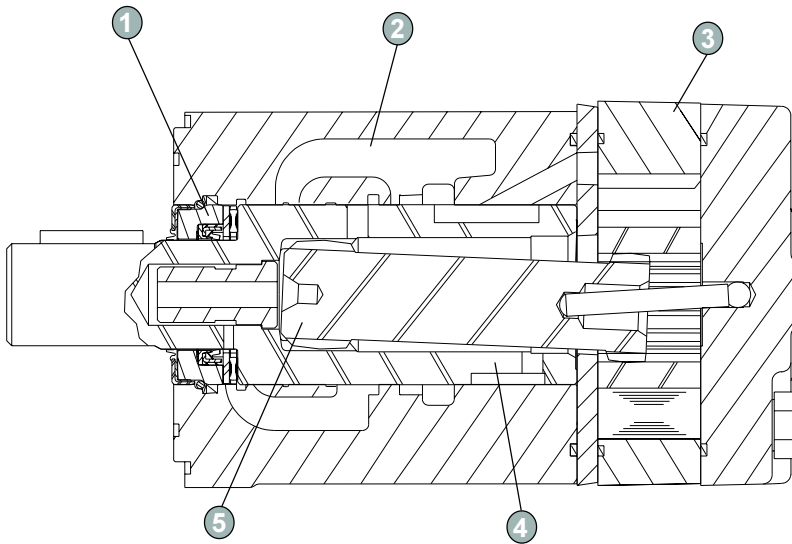


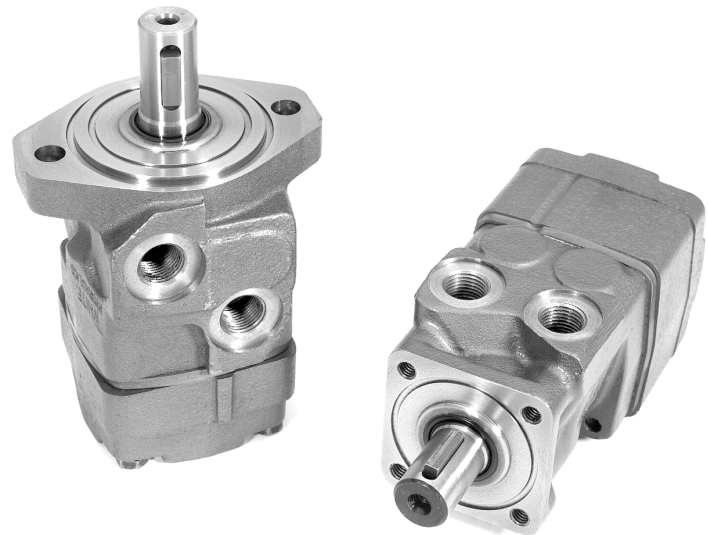
## •Features



- ① **High Pressure Viton® Shaft Seal** offers superior seal life and performance and eliminates the need for case drain.
- ② **Pressure Fed Bearing** surface receives positive flow of clean, cool oil.
- ③ **Roller Stator® Motor Design** increases efficiency and life by using roller contact versus solid, sliding contact design.
- ④ **Match Ground Shaft** is matched to housing bore to maintain highest volumetric efficiencies.
- ⑤ **Heavy-Duty Drive Link** receives full flow lubrication to provide long life.

## Low Cost, Not Low Tech

The RS Series motors are the most economical model in the White Hydraulics product line, but are not low-tech. Unlike competitive products using power robbing, two-piece rotor set designs with sliding contact points, RS Series motors utilize the patented Roller Stator® design. Seven precision rollers for the contact points reduce friction, providing more power and longer life for your application. Each output shaft is custom ground to maintain exact tolerances between the housing and shaft, producing high volumetric efficiencies. Industry standard mounting flanges and output shafts allow the RS Series motors to interchange with competitive designs.

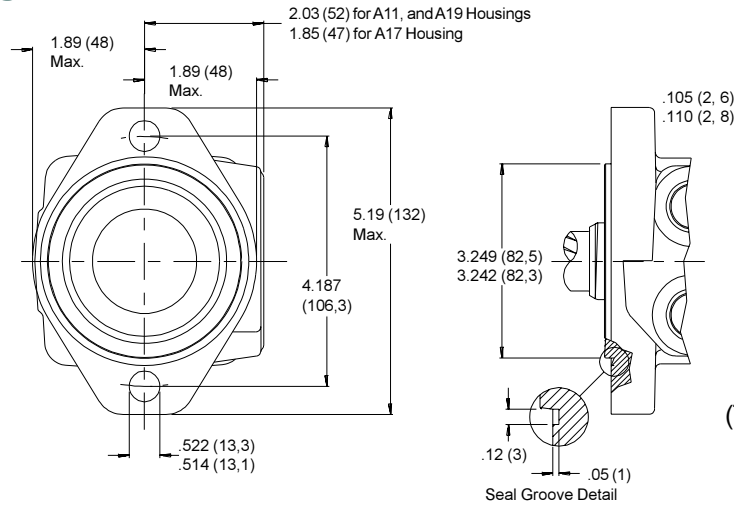


## Specifications

Code	Displacement in <sup>3</sup> /rev (cc)	Max Speed RPM		Max Flow GPM (LPM)		Max Torque lb-in (Nm)			Pressure ΔPSI(ΔBar)		
		Cont.	Inter.	Cont.	Inter.	Cont.	Inter.	*Stall	Pressure ΔPSI(ΔBar)		
									Cont.	Inter.	Peak
050	3.2 (52)	400	490	6 (23)	10 (38)	730 (82)	840 (95)	580 (65)	1750 (121)	2000 (138)	2250 (155)
080	4.6 (76)	460	540	10 (38)	12 (45)	1070 (121)	1230 (138)	875 (99)	1750 (121)	2000 (138)	2250 (155)
090	5.4 (89)	420	580	10 (38)	14 (53)	1300 (147)	1480 (167)	1045 (118)	1750 (121)	2000 (138)	2250 (155)
100	6.3 (103)	510	570	14 (53)	16 (61)	1500 (169)	1725 (195)	1170 (132)	1750 (121)	2000 (138)	2250 (155)
110	6.8 (111)	460	600	14 (53)	18 (68)	1630 (184)	1900 (214)	1320 (149)	1750 (121)	2000 (138)	2250 (155)
125	7.7 (127)	410	530	14 (53)	18 (68)	1600 (181)	1850 (208)	1330 (150)	1500 (103)	1750 (121)	2250 (155)
160	10.0 (164)	370	460	16 (61)	20 (76)	1970 (222)	2350 (265)	1770 (200)	1500 (103)	1750 (121)	2250 (155)
200	12.5 (205)	300	370	16 (61)	20 (76)	2640 (297)	3050 (345)	2295 (259)	1500 (103)	1750 (121)	2250 (155)
250	15.5 (254)	300	360	20 (76)	24 (91)	2540 (287)	3040 (344)	2280 (258)	1250 (86)	1500 (103)	1750 (121)
300	17.9 (293)	300	310	20 (76)	24 (91)	2460 (277)	3100 (350)	2110 (238)	1000 (69)	1250 (86)	1500 (103)
400	24.9 (409)	190	220	20 (76)	24 (91)	3350 (377)	4100 (463)	3200 (362)	1000 (69)	1250 (86)	1500 (103)

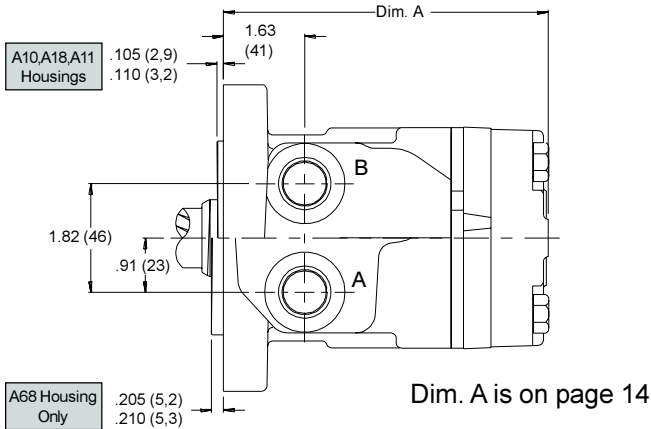
\* Stall torque measured at 1 RPM at continuous pressure per SAE J746b.

## •Housings SAE "A" Flange

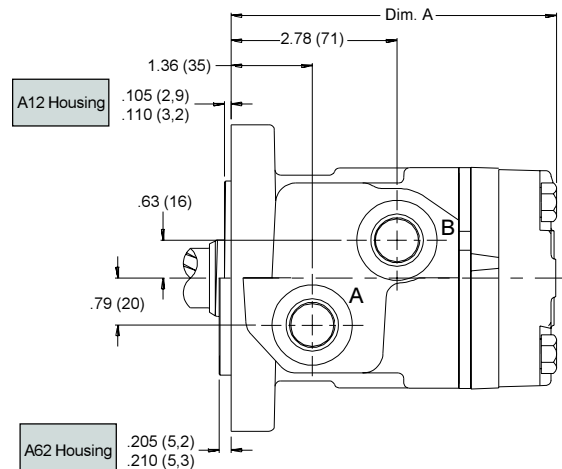


(TP)\* These housings have a taller pilot height. See dimensions below.

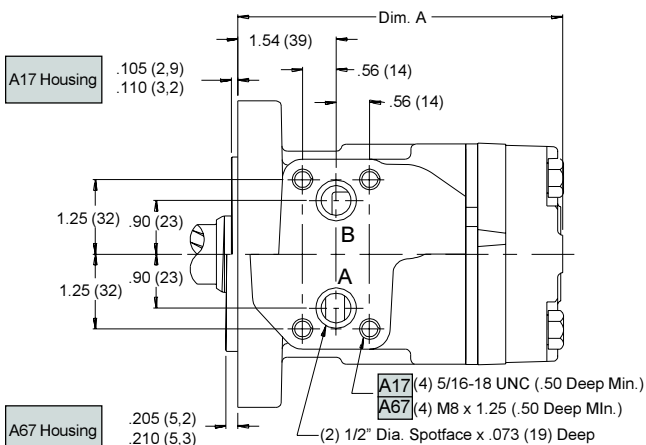
<b>A10</b>	2-Hole Aligned Ports 1/2" NPT
<b>A18</b>	2-Hole Aligned Ports 1/2" BSP.F
<b>A68</b>	2-Hole Aligned Ports 1/2" BSP.F (TP)*
<b>A11</b>	2-Hole Aligned Ports SAE #10



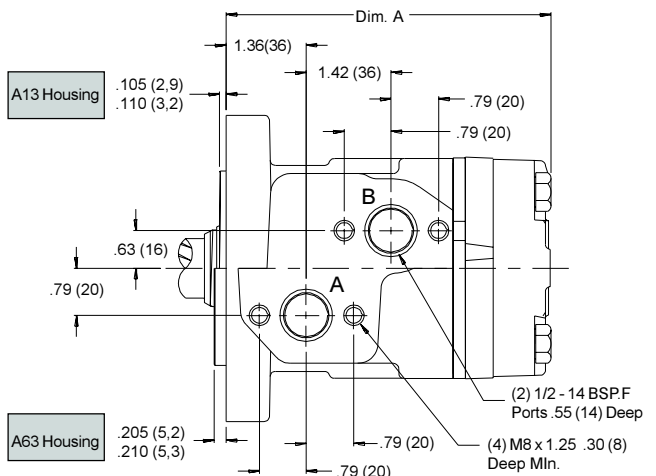
<b>A12</b>	2-Hole Offset Ports 1/2" BSP.F
<b>A62</b>	2-Hole Offset Ports 1/2" BSP.F (TP)*



<b>A17</b>	2-Hole Manifold Ports
<b>A67</b>	2-Hole Manifold Ports (TP)*

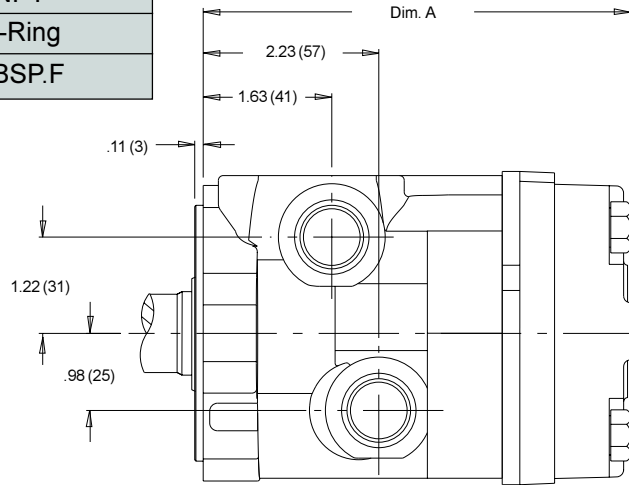


<b>A13</b>	2-Hole Offset Manifold Ports 1/2" BSP.F
<b>A63</b>	2-Hole Offset Manifold Ports 1/2" BSP.F (TP)*



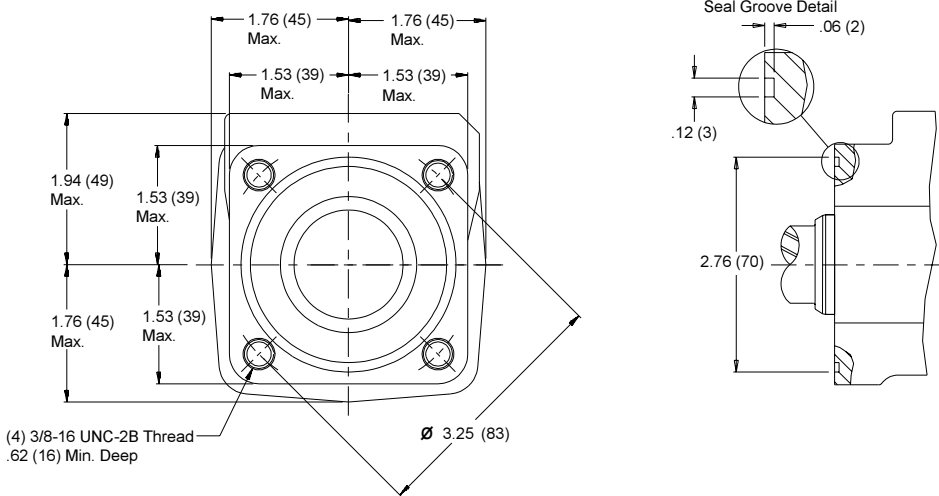
• **Housings**  
SAE "A" Flange

<b>A70</b>	2-Hole Side Ports 1/2" NPT
<b>A71</b>	2-Hole Side Ports 7/8" O-Ring
<b>A72</b>	2-Hole Side Ports 1/2" BSP.F

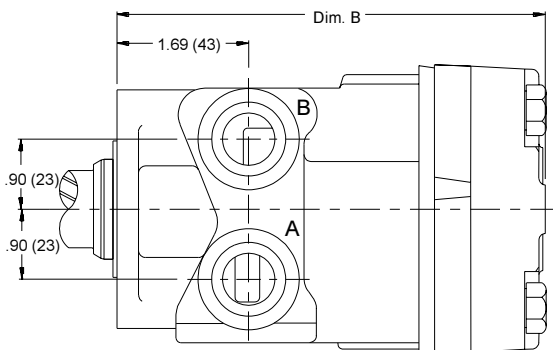


Dim. A is on page 14

**4-Hole Flange**

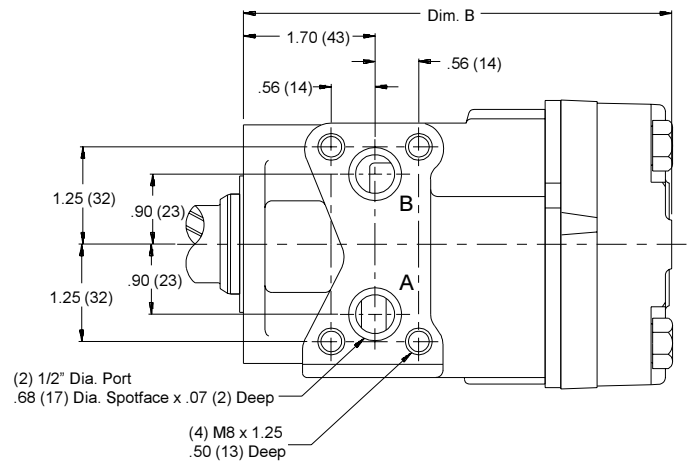


<b>F30</b>	4-Hole Aligned Ports 1/2" NPT
<b>F31</b>	4-Hole Aligned Ports 7/8" O-Ring



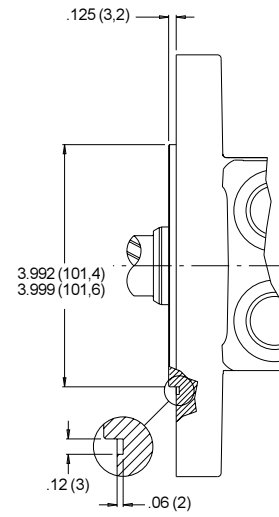
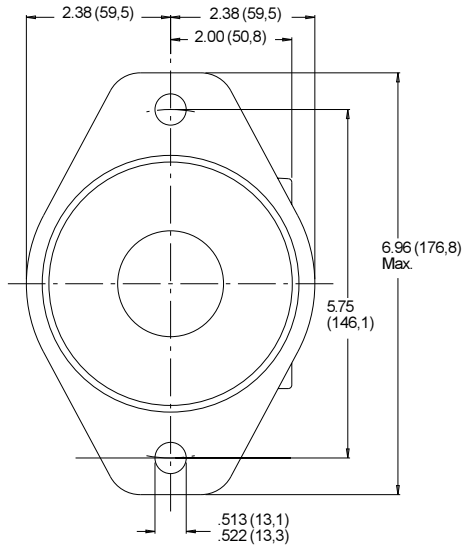
Dim. B is on page 14

<b>F37</b>	4-Hole Manifold Ports
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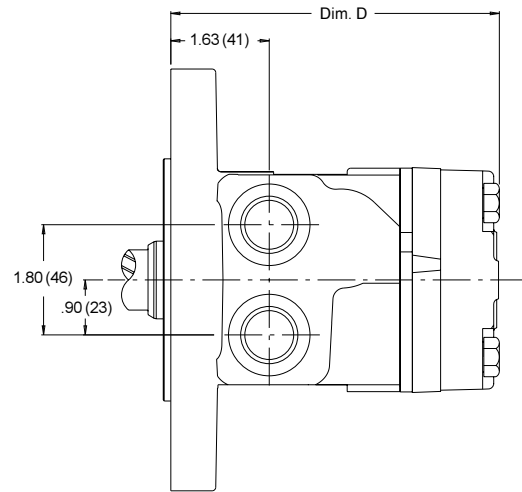
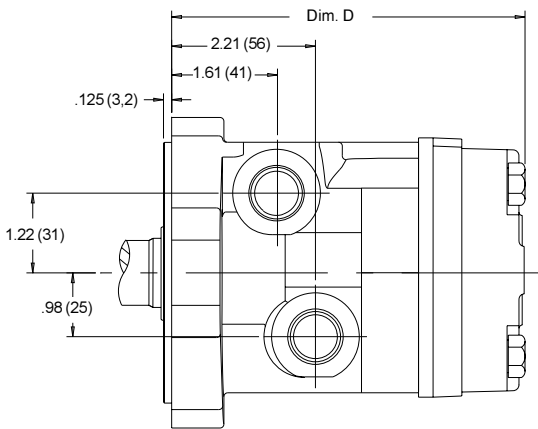
## •Housings

### SAE "B" Flange



<b>B70</b>	2-Hole Side Ports 1/2" NPT
<b>B71</b>	2-Hole Side Ports 7/8" O-Ring
<b>B78</b>	2-Hole Side Ports 1/2" BSP.F

<b>B18</b>	2-Hole Aligned Ports 1/2" BSP.F
<b>B10</b>	2-Hole Aligned Ports 1/2" NPT
<b>B11</b>	2-Hole Aligned Ports 7/8" O-ring



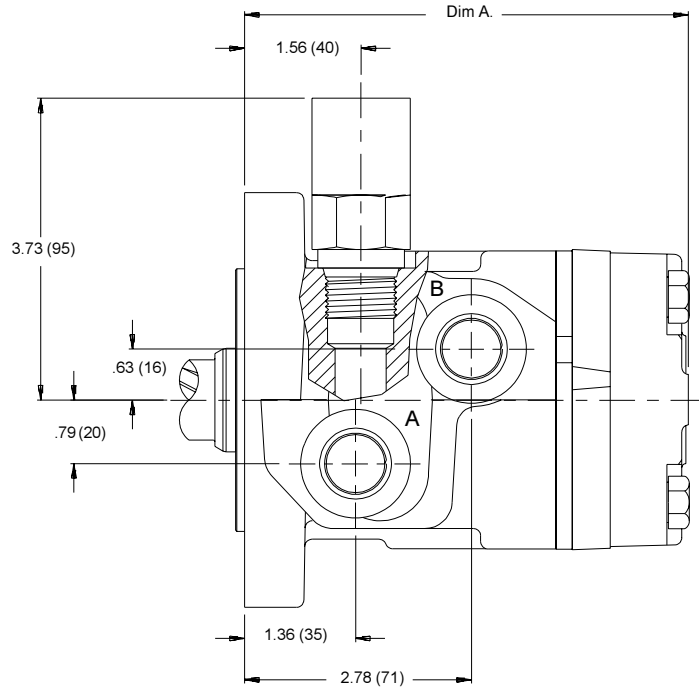
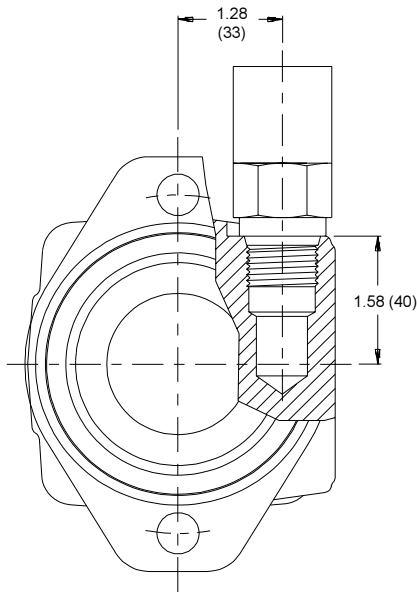
Dim. D is on page 14

## •Housings Valve Cavity Housings

### A19 2-Hole Offset Ports 7/8" O-Ring

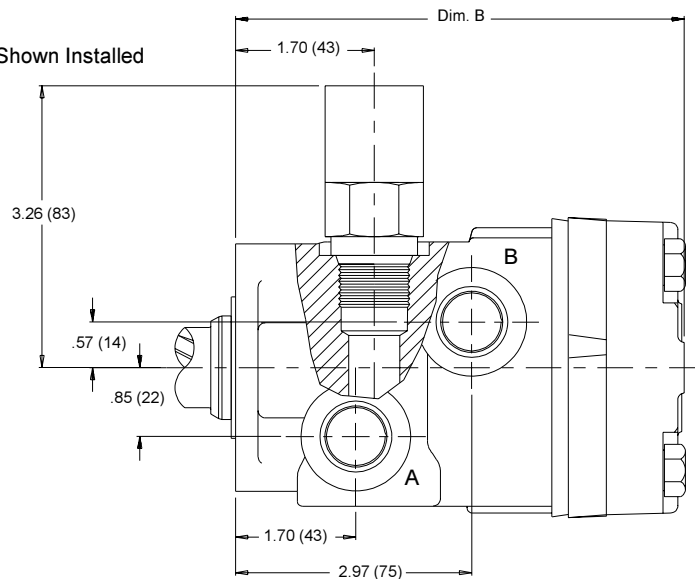
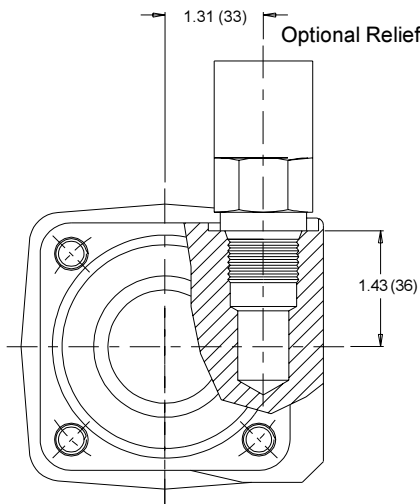
The mounting dimensions are shown on page 10.

Both housings shown on this page are only available with valve cavities.



### F39 4-Hole Offset Ports 7/8" O-Ring

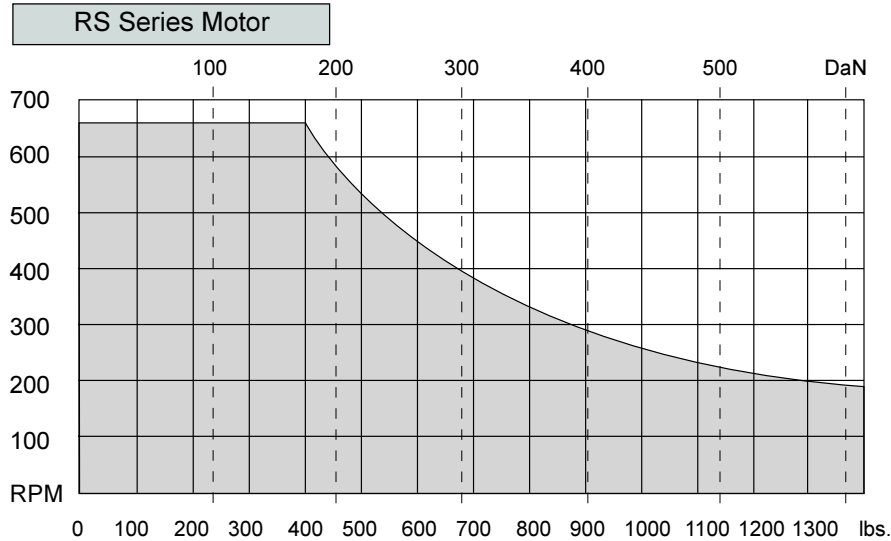
The mounting dimensions are shown on page 11.



## • Technical

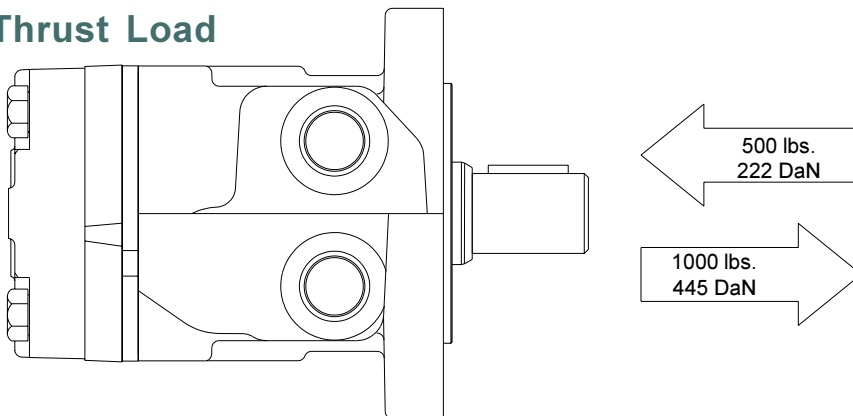
### Allowable Side Load

Operating conditions within the shaded area will maintain acceptable oil film lubrication with recommended fluids. Operating conditions outside the shaded area are susceptible to motor failure due to oil starvation and/or excessive heat generation. Fluids with low lubricity or low viscosity may require the maximum load and speed ratings to be derated to provide acceptable motor life and performance.



**Bearing Curve:** The bearing curve above represents the side load capacity of the motor at the centerline of the key for various motor speeds.

### Thrust Load



## Length and Weight Tables

### SAE "A" Flange

Disp. Code	Dim. A in (mm)	Weight lbs (kg)
050	5.29 (134)	16.1 (7,3)
080	5.44 (138)	16.5 (7,5)
090	5.51 (140)	16.8 (7,6)
100	5.65 (144)	17.2 (7,8)
110	5.75 (146)	14.4 (6,5)
125	5.75 (146)	17.7 (8,0)
160	5.97 (152)	18.2 (8,3)
200	6.22 (158)	18.8 (8,5)
250	6.53 (166)	19.8 (9,0)
300	6.76 (172)	20.5 (9,3)
400	7.47 (190)	22.7 (10,3)

RS motor weights vary  $\pm 1$  lb (.45 kg) depending upon exact motor configuration.

For Speed Sensor motors add .82 (21) to Dim. A

### 4-Hole Flange

Disp. Code	Dim. B in (mm)	Weight lbs (kg)
050	5.36 (136)	13.4 (6,1)
080	5.50 (140)	13.9 (6,3)
090	5.58 (142)	14.1 (6,4)
100	5.72 (145)	14.6 (6,6)
110	5.82 (148)	15.1 (6,9)
125	5.82 (148)	15.1 (6,9)
160	6.04 (153)	15.4 (7,0)
200	6.29 (160)	16.0 (7,3)
250	6.59 (167)	17.1 (7,8)
300	6.83 (173)	17.9 (8,1)
400	7.54 (192)	20.2 (9,2)

RS motor weights vary  $\pm 1$  lb (.45 kg) depending upon motor configuration.

For Speed Sensor motors add .67 (17) to Dim. B

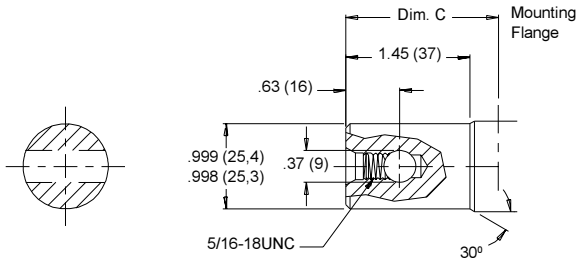
### SAE "B" Flange

Disp. Code	Dim. D in (mm)	Weight lbs (kg)
050	5.29 (134)	18.6 (8,5)
080	5.44 (138)	19.0 (8,6)
090	5.51 (140)	19.3 (8,8)
100	5.65 (144)	19.7 (9,0)
110	5.75 (146)	16.9 (7,7)
125	5.75 (146)	20.2 (9,2)
160	5.97 (152)	20.7 (9,4)
200	6.22 (158)	21.3 (9,7)
250	6.53 (166)	22.3 (10,1)
300	6.76 (172)	23.0 (10,5)
400	7.47 (190)	25.2 (11,5)

RS motor weights vary  $\pm 1$  lb (.45 kg)

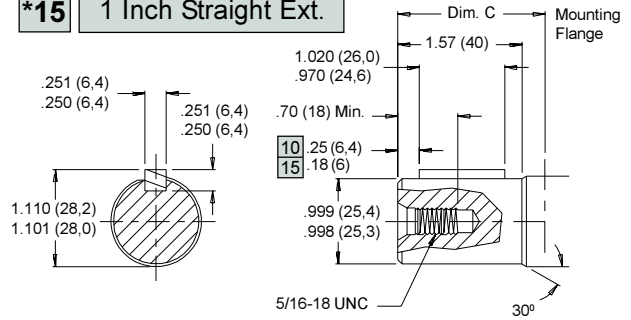
## •Shafts

**05** 1 Inch Pinhole Max. Torque: 6,000 lb-in  
680 Nm

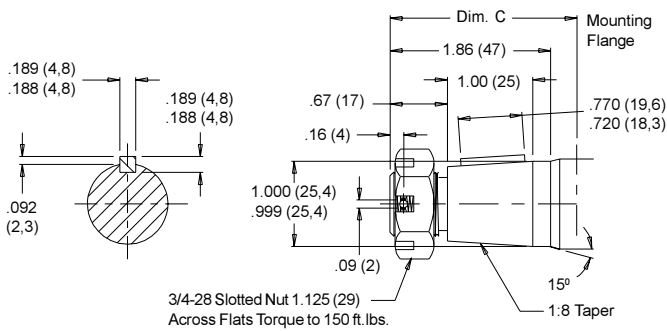


**10** 1 Inch Straight Max. Torque: 5,800 lb-in  
650 Nm

**\*15** 1 Inch Straight Ext.



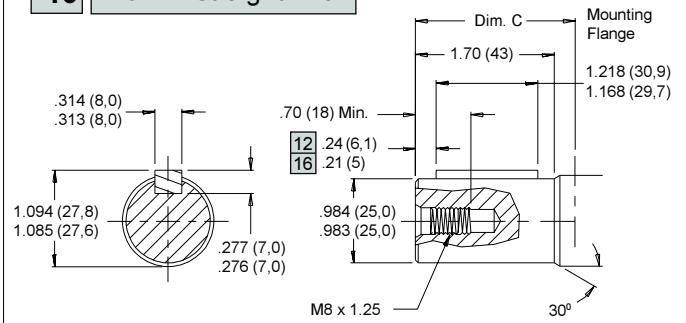
**13** 1 Inch Tapered Max. Torque: 5,800 lb-in  
650 Nm



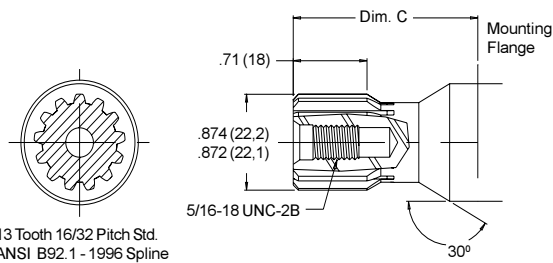
Note: A slotted nut is standard on this shaft. Dimensions for this nut are shown on page 112.

**12** 25mm Straight Max. Torque: 6,000 lb-in  
680 Nm

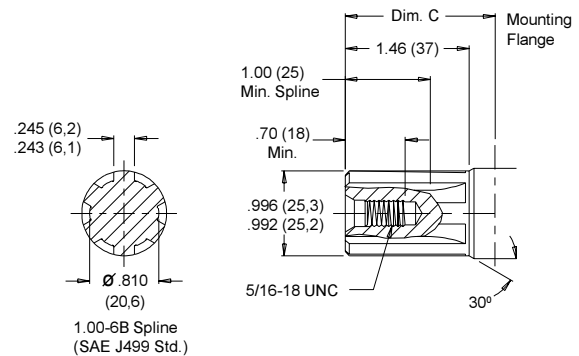
**\*16** 25mm Straight Ext.



**01** 13 Tooth Spline Max. Torque: 1,500 lb-in  
170 Nm



**02** 6-B Spline Max. Torque: 6,000 lb-in  
680 Nm



## Shaft Lengths

Dim. C	Shaft Code	SAE "A" Flange in (mm)	4-Hole Flange in (mm)	SAE "B" Flange in (mm)
	05	1.73 (44)	1.66 (42)	1.73 (44)
	10	1.73 (44)	1.66 (42)	1.73 (44)
	02	1.73 (44)	1.66 (42)	1.73 (44)
	12	2.13 (54)	2.08 (53)	2.13 (54)
	13	2.20 (56)	2.13 (54)	2.20 (56)
	15	1.56 (40)	1.53 (39)	1.56 (40)
	16	1.54 (39)	1.55 (39)	1.54 (39)
	01	1.77 (45)	1.70 (43)	1.77 (45)

Shaft lengths vary  $\pm .030$  in. (.8mm)

\* The #15 and #16 shafts are to be used with speed sensor motors only.



## Ordering Information

**SERIES**  
**201** — REVERSED TIMING  
**200**

**DISPLACEMENT**    **HOUSING**    **SHAFT**    **OPTIONS**    **MISCELLANEOUS**

Code	Displacements
050	52 cc 3.2 in <sup>3</sup> /r
080	76 cc 4.6 in <sup>3</sup> /r
090	89 cc 5.4 in <sup>3</sup> /r
100	103 cc 6.3 in <sup>3</sup> /r
110	111 cc 6.8 in <sup>3</sup> /r
125	127 cc 7.7 in <sup>3</sup> /r
160	164 cc 10 in <sup>3</sup> /r
200	205 cc 12.5 in <sup>3</sup> /r
250	254 cc 15.5 in <sup>3</sup> /r
300	293 cc 17.9 in <sup>3</sup> /r
400	409 cc 24.9 in <sup>3</sup> /r

Code	Housings
A10	2-Hole 1/2" NPT Aligned Ports (S)
A11	2-Hole 7/8" O-ring Aligned Ports (S)
A12	2-Hole 1/2" BSP.F Offset Ports (S)
A13	2-Hole 1/2" BSP.F Offset Manifold (S)
A17	2-Hole Manifold Ports (S)
A18	2-Hole 1/2" BSP.F Aligned (S)
A19	2-Hole 7/8" O-ring With Valve Cavity (S)
A62	2-Hole 1/2" BSP.F Offset w/.200 Pilot
A63	2-Hole 1/2" BSP.F Offset Manifold w/.200 Pilot
A67	2-Hole Manifold Ports w/.200 Pilot
A68	2-Hole 1/2" BSP.F Aligned w/.200 Pilot
A70	2-Hole 1/2" NPT Side Ports
A71	2-Hole 7/8" O-ring Side Ports
A72	2-Hole 1/2" BSP.F Side Ports
B10	2-Hole SAE B Flange 1/2" NPT Aligned
B11	2-Hole SAE B Flange 7/8" O-ring Aligned
B18	2-Hole SAE B Flange 1/2" BSP.F Aligned
B70	2-Hole SAE B Flange 1/2" NPT Side Ports
B71	2-Hole SAE B Flange 7/8" O-ring Side Ports
B78	2-Hole SAE B Flange 1/2" BSP.F Side Ports
F30	4-Hole 1/2" NPT Aligned Ports (S)
F31	4-Hole 7/8" O-ring Aligned Ports (S)
F37	4-Hole Manifold Ports (S)
F39	4-Hole Manifold Ports W/Valve Cavity (S)

Code	Shafts
01	7/8" 13 Tooth
02	1" 6-B Spline
05	1" Pinhole
10	1" Straight
12	25mm Straight
13	1" Tapered
15	1" Straight Ext. (S)
16	25mm Ext. (S)

Code	Options
A	Dark Metallic Gray
B	Dark Metallic Gray (Unpainted Flange Face)
C	Black
D	Black (Unpainted Flange Face)
Z	No Paint

**PAINT**

\* Available with A19 and F39 housings  
 \*\* Available with A10, A11, A12, A13, A17, A18, A19, F30, F31, F37, and F39 housings and must use the 15 or 16 shaft  
 (S) Speed sensor components

Code	Options
AA	None
AC	Freeturning Rotor
EC	Standard Rotor (AC Shaft Clearance)

**ADD ONS**

Code	Options
A	Standard
B	Lock Nut
C	Solid Hex Nut
**W	4-Pin Male Weatherpack Connector (Dual)
**X	4-Pin M12 Male Connector (Dual)
**Y	3-Pin Male Weatherpack Connector (Single)
**Z	4-Pin M12 Male Connector (Single)

**CAVITY**

Code	Options
A	None
*B	Relief Valve Cavity
*C	1000 PSI (69 Bar) Relief Valve Installed
*D	1250 PSI (86 Bar) Relief Valve Installed
*E	1500 PSI (104 Bar) Relief Valve Installed
*F	1750 PSI (121 Bar) Relief Valve Installed
*G	2000 PSI (138 Bar) Relief Valve Installed
*J	2500 PSI (173 Bar) Relief Valve Installed
*L	3000 PSI (207 Bar) Relief Valve Installed

**200**

**201**

## Rotation

For applications requiring the motor to rotate in only one direction, shaft seal life may be prolonged by pressurizing the "B" port of the motor. To obtain the desired direction of shaft rotation, use the graphic at the left to determine the rotation code for the motor. For bidirectional applications, the 200 series is recommended. Preferred rotation is based on rotor timing. Changing preferred direction requires no unique parts.