# WM Series

Hydraulic Mini Motor

## WM (All Series)

For Light Duty Applications

### OVERVIEW

The WM product line with spool valve design is an economical motor with enhanced rotor technology. Intended for light-duty applications, the WM series offers many advantages such as compact size, high speed, medium torque and extreme low weight. The WM series motors are used primarily in the mobile, industrial and agricultural markets.

### FEATURES / BENEFITS

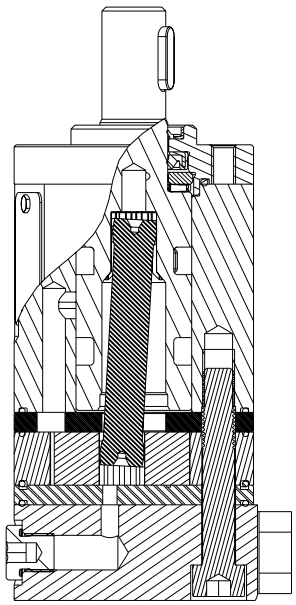
- Built-in check valves offer versatility and increased seal life.
- Bolt-on mounting flange relates to easy serviceability.
- Spool valve design gives superior performance and smooth operation over a wide speed and torque range.
- Enhanced rotor design provides smooth performance, compact volume and low weight.

### TYPICAL APPLICATIONS

agriculture equipment, conveyors, carwashes, sweepers, food processing, grain augers, spreaders, feed rollers, augers, brush drives and more

### SERIES DESCRIPTIONS

**125/126** - Hydraulic Mini Motor
*Standard*



### SPECIFICATIONS

| CODE | Displacement $cm^3$ [$in^3$/rev] | Max. Speed rpm | | Max. Flow lpm [gpm] | | Max. Torque Nm [lb-in] | | Max. Pressure bar [psi] | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | cont. | inter. | cont. | inter. | cont. | inter. | cont. | inter. | peak |
| 008 | 8.4 [0.5] | 1864 | 2293 | 16 [4] | 20 [5] | 11 [97] | 14 [124] | 100 [1450] | 140 [2030] | 200 [2900] |
| 012 | 13.1 [0.8] | 1521 | 1871 | 20 [5] | 25 [7] | 17 [150] | 22 [195] | 100 [1450] | 140 [2030] | 200 [2900] |
| 020 | 20.1 [1.2] | 989 | 1229 | 20 [5] | 25 [7] | 26 [230] | 34 [301] | 100 [1450] | 140 [2030] | 200 [2900] |
| 032 | 31.8 [1.9] | 622 | 767 | 20 [5] | 25 [7] | 40 [354] | 55 [487] | 100 [1450] | 140 [2030] | 160 [2320] |
| 040 | 40.2 [2.5] | 495 | 620 | 20 [5] | 25 [7] | 49 [434] | 64 [566] | 100 [1450] | 140 [2030] | 160 [2320] |

▶ Performance data is typical. Performance of production units varies slightly from one motor to another. Running at intermittent ratings should not exceed 10% of every minute of operation.

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### DISPLACEMENT PERFORMANCE

**008**

8 cm³ [0.5 in³] / rev

| Flow - lpm [gpm] | Max. Max. Inter. Cont. | Pressure - bar [psi] 30 [435] | 50 [725] | 70 [1015] | Max. Cont. 100 [1450] | 120 [1740] | Max. Inter. 140 [2030] | Theoretical rpm |
|---|---|---|---|---|---|---|---|---|
| | | Torque - Nm [lb-in], **Speed rpm** | | | | **Intermittent Ratings -** 10% of Operation | | |
| 2 [0.5] | | 3 [25] **226** | 5 [44] **219** | 7 [62] **196** | 10 [89] **166** | 11 [97] **141** | 14 [124] **117** | 237 |
| 4 [1] | | 3 [25] **476** | 5 [44] **455** | 8 [71] **435** | 10 [89] **402** | 12 [106] **384** | 12 [106] **351** | 474 |
| 8 [2] | | | 5 [44] **915** | 7 [62] **893** | 10 [89] **850** | 12 [106] **816** | 14 [124] **778** | 949 |
| 12 [3] | | | 5 [41] **1390** | 7 [62] **1366** | 11 [97] **1328** | 12 [106] **1292** | 14 [124] **1268** | 1423 |
| 16 [4] | | | 4 [35] **1864** | 7 [58] **1847** | 10 [89] **1815** | 12 [106] **1792** | 13 [115] **1771** | 1898 |
| 20 [5] | | | 4 [35] **2293** | 6 [53] **2277** | 9 [80] **2272** | 12 [106] **2245** | 12 [106] **2190** | 2372 |

**Overall Efficiency -** 70 - 100% 40 - 69% 0 - 39%

| Rotor Width | Theoretical Torque - Nm [lb-in] | | | | | |
|---|---|---|---|---|---|---|
| 3.3 [.130] | 4 [36] | 7 [59] | 9 [83] | 13 [119] | 17 [148] | 19 [166] |

mm [in]

Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

**012**

13 cm³ [0.8 in³] / rev

| Flow - lpm [gpm] | Max. Max. Inter. Cont. | Pressure - bar [psi] 30 [435] | 50 [725] | 70 [1015] | Max. Cont. 100 [1450] | 120 [1740] | Max. Inter. 140 [2030] | Theoretical rpm |
|---|---|---|---|---|---|---|---|---|
| | | Torque - Nm [lb-in], **Speed rpm** | | | | **Intermittent Ratings -** 10% of Operation | | |
| 3 [0.8] | | 5 [44] **220** | 8 [71] **212** | 11 [97] **195** | 16 [142] **176** | | | 230 |
| 5 [1.3] | | 6 [53] **367** | 9 [80] **362** | 12 [106] **351** | 17 [150] **320** | 19 [168] **304** | | 383 |
| 10 [2.6] | | 5 [44] **757** | 9 [80] **748** | 11 [97] **728** | 16 [142] **703** | 19 [168] **659** | 22 [195] **609** | 766 |
| 15 [4.0] | | 4 [35] **1134** | 8 [71] **1124** | 11 [97] **1106** | 16 [142] **1072** | 18 [159] **1049** | 21 [186] **1026** | 1149 |
| 20 [5.3] | | 3 [27] **1521** | 6 [53] **1511** | 10 [89] **1498** | 14 [124] **1480** | 17 [150] **1449** | 21 [186] **1413** | 1533 |
| 25 [6.6] | | | 5 [44] **1871** | 9 [80] **1858** | 13 [115] **1850** | 17 [150] **1840** | 19 [168] **1793** | 1916 |

**Overall Efficiency -** 70 - 100% 40 - 69% 0 - 39%

| Rotor Width | Theoretical Torque - Nm [lb-in] | | | | | |
|---|---|---|---|---|---|---|
| 5.2 [.205] | 6 [55] | 10 [92] | 15 [129] | 21 [184] | 25 [221] | 29 [257] |

mm [in]

Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

**020**

20 cm³ [1.2 in³] / rev

| Flow - lpm [gpm] | Max. Max. Inter. Cont. | Pressure - bar [psi] 30 [435] | 50 [725] | 70 [1015] | Max. Cont. 100 [1450] | 120 [1740] | Max. Inter. 140 [2030] | Theoretical rpm |
|---|---|---|---|---|---|---|---|---|
| | | Torque - Nm [lb-in], **Speed rpm** | | | | **Intermittent Ratings -** 10% of Operation | | |
| 3 [0.8] | | 8 [12] **143** | 13 115] **133** | 13 [115] **133** | | | | 149 |
| 5 [1.3] | | 8 [71] **241** | 13 [115] **233** | 18 [159] **223** | 25 [221] **204** | 31 [274] **185** | | 248 |
| 10 [2.6] | | 7 [62] **489** | 12 [106] **479** | 18 [159] **470** | 26 [230] **454** | 29 [257] **454** | 34 [301] **454** | 497 |
| 15 [4.0] | | 6 [29] **731** | 12 [106] **714** | 18 [159] **692** | 25 [221] **670** | 29 [257] **648** | 34 [301] **613** | 745 |
| 20 [5.3] | | 5 [44] **989** | 11 [97] **974** | 16 [142] **962** | 24 [212] **941** | 28 [248] **941** | 33 [292] **941** | 994 |
| 25 [6.6] | | 4 [35] **1229** | 10 [89] **1216** | 14 [124] **1224** | 22 [195] **1182** | 26 [230] **1132** | 31 [274] **1104** | 1242 |

**Overall Efficiency -** 70 - 100% 40 - 69% 0 - 39%

| Rotor Width | Theoretical Torque - Nm [lb-in] | | | | | |
|---|---|---|---|---|---|---|
| 8.0 [.316] | 10 [85] | 16 [142] | 22 [199] | 32 [284] | 38 [336] | 45 [397 |

mm [in]

Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

- Performance data is typical. Performance of production units varies slightly from one motor to another.

## WM (All Series)

For Light Duty Applications

### PERFORMANCE

**032**

32 cm³ [1.9 in³] / rev

Pressure - bar [psi] | Max. Cont. | Max. Inter.

Torque - Nm [lb-in], **Speed rpm**

**Intermittent Ratings -** 10% of Operation

| Flow - lpm [gpm] | 30 [435] | 50 [725] | 70 [1015] | 100 [1450] | 120 [1740] | 140 [2030] | Theoretical rpm |
|---|---|---|---|---|---|---|---|
| 3 [0.8] | 12 [106] **84** | | | | | | 94 |
| 5 [1.3] | 12 [106] **148** | 21 [186] **139** | 28 [248] **113** | | | | 157 |
| 10 [2.6] | 12 [106] **301** | 20 [177] **293** | 28 [248] **284** | 39 [345] **269** | 46 [407] **254** | 55 [487] **234** | 314 |
| 15 [4.0] | 11 [97] **456** | 19 [168] **448** | 28 [248] **437** | 40 [354] **423** | 44 [389] **412** | 52 [460] **396** | 472 |
| 20 [5.3] Max. Inter. | 9 [80] **622** | 18 [159] **610** | 26 [230] **601** | 38 [336] **589** | 42 [372] **547** | 51 [451] **514** | 629 |
| 25 [6.6] Max. Cont. | 7 [62] **767** | 16 [142] **754** | 24 [212] **741** | 35 [310] **718** | 42 [372] **679** | 48 [425] **633** | 786 |

**Overall Efficiency -** 70 - 100% ☐ 40 - 69% ☐ 0 - 39% ☐

**Rotor Width**

Theoretical Torque - Nm [lb-in]

| mm [in] | 30 [435] | 50 [725] | 70 [1015] | 100 [1450] | 120 [1740] | 140 [2030] |
|---|---|---|---|---|---|---|
| 12.7 [.501] | 15 [134] | 25 [224] | 35 [314] | 51 [448] | 61 [538] | 71 [627] |

Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

**040**

40 cm³ [2.5 in³] / rev

Pressure - bar [psi] | Max. Cont. | Max. Inter.

Torque - Nm [lb-in], **Speed rpm**

**Intermittent Ratings -** 10% of Operation

| Flow - lpm [gpm] | 30 [435] | 50 [725] | 70 [1015] | 100 [1450] | 130 [1885] | 140 [2030] | Theoretical rpm |
|---|---|---|---|---|---|---|---|
| 3 [0.8] | 15 [133] **71** | | | | | | 75 |
| 5 [1.3] | 16 [142] **116** | 25 [221] **110** | 33 [292] **102** | | | | 124 |
| 10 [2.6] | 16 [142] **238** | 24 [212] **237** | 35 [310] **224** | 47 [416] **209** | 54 [478] **167** | 64 [566] **142** | 249 |
| 15 [4.0] | 14 [124] **367** | 24 [212] **359** | 34 [301] **354** | 49 [434] **345** | 53 [469] **300** | 62 [549] **277** | 373 |
| 20 [5.3] Max. Inter. | 11 [97] **495** | 22 [195] **487** | 33 [292] **479** | 48 [425] **465** | 52 [460] **434** | 59 [522] **416** | 498 |
| 25 [6.6] Max. Cont. | 9 [80] **620** | 18 [159] **609** | 29 [257] **602** | 44 [389] **576** | 50 [443] **558** | 58 [513] **528** | 622 |

**Overall Efficiency -** 70 - 100% ☐ 40 - 69% ☐ 0 - 39% ☐

**Rotor Width**

Theoretical Torque - Nm [lb-in]

| mm [in] | 30 [435] | 50 [725] | 70 [1015] | 100 [1450] | 130 [1885] | 140 [2030] |
|---|---|---|---|---|---|---|
| 16.0 [.631] | 19 [170] | 32 [283] | 45 [397] | 64 [567] | 83 [736] | 90 [793] |

Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

▶ Performance data is typical. Performance of production units varies slightly from one motor to another.

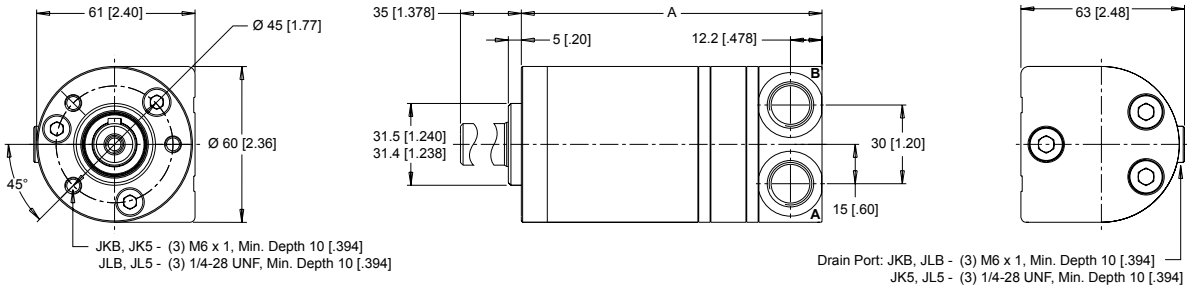
## WM (125/126 Series)

Light Duty Hydraulic Motor

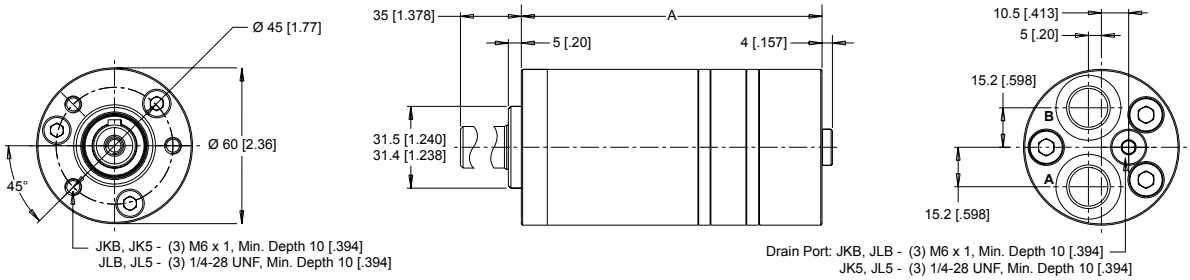
### HOUSINGS

▶ Dimensions shown are without paint. Paint thickness can be up to 0.13 [.005].

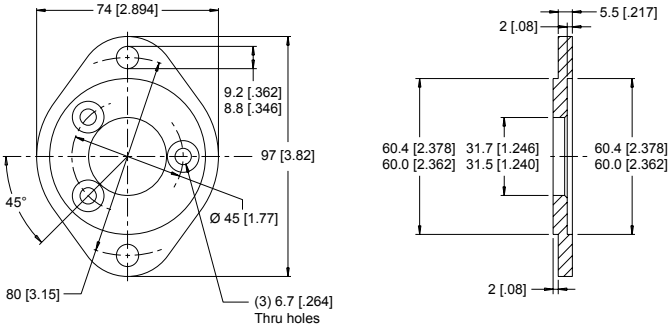
**3-HOLE, ROUND MOUNT, ALIGNED SIDE PORTS** — **JKB** G 3/8 — **JK5** 9/16-18 UNF — **JLB** G 3/8 — **JL5** 9/16-18 UNF




**3-HOLE, ROUND MOUNT, ALIGNED END PORTS** — **JMB** G 3/8 — **JM5** 9/16-18 UNF — **JNB** G 3/8 — **JN5** 9/16-18 UNF




**2-HOLE FLANGE MOUNTING KIT (OPTIONAL)**




▶ Reference part number 125017004 when ordering the 2-Hole flange mounting kit. The kit contains three M6 and three 1/4" bolts to accomodate either thread type.

**LENGTH & WEIGHT CHART**

Dimension A is the overall motor length from the rear of the motor to the mounting flange surface and is referenced on detailed housing drawings above.

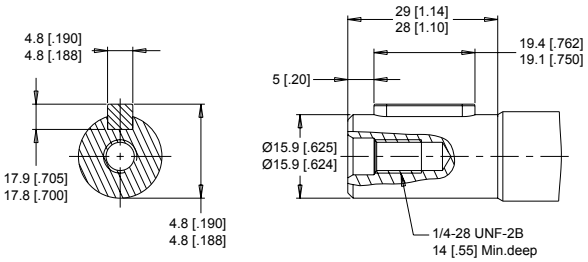
| A | Length | Weight |
|---|---|---|
| # | mm [in] | kg [lb] |
| 008 | 106 [4.16] | 2.2 [4.8] |
| 012 | 108 [4.23] | 2.2 [4.9] |
| 020 | 110 [4.34] | 2.3 [5.0] |
| 032 | 115 [4.53] | 2.3 [5.1] |
| 040 | 118 [4.66] | 2.4 [5.2] |

## WM (125/126 Series)

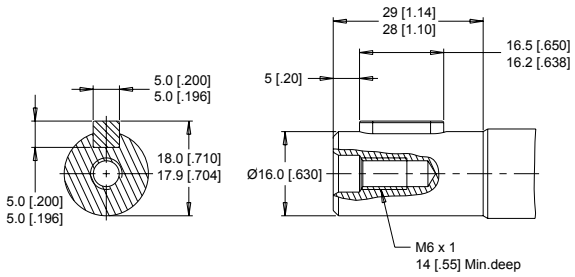
Light Duty Hydraulic Motor

### SHAFT & TECHNICAL INFORMATION

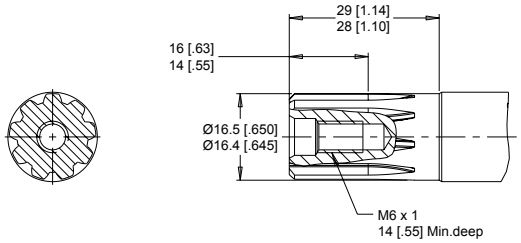
**C3** 5/8" Straight




**C4** 16mm Straight

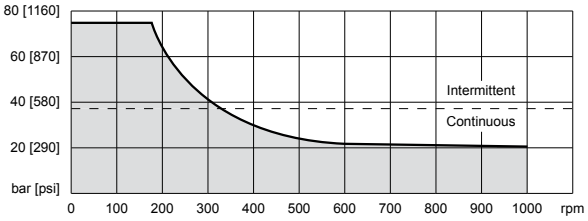



**C5** 16mm, 9 Tooth Spline



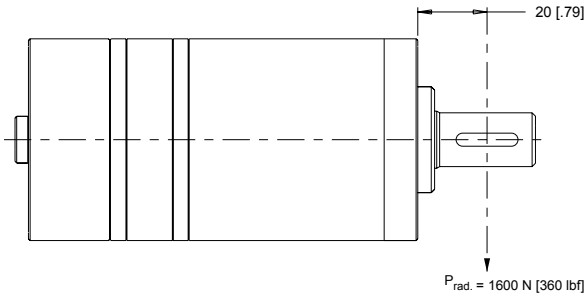

#### PERMISSIBLE SHAFT SEAL PRESSURE

The curve below represents allowable seal pressure at various speeds. Operation in the gray area results in maintaining the rated life of the shaft seal. Actual shaft seal pressure depends on motor configuration.

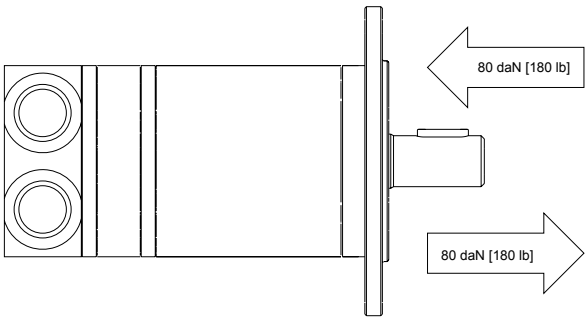



▶ With check valves and drain connection, the shaft seal pressure equals pressure in the drain line. With check valves and no drain connection, shaft seal pressure is identical to output pressure.

#### PERMISSIBLE SHAFT SIDE LOAD / AXIAL LOAD




#### THRUST LOAD



## WM (125/126 Series)

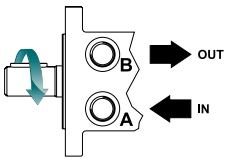
Light Duty Hydraulic Motor

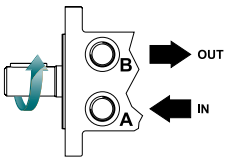
### 125 & 126 SERIES MODEL CODE BUILDER

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

#### 1. CHOOSE SERIES DESIGNATION

| | | | |
|---|---|---|---|
| **125** | Clockwise Rotation | **126** | Counterclockwise Rotation |




▶ The 125 & 126 series are bi-directional. Reversing the inlet hose will reverse shaft rotation.

#### 2. SELECT A DISPLACEMENT OPTION

| | | | | | |
|---|---|---|---|---|---|
| **008** | 8 $cm^3$/rev | [0.5 $in^3$/rev] | **032** | 32 $cm^3$/rev | [1.9 $in^3$/rev] |
| **012** | 13 $cm^3$/rev | [0.8 $in^3$/rev] | **040** | 40 $cm^3$/rev | [2.5 $in^3$/rev] |
| **020** | 20 $cm^3$/rev | [1.2 $in^3$/rev] | | | |

#### 3. SELECT A MOUNT & PORT OPTION

| | |
|---|---|
| **JKB** | 3-Hole, M6 Round Mount, Side Ports, G 3/8 |
| **JK5** | 3-Hole, M6 Round Mount, Side Ports, 9/16-18 UNF |
| **JLB** | 3-Hole, 1/4” Round Mount, Side Ports, G 3/8 |
| **JL5** | 3-Hole, 1/4” Round Mount, Side Ports, 9/16-18 UNF |
| **JMB** | 3-Hole, M6 Round Mount, End Ports, G 3/8 |
| **JM5** | 3-Hole, M6 Round Mount, End Ports, 9/16-18 UNF |
| **JNB** | 3-Hole, 1/4” Round Mount, End Ports, G 3/8 |
| **JN5** | 3-Hole, 1/4” Round Mount, End Ports, 9/16-18 UNF |

#### 4. SELECT A SHAFT OPTION

| | | | |
|---|---|---|---|
| **C3** | 5/8” Straight | **C5** | 16mm, 9 Tooth Spline |
| **C4** | 16mm Straight | | |

#### 5. SELECT A PAINT OPTION

| | |
|---|---|
| **A** | Black |
| **B** | Black, Unpainted Mounting Surface |

#### 6. SELECT A VALVE CAVITY / CARTRIDGE OPTION

| | |
|---|---|
| **A** | None |

#### 7. SELECT AN ADD-ON OPTION

| | |
|---|---|
| **A** | Standard |

#### 8. SELECT A MISCELLANEOUS OPTION

| | |
|---|---|
| **AA** | None |