.

## TYPICAL APPLICATIONS

- Mobile equipment
- Snow removal
- Brush cutters and mowing
- Sprayer
- Trencher
- Wood processing
- Skid steer attachments
- Swing motor
- Harvesting & agricultural equipment
- Turf equipment
- Conveyors
- Metal working machines
- Road building machines
- Mining machinery
- Food industries
- Special vehicles

## BMK6 MOTOR CROSS REFERENCE GUIDE

| <i>Brand</i>            | <i>Series</i>                  |
|-------------------------|--------------------------------|
| <b>Eaton Char-Lynn®</b> | 6000 (112-, 113-) <sup>1</sup> |
| <b>Danfoss®</b>         | OMT <sup>2</sup>               |
| <b>White®</b>           | -                              |
| <b>Parker®</b>          | -                              |
| <b>M+S®</b>             | MLHT, MT <sup>3</sup>          |
| <b>ROSS-TRW®</b>        | -                              |
| <b>BREVINI - SAM®</b>   | -                              |

<sup>1</sup> Anfield BMK6 motors are the crossover for Eaton Char-Lynn 6000 series 112- (standard motor) and 113- (wheel motor)

<sup>2</sup> Danfoss OMT crossover is the Anfield BMT series and should be considered first. The BMK6 can be an alternative choice.

<sup>3</sup> M+S MLHT and MT crossover is the Anfield BMT series and should be considered first. The BMK6 can be an alternative choice.

### ASSEMBLY DIAGRAM - BMK6 SERIES

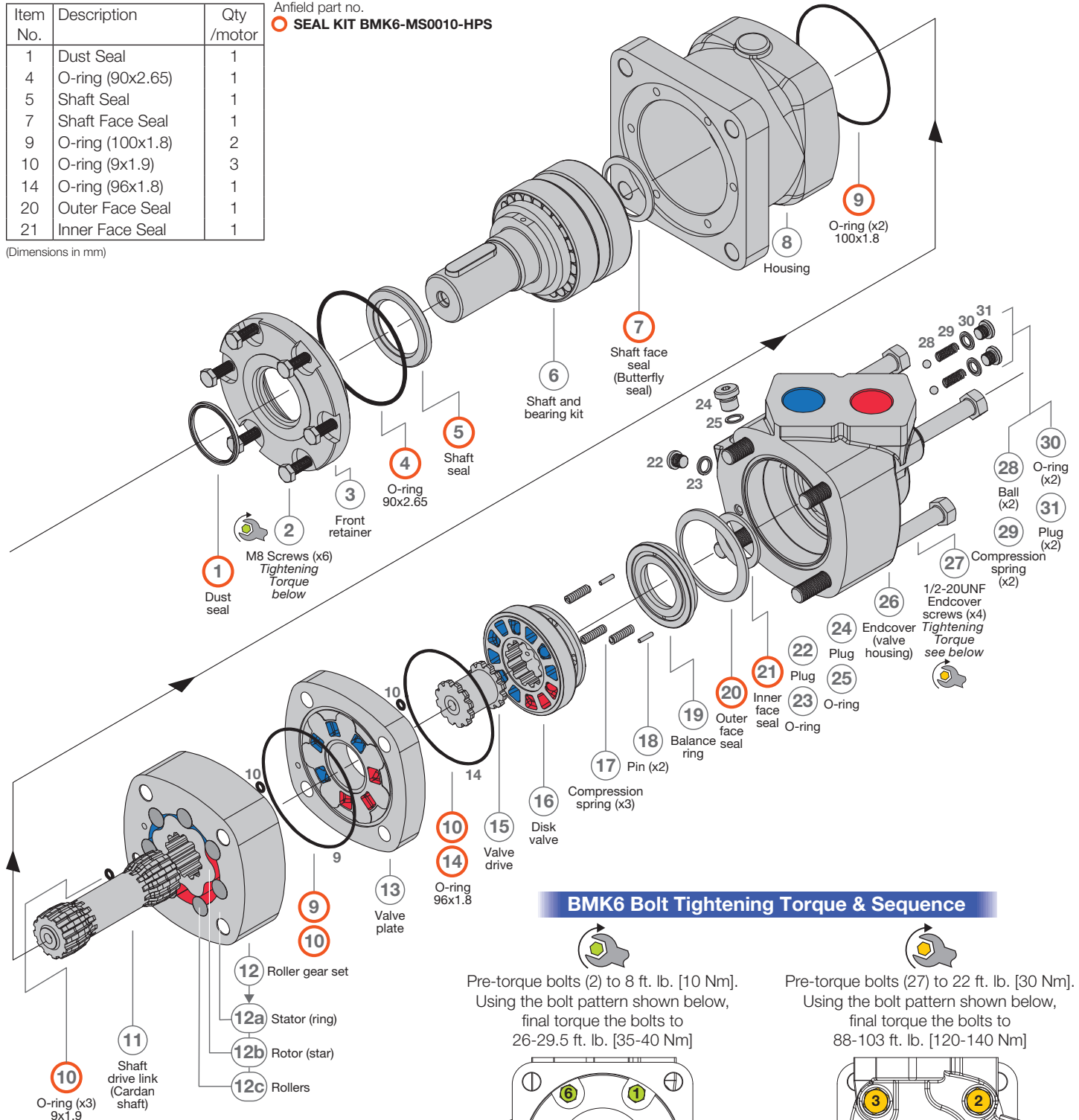
#### BMK6 Seal Kit

| Item No. | Description      | Qty /motor |
|----------|------------------|------------|
| 1        | Dust Seal        | 1          |
| 4        | O-ring (90x2.65) | 1          |
| 5        | Shaft Seal       | 1          |
| 7        | Shaft Face Seal  | 1          |
| 9        | O-ring (100x1.8) | 2          |
| 10       | O-ring (9x1.9)   | 3          |
| 14       | O-ring (96x1.8)  | 1          |
| 20       | Outer Face Seal  | 1          |
| 21       | Inner Face Seal  | 1          |

(Dimensions in mm)

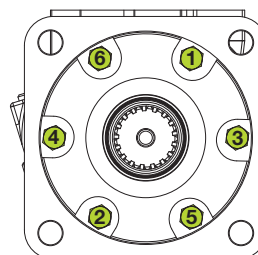
Anfield part no.

○ SEAL KIT BMK6-MS0010-HPS

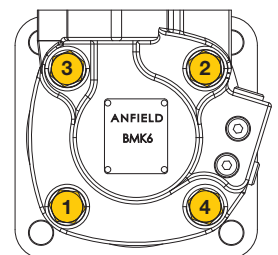


#### BMK6 Bolt Tightening Torque & Sequence

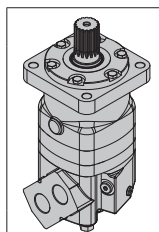
Pre-torque bolts (2) to 8 ft. lb. [10 Nm].  
Using the bolt pattern shown below,  
final torque the bolts to  
26-29.5 ft. lb. [35-40 Nm]



Pre-torque bolts (27) to 22 ft. lb. [30 Nm].  
Using the bolt pattern shown below,  
final torque the bolts to  
88-103 ft. lb. [120-140 Nm]



## TECHNICAL SPECIFICATIONS - BMK6 SERIES



|                        |                    |        | 1     | 2     | 3     | 4      | 5      | 6      | 7      | 8      |
|------------------------|--------------------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| BMK6                   |                    |        | 200   | 250   | 315   | 400    | 500    | 630    | 800    | 1000   |
| Geometric Displacement | in <sup>3</sup> /r |        | 11.94 | 15.02 | 19.01 | 23.88  | 29.95  | 38.02  | 48.97  | 59.9   |
|                        | cm <sup>3</sup> /r |        | 195.6 | 246.1 | 311.6 | 391.3  | 490.8  | 623.0  | 802.4  | 981.6  |
| Max. Speed             | rpm                | Cont.  | 765   | 610   | 480   | 382    | 304    | 240    | 186    | 152    |
|                        |                    | Inter. | 865   | 830   | 690   | 570    | 455    | 360    | 280    | 230    |
| Max. Flow              | gpm                | Cont.  | 39.7  | 39.7  | 39.7  | 39.7   | 39.7   | 39.7   | 39.7   | 39.7   |
|                        | l/min              |        | 150   | 150   | 150   | 150    | 150    | 150    | 150    | 150    |
|                        |                    | Inter. | 45.0  | 54.2  | 59.5  | 59.5   | 59.5   | 59.5   | 59.5   | 59.5   |
|                        |                    |        | 170   | 205   | 225   | 225    | 225    | 225    | 225    | 225    |
| Max. Torque            | lbf-ft             | Cont.  | 417.0 | 524.0 | 679.0 | 856.1  | 1066.4 | 1092.2 | 1166.0 | 1236.2 |
|                        | Nm                 |        | 565   | 710   | 920   | 1160   | 1445   | 1480   | 1580   | 1675   |
|                        |                    | Inter. | 619.9 | 797.0 | 977.9 | 1199.3 | 1387.4 | 1394.8 | 1387.4 | 1372.7 |
|                        |                    |        | 840   | 1080  | 1325  | 1625   | 1880   | 1890   | 1880   | 1860   |
| Max. Pressure Drop     | Δ psi              | Cont.  | 2901  | 2901  | 2901  | 2901   | 2901   | 2538   | 2031   | 2031   |
|                        | Δ bar              |        | 200   | 200   | 200   | 200    | 200    | 175    | 140    | 140    |
|                        |                    | Inter. | 4351  | 4351  | 4351  | 4351   | 3989   | 3263   | 2248   | 2031   |
|                        |                    |        | 300   | 300   | 300   | 300    | 275    | 225    | 155    | 140    |
|                        |                    | Peak   | 4350  | 4351  | 4351  | 4351   | 4351   | 3481   | 2538   | 2466   |
|                        |                    |        | 300   | 300   | 300   | 300    | 300    | 240    | 175    | 170    |
| Weight                 | lbs                |        | 57.9  | 59.0  | 60.1  | 61.6   | 63.4   | 65.1   | 67.1   | 70.4   |
|                        | kg                 |        | 26.3  | 26.8  | 27.3  | 28.0   | 28.8   | 29.6   | 30.5   | 32.0   |

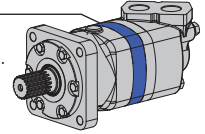
**Notes:**

1. Continuous rating (Cont.): motor may be run continuously at these ratings.
2. Intermittent operation (Inter.): 10% of every minute. (6 sec.)
3. Peak: 1% of every minute. (0.6 sec.)
4. Δ Pressure: Δ psi [Δ bar] True pressure difference between inlet port and outlet port.
5. Motor Power (HP) = (Torque Output (In. lbs.) x RPM) / 63025
6. Simultaneous maximum torque & maximum speed NOT recommended and may damage the motor.



### PERFORMANCE DATA - BMK6 SERIES

Performance data is based on the motor displacement.



**BMK6 200** 11.9 in<sup>3</sup>/rev. (195.6 cm<sup>3</sup>/rev.)

| Torque Speed<br><div>lb.f.ft<br/>(Nm)<br/>rpm</div> |               | Δ Pressure   psi (bar) ➡ |                     |                       |                       |                       |                       | Max. Cont.            |                       | Max. Inter.           |                       | Peak |
|-----------------------------------------------------|---------------|--------------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------|
|                                                     |               | 254<br>(17.5)            | 508<br>(35)         | 1015<br>(70)          | 1523<br>(105)         | 2031<br>(140)         | 2538<br>(175)         | 2901<br>(200)         | 3481<br>(240)         | 3989<br>(275)         | 4351<br>(300)         |      |
| Flow<br>gpm (l/min)   ➡                             | 0.5<br>(2)    | 22.1<br>(30)<br>9        | 53.8<br>(73)<br>7   | 118.0<br>(160)<br>5   |                       |                       |                       |                       |                       |                       |                       |      |
|                                                     | 2.1<br>(8)    | 26.6<br>(36)<br>39       | 56.1<br>(76)<br>38  | 123.9<br>(168)<br>35  | 193.2<br>(262)<br>34  | 254.5<br>(345)<br>31  | 323.1<br>(438)<br>27  | 343.0<br>(465)<br>16  |                       |                       |                       |      |
|                                                     | 4.0<br>(15)   | 26.6<br>(36)<br>75       | 59.7<br>(81)<br>75  | 128.3<br>(174)<br>74  | 199.1<br>(270)<br>71  | 269.2<br>(365)<br>65  | 335.6<br>(455)<br>60  | 376.2<br>(510)<br>45  | 427.8<br>(580)<br>32  | 472.0<br>(640)<br>16  |                       |      |
|                                                     | 7.9<br>(30)   | 27.3<br>(37)<br>152      | 62.7<br>(85)<br>151 | 129.1<br>(175)<br>147 | 202.8<br>(275)<br>142 | 272.9<br>(370)<br>132 | 343.0<br>(465)<br>121 | 398.3<br>(540)<br>109 | 453.6<br>(615)<br>96  | 516.3<br>(700)<br>80  | 564.2<br>(765)<br>60  |      |
|                                                     | 11.9<br>(45)  | 27.3<br>(37)<br>228      | 62.7<br>(85)<br>227 | 132.8<br>(180)<br>223 | 206.5<br>(280)<br>218 | 276.6<br>(375)<br>210 | 346.7<br>(470)<br>200 | 394.6<br>(535)<br>185 | 479.4<br>(650)<br>165 | 545.8<br>(740)<br>146 | 593.7<br>(805)<br>110 |      |
|                                                     | 15.9<br>(60)  | 28.0<br>(38)<br>305      | 59.0<br>(80)<br>304 | 131.3<br>(178)<br>302 | 208.0<br>(282)<br>297 | 280.3<br>(380)<br>288 | 350.3<br>(475)<br>280 | 416.7<br>(565)<br>255 | 486.8<br>(660)<br>235 | 553.2<br>(750)<br>210 | 608.5<br>(825)<br>170 |      |
|                                                     | 19.8<br>(75)  | 23.6<br>(32)<br>382      | 57.5<br>(78)<br>380 | 129.1<br>(175)<br>376 | 202.8<br>(275)<br>370 | 278.8<br>(378)<br>362 | 354.0<br>(480)<br>350 | 416.7<br>(565)<br>328 | 494.2<br>(670)<br>300 | 560.5<br>(760)<br>270 | 619.6<br>(840)<br>230 |      |
|                                                     | 23.8<br>(90)  | 19.2<br>(26)<br>459      | 55.3<br>(75)<br>456 | 126.9<br>(172)<br>452 | 199.1<br>(270)<br>445 | 276.6<br>(375)<br>436 | 350.3<br>(475)<br>420 | 416.7<br>(565)<br>405 | 486.8<br>(660)<br>383 | 564.2<br>(765)<br>355 |                       |      |
|                                                     | 27.7<br>(105) | 16.2<br>(22)<br>536      | 51.6<br>(70)<br>534 | 125.4<br>(170)<br>530 | 199.1<br>(270)<br>523 | 272.9<br>(370)<br>510 | 346.7<br>(470)<br>496 | 413.0<br>(560)<br>470 | 486.8<br>(660)<br>435 | 560.5<br>(760)<br>400 |                       |      |
|                                                     | 31.7<br>(120) | 14.8<br>(20)<br>612      | 49.4<br>(67)<br>610 | 122.4<br>(166)<br>605 | 195.5<br>(265)<br>598 | 269.2<br>(365)<br>585 | 343.0<br>(465)<br>570 | 413.0<br>(560)<br>536 | 486.8<br>(660)<br>502 | 556.9<br>(755)<br>450 |                       |      |
|                                                     | 35.7<br>(135) | 10.3<br>(14)<br>690      | 47.9<br>(65)<br>687 | 118.0<br>(160)<br>680 | 191.8<br>(260)<br>672 | 265.5<br>(360)<br>650 | 343.0<br>(465)<br>638 | 413.0<br>(560)<br>595 | 483.1<br>(655)<br>550 | 553.2<br>(750)<br>485 |                       |      |
|                                                     | Max. Cont.    | 39.6<br>(150)            | 7.4<br>(10)<br>765  | 44.3<br>(60)<br>765   | 114.3<br>(155)<br>755 | 190.3<br>(258)<br>740 | 262.6<br>(356)<br>725 | 331.9<br>(450)<br>700 | 405.7<br>(550)<br>640 | 479.4<br>(650)<br>580 |                       |      |
| Max. Inter.                                         | 44.9<br>(170) |                          | 44.3<br>(60)<br>865 | 114.3<br>(155)<br>850 | 188.1<br>(255)<br>840 | 258.1<br>(350)<br>820 | 331.9<br>(450)<br>800 | 402.0<br>(545)<br>745 | 472.0<br>(640)<br>700 |                       |                       |      |

Continuous values
  Intermittent values (max. 10% operation every minute)
  Peak operation (max. 1% operation every minute)
  No operation

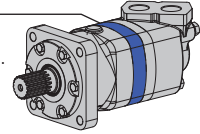
Motors run with high efficiency in all areas until maximum continuous values are exceeded. For best service life of the motor select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical of randomly selected motors at back pressure of 5 to 10 bar [72.5 to 145 psi] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

Actual data may vary slightly from one production motor to another.

## PERFORMANCE DATA - BMK6 SERIES

Performance data  
is based on the  
motor displacement.



**BMK6 250** 15.0 in<sup>3</sup>/rev. (246.1 cm<sup>3</sup>/rev.)

| Torque<br>Speed          | lb <sub>f</sub> .ft<br>(Nm)<br>rpm | Δ Pressure psi (bar) → |                      |                       |                       |                       |                       | Max. Cont.            |                       | Max. Inter.           | Peak                   |
|--------------------------|------------------------------------|------------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
|                          |                                    | 254<br>(17.5)          | 508<br>(35)          | 1015<br>(70)          | 1523<br>(105)         | 2031<br>(140)         | 2538<br>(175)         | 2901<br>(200)         | 3481<br>(240)         | 3989<br>(275)         | 4351<br>(300)          |
| Flow<br>gpm (l/min)<br>↓ | 0.5<br>(2)                         | 33.9<br>(46)<br>7      | 67.9<br>(92)<br>4    |                       |                       |                       |                       |                       |                       |                       |                        |
|                          | 2.1<br>(8)                         | 37.6<br>(51)<br>31     | 76.0<br>(103)<br>30  | 158.6<br>(215)<br>27  | 247.1<br>(335)<br>24  | 324.5<br>(440)<br>21  | 405.7<br>(550)<br>15  | 413.0<br>(560)<br>10  |                       |                       |                        |
|                          | 4.0<br>(15)                        | 38.4<br>(52)<br>58     | 77.4<br>(105)<br>57  | 162.3<br>(220)<br>55  | 250.8<br>(340)<br>52  | 335.6<br>(455)<br>46  | 420.4<br>(570)<br>40  | 472.0<br>(640)<br>37  | 549.5<br>(745)<br>28  | 626.9<br>(850)<br>10  | 708.1<br>(960)<br>5    |
|                          | 7.9<br>(30)                        | 40.6<br>(55)<br>118    | 81.1<br>(110)<br>116 | 171.1<br>(232)<br>113 | 259.6<br>(352)<br>110 | 346.7<br>(470)<br>105 | 442.5<br>(600)<br>96  | 505.2<br>(685)<br>80  | 582.7<br>(790)<br>64  | 663.8<br>(900)<br>48  | 752.3<br>(1020)<br>35  |
|                          | 11.9<br>(45)                       | 42.8<br>(58)<br>180    | 81.1<br>(110)<br>177 | 173.3<br>(235)<br>174 | 261.8<br>(355)<br>170 | 350.3<br>(475)<br>164 | 449.9<br>(610)<br>155 | 520.0<br>(705)<br>140 | 619.6<br>(840)<br>126 | 693.3<br>(940)<br>106 | 774.4<br>(1050)<br>88  |
|                          | 15.9<br>(60)                       | 39.1<br>(53)<br>242    | 81.1<br>(110)<br>240 | 169.6<br>(230)<br>237 | 258.1<br>(350)<br>233 | 354.0<br>(480)<br>224 | 453.6<br>(615)<br>212 | 520.0<br>(705)<br>198 | 623.2<br>(845)<br>180 | 704.4<br>(955)<br>162 | 796.6<br>(1080)<br>140 |
|                          | 19.8<br>(75)                       | 33.2<br>(45)<br>302    | 77.4<br>(105)<br>298 | 169.6<br>(230)<br>292 | 261.8<br>(355)<br>285 | 357.7<br>(485)<br>278 | 457.3<br>(620)<br>268 | 523.7<br>(710)<br>254 | 626.9<br>(850)<br>230 | 708.1<br>(960)<br>206 | 796.6<br>(1080)<br>182 |
|                          | 23.8<br>(90)                       | 33.2<br>(45)<br>364    | 77.4<br>(105)<br>360 | 166.0<br>(225)<br>352 | 258.1<br>(350)<br>342 | 354.0<br>(480)<br>338 | 453.6<br>(615)<br>322 | 523.7<br>(710)<br>305 | 623.2<br>(845)<br>288 | 704.4<br>(955)<br>265 |                        |
|                          | 27.7<br>(105)                      | 29.5<br>(40)<br>424    | 73.8<br>(100)<br>420 | 162.3<br>(220)<br>414 | 250.8<br>(340)<br>408 | 350.3<br>(475)<br>394 | 449.9<br>(610)<br>372 | 520.0<br>(705)<br>352 | 619.6<br>(840)<br>334 | 700.7<br>(950)<br>315 |                        |
|                          | 31.7<br>(120)                      | 28.0<br>(38)<br>485    | 70.1<br>(95)<br>479  | 154.9<br>(210)<br>471 | 250.8<br>(340)<br>463 | 346.7<br>(470)<br>454 | 435.2<br>(590)<br>442 | 516.3<br>(700)<br>420 | 612.2<br>(830)<br>385 | 693.3<br>(940)<br>362 |                        |
| Max. Cont.               | 35.7<br>(135)                      | 25.8<br>(35)<br>546    | 62.7<br>(85)<br>540  | 151.2<br>(205)<br>532 | 239.7<br>(325)<br>525 | 339.3<br>(460)<br>516 | 427.8<br>(580)<br>504 | 508.9<br>(690)<br>478 | 604.8<br>(820)<br>445 |                       |                        |
|                          | 39.6<br>(150)                      | 22.1<br>(30)<br>608    | 59.0<br>(80)<br>605  | 147.5<br>(200)<br>600 | 236.0<br>(320)<br>592 | 331.9<br>(450)<br>580 | 420.4<br>(570)<br>566 | 501.5<br>(680)<br>532 | 601.1<br>(815)<br>496 |                       |                        |
|                          | 44.9<br>(170)                      |                        | 47.9<br>(65)<br>686  | 140.1<br>(190)<br>678 | 232.3<br>(315)<br>665 | 324.5<br>(440)<br>652 | 413.0<br>(560)<br>635 | 497.9<br>(675)<br>600 | 553.2<br>(750)<br>565 |                       |                        |
|                          | 48.9<br>(185)                      |                        |                      | 136.4<br>(185)<br>750 | 228.6<br>(310)<br>746 | 317.2<br>(430)<br>730 | 402.0<br>(545)<br>708 | 494.2<br>(670)<br>658 |                       |                       |                        |
|                          | 54.2<br>(205)                      |                        |                      | 129.1<br>(175)<br>830 | 221.3<br>(300)<br>820 | 308.3<br>(418)<br>800 | 395.3<br>(536)<br>776 | 414.5<br>(562)<br>735 |                       |                       |                        |
| Max. Inter.              |                                    |                        |                      |                       |                       |                       |                       |                       |                       |                       |                        |
|                          |                                    |                        |                      |                       |                       |                       |                       |                       |                       |                       |                        |
|                          |                                    |                        |                      |                       |                       |                       |                       |                       |                       |                       |                        |
|                          |                                    |                        |                      |                       |                       |                       |                       |                       |                       |                       |                        |

Continuous values
  Intermittent values  
(max. 10% operation every minute)
  Peak operation  
(max. 1% operation every minute)
  No operation

Motors run with high efficiency in all areas until maximum continuous values are exceeded. For best service life of the motor select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical of randomly selected motors at back pressure of 5 to 10 bar [72.5 to 145 psi] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

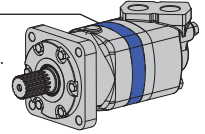
Actual data may vary slightly from one production motor to another.

ANFIELD Orbital Motor Catalog BMK6 Rev. B (06/25/2024)



## PERFORMANCE DATA - BMK6 SERIES

Performance data is based on the motor displacement.



**BMK6 315** 19.0 in<sup>3</sup>/rev. (311.6 cm<sup>3</sup>/rev.)

| Torque Speed       | lb.ft (Nm) rpm | Δ Pressure psi (bar) → |                    |                    |                    |                    |                    | Max. Cont.         |                     | Max. Inter.         | Peak                |
|--------------------|----------------|------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
|                    |                | 254 (17.5)             | 508 (35)           | 1015 (70)          | 1523 (105)         | 2031 (140)         | 2538 (175)         | 2901 (200)         | 3481 (240)          | 3989 (275)          | 4351 (300)          |
| Flow gpm (l/min) ↓ | 0.5 (2)        | 47.9 (65)<br>5         | 92.9 (126)<br>4    |                    |                    |                    |                    |                    |                     |                     |                     |
|                    | 2.1 (8)        | 50.2 (68)<br>24        | 99.6 (135)<br>23   | 206.5 (280)<br>22  | 302.4 (410)<br>20  | 398.3 (540)<br>16  | 479.4 (650)<br>13  | 553.2 (750)<br>9   | 649.1 (880)<br>3    |                     |                     |
|                    | 4.0 (15)       | 51.6 (70)<br>46        | 99.6 (135)<br>45   | 210.2 (285)<br>44  | 320.8 (435)<br>41  | 416.7 (565)<br>36  | 508.9 (690)<br>30  | 597.4 (810)<br>22  | 693.3 (940)<br>16   | 744.9 (1010)<br>9   | 763.4 (1035)<br>3   |
|                    | 7.9 (30)       | 51.6 (70)<br>93        | 99.6 (135)<br>92   | 217.6 (295)<br>90  | 324.5 (440)<br>86  | 442.5 (600)<br>80  | 545.8 (740)<br>71  | 649.1 (880)<br>62  | 730.2 (990)<br>52   | 811.3 (1100)<br>43  | 870.3 (1180)<br>31  |
|                    | 11.9 (45)      | 51.6 (70)<br>142       | 103.3 (140)<br>140 | 221.3 (300)<br>138 | 339.3 (460)<br>132 | 449.9 (610)<br>127 | 553.2 (750)<br>120 | 663.8 (900)<br>118 | 763.4 (1035)<br>96  | 859.3 (1165)<br>85  | 958.8 (1300)<br>72  |
|                    | 15.9 (60)      | 51.6 (70)<br>190       | 103.3 (140)<br>189 | 221.3 (300)<br>186 | 339.3 (460)<br>182 | 453.6 (615)<br>176 | 571.6 (775)<br>167 | 678.6 (920)<br>154 | 778.1 (1055)<br>138 | 885.1 (1200)<br>124 | 977.3 (1325)<br>105 |
|                    | 19.8 (75)      | 47.9 (65)<br>238       | 99.6 (135)<br>237  | 217.6 (295)<br>235 | 335.6 (455)<br>231 | 453.6 (615)<br>225 | 575.3 (780)<br>214 | 678.6 (920)<br>200 | 785.5 (1065)<br>180 | 896.1 (1215)<br>160 |                     |
|                    | 23.8 (90)      | 44.3 (60)<br>285       | 95.9 (130)<br>284  | 213.9 (290)<br>280 | 331.9 (450)<br>276 | 453.6 (615)<br>270 | 575.3 (780)<br>260 | 678.6 (920)<br>245 | 789.2 (1070)<br>226 | 899.8 (1220)<br>210 |                     |
|                    | 27.7 (105)     | 36.9 (50)<br>335       | 92.2 (125)<br>333  | 206.5 (280)<br>330 | 328.2 (445)<br>324 | 446.2 (605)<br>316 | 567.9 (770)<br>302 | 674.9 (915)<br>290 | 789.2 (1070)<br>271 | 888.8 (1205)<br>248 |                     |
|                    | 31.7 (120)     | 33.2 (45)<br>384       | 88.5 (120)<br>382  | 206.5 (280)<br>380 | 324.5 (440)<br>372 | 442.5 (600)<br>364 | 564.2 (765)<br>350 | 671.2 (910)<br>338 | 778.1 (1055)<br>312 |                     |                     |
|                    | 35.7 (135)     | 29.5 (40)<br>432       | 84.8 (115)<br>428  | 202.8 (275)<br>420 | 320.8 (435)<br>412 | 431.5 (585)<br>408 | 560.5 (760)<br>391 | 663.8 (900)<br>380 | 774.4 (1055)<br>350 |                     |                     |
|                    | 39.6 (150)     | 25.8 (35)<br>480       | 81.1 (110)<br>475  | 199.1 (270)<br>462 | 309.8 (420)<br>458 | 420.4 (570)<br>450 | 556.9 (755)<br>435 | 649.1 (880)<br>420 | 759.7 (1030)<br>395 |                     |                     |
|                    | 50.2 (190)     |                        | 73.8 (100)<br>595  | 180.7 (245)<br>580 | 276.6 (375)<br>574 | 383.5 (520)<br>560 | 505.2 (685)<br>548 | 604.8 (820)<br>530 |                     |                     |                     |
|                    | 59.4 (225)     |                        |                    | 162.3 (220)<br>690 | 258.1 (350)<br>683 | 368.8 (500)<br>674 | 472.0 (640)<br>652 | 567.9 (770)<br>634 |                     |                     |                     |

Continuous values
  Intermittent values (max. 10% operation every minute)
  Peak operation (max. 1% operation every minute)
  No operation

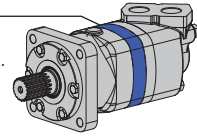
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Performance data is typical of randomly selected motors at back pressure of 5 to 10 bar [72.5 to 145 psi] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

Actual data may vary slightly from one production motor to another.

## PERFORMANCE DATA - BMK6 SERIES

Performance data  
is based on the  
motor displacement.



**BMK6 400** 23.9 in<sup>3</sup>/rev. (391.3 cm<sup>3</sup>/rev.)

| Torque<br>Speed          | lb.ft<br>(Nm)<br>rpm | Δ Pressure psi (bar) → |                       |                       |                       |                       |                       | Max. Cont.             |                        | Max. Inter.            | Peak                   |
|--------------------------|----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|                          |                      | 254<br>(17.5)          | 508<br>(35)           | 1015<br>(70)          | 1523<br>(105)         | 2031<br>(140)         | 2538<br>(175)         | 2901<br>(200)          | 3481<br>(240)          | 3989<br>(275)          | 4351<br>(300)          |
| Flow<br>gpm (l/min)<br>↓ | 0.5<br>(2)           | 66.4<br>(90)<br>4      | 126.9<br>(172)<br>2   | 265.5<br>(360)<br>1   |                       |                       |                       |                        |                        |                        |                        |
|                          | 2.1<br>(8)           | 70.1<br>(95)<br>19     | 132.8<br>(180)<br>18  | 272.9<br>(370)<br>17  | 409.3<br>(555)<br>16  | 538.4<br>(730)<br>14  | 652.7<br>(885)<br>12  | 756.0<br>(1025)<br>9   | 881.4<br>(1195)<br>4   |                        |                        |
|                          | 4.0<br>(15)          | 70.1<br>(95)<br>37     | 136.4<br>(185)<br>37  | 276.6<br>(375)<br>36  | 413.0<br>(560)<br>35  | 545.8<br>(740)<br>33  | 685.9<br>(930)<br>28  | 789.2<br>(1070)<br>22  | 933.0<br>(1265)<br>14  | 1017.8<br>(1380)<br>5  | 1198.5<br>(1625)<br>1  |
|                          | 7.9<br>(30)          | 72.3<br>(98)<br>75     | 136.4<br>(185)<br>74  | 280.3<br>(380)<br>73  | 424.1<br>(575)<br>71  | 560.5<br>(760)<br>68  | 708.1<br>(960)<br>65  | 837.1<br>(1135)<br>55  | 969.9<br>(1315)<br>45  | 1073.2<br>(1455)<br>31 | 1198.5<br>(1625)<br>20 |
|                          | 11.9<br>(45)         | 70.1<br>(95)<br>114    | 136.4<br>(185)<br>113 | 284.0<br>(385)<br>111 | 427.8<br>(580)<br>108 | 564.2<br>(765)<br>105 | 715.4<br>(970)<br>100 | 844.5<br>(1145)<br>90  | 984.6<br>(1335)<br>80  | 1128.5<br>(1530)<br>72 |                        |
|                          | 15.9<br>(60)         | 66.4<br>(90)<br>152    | 132.8<br>(180)<br>152 | 280.3<br>(380)<br>150 | 427.8<br>(580)<br>147 | 567.9<br>(770)<br>142 | 719.1<br>(975)<br>134 | 851.9<br>(1155)<br>126 | 992.0<br>(1345)<br>112 |                        |                        |
|                          | 19.8<br>(75)         | 62.7<br>(85)<br>191    | 132.8<br>(180)<br>191 | 280.3<br>(380)<br>188 | 427.8<br>(580)<br>186 | 571.6<br>(775)<br>181 | 722.8<br>(980)<br>172 | 855.6<br>(1160)<br>160 | 999.4<br>(1355)<br>148 |                        |                        |
|                          | 23.8<br>(90)         | 59.0<br>(80)<br>230    | 129.1<br>(175)<br>229 | 276.6<br>(375)<br>227 | 420.4<br>(570)<br>224 | 564.2<br>(765)<br>220 | 719.1<br>(975)<br>212 | 851.9<br>(1155)<br>200 |                        |                        |                        |
|                          | 27.7<br>(105)        | 51.6<br>(70)<br>268    | 121.7<br>(165)<br>267 | 265.5<br>(360)<br>265 | 413.0<br>(560)<br>260 | 560.5<br>(760)<br>254 | 564.2<br>(765)<br>246 | 848.2<br>(1150)<br>232 |                        |                        |                        |
|                          | 31.7<br>(120)        | 47.9<br>(65)<br>306    | 118.0<br>(160)<br>305 | 261.8<br>(355)<br>303 | 405.7<br>(550)<br>298 | 549.5<br>(745)<br>290 | 700.7<br>(950)<br>278 | 840.8<br>(1140)<br>262 |                        |                        |                        |
| Max. Cont.               | 35.7<br>(135)        | 40.6<br>(55)<br>345    | 114.3<br>(155)<br>343 | 250.8<br>(340)<br>337 | 402.0<br>(545)<br>330 | 542.1<br>(735)<br>322 | 693.3<br>(940)<br>310 | 826.1<br>(1120)<br>295 |                        |                        |                        |
|                          | 39.6<br>(150)        | 33.2<br>(45)<br>382    | 106.9<br>(145)<br>380 | 236.0<br>(320)<br>376 | 390.9<br>(530)<br>370 | 538.4<br>(730)<br>362 | 682.2<br>(925)<br>352 |                        |                        |                        |                        |
|                          | 50.2<br>(190)        |                        | 95.9<br>(130)<br>483  | 221.3<br>(300)<br>476 | 379.8<br>(515)<br>470 | 538.4<br>(730)<br>458 | 674.9<br>(915)<br>445 |                        |                        |                        |                        |
| Max. Inter               | 59.4<br>(225)        |                        |                       | 210.2<br>(285)<br>570 | 368.8<br>(500)<br>560 | 523.7<br>(710)<br>550 | 660.1<br>(895)<br>535 |                        |                        |                        |                        |

Continuous values
  Intermittent values  
(max. 10% operation every minute)
  Peak operation  
(max. 1% operation every minute)
  No operation

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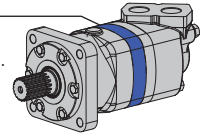
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ANFIELD Orbital Motor Catalog BMK6 Rev. B (06/25/2024)

## PERFORMANCE DATA - BMK6 SERIES

Performance data is based on the motor displacement.


**BMK6 500**

30.0 in<sup>3</sup>/rev. (490.8 cm<sup>3</sup>/rev.)

| Torque Speed<br>lbf.ft (Nm) rpm |            | Δ Pressure psi (bar) → |                    |                    |                    |                    |                     | Max. Cont.          | Max. Inter.         | Peak                |
|---------------------------------|------------|------------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
|                                 |            | 254 (17.5)             | 508 (35)           | 1015 (70)          | 1523 (105)         | 2031 (140)         | 2538 (175)          | 2901 (200)          | 3481 (240)          | 3989 (275)          |
| Flow<br>gpm (l/min) ↓           | 1.1 (4)    | 88.5 (120)<br>7        | 169.6 (230)<br>6   | 346.7 (470)<br>5   | 505.2 (685)<br>3   |                    |                     |                     |                     |                     |
|                                 | 2.1 (8)    | 92.2 (125)<br>15       | 177.0 (240)<br>14  | 350.3 (475)<br>13  | 520.0 (705)<br>12  | 693.3 (940)<br>11  | 859.3 (1165)<br>8   | 1014.1 (1375)<br>3  |                     |                     |
|                                 | 4.0 (15)   | 92.2 (125)<br>30       | 173.3 (235)<br>29  | 354.0 (480)<br>29  | 531.0 (720)<br>28  | 708.1 (960)<br>27  | 877.7 (1190)<br>25  | 1032.6 (1400)<br>21 | 1198.5 (1625)<br>17 | 1386.6 (1880)<br>12 |
|                                 | 7.9 (30)   | 92.2 (125)<br>60       | 173.3 (235)<br>59  | 357.7 (485)<br>58  | 542.1 (735)<br>57  | 719.1 (975)<br>54  | 896.1 (1215)<br>50  | 1065.8 (1445)<br>45 | 1242.8 (1685)<br>35 |                     |
|                                 | 11.9 (45)  | 92.2 (125)<br>91       | 173.3 (235)<br>90  | 357.7 (485)<br>89  | 542.1 (735)<br>87  | 719.1 (975)<br>84  | 896.1 (1215)<br>78  | 1069.5 (1450)<br>70 |                     |                     |
|                                 | 15.9 (60)  | 88.5 (120)<br>121      | 173.3 (235)<br>121 | 354.0 (480)<br>120 | 538.4 (730)<br>118 | 719.1 (975)<br>114 | 899.8 (1220)<br>108 | 1076.8 (1460)<br>98 |                     |                     |
|                                 | 19.8 (75)  | 81.1 (110)<br>152      | 166.0 (225)<br>151 | 346.7 (470)<br>149 | 534.7 (725)<br>146 | 715.4 (970)<br>142 | 899.8 (1220)<br>135 |                     |                     |                     |
|                                 | 23.8 (90)  | 73.8 (100)<br>182      | 162.3 (220)<br>182 | 343.0 (465)<br>180 | 531.0 (720)<br>178 | 711.7 (965)<br>175 | 896.1 (1215)<br>168 |                     |                     |                     |
|                                 | 27.7 (105) | 70.1 (95)<br>213       | 151.2 (205)<br>212 | 339.3 (460)<br>210 | 523.7 (710)<br>206 | 708.1 (960)<br>201 | 892.4 (1210)<br>195 |                     |                     |                     |
|                                 | 31.7 (120) | 66.4 (90)<br>244       | 143.8 (195)<br>243 | 331.9 (450)<br>240 | 516.3 (700)<br>235 | 700.7 (950)<br>228 | 888.8 (1205)<br>221 |                     |                     |                     |
|                                 | 35.7 (135) | 62.7 (85)<br>274       | 129.1 (175)<br>273 | 320.8 (435)<br>270 | 501.5 (680)<br>265 | 689.6 (935)<br>258 | 862.9 (1170)<br>250 |                     |                     |                     |
|                                 | 39.6 (150) | 51.6 (70)<br>304       | 114.3 (155)<br>303 | 309.8 (420)<br>301 | 490.5 (665)<br>292 | 678.6 (920)<br>287 | 848.2 (1150)<br>280 |                     |                     |                     |
|                                 | 50.2 (190) |                        | 95.9 (130)<br>385  | 265.5 (360)<br>382 | 427.8 (580)<br>373 | 638.0 (865)<br>365 |                     |                     |                     |                     |
|                                 | 59.4 (225) |                        |                    | 236.0 (320)<br>455 | 409.3 (555)<br>440 | 590.0 (800)<br>432 |                     |                     |                     |                     |



Continuous values



Intermittent values  
(max. 10% operation every minute)



Peak operation  
(max. 1% operation every minute)



No operation

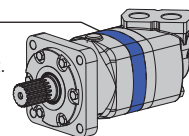
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Actual data may vary slightly from one production motor to another.

## PERFORMANCE DATA - BMK6 SERIES

Performance data  
is based on the  
motor displacement.



**BMK6 630** 38.0 in<sup>3</sup>/rev. (623.0 cm<sup>3</sup>/rev.)

| Torque<br>Speed          | lb <sub>f</sub> .ft<br>(Nm)<br>rpm | Δ Pressure psi (bar) → |                       |                       |                       | Max. Cont.             |                        | Max. Inter.            |                        |
|--------------------------|------------------------------------|------------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|                          |                                    | 254<br>(17.5)          | 508<br>(35)           | 1015<br>(70)          | 1523<br>(105)         | 2031<br>(140)          | 2538<br>(175)          | 2901<br>(200)          | 3263<br>(225)          |
| Flow<br>gpm (l/min)<br>↓ | 1.1<br>(4)                         | 95.9<br>(130)<br>6     | 180.7<br>(245)<br>5   | 368.8<br>(500)<br>4   | 553.2<br>(750)<br>2   |                        |                        |                        |                        |
|                          | 2.1<br>(8)                         | 99.6<br>(135)<br>12    | 195.5<br>(265)<br>12  | 398.3<br>(540)<br>11  | 593.7<br>(805)<br>10  | 774.4<br>(1050)<br>6   |                        |                        |                        |
|                          | 4.0<br>(15)                        | 103.3<br>(140)<br>24   | 206.5<br>(280)<br>23  | 431.5<br>(585)<br>22  | 638.0<br>(865)<br>21  | 800.3<br>(1085)<br>16  | 1051.0<br>(1425)<br>13 |                        |                        |
|                          | 7.9<br>(30)                        | 106.9<br>(145)<br>48   | 217.6<br>(295)<br>47  | 446.2<br>(605)<br>45  | 682.2<br>(925)<br>42  | 936.7<br>(1270)<br>38  | 1091.6<br>(1480)<br>34 | 1312.9<br>(1780)<br>30 | 1394.0<br>(1890)<br>27 |
|                          | 11.9<br>(45)                       | 106.9<br>(145)<br>72   | 217.6<br>(295)<br>71  | 449.9<br>(610)<br>70  | 678.6<br>(920)<br>68  | 981.0<br>(1330)<br>65  | 1080.5<br>(1465)<br>58 | 1305.5<br>(1770)<br>50 |                        |
|                          | 15.9<br>(60)                       | 99.6<br>(135)<br>95    | 210.2<br>(285)<br>94  | 446.2<br>(605)<br>91  | 674.9<br>(915)<br>87  | 981.0<br>(1330)<br>83  | 1080.5<br>(1465)<br>78 |                        |                        |
|                          | 19.8<br>(75)                       | 95.9<br>(130)<br>120   | 202.8<br>(275)<br>119 | 438.8<br>(595)<br>116 | 674.9<br>(915)<br>112 | 977.3<br>(1325)<br>106 |                        |                        |                        |
|                          | 23.8<br>(90)                       | 84.8<br>(115)<br>145   | 191.8<br>(260)<br>144 | 431.5<br>(585)<br>141 | 667.5<br>(905)<br>137 | 966.2<br>(1310)<br>130 |                        |                        |                        |
|                          | 27.7<br>(105)                      | 73.8<br>(100)<br>168   | 188.1<br>(255)<br>167 | 424.1<br>(575)<br>164 | 660.1<br>(895)<br>160 | 962.5<br>(1305)<br>152 |                        |                        |                        |
|                          | 31.7<br>(120)                      | 62.7<br>(85)<br>192    | 173.3<br>(235)<br>191 | 413.0<br>(560)<br>186 | 649.1<br>(880)<br>182 | 944.1<br>(1280)<br>175 |                        |                        |                        |
|                          | 35.7<br>(135)                      | 55.3<br>(75)<br>216    | 162.3<br>(220)<br>215 | 398.3<br>(540)<br>212 | 630.6<br>(855)<br>207 |                        |                        |                        |                        |
|                          | 39.6<br>(150)                      | 36.9<br>(50)<br>240    | 147.5<br>(200)<br>239 | 387.2<br>(525)<br>236 | 619.6<br>(840)<br>233 |                        |                        |                        |                        |
|                          | 50.2<br>(190)                      |                        |                       | 343.0<br>(465)<br>300 | 586.4<br>(795)<br>293 |                        |                        |                        |                        |
|                          | 59.4<br>(225)                      |                        |                       | 317.2<br>(430)<br>360 | 545.8<br>(740)<br>348 |                        |                        |                        |                        |

Continuous values
  Intermittent values  
(max. 10% operation every minute)
  Peak operation  
(max. 1% operation every minute)
  No operation

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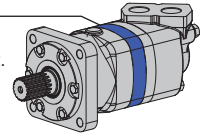
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ANFIELD Orbital Motor Catalog BMK6 Rev. B (06/25/2024)

## PERFORMANCE DATA - BMK6 SERIES

Performance data is based on the motor displacement.


**BMK6 800**

49.0 in<sup>3</sup>/rev. (802.4 cm<sup>3</sup>/rev.)

| Torque Speed<br><div>lb.f.ft (Nm)<br/>rpm</div> |               | Δ Pressure    psi (bar) ➡ |                       |                       |                       |                       |                        |                        | Max. Cont.             |                        | Max. Inter.           |
|-------------------------------------------------|---------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|
|                                                 |               | 254<br>(17.5)             | 508<br>(35)           | 725<br>(50)           | 1015<br>(70)          | 1233<br>(85)          | 1523<br>(105)          | 1740<br>(120)          | 2031<br>(140)          | 2248<br>(155)          | 2538<br>(175)         |
| Flow gpm (l/min) ⬇                              | 1.1<br>(4)    | 126.9<br>(172)<br>4       | 254.5<br>(345)<br>4   | 390.9<br>(530)<br>2   | 508.9<br>(690)<br>2   | 634.3<br>(860)<br>1   |                        |                        |                        |                        |                       |
|                                                 | 2.1<br>(8)    | 132.8<br>(180)<br>9       | 261.8<br>(355)<br>9   | 398.3<br>(540)<br>8   | 534.7<br>(725)<br>8   | 704.4<br>(955)<br>7   | 796.6<br>(1080)<br>6   | 940.4<br>(1275)<br>5   | 1003.1<br>(1360)<br>4  |                        |                       |
|                                                 | 4.0<br>(15)   | 136.4<br>(185)<br>18      | 272.9<br>(370)<br>18  | 416.7<br>(565)<br>17  | 559.1<br>(758)<br>17  | 722.8<br>(980)<br>16  | 833.4<br>(1130)<br>15  | 933.0<br>(1265)<br>14  | 1047.3<br>(1420)<br>12 | 1220.7<br>(1655)<br>10 | 1386.6<br>(1880)<br>9 |
|                                                 | 7.9<br>(30)   | 140.1<br>(190)<br>36      | 284.0<br>(385)<br>35  | 435.2<br>(590)<br>34  | 586.4<br>(795)<br>33  | 741.2<br>(1005)<br>32 | 855.1<br>(1200)<br>31  | 981.0<br>(1330)<br>29  | 1165.3<br>(1580)<br>28 | 1283.4<br>(1740)<br>26 |                       |
|                                                 | 11.9<br>(45)  | 140.1<br>(190)<br>55      | 284.0<br>(385)<br>55  | 435.2<br>(590)<br>54  | 590.0<br>(800)<br>53  | 748.6<br>(1015)<br>52 | 855.1<br>(1200)<br>52  | 1017.8<br>(1380)<br>50 | 1143.2<br>(1550)<br>48 |                        |                       |
|                                                 | 15.9<br>(60)  | 136.4<br>(185)<br>74      | 280.3<br>(380)<br>73  | 427.8<br>(580)<br>72  | 582.7<br>(790)<br>70  | 748.6<br>(1015)<br>69 | 855.1<br>(1200)<br>67  | 992.0<br>(1345)<br>65  |                        |                        |                       |
|                                                 | 19.8<br>(75)  | 129.8<br>(176)<br>92      | 272.9<br>(370)<br>92  | 424.1<br>(575)<br>91  | 576.8<br>(782)<br>88  | 737.6<br>(1000)<br>87 | 874.0<br>(1185)<br>85  | 1006.8<br>(1365)<br>82 |                        |                        |                       |
|                                                 | 23.8<br>(90)  | 121.7<br>(165)<br>112     | 265.5<br>(360)<br>111 | 413.0<br>(560)<br>110 | 564.2<br>(765)<br>108 | 730.2<br>(990)<br>106 | 862.9<br>(1170)<br>102 |                        |                        |                        |                       |
|                                                 | 27.7<br>(105) | 110.6<br>(150)<br>130     | 250.8<br>(340)<br>129 | 409.3<br>(555)<br>128 | 553.2<br>(750)<br>127 | 716.9<br>(972)<br>125 | 851.9<br>(1155)<br>120 |                        |                        |                        |                       |
|                                                 | 31.7<br>(120) | 97.4<br>(132)<br>179      | 239.7<br>(325)<br>148 | 402.0<br>(545)<br>146 | 542.1<br>(735)<br>143 | 697.0<br>(945)<br>140 | 833.4<br>(1130)<br>135 |                        |                        |                        |                       |
|                                                 | 35.7<br>(135) | 77.4<br>(105)<br>168      | 222.7<br>(302)<br>167 | 387.2<br>(525)<br>165 | 523.7<br>(710)<br>162 | 671.9<br>(911)<br>158 |                        |                        |                        |                        |                       |
| Max. Cont.                                      | 39.6<br>(150) | 59.0<br>(80)<br>186       | 199.1<br>(270)<br>185 | 368.8<br>(500)<br>183 | 501.5<br>(680)<br>180 | 649.1<br>(880)<br>176 |                        |                        |                        |                        |                       |
|                                                 | 50.2<br>(190) |                           | 221.3<br>(300)<br>235 | 350.3<br>(475)<br>233 | 486.8<br>(660)<br>230 | 630.6<br>(855)<br>226 |                        |                        |                        |                        |                       |
| Max. Inter.                                     | 59.4<br>(225) |                           |                       | 312.0<br>(423)<br>280 | 451.4<br>(612)<br>276 | 612.2<br>(830)<br>272 |                        |                        |                        |                        |                       |



Continuous values



Intermittent values  
(max. 10% operation every minute)



Peak operation  
(max. 1% operation every minute)



No operation

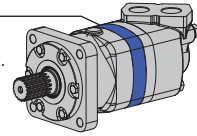
Motors run with high efficiency in all areas until maximum continuous values are exceeded. For best service life of the motor select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical of randomly selected motors at back pressure of 5 to 10 bar [72.5 to 145 psi] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

Actual data may vary slightly from one production motor to another.

## PERFORMANCE DATA - BMK6 SERIES

Performance data  
is based on the  
motor displacement.



**BMK6 1000** 59.9 in<sup>3</sup>/rev. (981.6 cm<sup>3</sup>/rev.)

| Torque Speed<br><div>lb·ft<br/>(Nm)<br/>rpm</div> |               | Δ Pressure    psi (bar) ➡ |                       |                       |                       |                        |                         | Max. Cont.             | Max. Inter.            |  |
|---------------------------------------------------|---------------|---------------------------|-----------------------|-----------------------|-----------------------|------------------------|-------------------------|------------------------|------------------------|--|
|                                                   |               | 254<br>(17.5)             | 508<br>(35)           | 725<br>(50)           | 1015<br>(70)          | 1233<br>(85)           | 1523<br>(105)           | 1740<br>(120)          | 2031<br>(140)          |  |
| Flow<br>gpm (l/min)<br>⬇                          | 1.1<br>(4)    | 166.0<br>(225)<br>3       | 339.3<br>(460)<br>3   | 472.0<br>(640)<br>2   | 645.4<br>(875)<br>2   | 800.3<br>(1085)<br>1   |                         |                        |                        |  |
|                                                   | 2.1<br>(8)    | 169.6<br>(230)<br>7       | 346.7<br>(470)<br>7   | 512.6<br>(695)<br>6   | 697.0<br>(945)<br>6   | 862.9<br>(1170)<br>5   | 1043.6<br>(1415)<br>4   | 1150.6<br>(1560)<br>3  | 1235.4<br>(1675)<br>2  |  |
|                                                   | 4.0<br>(15)   | 177.0<br>(240)<br>15      | 357.7<br>(485)<br>15  | 527.4<br>(715)<br>15  | 711.7<br>(965)<br>14  | 885.1<br>(1200)<br>14  | 1065.8<br>(1445)<br>13  | 1165.3<br>(1580)<br>13 | 1312.9<br>(1780)<br>12 |  |
|                                                   | 7.9<br>(30)   | 177.0<br>(240)<br>30      | 365.1<br>(495)<br>30  | 531.0<br>(720)<br>30  | 733.9<br>(995)<br>29  | 910.9<br>(1235)<br>28  | 1091.6<br>(1480)<br>27  | 1209.6<br>(1640)<br>25 | 1371.9<br>(1860)<br>23 |  |
|                                                   | 11.9<br>(45)  | 177.0<br>(240)<br>45      | 365.1<br>(495)<br>45  | 531.0<br>(720)<br>44  | 737.6<br>(1000)<br>44 | 922.0<br>(1250)<br>43  | 1099.0<br>(1490)<br>42  | 1253.9<br>(1700)<br>40 |                        |  |
|                                                   | 15.9<br>(60)  | 173.3<br>(235)<br>60      | 361.4<br>(490)<br>60  | 527.4<br>(715)<br>60  | 730.2<br>(990)<br>59  | 918.3<br>(1245)<br>57  | 1106.3<br>(1500)<br>55  |                        |                        |  |
|                                                   | 19.8<br>(75)  | 166.0<br>(225)<br>76      | 350.3<br>(475)<br>76  | 523.7<br>(710)<br>76  | 722.8<br>(980)<br>75  | 907.2<br>(1230)<br>73  | 1095.3<br>(1485)<br>70  |                        |                        |  |
|                                                   | 23.8<br>(90)  | 158.6<br>(215)<br>91      | 339.3<br>(460)<br>91  | 520.0<br>(705)<br>91  | 708.1<br>(960)<br>90  | 896.1<br>(1215)<br>88  | 1080.5<br>(1465)<br>85  |                        |                        |  |
|                                                   | 27.7<br>(105) | 147.5<br>(200)<br>106     | 328.2<br>(445)<br>106 | 508.9<br>(690)<br>105 | 693.3<br>(940)<br>105 | 881.4<br>(1195)<br>103 | 1062.1<br>(1440)<br>100 |                        |                        |  |
|                                                   | 31.7<br>(120) | 136.4<br>(185)<br>122     | 309.8<br>(420)<br>122 | 490.5<br>(665)<br>121 | 678.6<br>(920)<br>119 | 851.9<br>(1155)<br>116 |                         |                        |                        |  |
| Max. Cont.                                        | 35.7<br>(135) | 110.6<br>(150)<br>137     | 287.6<br>(390)<br>137 | 468.4<br>(635)<br>136 | 656.4<br>(890)<br>136 | 826.1<br>(1120)<br>134 |                         |                        |                        |  |
|                                                   | 39.6<br>(150) | 81.1<br>(110)<br>152      | 265.5<br>(360)<br>151 | 446.2<br>(605)<br>150 | 634.3<br>(860)<br>148 | 796.6<br>(1080)<br>145 |                         |                        |                        |  |
|                                                   | Max. Inter.   | 50.2<br>(190)             |                       | 236.0<br>(320)<br>192 | 424.1<br>(575)<br>190 | 604.8<br>(820)<br>188  | 770.8<br>(1045)<br>185  |                        |                        |  |
|                                                   |               | 59.4<br>(225)             |                       |                       | 379.8<br>(515)<br>230 | 590.0<br>(800)<br>228  | 752.3<br>(1020)<br>224  |                        |                        |  |

Continuous values
  Intermittent values  
(max. 10% operation every minute)
  Peak operation  
(max. 1% operation every minute)
  No operation

Motors run with high efficiency in all areas until maximum continuous values are exceeded. For best service life of the motor select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical of randomly selected motors at back pressure of 5 to 10 bar [72.5 to 145 psi] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

Actual data may vary slightly from one production motor to another.

ANFIELD Orbital Motor Catalog BMK6 Rev. B (06/25/2024)



|                             |                          |
|-----------------------------|--------------------------|
| <b>BMK6 MOUNTING FLANGE</b> | <b>CODE</b><br><b>CC</b> |
| <b>4-Bolt, Square Mount</b> | <b>CC1</b>               |

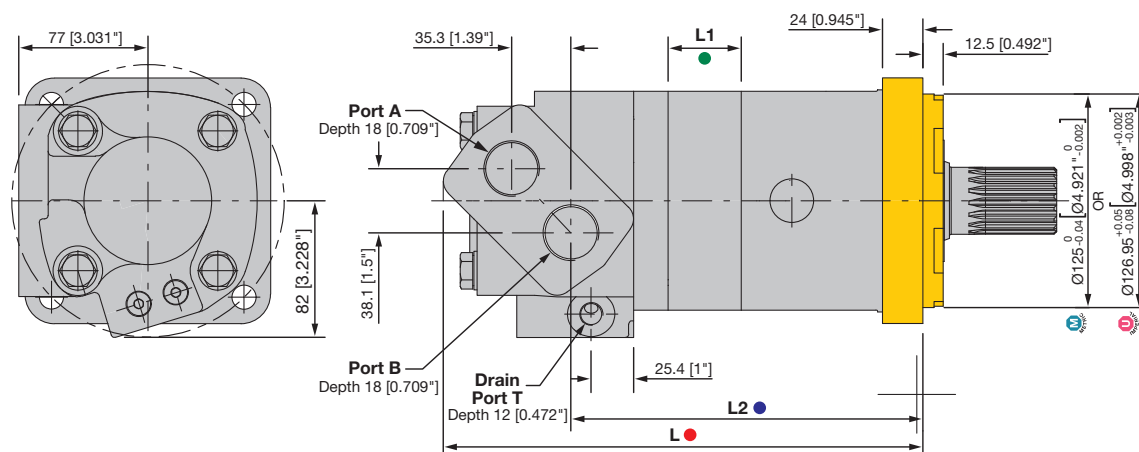
- Pilot Diameter: 5"
- Bolt Circle Diameter: 6.37"

- Pilot Diameter: 125 mm
- Bolt Circle Diameter: 161.9 mm

Technical drawing of the 3000 series hydraulic cylinder. The top view shows a yellow mounting flange with a central gear and a purple arrow indicating rotation. The side view shows a grey cylinder body with a mounting bracket (A) and a port (B). The bottom view shows a circular flange with a central gear and four mounting holes. Dimensions are given in millimeters and inches.

Dimensions:

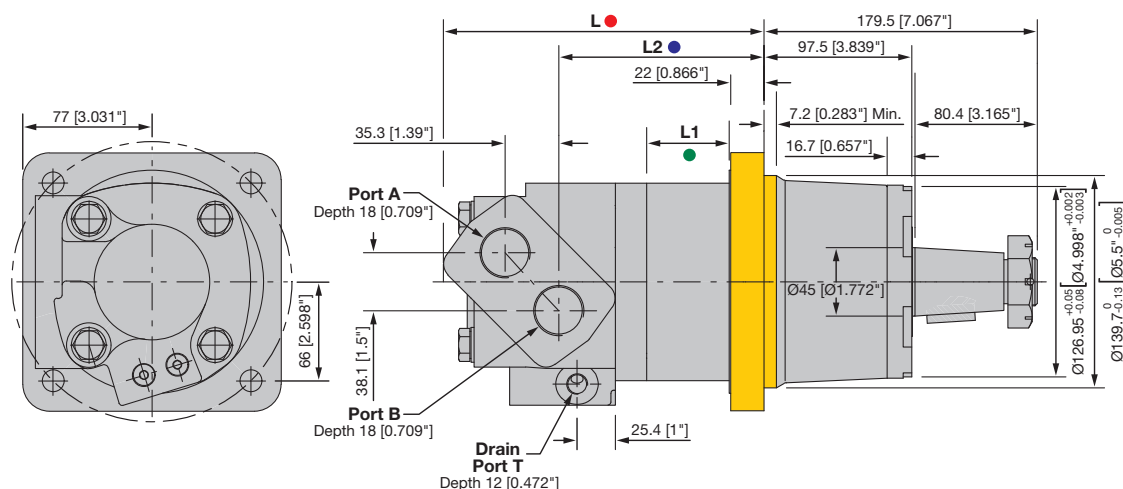
- 161.9 [6.374"]
- 4 x Ø14.2 [Ø0.559"]



## **BMK6 MOUNTING FLANGE**

- Pilot Diameter: 5.5"
- Bolt Circle Diameter: 7.25"

170 x 170 Max. [6.693" x 6.693"]  
 4 x Ø14.2 [Ø0.559"]  
 12.249"  
 170"  
 170"  
 A  
 B  
 T



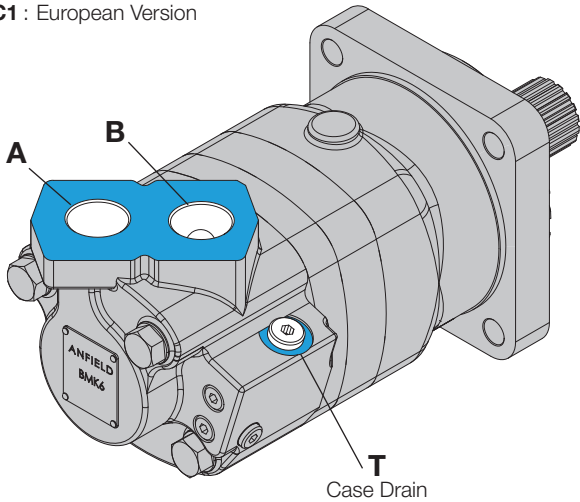
ANFIELD Orbital Motor Catalog BMK6 Rev. B (06/25/2024)

## BMK6 PORT OPTIONS

### 4-Bolt, Square Mount

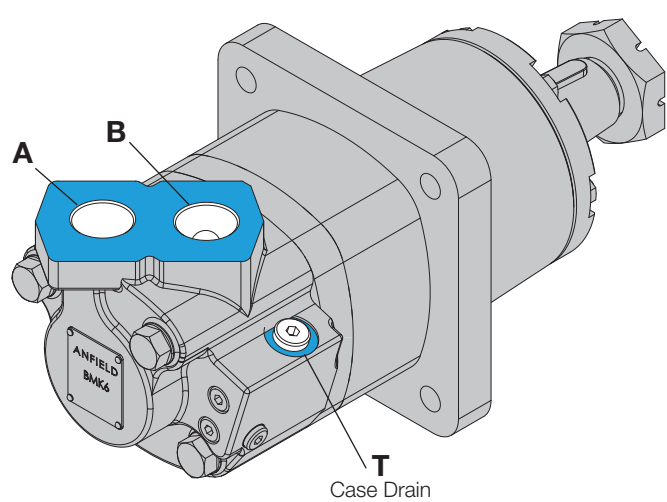
CC : U.S. Version

CC1 : European Version



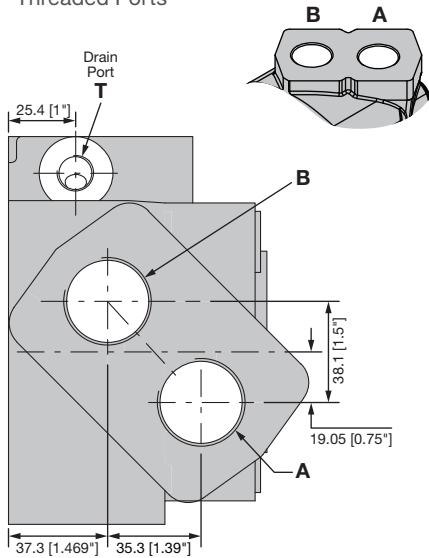
### 4-Bolt, Wheel Mount

W : U.S. Version



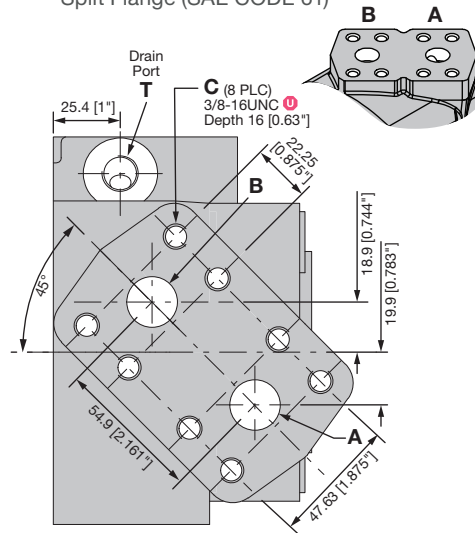
#### BMK6 PORTS SF5 SF6 SF7 SF8

**Line Mount**  
Threaded Ports



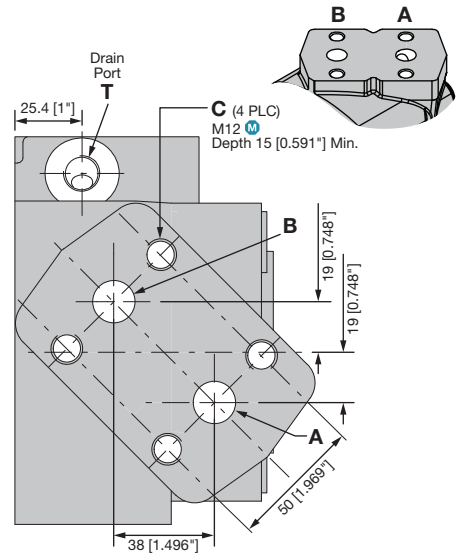
#### BMK6 PORTS SF

**Line Mount**  
Split Flange (SAE CODE 61)



#### BMK6 PORTS SF0

**Manifold Mount**



| BMK6 PORT CODE |                  |                |              |             |                           |                           |
|----------------|------------------|----------------|--------------|-------------|---------------------------|---------------------------|
|                | SF5              | SF6            | SF7          | SF8         | SF                        | SF0                       |
| Connection     | SAE ports        | Metric ports   | BSPP ports   | BSPP ports  | Split Flange ports        | Manifold Mount            |
| P (A,B)        | 1-5/16-12UN (18) | M33 x 2 (18)   | G 1" (15)    | G 3/4" (18) | 3/4"CD61 (Ø19.05)         | Ø16                       |
| T              | 7/16-20 UNF (12) | M14 x 1.5 (12) | G 1/4" (12)) | G 1/4" (12) | 7/16-20UNF (12)           | M14x1.5 (12) <sup>M</sup> |
| C              | --               | --             | --           | --          | 8x 3/8-16UNC <sup>U</sup> | 4x M12 <sup>M</sup>       |

SF5 : SAE-16 O-ring Staggered Ports (2), SAE-4 Case Drain Port (1)

SF6 : M33x2 (Metric) Staggered Ports (2), M14x1.4 (Metric) Case Drain Port (1)

SF7 : G1 (BSP) Staggered Ports (2), G1/4 (BSP) Case Drain Port (1)

SF8 : G3/4 (BSP) Staggered Ports (2), G1/4 (BSP) Case Drain Port (1)

SF : 4 Bolt 3/4 Inch Split Flange (Code 61) (2), SAE-4 Case Drain Port (1)

SF0 : 4 Bolt (Metric) Manifold Mount Ø16 (2), M14x1.4 (Metric) Case Drain Port (1)

(Depth in mm)

### BMK6 SHAFT EXTENSIONS

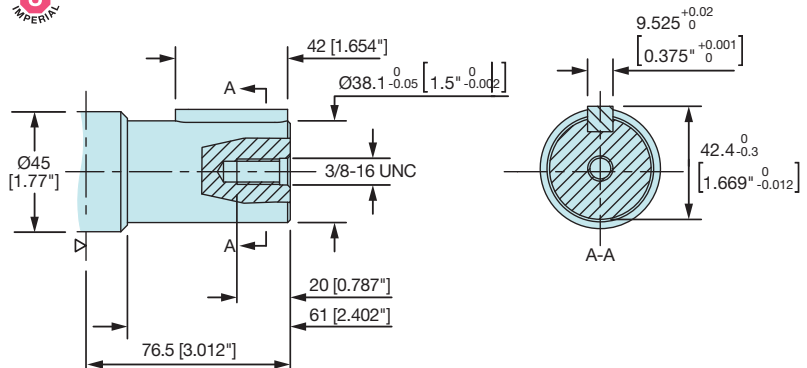
#### IMPORTANT:

Ensure that the torque rating of your motor does not exceed shaft torque limitations stated below. Please refer to performance data charts.

#### BMK6 SHAFT EXTENSION CODE G2 U IMPERIAL

**1 1/2" Straight Keyed**  
Parallel key 3/8"x3/8"x1.65"

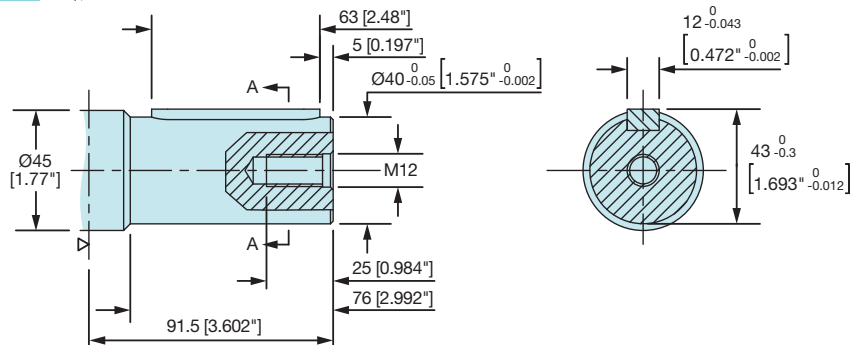
**Max. Torque**  
980 lbf.ft [1328 Nm]



#### BMK6 SHAFT EXTENSION CODE Y1 M METRIC

**40 mm Straight Keyed**  
Parallel key 12x8x63

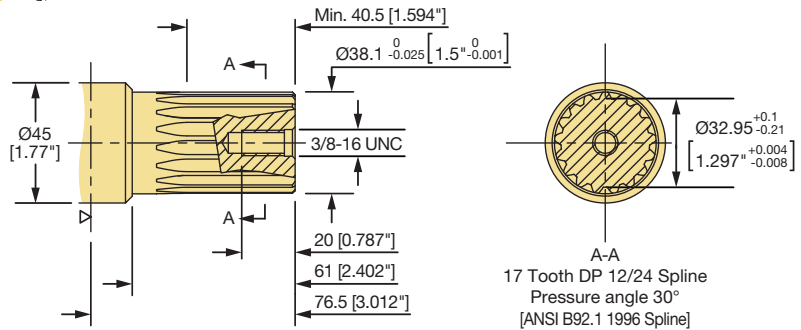
**Max. Torque**  
980 lbf.ft [1328 Nm]



#### BMK6 SHAFT EXTENSION CODE FE U IMPERIAL

**1 1/2" 17 Tooth Splined**

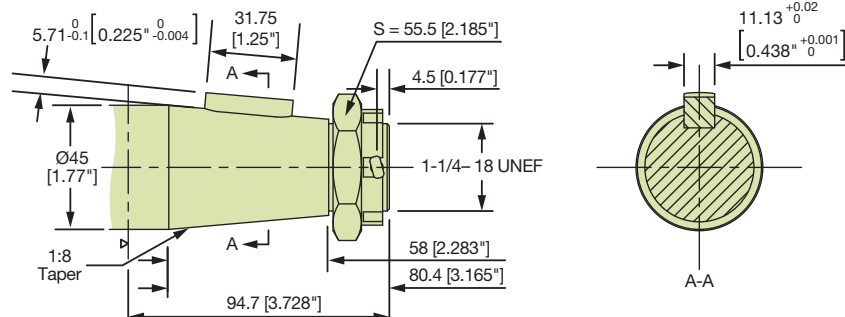
**Max. Torque**  
980 lbf.ft [1328 Nm]



#### BMK6 SHAFT EXTENSION CODE T1 M METRIC

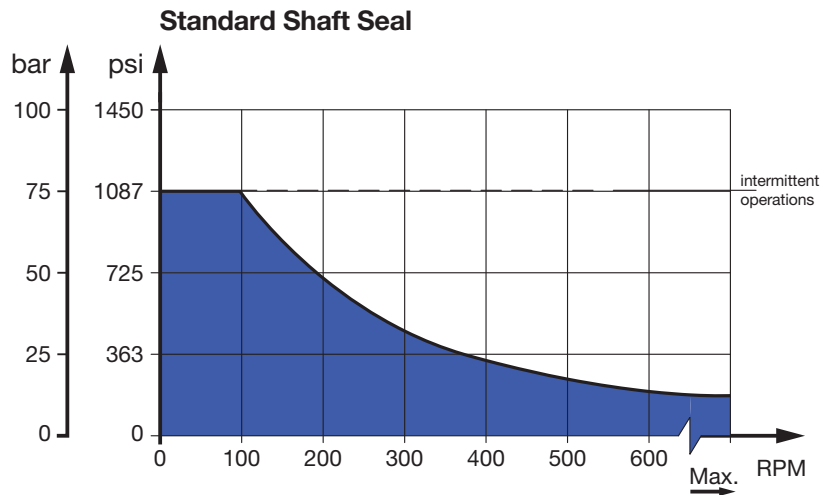
**45 mm Tapered (1:8) w/ Nut**  
Parallel Key 11.3x11.3x31.75

**Max. Torque**  
1549 lbf.ft [2100 Nm]



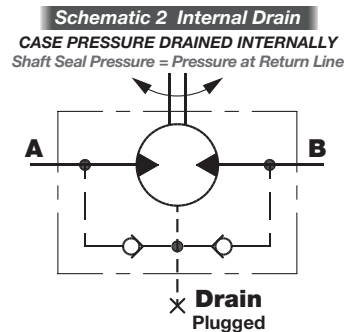
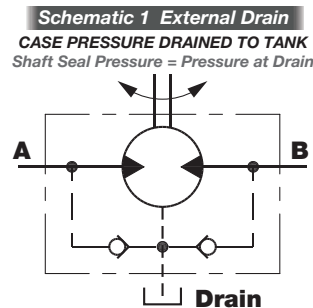
mm [Inch]  
U Imperial M Metric

## PERMISSIBLE SHAFT SEAL PRESSURES - BMK6 SERIES



### Internal Drain, Permissible back pressure and case pressure:

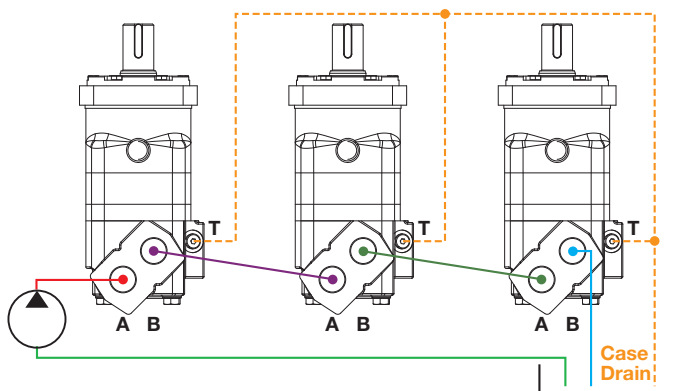
The internal drain option is standard on all BMK6 series motors. There are Built-In Check Valves integrated in the housing of the motor that connect the case area of the motor to each of the work ports (A and B). During normal operation, pressure in the input and return lines of the motor close the corresponding check valves. However, when the pressure in the motor case becomes greater than that of the return line, the check valve between the case and low pressure return line opens, allowing the case leakage to flow into the return line. Since the operation of the check valves is dependent upon a pressure differential, the internal drain option operates in either direction of motor rotation and whichever work port (A or B) has the lower pressure. This offers versatility and increased seal life as the drain line relieves the pressure on the shaft seal to tank.<sup>1)</sup>



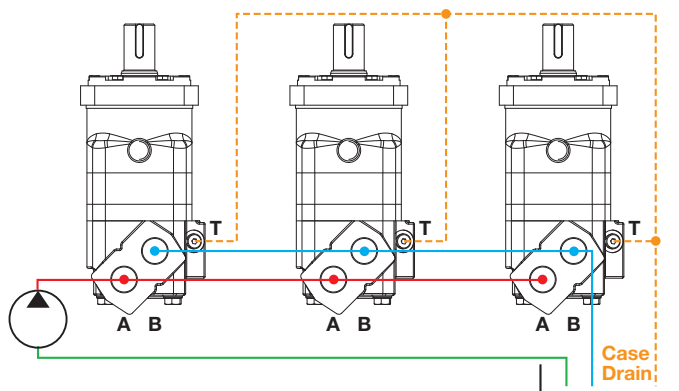
### Important:

1) Installing motors with "internal drainage" in series or when the motor operates in a meter-out circuit is not recommended unless overall pressure drop over all motors is below the maximum allowable backpressure.

### Series Connection



### Parallel Connection



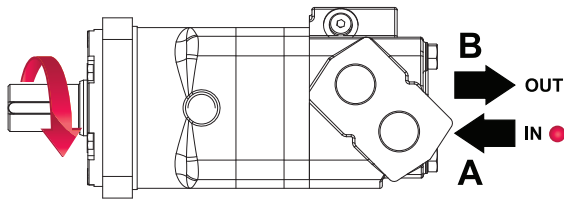
## DIRECTION OF SHAFT ROTATION - BMK6 SERIES

### Standard Rotation

(Viewed from Shaft End)

Port **A** Pressurized - **CW**

Port **B** Pressurized - **CCW**

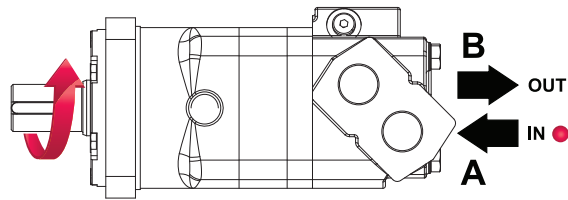


### Reverse Rotation

(Viewed from Shaft End)

Port **A** Pressurized - **CCW**

Port **B** Pressurized - **CW**



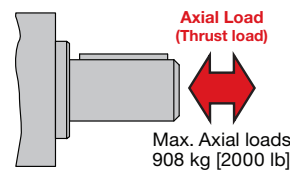
## PERMISSIBLE SHAFT LOADS FOR BMK6 MOTORS

These curves indicate the radial load capacity on the motor shaft(s) at various locations with an external thrust load of 454 kg [1000 lb]. The maximum allowable thrust load is 908 kg [2000 lb].

**Note:** Case pressure will increase the allowable inward thrust load and decrease the allowable outward thrust load. Case pressure will push outward on the shaft at 109 kg/7 Bar [241 lb/100 PSI].

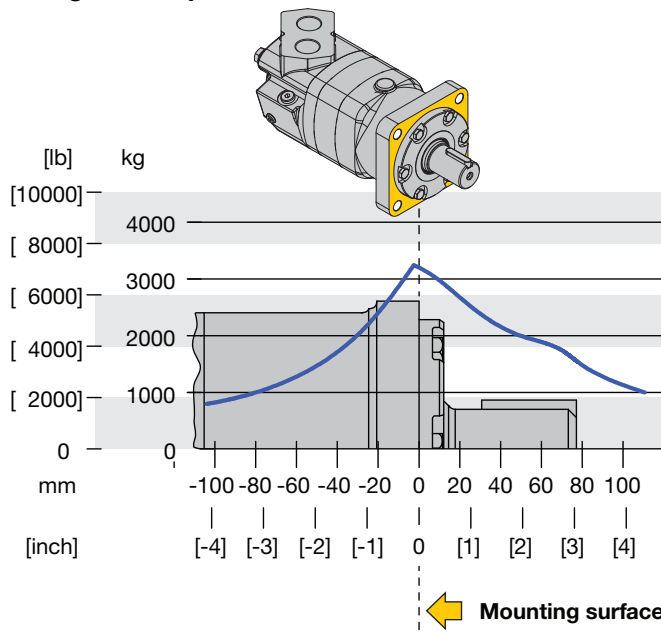
**Each curve is based on B10 bearing life (2000 hours of 12,000,000 shaft revolutions at 100 RPM) at rated output torque.**

To determine radial load at speeds other than 100 RPM, multiply the load values given on the bearing curve by the factors in the chart on the right.

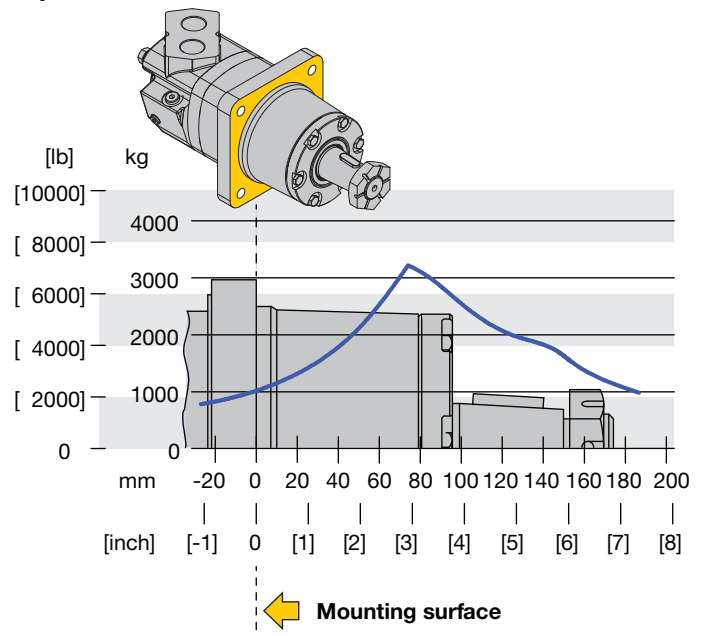


| RPM | Multiplication Factor |
|-----|-----------------------|
| 50  | 1.23                  |
| 100 | 1.00                  |
| 200 | 0.81                  |
| 300 | 0.72                  |
| 400 | 0.66                  |
| 500 | 0.62                  |
| 600 | 0.58                  |
| 700 | 0.56                  |
| 800 | 0.54                  |

### Standard motor (CC, CC1) straight and splined shafts (G2, Y1, FE)



### Wheel motor (W) tapered shafts (T1)

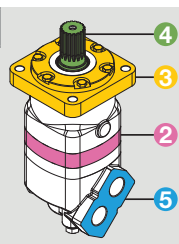


## BMK6 DESIGNATION & ORDERING CODE

### BMK6 - 400 - CC - G2 - SF5 - ... - ...

**1 Series**

BMK6



**2 Displacement**

|      | cm <sup>3</sup> /rev | in <sup>3</sup> /rev |
|------|----------------------|----------------------|
| 200  | 195.6                | 11.94                |
| 250  | 246.1                | 15.02                |
| 315  | 311.6                | 19.01                |
| 400  | 391.3                | 23.88                |
| 500  | 490.8                | 29.95                |
| 630  | 623.0                | 38.02                |
| 800  | 802.4                | 48.97                |
| 1000 | 981.6                | 59.90                |

*\*Pages 6-13 for performance details.*

**3 Mounting Type**

|     |                                                                        |                                                                                     |                                                                                     |
|-----|------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| CC  | 4-Bolt, Square Mount<br>Pilot Dia: 5" Bolt Circle Dia: 6.37"           |  |  |
| CC1 | 4-Bolt, Square Mount<br>Pilot Dia: 125 mm<br>Bolt Circle Dia: 161.9 mm |  |  |
| W   | Wheel Mount<br>Pilot Dia: 5.5" Bolt Circle Dia: 7.25"                  |  |  |

*\*Page 14 for mounting details.*

**7 Options**

|      |               |
|------|---------------|
| Omit | None          |
| 0    | No Case Drain |

*\*Contact Anfield if option required is not listed.*

**6 Rotation**

|      |                   |
|------|-------------------|
| Omit | Standard Rotation |
| R    | Reverse Rotation  |

*\*Page 18 for rotation details.*

**5 Ports (A&B,T)**

|     |                                             |                                                                                       |
|-----|---------------------------------------------|---------------------------------------------------------------------------------------|
| SF5 | SAE Staggered Ports (-16,-4)                |  |
| SF6 | Metric Staggered Ports (M33,M14)            |  |
| SF7 | BSPP Staggered Ports (G1,G1/4)              |                                                                                       |
| SF8 | BSPP Staggered Ports (G3/4,G1/4)            |                                                                                       |
| SF  | Staggered Split Flange Ports (3/4" CD61,-4) |  |
| SF0 | Manifold Ports (Ø16,M14)                    |  |

*\*Page 15 for port details.*

**4 Output Shaft**

|    |                                          |                                                                                     |                                                                                      |
|----|------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| G2 | 1½" Straight Keyed (3/8"x3/8"x1.65" key) |  |  |
| Y1 | 40 mm Straight Keyed (12x8x63 key)       |  |  |
| FE | 1½" 17 Tooth Splined                     |  |  |
| T1 | 45 mm Tapered (1:8)                      |  |  |

*\*Page 16 for shaft details.*

Anfield BMK6 series motors are painted black and the JBMK6 series motors are painted industrial gray. For information on the JBMK6 motors contact Anfield.









# Strength in Products, Strength in Service

- Pressure Switches
- Temperature Switches
- Differential Switches
- Level Switches
- Vacuum Switches
- Transducers
- Gear Pumps
- Vane Pumps
- Dump Pumps
- Variable Piston Pumps
- Orbital Motors
- Vane Motors
- Gear Motors
- Monoblock Valves
- High Pressure Ball Valves
- Flow Controls & Needle Valves
- Drive Couplings
- Flanges
- Gauges
- Test Points

ANFIELD Orbital Motor Catalog BMK6 Rev. B (06/25/2024)



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