Spool Valve Hydraulic Motors

Spool Valve motors incorporate the proven orbit motor principle to provide high torque at low speeds.

Powering Business Worldwide

Spool Valve Motors

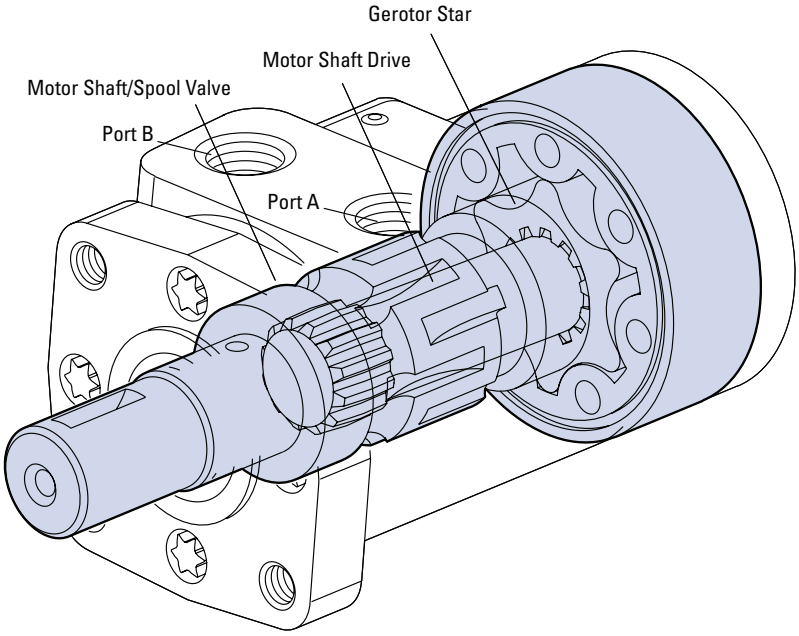
Highlights

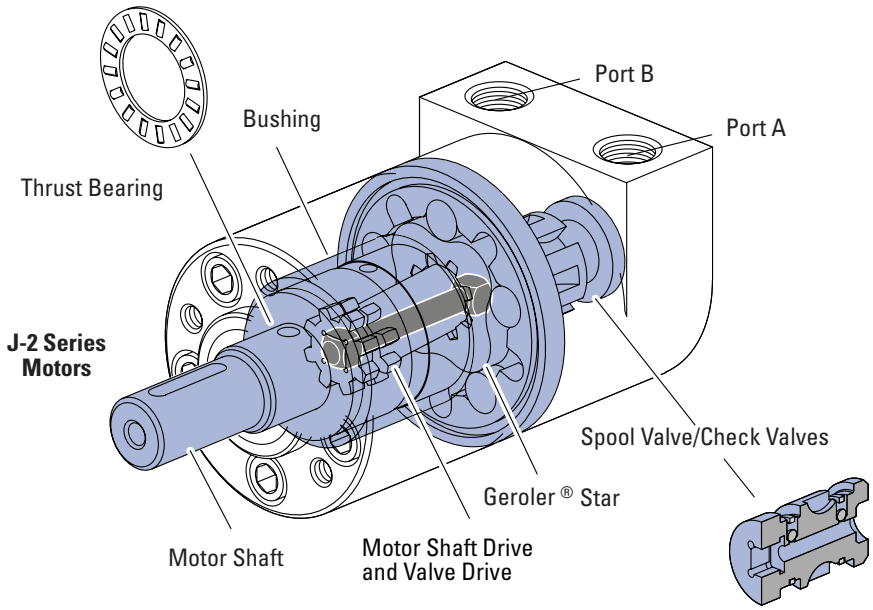
Product Description

Char-Lynn spool valve motors distribute pressurized fluid into and out of the Orbit gear set (Gerotor or Geroler) via valve slots integrated into the output shaft. The spool valve motors incorporate both valving and hydrodynamic journal bearings into a common shaft design. The valve section (spool valve) can be optimized for low flow, low speed needs using a low speed spool option to enhance smooth running performance.

These motors incorporate the proven orbit motor principle to provide high torque at low speeds.

Motor shaft rotation can be instantly reversed by changing direction of input/output flow while generating equal torque in either direction. The displacements available provide a wide variety of speeds and torques from any spool valve motor series.





Features, Benefits, and Applications

Features

- Proven Orbit Motor Principle
- Hydrodynamic Journal Bearings
- Constant Clearance Geroler
- Three-Zone Pressure Design
- Reduced drive running-angle
- High-pressure seals
- Modular design

Benefits

- Compact, powerful package
- Infinite bearing life (at rated loads)
- High efficiency
- Increases shaft seal & bearing life
- Smooth operation, increases drive life
- Reduces leakage
- Design flexibility
- Economically tailored solutions

Applications

- Harvesters
- Augers
- Spreaders
- Machine tools
- Conveyors
- Winches
- Turf care equipment
- Food processing
- Aerial Work Platforms
- Anywhere a compact drive with high output torque is needed

Design Features

Spool valve technology is typically used where compact, economical solutions are most needed. Spool valve motors use a spool valve to precisely time and control flow through the orbit gear set (Gerotor or Geroler). Inlet flow is directed into and out of the orbit set via slots in the spool and passages through the motor housing. The result is a very cost-effective compact package suited to many application requirements. The three primary components in the motor are the orbit star, drive and output shaft. H, S and T Series incorporate the spool valve and hydrodynamic bearings in the motor shaft. The W series is similar except a ball bearing is used for the front bearing for increased side-load capacity. Due to its compact size and high speed capability, the J Series is unique and utilizes a separate dedicated spool and spool valve drive. All motors utilize Eaton's constant-clearance Geroler technology except the H Series, which continues to use the time-proven H motor gerotor set. These motors all use a three-zone pressure design consisting of three unique pressure areas: 1) inlet, 2) return, 3) case. This provides the capability to limit motor case pressure and allows the use of several case pressure options for extended shaft seal and thrust bearing life.

Below is a quick-guide to help select the proper motor for your application:

MOTOR QUICK-GUIDE (BASED ON MAXIMUM CONTINUOUS RATINGS)

Series	Output Torque Nm [lb-in]	Pressure bar [psi]	Flow lpm [gpm]	Side Load kg [lbs]
J Series	62 [550]	140 [2030]	21 [5.5]	196 [430]
H Series	407 [3607]	124 [1800]	57 [15]	635 [1400]
S Series	430 [3800]	135 [2000]	55 [15]	635 [1400]
T Series	450 [4000]	155 [2250]	55 [15]	635 [1400]
W Series	410 [3625]	165 [2400]	68 [18]	845 [1900]

* The above are provided as guidelines only. Actual ratings vary depending on final motor configuration

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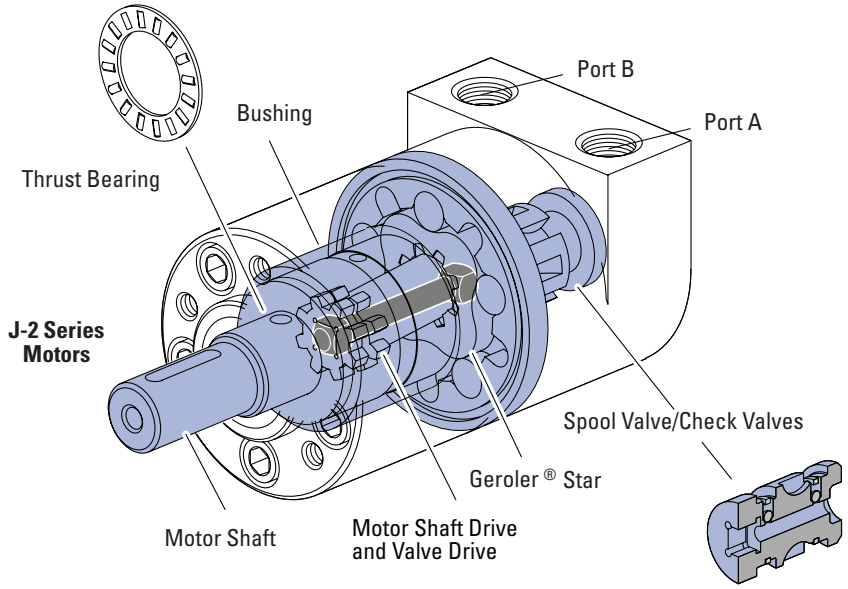
J Series (129-)

Highlights



Description

Char-Lynn J Series motors provide a lot of power from a very small package. Up to 5 kW [6 1/2 HP] of power. These motors are 61 mm [2.4 in] in diameter and 104 to 130 mm [4.1 to 5.1 in] in length.

The J Series motor shaft and seal allows high case pressure up to 76 bar [1100 PSI] return line pressure without case drain line. When a case drain line is used a 220 bar [3190 PSI] peak pressure is allowed in the return line.

Specifications

Geroler Element	5 Displacements
Flow l/min [GPM]	21 [5.5] Continuous***
	25 [6.5] Intermittent**
Speed	Up to 1992 RPM Cont.
	Up to 2458 RPM Inter.
Pressure bar [PSI]	140 [2030] Cont.***
	165 [2400] Inter.**
Torque Nm [lb-in]	62 [549] Cont.***
	84 [743] Inter.**

*** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.
** Intermittent— (Inter.) Intermittent operation, 10% of every minute.

Features:

- Constant clearance Geroler set
- Integrated check valves
- Self-lubricating shaft bushing
- High-strength rigid components
- Increased valve seal lands
- High pressure seals
- Variety of displacements, shafts, mounts and special options

Benefits:

- High efficiency
- Extended leak-free performance
- Powerful compact package
- Design flexibility

Applications:

- Agricultural augers, harvesters, seeders
- Car wash tire spray wands and brushes
- Marine bow thrusters
- Food processing
- Railroad maintenance equipment
- Machine tools
- Conveyors
- Snow blower chute rotator
- Industrial sweepers and floor polishers
- Saw mill works
- Turf equipment reel drives
- Paint stripper
- Many more


Plastic Injection

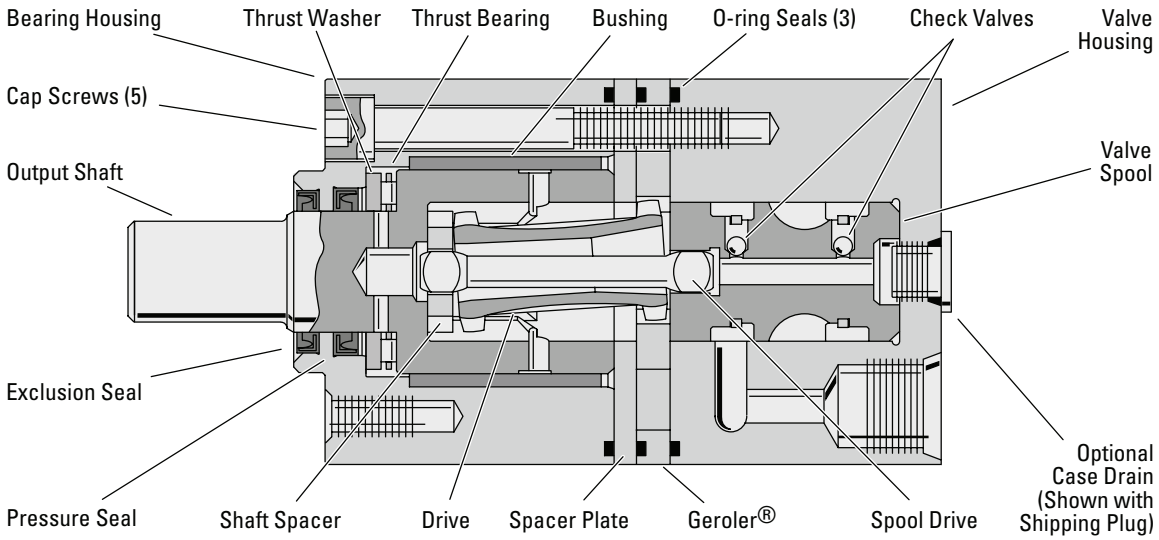

Metal Forming


Food Processing


Ship-Boat Building

J Series (129-)

Specifications



SPECIFICATION DATA — J MOTORS

Displ. cm³/r [in³/r]		8,2 [.50]	12,9 [.79]	19,8 [1.21]	31,6 [1.93]	50,0 [3.00]
Max. Speed (RPM) @ Continuous Flow		1992	1575	1043	650	393
Flow l/min [GPM]	Continuous	17 [4.5]	21 [5.5]	21 [5.5]	21 [5.5]	21 [5.5]
	Intermittent	21 [5.5]	25 [6.5]	25 [6.5]	25 [6.5]	25 [6.5]
Torque Nm [lb-in]	Continuous	16 [141]	25 [225]	38 [333]	50 [446]	62 [549]
	Intermittent	19 [164]	30 [263]	46 [405]	62 [546]	84 [743]
	Peak	22 [193]	36 [321]	48 [425]	83 [733]	86 [765]
Pressure	Continuous	140 [2030]	140 [2030]	140 [2030]	121 [1750]	97 [1400]
Δ bar [Δ PSI]	Intermittent	165 [2400]	165 [2400]	165 [2400]	150 [2175]	140 [2030]
	Peak	220 [3190]	220 [3190]	220 [3190]	190 [2756]	150 [2175]
Weight kg [lbs]		2 [4.4]	2,1 [4.6]	2,2 [4.8]	2,3 [5.0]	2,4 [5.4]

* Maximum pressure at motor inlet port is 220 Bar [3190 PSI] without regard to Δ bar [Δ PSI] and/or back pressure ratings or combination thereof.

Note:

To assure best motor life, run motor for approximately one hour at 30% of rated pressure before application to full load. Be sure motor is filled with fluid prior to any load applications.

Δ Pressure:

The true Δ bar [Δ PSI] difference between inlet port and outlet port.

See individual shafts for maximum torque recommendation. Splined shafts are recommended for those applications subject to frequent reversals.

Continuous Rating:

Motor may be run continuously at these ratings

Intermittent Operation:

10% of every minute

Peak Operation:

1% of every minute

Recommended Fluids:

Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 70 SUS at operating temperature.

Recommended System Operating Temp.:

-34°C to 82°C
[-30°F to 180°F]

Recommended Filtration:

per ISO Cleanliness Code 4406, level 20/18/13

J Series (129-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from motor to motor in production.

8,2 cm ^{3}/r [.50 in ^{3}/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[500] 34	[600] 41	[700] 48	[800] 55	[1000] 69	[1400] 97	[1500] 103	[2000] 138	Max. Continuous [2030] 140	Max. Intermittent [2400] 165
[1] 3,8	[11] *1* **456**	[25] *3* **444**	[33] *4* **437**	[40] *5* **429**	[47] *5* **422**	[55] *6* **412**	[69] *8* **394**	[96] *11* **347**	[102] *12* **332**	[130] *15* **250**	[132] *15* **239**	[146] *16* **170**
[2] 7,6	[9] *1* **897**	[24] *3* **886**	[31] *4* **877**	[38] *4* **867**	[46] *5* **860**	[53] *6* **847**	[68] *8* **823**	[97] *11* **768**	[105] *12* **749**	[139] *16* **657**	[141] *16* **647**	[163] *18* **557**
[3] 11,4	[6] *1* **1349**	[20] *2* **1331**	[28] *3* **1318**	[35] *4* **1309**	[44] *5* **1296**	[51] *6* **1285**	[65] *7* **1261**	[94] *11* **1198**	[102] *12* **1176**	[137] *15* **1070**	[139] *16* **1060**	[164] *19* **959**
[4.25] 16,0		[16] *2* **1902**	[23] *3* **1885**	[30] *3* **1873**	[36] *4* **1858**	[44] *5* **1846**	[60] *7* **1817**	[90] *10* **1750**	[97] *11* **1721**	[133] *15* **1599**	[135] *15* **1585**	[160] *18* **1475**
Max. Continuous [4.5] 17,0		[16] *2* **1992**	[23] *3* **1979**	[29] *3* **1964**	[36] *4* **1947**	[43] *5* **1929**	[59] *7* **1900**	[89] *10* **1833**	[96] *11* **1808**	[131] *15* **1684**	[134] *15* **1673**	[160] *18* **1553**
Max. Intermittent [5.5] 20,8		[12] *1* **2458**	[18] *2* **2437**	[26] *3* **2420**	[33] *4* **2405**	[40] *5* **2387**	[54] *6* **2353**	[83] *9* **2272**	[92] *10* **2255**	[124] *14* **2134**	[129] *15* **2115**	[154] *17* **1994**

Continuous

Intermittent

12,9 cm ^{3}/r [0.79 in ^{3}/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[500] 34	[600] 41	[700] 48	[800] 55	[1000] 69	[1400] 97	[1450] 100	[1500] 103	[2000] 138	Max. Continuous 2030] 140	Max. Intermittent [2400] 165
[1] 3,8	[19] *2* **290**	[43] *5* **285**	[54] *6* **281**	[65] *7* **277**	[76] *9* **273**	[88] *10* **268**	[109] *12* **260**	[154] *17* **237**	[159] *18* **234**	[164] *19* **230**	[214] *24* **194**	[217] *25* **189**	[250] *28* **151**
[2] 7,6	[16] *2* **573**	[39] *4* **566**	[51] *6* **561**	[63] *7* **555**	[74] *8* **549**	[86] *10* **544**	[109] *12* **534**	[155] *18* **501**	[160] *18* **496**	[165] *19* **490**	[221] *25* **442**	[225] *25* **437**	[263] *30* **396**
[3] 11,4	[11] *1* **859**	[35] *4* **849**	[47] *5* **843**	[58] *7* **838**	[70] *8* **832**	[82] *9* **825**	[105] *12* **810**	[152] *17* **777**	[157] *18* **771**	[163] *18* **763**	[219] *25* **708**	[223] *25* **701**	[263] *30* **652**
[4] 15,1	[6] *1* **1153**	[30] *3* **1140**	[41] *5* **1135**	[53] *6* **1129**	[64] *7* **1124**	[76] *9* **1117**	[99] *11* **1101**	[146] *16* **1060**	[152] *17* **1051**	[157] *18* **1044**	[214] *24* **982**	[217] *25* **975**	[260] *29* **924**
Max. Continuous [5.5] 20,8		[19] *2* **1575**	[30] *3* **1566**	[42] *5* **1556**	[54] *6* **1547**	[65] *7* **1539**	[89] *10* **1521**	[136] *15* **1473**	[142] *16* **1466**	[148] *17* **1457**	[205] *23* **1396**	[209] *24* **1387**	[251] *28* **1330**
Max. Intermittent [6.5] 24,6		[11] *1* **1859**	[23] *3* **1851**	[35] *4* **1842**	[46] *5* **1831**	[56] *6* **1820**	[81] *9* **1804**	[130] *15* **1755**	[135] *15* **1743**	[140] *16* **1734**	[198] *22* **1670**	[202] *23* **1663**	[243] *27* **1599**

[42] *5* **1556** } Torque [lb-in] Nm **Speed RPM**

J Series (129-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from motor to motor in production.

Continuous

Intermittent

19.8 cm ³/r [1.21 in ³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[500] 34	[600] 41	[700] 48	[800] 55	[1000] 69	[1400] 97	[1450] 100	[1500] 103	[2000] 138	[2030] 140	Max. Continuous [2400] 165
[1] 3,8	[32] *4* **189**	[67] *8* **187**	[85] *10* **186**	[102] *12* **185**	[119] *13* **183**	[136] *15* **182**	[170] *19* **179**	[236] *27* **172**	[244] *28* **170**	[253] *29* **169**	[321] *36* **141**	[325] *37* **138**	[374] *42* **114**
[2] 7,6	[30] *3* **379**	[65] *7* **375**	[83] *9* **373**	[101] *11* **370**	[119] *13* **368**	[136] *15* **366**	[172] *19* **361**	[223] *25* **351**	[248] *28* **349**	[257] *29* **347**	[328] *37* **312**	[333] *38* **309**	[388] *44* **285**
[3] 11,4	[21] *2* **569**	[57] *6* **565**	[75] *8* **563**	[93] *11* **560**	[111] *13* **558**	[128] *14* **556**	[163] *18* **551**	[231] *26* **529**	[240] *27* **526**	[248] *28* **523**	[325] *37* **487**	[330] *37* **484**	[405] *46* **459**
[4] 15,1	[12] *1* **761**	[47] *5* **758**	[65] *7* **754**	[83] *9* **751**	[101] *11* **749**	[119] *13* **746**	[154] *17* **741**	[221] *25* **717**	[230] *26* **711**	[239] *27* **707**	[316] *36* **660**	[320] *36* **656**	[382] *43* **628**
Max. Continuous [5.5] 20,8		[31] *4* **1043**	[49] *6* **1040**	[67] *8* **1035**	[84] *9* **1033**	[101] *11* **1028**	[137] *15* **1021**	[202] *23* **997**	[211] *24* **993**	[218] *25* **990**	[295] *33* **938**	[299] *34* **934**	[365] *41* **899**
Max. Intermittent [6.5] 24,6		[21] *2* **1226**	[38] *4* **1222**	[56] *6* **1219**	[74] *8* **1215**	[91] *10* **1211**	[126] *14* **1204**	[189] *21* **1179**	[196] *22* **1174**	[206] *23* **1169**	[278] *31* **1121**	[283] *32* **1117**	[347] *39* **1079**

31,6 cm ³/r [1.93 in ³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[500] 34	[600] 41	[700] 48	[800] 55	[1000] 69	[1400] 97	[1450] 100	[1500] 103	[1750] 121	Max. Continuous [2175] 150
[1] 3,8	[51] *6* **118**	[106] *12* **116**	[133] *15* **115**	[160] *18* **113**	[187] *21* **112**	[213] *24* **111**	[265] *30* **107**	[362] *41* **91**	[372] *42* **85**	[383] *43* **81**	[439] *50* **70**	
[2] 7,6	[46] *5* **236**	[103] *12* **234**	[132] *15* **232**	[159] *18* **230**	[187] *21* **228**	[214] *24* **225**	[269] *30* **221**	[362] *41* **187**	[374] *42* **179**	[387] *44* **175**	[446] *50* **165**	[546] *62* **145**
[3] 11,4	[36] *4* **355**	[94] *11* **352**	[122] *14* **349**	[149] *17* **347**	[177] *20* **345**	[205] *23* **342**	[259] *29* **336**	[351] *40* **296**	[364] *41* **292**	[377] *43* **287**	[440] *50* **273**	[542] *61* **245**
[4] 15,1	[24] *3* **474**	[79] *9* **472**	[107] *12* **469**	[135] *15* **466**	[162] *18* **462**	[190] *21* **460**	[246] *28* **452**	[337] *38* **404**	[349] *39* **397**	[362] *41* **393**	[425] *48* **373**	[528] *60* **346**
Max. Continuous [5.5] 20,8		[55] *6* **650**	[83] *9* **647**	[111] *13* **645**	[139] *16* **640**	[167] *19* **636**	[221] *25* **629**	[307] *35* **584**	[320] *36* **580**	[334] *38* **575**	[400] *45* **550**	[505] *57* **513**
Max. Intermittent [6.5] 24,6		[35] *4* **767**	[64] *7* **764**	[93] *11* **760**	[121] *14* **755**	[150] *17* **751**	[204] *23* **742**	[279] *32* **712**	[294] *33* **707**	[308] *35* **701**	[378] *43* **675**	[485] *55* **637**

50.0 cm ³/r [3.00 in ³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[500] 34	[600] 41	[700] 48	[800] 55	[1000] 69	[1100] 76	[1200] 83	[1300] 90	[1400] 97	Max. Continuous [2030] 140
[1] 3,8	[82] *9* **75**	[167] *19* **72**	[211] *24* **72**									
[2] 7,6	[70] *8* **149**	[156] *18* **147**	[201] *23* **145**	[243] *28* **144**	[286] *32* **143**	[327] *37* **142**						
[3] 11,4	[53] *6* **221**	[140] *16* **220**	[184] *21* **218**	[227] *26* **217**	[271] *31* **215**	[311] *35* **213**	[396] *45* **209**	[441] *50* **205**	[484] *55* **201**	[521] *59* **200**	[549] *62* **191**	
[4] 15,1	[30] *3* **296**	[120] *14* **292**	[162] *18* **289**	[204] *23* **286**	[250] *28* **284**	[292] *33* **282**	[374] *42* **273**	[419] *47* **270**	[460] *52* **265**	[501] *57* **263**	[541] *61* **259**	[743] *84* **213**
Max. Continuous [5.5] 20,8		[81] *9* **393**	[127] *14* **392**	[170] *19* **389**	[214] *24* **387**	[254] *29* **383**	[339] *38* **377**	[379] *43* **372**	[422] *48* **369**	[463] *52* **364**	[506] *57* **358**	[702] *79* **302**
Max. Intermittent [6.5] 24,6		[47] *5* **465**	[90] *10* **462**	[133] *15* **460**	[176] *20* **458**	[219] *25* **455**	[307] *35* **448**	[345] *39* **445**	[385] *43* **440**	[429] *48* **435**	[467] *53* **430**	[685] *77* **364**

[81] Torque [lb-in]
9 Nm
393 **Speed RPM**

J Series (129-)

Dimensions

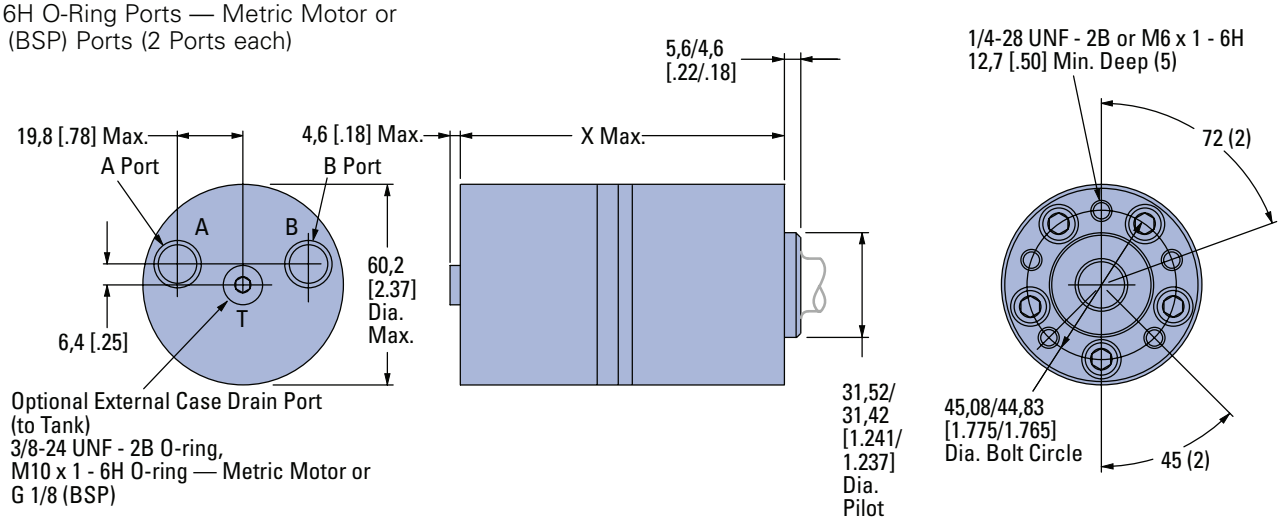
Standard Rotation Viewed from Shaft End

Port A Pressurized — CW

Port B Pressurized — CCW

9/16 Inch End Port

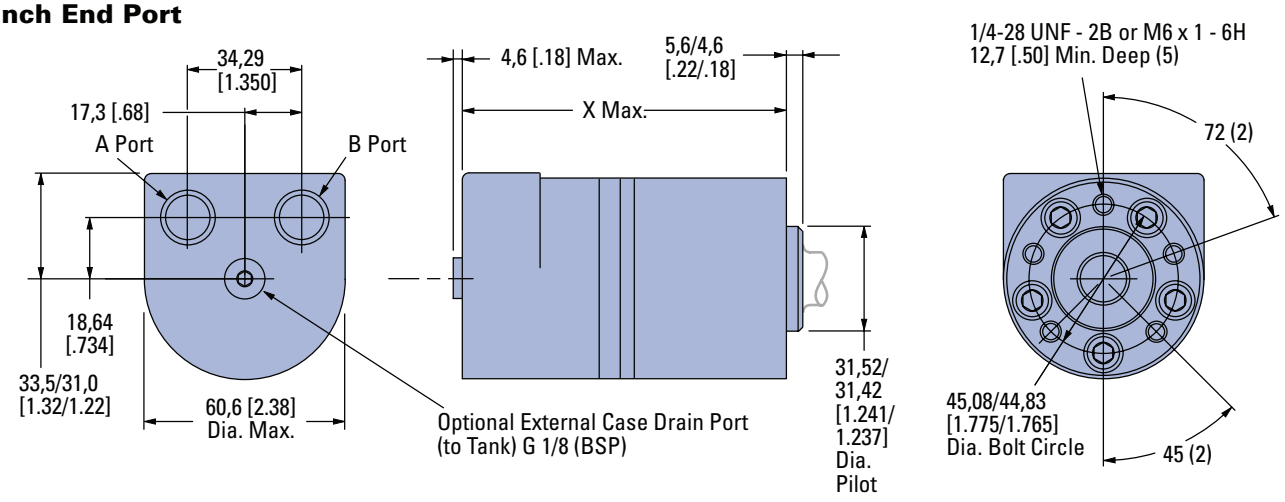
9/16 -18 UNF - 2B O-Ring Ports, M14 x 1,5 - 6H O-Ring Ports — Metric Motor or G 1/4 (BSP) Ports (2 Ports each)



END PORT DIMENSIONS

Displacement cm³/r [in³/r]	X mm [inch]
8,2 [.50]	103,9 [4.09]
12,9 [.79]	106,9 [4.21]
19,8 [1.21]	112,5 [4.38]
31,6 [1.93]	118,9 [4.68]
50,0 [3.00]	130,3 [5.13]

3/8 Inch End Port



END PORT DIMENSIONS

Displacement cm³/r [in³/r]	X mm [inch]
8,2 [.50]	103,9 [4.09]
12,9 [.79]	106,9 [4.21]
19,8 [1.21]	112,5 [4.38]
31,6 [1.93]	118,9 [4.68]
50,0 [3.00]	130,0 [5.12]
160,5 [6.32]	132,3 [5.21]

J Series (129-)

Dimensions

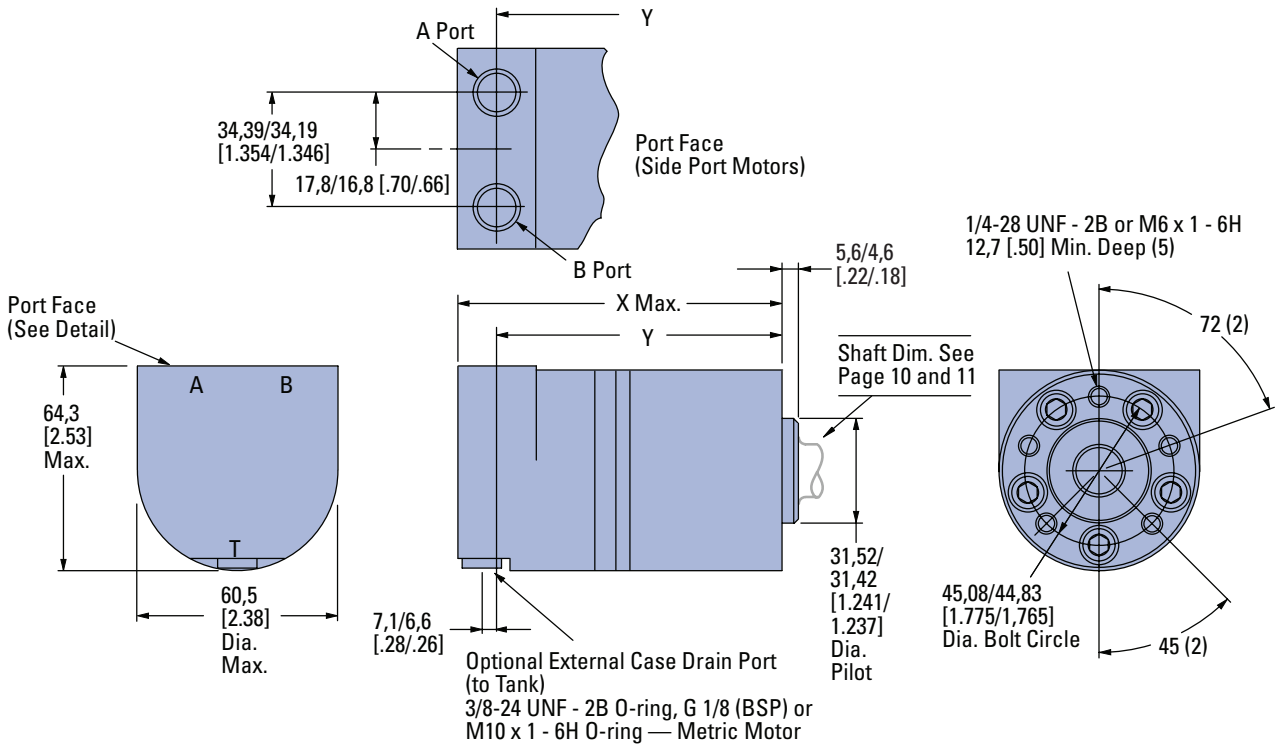
Ports

9/16 -18 UNF - 2B O-Ring Ports,
M14 x 1,5 -6H O-Ring Ports — Metric Motor,
G 3/8 or G 1/4 (BSP) Ports (2)

Standard Rotation Viewed from Shaft End

Port A Pressurized — CW
Port B Pressurized — CCW

Side Port



SIDE PORT MOTORS

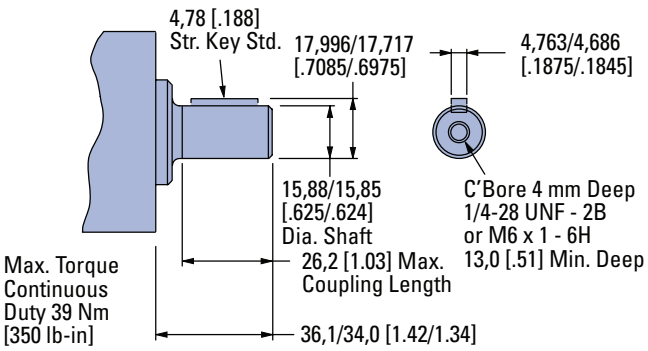
Displacement cm³/r [in³/r]	X mm [inch]	Y mm [inch]
8,2 [.50]	103,9 [4.09]	89,4/ 87,4 [3.52/3.44]
12,9 [.79]	106,9 [4.21]	92,5/ 90,4 [3.64/3.56]
19,8 [1.21]	112,5 [4.38]	96,8/ 94,7 [3.81/3.73]
31,6 [1.93]	118,9 [4.68]	104,4/102,4 [4.11/4.03]
50,0 [3.00]	130,0 [5.12]	115,7/113,9 [4.56/4.48]

J Series (129-)

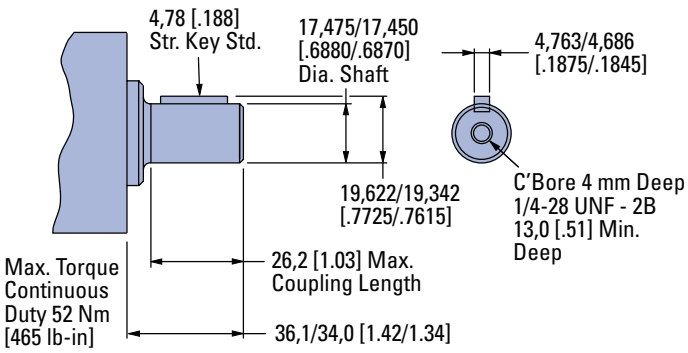
Dimensions

Shafts

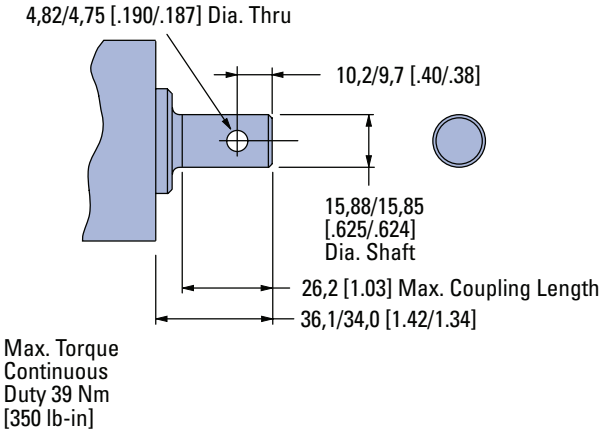
5/8 Inch Straight Keyed



11/16 Inch Straight Keyed



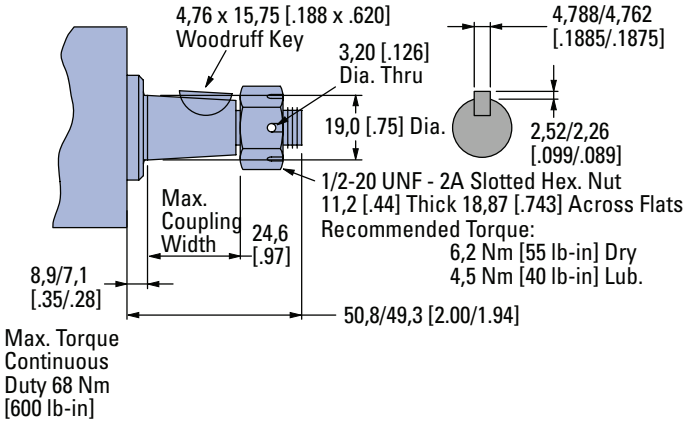
5/8 Inch Straight Keyed w/ Crosshole



3/4 Inch Tapered

(Tapered Shaft End Per SAE J744

Except as Specified — 1.5 : 12 Ratio)

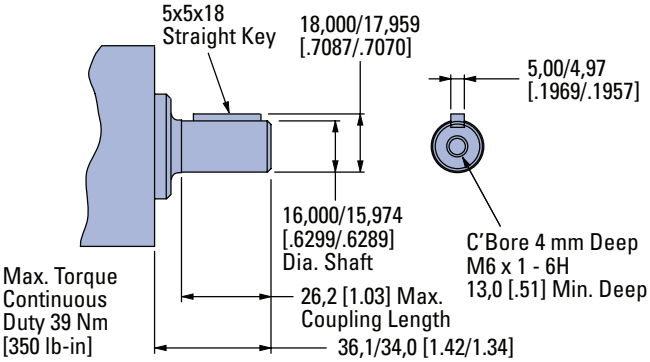


J Series (129-)

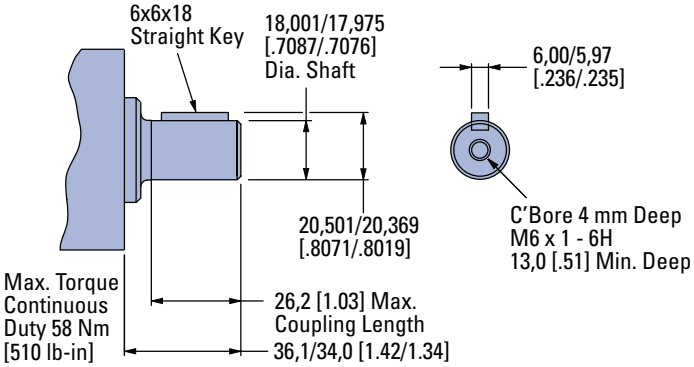
Dimensions

Shafts and Flange Kit

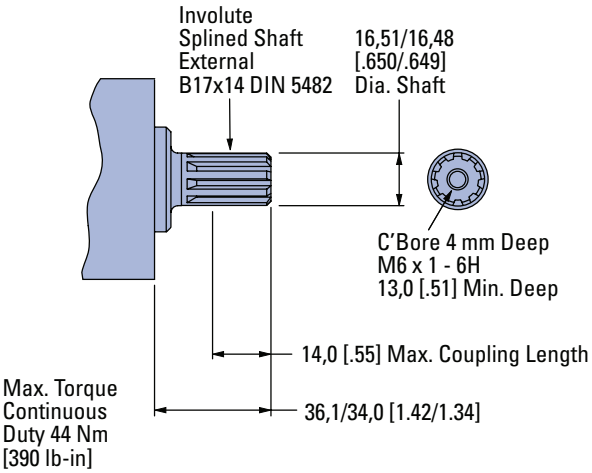
16 mm Straight Keyed



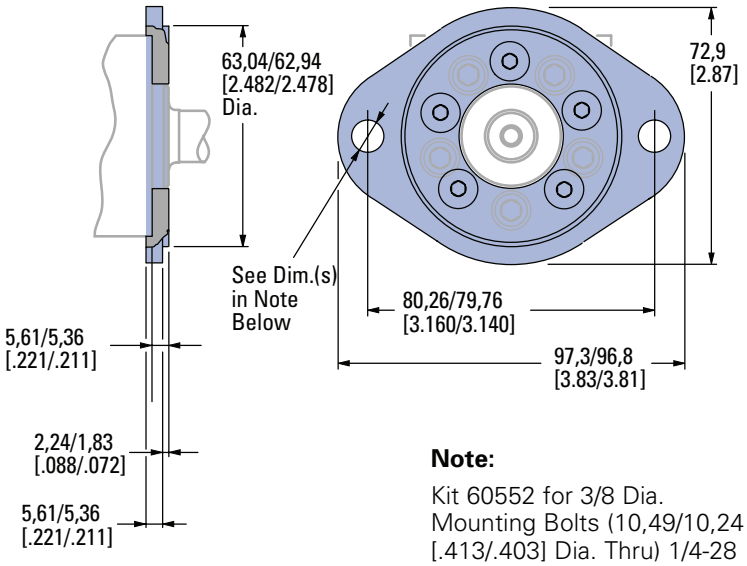
18 mm Straight Keyed



Involute 9T Splined — Metric



2 Bolt Flange Kits (2)



Note:

Kit 60552 for 3/8 Dia. Mounting Bolts (10,49/10,24 [.413/.403] Dia. Thru) 1/4-28 UNF screws for attaching flange to motor (5)

Kit 60553 for M8 Dia. Mounting Bolts (9,12/8,86 [.359/.349] Dia. Thru) M6 x 1 -6H screws for attaching flange to motor (5)

J Series (129-)

Product Numbers

Use digit prefix — 129- plus four digit number from charts for complete product number— Example 129-0479.

Orders will not be accepted without three digit prefix.

End Port

MOUNTING	SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER				
			8,2 [.50]	12,9 [.79]	19,8 [1.21]	31,6 [1.93]	50,0 [3.00]
1/4-28 UNF 2B	5/8 inch Straight	9/16 -18 UNF 2B O-Ring (2)	129-0291	-0292	-0293	-0294	-0458
	11/16 inch Straight		129-0295	-0296	-0297	-0298	-0459
	Splined — Metric		129-0299	-0300	-0301	-0302	-0460
	3/4 inch Tapered		129-0480				
M6 x 1 - 6H	16 mm Straight	M14 x 1,5 - 6H O-Ring (2)	129-0303	-0304	-0305	-0306	-0461
	18 mm Straight		129-0307	-0308	-0309	-0310	-0462
	Splined — Metric		129-0311	-0312	-0313	-0314	-0463
	16 mm Straight	G 1/4 (BSP) (2)	129-0315	-0316	-0317	-0318	-0464
	18 mm Straight		129-0319	-0320	-0321	-0322	-0465
	Splined — Metric		129-0323	-0324	-0325	-0326	-0466
	16 mm Straight	G 3/8 (BSP) (2)*	129-0327	-0328	-0329	-0330	-0467
	18 mm Straight		129-0331	-0332	-0333	-0334	-0468
	Splined — Metric		129-0335	-0336	-0337	-0338	-0469

*Note: The Same Casting used for Side Ports is Required for G 3/8 (BSP) End Ports

129-0336

Side Port

MOUNTING	SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER				
			8,2 [.50]	12,9 [.79]	19,8 [1.21]	31,6 [1.93]	50,0 [3.00]
1/4-28 UNF 2B	5/8 inch Straight	9/16 -18 UNF 2B O-Ring (2)	129-0339	-0340	-0341	-0342	-0470
	11/16 inch Straight		129-0343	-0344	-0345	-0346	-0471
	Splined — Metric		129-0347	-0348	-0349	-0350	-0472
	3/4 inch Tapered		129-0481				
M6 x 1 - 6H	16 mm Straight	M14 x 1,5 - 6H O-Ring (2)	129-0351	-0352	-0353	-0354	-0473
	18 mm Straight		129-0355	-0356	-0357	-0358	-0474
	Splined — Metric		129-0359	-0360	-0361	-0362	-0475
	16 mm Straight	G 1/4 (BSP) (2)	129-0363	-0364	-0365	-0366	-0476
	18 mm Straight						
	Splined — Metric		129-0367	-0368	-0369	-0370	-0477
	16 mm Straight	G 3/8 (BSP) (2)	129-0371	-0372	-0373	-0374	-0403
	18 mm Straight		129-0375	-0376	-0377	-0378	-0478
	Splined — Metric		129-0379	-0380	-0381	-0382	-0479

Two Bolt Mounting Flange Kit (for 3/8 inch Mounting Bolts) — Kit Number 60552 (includes 5 screws — 1/4 -28 UNF-2B)
Two Bolt Mounting Flange Kit (for M8 Mounting Bolts) — Kit Number 60553 (includes 5 screws — M6 x 1-6H)

J Series (129-)

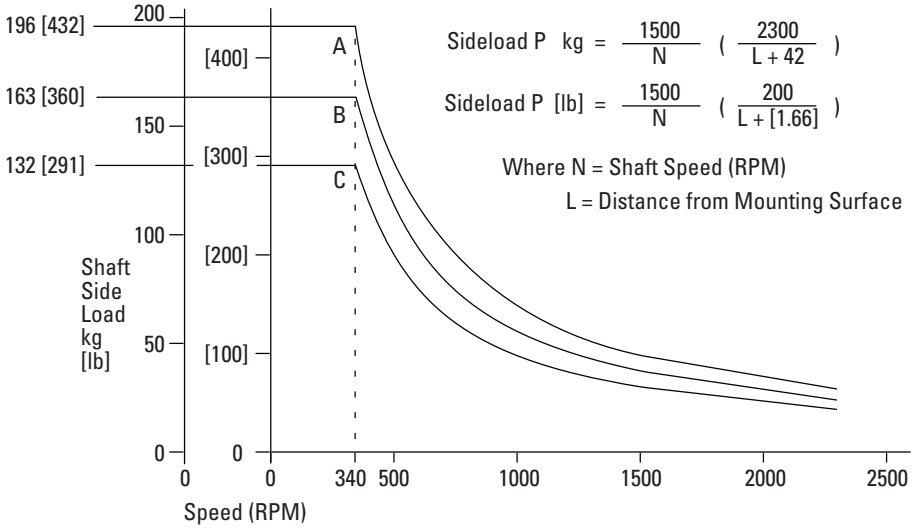
Shaft Side Load Capacity

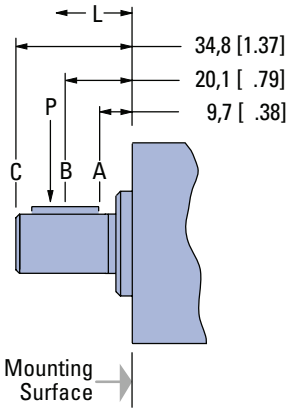
The hydrodynamic bearing has infinite life when shaft load ratings are not exceeded. Hence, the shaft side load capacity is more than adequate to handle most externally applied loads (such as belts, chains, etc.), providing the motor to shaft size is applied within its torque rating.

Allowable side load chart, shaft load location drawing (right) and load curves (below) are based on the side or radial loads being applied to shaft at locations A, B, and C, to determine the shaft side load capacity at locations other than those shown use the formula (shown below). For more information about shaft side loads on Char-Lynn motors contact your Eaton representative.

ALLOWABLE SIDE LOAD — KG [LB]

RPM	A	B	C
2300	29 [64]	24 [53]	20 [43]
1500	44 [98]	37 [82]	30 [66]
1250	54 [118]	44 [98]	36 [79]
1000	67 [147]	55 [122]	45 [99]
750	89 [196]	74 [163]	60 [132]
600	111 [245]	93 [204]	75 [165]
500	133 [294]	111 [245]	90 [198]
400	167 [368]	139 [306]	112 [248]
340	196 [432]	163 [360]	132 [291]





J Series (129-)

Case Pressure and Case Drain

The J Series now offers check valves in the motor as a standard feature. This addition reduces the case pressure in the motor to the return pressure of the system when the case drain is not used. For return pressures higher than the rated pressures (see chart) the external case drain can be connected. If the case drain line is needed, connect drain line to assure that the motor will always remain full of fluid.

Case Drain Advantage

In addition to providing lower case pressures for motors connected in series, there are advantages for adding an external case drain line to motors with normal case pressures as well. These advantages are:

Contamination Control — flushing the motor case.

Motor Cooler — exiting oil draws motor heat away.

Extend Motor Seal Life — maintain low case pressure with a preset restriction installed in the case drain line

Example:

A 14 Bar case pressure will cause a load of 40 kg, so the allowable thrust load will be 82 kg plus 40 = 120 kg kg pushing inward on shaft. Tension load is 82 kg under all case pressure conditions.

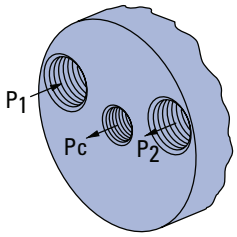
Example:

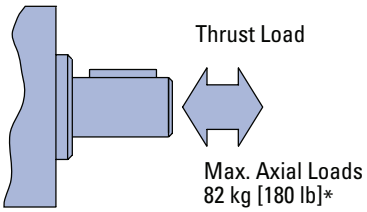
A 200 PSI case pressure will cause a load of 88 lbs, so the allowable thrust load will be 180 lbs plus 88 = 268 lbs pushing inward on shaft. Tension load is 180 lb under all case pressure conditions

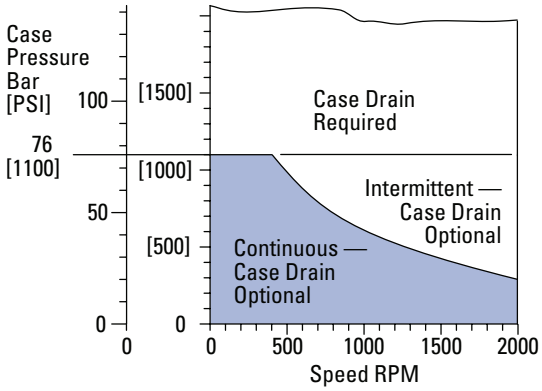
Note:

J Series motors can be connected in parallel or in series.

Case pressure will add to the allowable compressive thrust load. Case pressure will push outward on the shaft at 20 kg/7 Bar [44 lb/100 PSI].





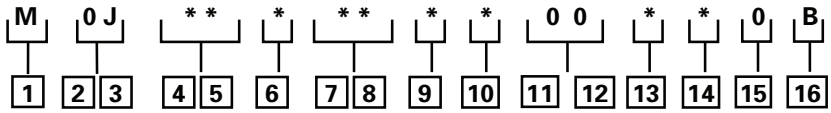


Case Pressure Seal Limitation

J Series (129-)

Model Code

The following 16-digit coding system has been developed to identify all of the configuration options for the J motor. Use this model code to specify a motor with the desired features. All 16-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.



1 Product

M – Motor

2, 3 Series

0J – J Series

4, 5 Displacement cm3/r [in3/r]

05 – 8,2 [.50]

08 – 12,9 [.79]

12 – 19,8 [1.21]

19 – 31,6 [1.93]

30 – 50,0 [3.00]

6 Mounting Type

A – 5 Bolt: Dia. 31,47 [1.239] x 5,1 [.20] Pilot 1/4-28 UNF 2B Mounting Holes on 45 [1.77] Dia. Bolt Circle

B – 5 Bolt: Dia. 31,47 [1.239] x 5,1 [.20] Pilot M6 x 1- 6H Mounting Holes on 45 [1.77] Dia. Bolt Circle

C – 2 Bolt: Dia. 62,99 [2.480] x 2,0 [.08] Pilot 10,36[.408] Mounting Holes on 80,0 [3.150] Dia. Bolt Circle

D – 2 Bolt: Dia. 62,99 [2.480] x 2,0 [.08] Pilot 9,0 [.354] Mounting Holes on 80,0 [3.150] Dia. Bolt Circle

7, 8 Output Shaft

01 – 5/8 inch Dia. Straight with 4,72 [.186] Square Key and 1/4-28 UNF - 2B Threaded Hole

02 – 16 mm Dia. Straight with 5,00 [.197] Square Key with M6 x 1 - 6H Threaded Hole

04 – 11/16 inch Dia. Straight with 4,72 [.186] Square Key and 1/4-28 UNF - 2B Threaded Hole

05 – 18 mm Dia. Straight with 5,92 [.233] Square Key with M6 x 1 - 6H Threaded Hole

06 – Involute Splined 9T—Metric 16,50 [.650] Dia. (B17 x 14 DIN 5482) M6 x 1 - 6H Threaded Hole

07 – 5/8 inch Dia. Straight with 4,75 [.187] Dia. Crosshole

08 – 3/4 inch Tapered with Woodruff Key and Nut

09 – 5/8 inch Dia. Straight with 4,72 [.186] Sq. Key with 1/4-28 UNF -2B Threaded Hole (Plated for Corrosion Protection)

14 – 16 mm Dia. Straight with 5,00 [.197] Sq. Key with M6 x 1- 6H Threaded Hole (Plated for Corrosion Protection)

9 Ports

A – 9/16 -18 UNF - 2B O-Ring End Ported

B – G 1/4 (BSP) End Ported

C – M14 x 1,5 - 6H O-Ring Port, End Ported

D – 9/16 -18 UNF - 2B O-Ring Side Ported

E – G 3/8 (BSP) Side Ported

F – G 1/4 (BSP) Side Ported

H – G 3/8 (BSP) End Ported

10 Case Flow Options

0 – No Case Drain

1 – 3/8 -24 UNF - 2B O-Ring

2 – G 1/8 (BSP)

3 – M10 x 1 - 6H O-Ring

11, 12 Special Features (Hardware)

00 – None

13 Special Features (Assembly)

0 – None

1 – Reverse Rotation

14 Paint/Special Packaging

0 – No Paint, Individual Box

A – Painted Low Gloss Black, Individual Box

B – No Paint, Bulk Box Option

15 Eaton Assigned Code when Applicable

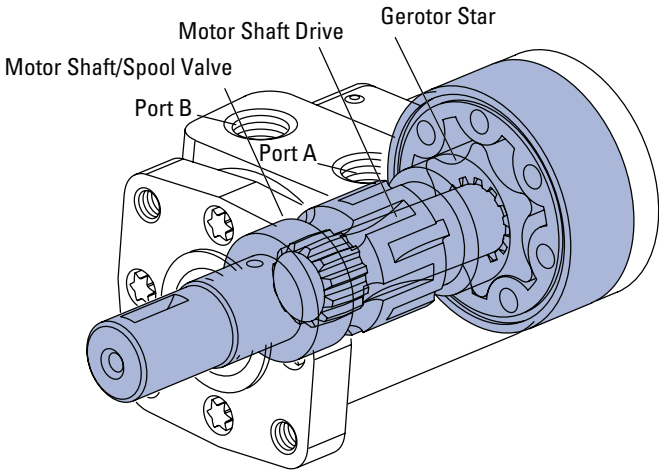
0 – Assigned Code

16 Eaton Assigned Design Code

B – Assigned Design Code

H Series (101-)

Highlights



Description

Designed for medium duty applications, these motors use industry-proven spool valve technology combined with state-of-the-art gerotors. In addition, a wide variety of mounting flanges, shafts, Ports and valving options provide design flexibility. Direction of shaft rotation and shaft speed can be controlled easily and smoothly throughout the speed range of the motor, and equipment can be driven direct, eliminating costly mechanical components.

Specifications

Gerotor Element	13 Displacements
Flow l/min [GPM]	57 [15] Continuous***
	76 [20] Intermittent**
Speed	Up to 1100 RPM
Pressure bar [PSI]	125 [1800] Cont.***
	165 [2400] Inter.**
Torque Nm [lb-in]	407 [3604] Cont.***
	520 [4600] Inter.**

*** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.
** Intermittent— (Inter.) Intermittent operation, 10% of every minute.

Features:

- Time-tested Char-Lynn drive set
- Three moving components (gerotor-star, drive, and shaft)
- Optimized drive running angle
- Three-zone pressure design (inlet, return and case)
- Variety of displacements, shafts and mounts
- Special options to meet customer needs

Benefits:

- High efficiency
- Powerful compact package
- Design flexibility
- Extended leak-free performance

Applications:

- Agricultural augers, harvesters, seeders
- Car wash brushes
- Food processing
- Railroad maintenance equipment
- Machine tools
- Conveyors
- Industrial sweepers and floor polishers
- Saw mill works
- Turf equipment
- Concrete and asphalt equipment
- Skid steer attachments
- Many more


Conveyer

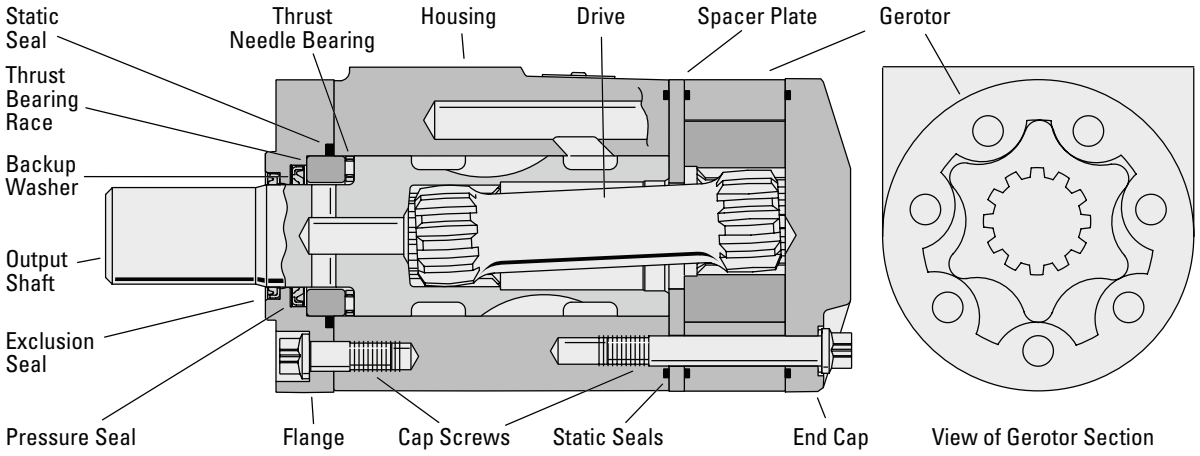

Combine


Sweeper


Salt and Sand Spreader

H Series (101-)

Specifications



SPECIFICATION DATA — H MOTORS

Displ. cm³/r [in³/r]		36 [2.2]	46 [2.8]	59 [3.6]	74 [4.5]	97 [5.9]	120 [7.3]	146 [8.9]	159 [9.7]	185 [11.3]	231 [14.1]	293 [17.9]	370 [22.6]	739 [45.1]
Max. Speed (RPM) @ Continuous Flow		1021	969	953	760	585	469	385	353	304	243	192	152	74
Flow LPM [GPM]	Continuous	38 [10]	45 [12]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]
	Intermittent	38 [10]	53 [14]	64 [17]	68 [18]	68 [18]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]
Torque Nm [lb-in]	Continuous	56 [497]	73 [650]	91 [802]	118 [1044]	155 [1368]	192 [1699]	221 [1954]	233 [2059]	265 [2343]	302 [2669]	351 [3110]	407 [3604]	389 [3440]
	Intermittent	75 [668]	99 [876]	122 [1076]	158 [1401]	207 [1829]	257 [2278]	300 [2653]	319 [2824]	356 [3151]	415 [3671]	466 [4121]	484 [4283]	520 [4600]
Min. Starting Torque Nm [lb-in]	@ Cont. Pressure	46 [410]	59 [520]	76 [670]	95 [840]	124 [1100]	154 [1360]	176 [1560]	186 [1650]	211 [1870]	238 [2110]	282 [2500]	330 [2920]	316 [2800]
	@ Int. Pressure	63 [560]	81 [720]	104 [920]	130 [1150]	171 [1510]	2102 [1860]	46 [2180]	262] [2320	293 [2590]	339 [3000]	388 [3430]	408 [3610]	434 [3840]
Pressure ΔBar [Δ PSI]	Continuous	124 [1800]	124 [1800]	124 [1800]	124 [1800]	124 [1800]	124 [1800]	117 [1700]	114 [1650]	110 [1600]	100 [1450]	93 [1350]	86 [1250]	41 [600]
	Intermittent	165 [2400]	165 [2400]	165 [2400]	165 [2400]	165 [2400]	165 [2400]	159 [2300]	155 [2250]	148 [2150]	138 [2000]	124 [1800]	103 [1500]	55 [800]
End Ported Units Only														
Δ Bar [Δ PSI]	Cont. Pressure	83 [1200]	83 [1200]	76 [1100]	76 [1100]	76 [1100]	69 [1000]	69 [1000]	69 [1000]	62 [900]	55 [800]	48 [700]	57 [825]	27 [396]
	Intermittent	117 [1700]	117 [1700]	110 [1600]	110 [1600]	110 [1600]	103 [1500]	103 [1500]	103 [1500]	91 [1400]	90 [1300]	83 [1200]	68 [990]	36 [528]
Weight kg [lb]		5,1 [11.2]	5,1 [11.2]	5,2 [11.5]	5,2 [11.5]	5,4 [11.8]	5,5 [12.1]	5,6 [12.4]	5,7 [12.5]	5,8 [12.8]	6,0 [13.3]	6,3 [14.0]	6,7 [14.7]	8,4 [18,6]

A simultaneous maximum torque and maximum speed NOT recommended.

Note:

To assure best motor life, run motor for approximately one hour at 30% of rated pressure before application to full load. Be sure motor is filled with fluid prior to any load applications.

Note:

Δ pressure is derated for end ported units.

Maximum Inlet Pressure:

172 Bar [2500 PSI] without regard to Δ Bar [Δ PSI] and/ or back pressure ratings or combination thereof.

6B splined or Tapered shafts are recommended whenever operation above 282 NM [2500 lb-in] of torque, especially for those applications subject to frequent reversals.

Δ Pressure:

The true Δ bar [Δ PSI] difference between inlet port and outlet port

Continuous Rating:

Motor may be run continuously at these ratings

Intermittent Operation:

10% of every minute

Recommended Fluids:

Recommended Fluids — Premium quality, anti-wear type hydraulic oil. Minimum oil viscosity (at operating temperature) should be the highest of the following:
100 SUS or

$$\left[\frac{300 \times \text{Bar}}{\text{RPM}} = \text{SUS}\right.$$

$$\left.\frac{20 \times \text{PSI}}{\text{RPM}} = \text{SUS}\right]$$

Recommended Maximum System Operating Temp.:
82°C [180°F]

Recommended Filtration:
per ISO Cleanliness Code 4406, level 20/18/13

H Series (101-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

36 cm³/r [2.2 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	Max. Continuous [2400] 165	Max. Intermittent
[2]	[49]	[103]	[162]	[189]	[270]	[325]	[379]	[432]	[489]	[650]	
6	12	18	21	31	37	43	49	55	73		
7,6	204	201	198	194	189	184	177	170	162	122	
[4]	[47]	[106]	[160]	[191]	[274]	[327]	[384]	[439]	[495]	[654]	
5	12	18	22	31	37	43	50	56	74		
15,1	408	407	402	399	394	387	381	373	365	323	
[6]	[44]	[102]	[158]	[188]	[272]	[328]	[383]	[440]	[496]	[661]	
5	12	18	21	31	37	43	50	56	75		
22,7	613	612	609	604	599	591	586	576	565	523	
[8]	[40]	[97]	[153]	[184]	[270]	[326]	[383]	[440]	[497]	[668]	
5	11	17	21	31	37	43	50	56	75		
30,3	817	817	814	807	799	793	785	776	762	721	
Max. Continuous [10]	[36]	[90]	[148]	[180]	[265]	[322]	[380]	[438]	[495]	[664]	
4	10	17	20	30	36	43	49	56	75		
37,9	1021	1021	1015	1008	1001	991	981	969	959	920	

[90] Torque [lb-in]
10 Nm
1021 Speed RPM

46 cm³/r [2.8 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	Max. Continuous [2400] 165	Max. Intermittent
[2]	[64]	[136]	[212]	[284]	[355]	[426]	[497]	[567]	[641]	[852]	
7	15	24	32	40	48	56	64	72	96		
7,6	161	158	156	153	148	145	139	133	127	95	
[4]	[61]	[139]	[209]	[286]	[359]	[429]	[503]	[576]	[649]	[857]	
7	16	24	32	41	48	57	65	73	97		
15,1	323	320	316	314	310	304	300	293	287	253	
[6]	[58]	[134]	[207]	[282]	[356]	[430]	[502]	[577]	[650]	[867]	
7	15	23	32	40	49	57	65	73	98		
22,7	486	481	479	475	471	464	461	453	444	410	
[8]	[52]	[128]	[200]	[276]	[354]	[428]	[502]	[577]	[651]	[876]	
6	14	23	31	40	48	57	65	74	99		
30,3	648	643	640	635	628	623	617	610	599	566	
[10]	[47]	[118]	[194]	[269]	[347]	[423]	[498]	[575]	[649]	[871]	
5	13	22	30	39	48	56	65	73	98		
37,9	808	803	798	793	787	779	771	761	753	722	
Max. Continuous [12]	[36]	[109]	[188]	[260]	[340]	[417]	[492]	[567]	[643]	[864]	
4	12	21	29	38	47	56	64	73	98		
45,4	969	964	960	952	946	938	931	922	914	877	
Max. Intermittent [14]	[25]	[98]	[175]	[249]	[327]	[404]	[484]	[559]	[634]		
3	11	20	28	37	46	55	63	72			
53,0	1127	1123	1115	1108	1100	1093	1086	1079	1068		

H Series (101-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

59 cm³/r [3.6 in³/r]

Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	Max. Continuous [1800] 124	Max. Intermittent [2400] 165
[2]	[79] 9	[169] 19	[260] 29	[305] 34	[437] 49	[526] 59	[616] 70	[704] 80	[796] 90	[1055] 119
7,6	127	125	123	121	117	114	109	103	96	65
[4]	[76] 9	[168] 19	[257] 29	[307] 35	[441] 50	[529] 60	[620] 70	[710] 80	[800] 90	[1065] 120
15,1	254	254	251	249	246	241	236	230	224	193
[6]	[73] 8	[161] 18	[252] 28	[303] 34	[439] 50	[529] 60	[618] 70	[709] 80	[802] 91	[1069] 121
22,7	381	381	380	377	373	368	364	358	349	319
[8]	[64] 7	[151] 17	[243] 27	[294] 33	[428] 48	[519] 59	[609] 69	[701] 79	[794] 90	[1076] 122
30,3	508	508	508	504	500	496	491	484	476	446
[10]	[57] 6	[141] 16	[234] 26	[283] 32	[419] 47	[512] 58	[602] 68	[693] 78	[786] 89	[1071] 121
37,9	635	635	634	630	626	621	614	608	601	571
[12]	[45] 5	[131] 15	[227] 26	[274] 31	[409] 46	[505] 57	[593] 67	[684] 77	[778] 88	[1058] 120
45,4	762	762	762	757	753	747	741	734	728	694
[14]	[33] 4	[118] 13	[213] 24	[266] 30	[396] 45	[492] 56	[583] 66	[676] 76	[770] 87	[1055] 119
53,0	889	889	887	882	877	872	866	860	851	813
Max. Continuous [15]	[29] 3	[111] 13	[205] 23	[260] 29	[389] 44	[486] 55	[576] 65	[670] 76	[765] 86	[1055] 119
56,8	953	953	951	945	940	935	929	921	913	872
Max. Intermittent [20]	[17] 2	[98] 11	[192] 22	[252] 28	[377] 43	[475] 54	[567] 64	[660] 75	[757] 86	
75,7	1080	1080	1077	1071	1067	1062	1055	1049	1040	

[111] 13 953 } Torque [lb-in] Nm Speed RPM

74 cm³/r [4.5 in³/r]

Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	Max. Continuous [1800] 124	Max. Intermittent [2400] 165
[2]	[103] 12	[220] 25	[339] 38	[454] 51	[569] 64	[685] 77	[801] 91	[916] 103	[1036] 117	[1373] 155
7,6	101	99	98	96	93	90	86	81	76	51
[4]	[99] 11	[219] 25	[335] 38	[457] 52	[574] 65	[689] 78	[808] 91	[925] 105	[1042] 118	[1386] 157
15,1	203	201	199	197	194	191	187	182	177	153
[6]	[94] 11	[210] 24	[328] 37	[451] 51	[571] 65	[689] 78	[805] 91	[924] 104	[1044] 118	[1392] 157
22,7	305	303	301	298	296	292	288	283	276	252
[8]	[86] 10	[196] 22	[319] 36	[438] 49	[558] 63	[676] 76	[793] 90	[913] 103	[1033] 117	[1401] 158
30,3	406	404	402	399	396	393	388	383	377	352
[10]	[74] 8	[183] 21	[310] 35	[422] 48	[545] 62	[667] 75	[784] 89	[903] 102	[1024] 116	[1394] 158
37,9	507	505	502	499	496	492	486	482	476	452
[12]	[58] 7	[171] 19	[295] 33	[408] 46	[533] 60	[657] 74	[773] 87	[891] 101	[1013] 114	[1377] 156
45,4	608	606	603	600	596	591	587	581	576	549
[14]	[43] 5	[154] 17	[277] 31	[396] 45	[515] 58	[640] 72	[760] 86	[880] 99	[1002] 113	[1374] 155
53,0	709	706	702	698	694	691	686	681	674	643
Max. Continuous [15]	[36] 4	[145] 16	[268] 30	[387] 44	[506] 57	[632] 71	[750] 85	[873] 99	[996] 113	[1373] 155
56,8	760	757	753	749	744	740	735	729	723	690
Max. Intermittent [20]	[14] 2	[121] 14	[233] 26	[351] 40	[482] 54	[609] 69	[725] 82	[856] 97	[981] 111	
75,7	904	902	898	895	891	887	882	877	869	

H Series (101-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

97 cm³/r [5.9 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	Max. Continuous [2400] 165
[2] 7,6	[134] 15 78	[292] 33 76	[442] 50 75	[593] 67 73	[746] 84 71	[899] 102 68	[1054] 119 65	[1209] 137 61	[1365] 154 55	[1806] 204 33
[4] 15,1	[131] 15 156	[281] 32 155	[436] 49 153	[596] 67 151	[750] 85 149	[903] 102 147	[1059] 120 143	[1212] 137 139	[1367] 154 134	[1828] 207 113
[6] 22,7	[126] 14 234	[269] 30 233	[425] 48 231	[588] 66 230	[747] 84 228	[900] 102 224	[1054] 119 221	[1206] 136 217	[1368] 155 210	[1823] 206 189
[8] 30,3	[110] 12 312	[246] 28 311	[408] 46 310	[566] 64 308	[718] 81 305	[873] 99 303	[1023] 116 300	[1177] 133 295	[1339] 151 291	[1829] 207 269
[10] 37,9	[96] 11 390	[231] 26 389	[392] 44 387	[539] 61 385	[699] 79 383	[859] 97 380	[1005] 114 376	[1156] 131 373	[1318] 149 368	[1821] 206 346
[12] 45,4	[77] 9 468	[218] 25 467	[378] 43 465	[522] 59 463	[681] 77 460	[844] 95 457	[990] 112 453	[1142] 129 449	[1301] 147 445	[1792] 202 421
[14] 53,0	[60] 7 546	[197] 22 544	[358] 40 542	[513] 58 539	[662] 75 537	[828] 94 535	[973] 110 531	[1131] 128 526	[1293] 146 521	[1776] 201 499
Max. Continuous [15] 56,8	[52] 6 585	[189] 21 583	[346] 39 581	[495] 56 578	[651] 74 575	[819] 93 573	[963] 109 569	[1126] 127 564	[1286] 145 559	[1778] 201 536
Max. Intermittent [20] 75,7	[25] 3 701	[157] 18 700	[311] 35 697	[455] 51 694	[625] 71 691	[790] 89 688	[941] 106 684	[1110] 125 681	[1272] 144 674	

[189] 21 583 } Torque [lb-in] Nm Speed RPM

120 cm³/r [7.3 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	Max. Continuous [2400] 165
[2] 7,6	[162] 18 62	[357] 40 61	[544] 61 61	[736] 83 59	[927] 105 58	[1116] 126 55	[1305] 147 53	[1498] 169 49	[1687] 191 45	[2231] 252 26
[4] 15,1	[160] 18 125	[348] 39 124	[539] 61 123	[736] 83 121	[930] 105 120	[1119] 126 119	[1316] 149 116	[1506] 170 114	[1698] 192 110	[2268] 256 90
[6] 22,7	[155] 18 188	[338] 38 187	[530] 60 186	[729] 82 185	[923] 104 183	[1116] 126 180	[1310] 148 178	[1500] 169 175	[1699] 192 170	[2271] 257 152
[8] 30,3	[139] 16 250	[319] 36 250	[515] 58 249	[710] 80 247	[901] 102 245	[1094] 124 243	[1283] 145 241	[1476] 167 237	[1673] 189 233	[2278] 257 216
[10] 37,9	[121] 14 313	[303] 34 312	[497] 56 311	[686] 78 309	[883] 100 308	[1081] 122 306	[1267] 143 302	[1460] 165 300	[1655] 187 296	[2268] 256 278
[12] 45,4	[102] 12 375	[288] 33 374	[480] 54 373	[664] 75 371	[862] 97 370	[1060] 120 367	[1246] 141 365	[1440] 163 361	[1640] 185 358	[2232] 252 338
[14] 53,0	[78] 9 438	[263] 30 437	[458] 52 435	[652] 74 433	[841] 95 431	[1041] 118 430	[1228] 139 427	[1420] 160 423	[1616] 183 419	[2213] 250 401
Max. Continuous [15] 56,8	[67] 8 469	[253] 29 468	[446] 50 466	[632] 71 464	[828] 94 462	[1030] 116 460	[1214] 137 458	[1411] 159 454	[1608] 182 450	[2205] 249 430
Max. Intermittent [20] 75,7	[20] 2 626	[202] 23 624	[384] 43 621	[581] 66 618	[778] 88 617	[971] 110 614	[1169] 132 611	[1356] 153 609	[1559] 176 606	

H Series (101-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

146 cm³/r [8.9 in³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	Max. Continuous [1700] 117	Max. Intermittent [2300] 159
[2] 7,6	[198] 22 51	[435] 49 50	[664] 75 50	[897] 101 49	[1130] 128 47	[1361] 154 45	[1591] 180 43	[1827] 206 40	[1942] 219 39	[2611] 295 24
[4] 15,1	[196] 22 103	[424] 48 102	[657] 74 101	[898] 101 99	[1133] 128 99	[1365] 154 97	[1604] 181 95	[1836] 207 93	[1954] 221 92	[2648] 299 78
[6] 22,7	[189] 21 154	[412] 47 153	[646] 73 152	[889] 100 151	[1125] 127 150	[1361] 154 148	[1598] 181 146	[1829] 207 143	[1951] 220 141	[2653] 300 128
[8] 30,3	[169] 19 205	[389] 44 205	[628] 71 204	[866] 98 203	[1098] 124 201	[1333] 151 200	[1564] 177 197	[1799] 203 195	[1919] 217 193	[2649] 299 180
[10] 37,9	[148] 17 257	[369] 42 256	[605] 68 255	[836] 94 253	[1076] 122 252	[1318] 149 251	[1544] 174 248	[1780] 201 246	[1899] 215 244	[2789] 315 231
[12] 45,4	[125] 14 308	[351] 40 307	[586] 66 306	[810] 92 305	[1051] 119 303	[1293] 146 301	[1519] 172 299	[1756] 198 296	[1878] 212 295	[2606] 294 281
[14] 53,0	[95] 11 359	[321] 36 358	[558] 63 357	[795] 90 355	[1026] 116 354	[1290] 146 352	[1497] 169 350	[1731] 196 347	[1851] 209 346	[2580] 292 331
Max. Continuous [15] 56,8	[82] 9 85	[308] 35 384	[544] 61 383	[771] 87 381	[1010] 114 379	[1256] 142 378	[1480] 167 375	[1720] 194 373	[1840] 208 371	[2569] 290 356
Max. Intermittent [20] 75,7	[24] 3 513	[246] 28 512	[468] 53 509	[708] 80 507	[948] 107 506	[1184] 134 504	[1425] 161 501	[1653] 187 499	[1780] 201 498	

159 cm³/r [9.7 in³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	Max. Continuous [1650] 134	Max. Intermittent [2250] 155
[2] 7,6	[209] 24 47	[465] 53 46	[715] 81 46	[973] 110 45	[1228] 139 44	[1478] 167 42	[1724] 195 40	[1981] 224 38	[2046] 231 37	[2764] 312 23
[4] 15,1	[210] 24 94	[460] 52 94	[710] 80 93	[971] 110 91	[1229] 139 91	[1480] 167 90	[1745] 197 89	[1996] 226 87	[2059] 233 87	[2813] 318 76
[6] 22,7	[205] 23 141	[454] 51 141	[704] 80 140	[965] 109 139	[1216] 137 138	[1477] 167 136	[1738] 196 134	[1991] 225 132	[2055] 232 132	[2824] 319 119
[8] 30,3	[186] 21 188	[440] 50 188	[693] 78 187	[951] 107 186	[1205] 136 185	[1461] 165 183	[1716] 194 181	[1973] 223 179	[2038] 230 178	[2808] 317 166
[10] 37,9	[164] 19 235	[422] 48 234	[671] 76 234	[930] 105 232	[1189] 134 232	[1451] 164 230	[1702] 192 228	[1965] 219 226	[2032] 230 225	[2789] 315 213
[12] 45,4	[144] 16 282	[404] 46 281	[652] 74 281	[900] 102 279	[1163] 131 279	[1421] 161 277	[1674] 189 275	[1937] 219 273	[2004] 226 272	[2770] 313 260
[14] 53,0	[109] 12 330	[374] 42 329	[623] 70 328	[883] 100 327	[1140] 129 325	[1396] 158 323	[1653] 187 322	[1900] 215 319	[1963] 222 319	[2727] 308 306
Max. Continuous [15] 56,8	[92] 10 353	[359] 41 352	[612] 69 351	[861] 97 350	[1123] 127 348	[1381] 156 347	[1633] 185 345	[1886] 213 343	[1950] 220 342	[2712] 306 330
Max. Intermittent [20] 75,7	[26] 3 471	[268] 30 470	[510] 58 467	[772] 87 465	[1034] 117 464	[1290] 146 462	[1553] 175 460	[1802] 204 458	[1865] 211 458	

[359] Torque [lb-in]
41 Nm
352 Speed RPM

H Series (101-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

185 cm³/r [11.3 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	Max. Continuous [1600] 110	Max. Intermittent [2150] 148
[2] 7,6	[257] 29 40	[554] 63 40	[847] 96 39	[1150] 130 38	[1447] 163 37	[1739] 196 36	[2035] 230 33	[2320] 262 29	[3103] 351 12
[4] 15,1	[254] 29 81	[546] 62 81	[845] 95 80	[1145] 129 79	[1448] 164 78	[1744] 197 77	[2049] 232 76	[2343] 265 74	[3147] 356 63
[6] 22,7	[246] 28 121	[540] 61 121	[834] 94 120	[1137] 128 120	[1434] 162 119	[1736] 196 117	[2036] 230 115	[2337] 264 112	[3151] 356 100
[8] 30,3	[224] 25 162	[520] 59 162	[820] 93 161	[1117] 126 160	[1414] 160 159	[1716] 194 157	[2014] 228 155	[2315] 262 152	[3133] 354 140
[10] 37,9	[202] 23 202	[499] 56 202	[793] 90 201	[1095] 124 201	[1394] 158 200	[1699] 192 198	[1997] 226 196	[2299] 260 193	[3112] 352 181
[12] 45,4	[176] 20 243	[475] 54 242	[767] 87 242	[1063] 120 241	[1368] 155 240	[1664] 188 238	[1969] 222 236	[2268] 256 234	[3088] 349 222
[14] 53,0	[140] 16 283	[443] 50 283	[735] 83 282	[1035] 117 281	[1340] 151 280	[1637] 185 279	[1936] 219 277	[2227] 252 274	[3051] 345 262
Max. Continuous [15] 56,8	[120] 14 304	[425] 48 303	[719] 81 302	[1014] 115 301	[1320] 149 300	[1618] 183 299	[1914] 216 297	[2205] 249 294	[3023] 342 283
Max. Intermittent [20] 75,7	[27] 3 405	[321] 36 404	[612] 69 402	[911] 103 401	[1211] 137 400	[1504] 170 398	[1795] 203 397		

231 cm³/r [14.1 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	Max. Continuous [1450] 100	Max. Intermittent [2000] 138
[2] 7,6	[338] 38 32	[707] 80 32	[1074] 121 31	[1456] 165 30	[1827] 206 30	[2192] 248 28	[2572] 291 26	[2657] 300 25	
[4] 15,1	[328] 37 65	[695] 79 65	[1076] 122 64	[1447] 163 63	[1827] 206 62	[2201] 249 62	[2577] 291 60	[2669] 302 60	[3671] 415 50
[6] 22,7	[317] 36 97	[687] 78 97	[1057] 119 97	[1434] 162 96	[1811] 205 95	[2186] 247 94	[2555] 289 92	[2650] 299 91	[3668] 414 80
[8] 30,3	[289] 33 130	[659] 74 130	[1038] 117 130	[1406] 159 129	[1777] 201 128	[2160] 244 127	[2531] 286 124	[2625] 297 124	[3644] 412 112
[10] 37,9	[265] 30 162	[631] 71 162	[1004] 113 162	[1381] 156 162	[1751] 198 160	[2131] 241 158	[2510] 284 156	[2602] 294 156	[3608] 408 145
[12] 45,4	[230] 26 195	[599] 68 195	[968] 109 194	[1345] 152 194	[1722] 195 193	[2088] 236 192	[2480] 280 189	[2571] 290 189	[3571] 403 178
[14] 53,0	[191] 22 227	[563] 64 227	[927] 105 227	[1299] 147 226	[1686] 190 226	[2058] 233 224	[2428] 274 222	[2519] 285 221	[3532] 399 212
Max. Continuous [15] 56,8	[167] 19 243	[538] 61 243	[904] 102 243	[1279] 145 242	[1661] 188 242	[2030] 229 240	[2404] 272 238	[2493] 282 238	[3488] 394 229
Max. Intermittent [20] 75,7	[29] 3 324	[411] 46 324	[785] 89 323	[1152] 130 322	[1520] 172 322	[1877] 212 320	[2222] 251 319	[2318] 262 318	

[538] 61 243 } Torque [lb-in] Nm Speed RPM

H Series (101-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

293 cm³/r [17.9 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	Max. Continuous [1350] 93	Max. Intermittent [1800] 124
[2] 7,6	[427] 48 26	[893] 101 25	[1361] 154 25	[1829] 207 24	[2293] 259 22	[2672] 302 16	[2977] 336 13	
[4] 15,1	[419] 47 51	[886] 100 51	[1362] 154 51	[1833] 207 50	[2305] 260 49	[2771] 313 47	[3110] 351 44	[4107] 464 22
[6] 22,7	[402] 45 77	[872] 99 77	[1342] 152 76	[1819] 206 76	[2291] 259 74	[2757] 312 71	[3098] 350 68	[4121] 466 54
[8] 30,3	[367] 41 102	[838] 95 102	[1316] 149 102	[1785] 202 101	[2252] 254 100	[2723] 308 98	[3070] 347 95	[4086] 462 84
[10] 37,9	[332] 38 128	[803] 91 128	[1276] 144 128	[1749] 198 127	[2215] 250 126	[2684] 303 123	[3034] 343 120	[4061] 459 108
[12] 45,4	[289] 33 153	[760] 86 153	[1230] 139 153	[1706] 193 153	[2177] 246 151	[2634] 298 149	[2989] 338 146	[4012] 453 135
[14] 53,0	[241] 27 179	[712] 80 179	[1176] 133 179	[1650] 186 179	[2126] 240 177	[2592] 293 175	[2935] 332 172	[3963] 448 161
Max. Continuous [15] 56,8	[211] 24 192	[683] 77 192	[1149] 130 192	[1623] 183 191	[2096] 237 190	[2558] 289 188	[2905] 328 185	[3914] 442 174
Max. Intermittent [20] 75,7	[43] 5 256	[527] 60 256	[1001] 113 255	[1463] 165 255	[1919] 217 254	[2375] 268 252	[2720] 307 249	

370 cm³/r [22.6 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	Max. Continuous [1250] 86	Max. Intermittent [1500] 103
[2] 7,6	[537] 61 20	[1121] 127 20	[1715] 194 20	[2285] 258 19	[2862] 323 16			
[4] 15,1	[532] 60 40	[1123] 127 40	[1715] 194 40	[2308] 261 39	[2893] 327 38	[3467] 392 36	[3604] 407 35	[4274] 483 27
[6] 22,7	[508] 57 61	[1100] 124 61	[1693] 191 61	[2294] 259 60	[2884] 326 58	[3458] 391 55	[3598] 407 53	[4283] 484 47
[8] 30,3	[463] 52 81	[1060] 120 81	[1661] 188 81	[2255] 255 80	[2840] 321 79	[3414] 386 76	[3557] 402 74	[4254] 481 68
[10] 37,9	[414] 47 101	[1017] 115 101	[1613] 182 101	[2203] 249 101	[2788] 315 99	[3363] 380 96	[3506] 396 94	[4212] 476 88
[12] 45,4	[363] 41 121	[960] 108 121	[1553] 175 121	[2152] 243 121	[2737] 309 119	[3305] 373 116	[3446] 389 115	[4152] 469 109
[14] 53,0	[303] 34 142	[897] 101 142	[1484] 168 142	[2086] 236 142	[2667] 301 140	[3246] 367 137	[3386] 383 136	[4092] 462 130
Max. Continuous [15] 56,8	[266] 30 152	[862] 97 152	[1452] 164 152	[2050] 232 152	[2630] 297 150	[3206] 362 148	[3347] 378 147	[4054] 458 140
Max. Intermittent [20] 75,7	[61] 7 202	[671] 76 202	[1269] 143 202	[1847] 209 202	[2410] 272 202	[2987] 337 199	[3119] 352 198	

[862] 97 152 } Torque [lb-in] Nm Speed RPM

739 cm³/r [45.1 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]	Continuous [200] 14	[400] 28	[600] 41	Max. Continuous	Max. Intermittent [800] 55
[2] 7,6	[1080] 122 10	[2250] 254 10	[3440] 389 10		[4570] 516 9
[4] 15,1	[1070] 121 20	[2250] 254 20	[3440] 389 19		[4600] 520 18
[6] 22,7	[1020] 115 30	[2200] 249 30	[3390] 383 29		[4590] 519 27
[8] 30,3	[945] 107 40	[2135] 241 40	[3330] 376 39		[4515] 510 37
[10] 37,9	[840] 95 50	[2050] 232 50	[3250] 367 48		[4430] 501 46
[12] 45,4	[740] 84 60	[1945] 220 59	[3130] 354 58		[4320] 488 55
[14] 53,0	[630] 71 69	[1820] 206 68	[3005] 340 68		[4195] 474 66
Max. Continuous [15] 56,8	[540] 61 74	[1735] 196 74	[2905] 328 73		[4130] 467 72
Max. Intermittent [20] 75,7	[143] 16 99	[1350] 153 98	[2565] 290 97		[3705] 419 96

H Series (101-)

Dimensions

(Refer to pages B-4-19 thru B-4-22 for shaft and port dimensions.)

Standard Rotation Viewed from Shaft End

Port A Pressurized — CW

Port B Pressurized — CCW

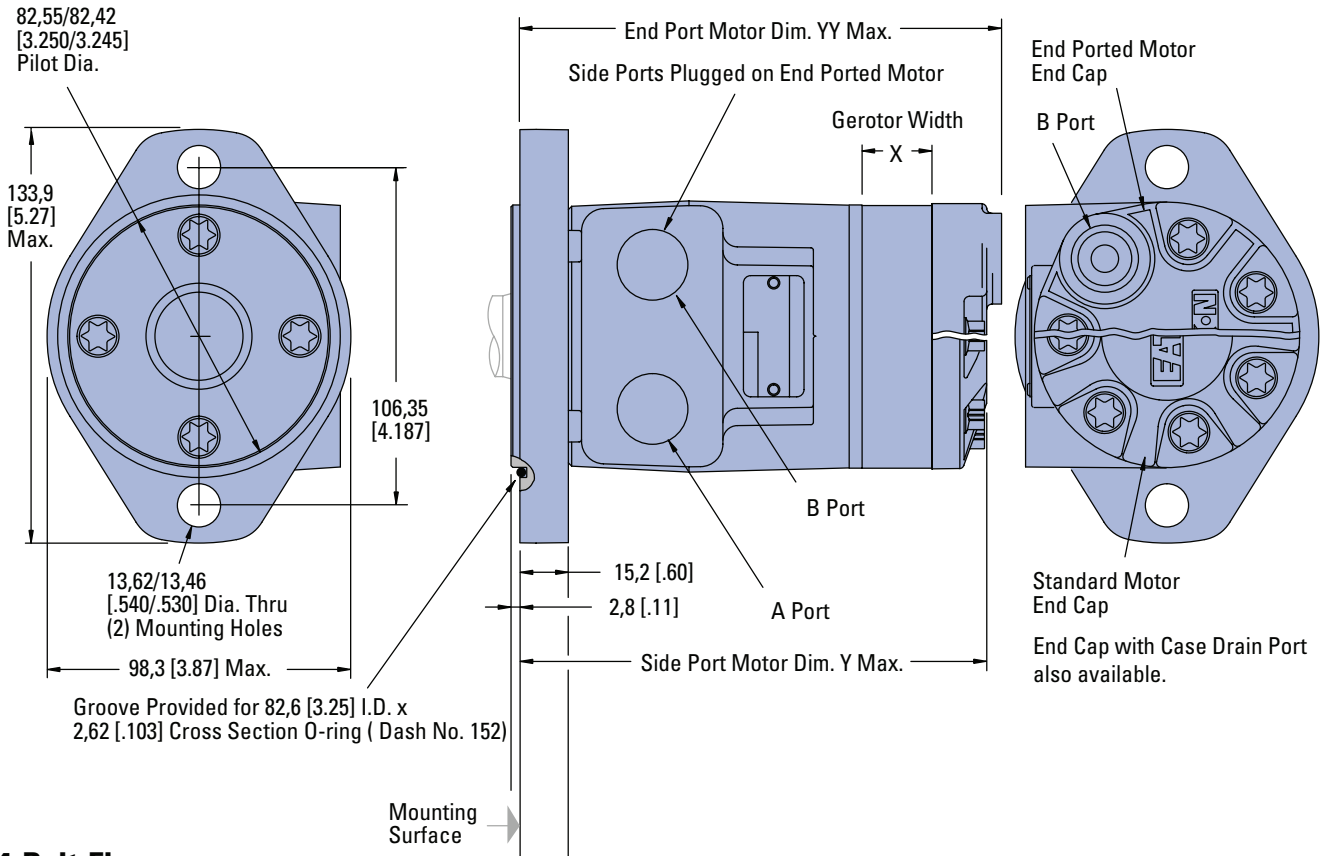
Note:

Mounting surface flatness requirement is ▱ ,13 mm [.005 inch] Max.

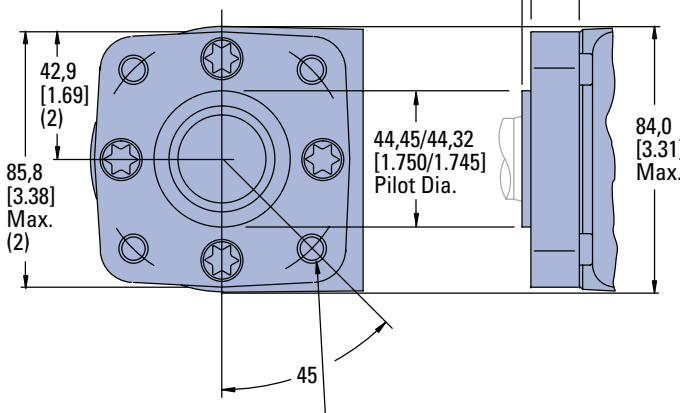
Note:

End ported motor pressure is derated. Reference page B-2-2 for ratings.

2 Bolt Flange



4 Bolt Flange



3/8-16 UNC (15,2 [.60] Max. Bolt Thread Engagement) Mounting Holes (4) Equally Spaced on 82,6 [3.25] Dia. Bolt Circle
or
M10 x 1,5 (15,2 [.60] Max. Bolt Thread Engagement) Mounting Holes (4) Equally Spaced on 82,6 [3.25] Dia. Bolt Circle

2 AND 4 BOLT FLANGE

Displacement cm³/r [in³/r]	X mm [inch]	Y mm [inch]	YY mm [inch]
36 [2.2]	6,4 [.25]	132,1 [5.20]	138,5 [5.45]
46 [2.8]	6,4 [.25]	132,1 [5.20]	138,5 [5.45]
59 [3.6]	10,2 [.40]	135,9 [5.35]	142,3 [5.60]
74 [4.5]	10,2 [.40]	135,9 [5.35]	142,3 [5.60]
97 [5.9]	13,2 [.52]	139,0 [5.47]	145,3 [5.72]
120 [7.3]	16,5 [.65]	142,3 [5.60]	148,6 [5.85]
146 [8.9]	20,1 [.79]	145,8 [5.74]	152,2 [5.99]
159 [9.7]	21,9 [.86]	147,6 [5.81]	154,0 [6.06]
185 [11.3]	25,4 [1.00]	151,2 [5.95]	157,5 [6.20]
231 [14.1]	31,8 [1.25]	157,5 [6.20]	
293 [17.9]	40,4 [1.59]	166,2 [6.54]	
370 [22.6]	50,8 [2.00]	176,6 [6.95]	
739 [45.1]	101,6 [4.00]	227,4 [8.95]	

H Series (101-)

Product Numbers

Use digit prefix —101- plus four digit number from charts for complete product number—Example 101-1001. Orders will not be accepted without three digit prefix.

2 Bolt Flange

SHAFT	PORT SIZE	DISPL. cm³/r [in³/r] / PRODUCT NUMBER												
		36 [2.2]	46 [2.8]	59 [3.6]	74 [4.5]	97 [5.9]	120 [7.3]	146 [8.9]	159 [9.7]	185 [11.3]	231 [14.1]	293 [17.9]	370 [22.6]	740 [45.0]
1 in. Straight w/Woodruff key	7/8-14 O-Ring	101-1700	-1033	-1701	-1034	-1035	-1702	-1703	-1036	-1037	-1038	-1039	-1040	—
	1/2 NPTF	101-1704	-1025	-1705	-1026	-1027	-1706	-1707	-1028	-1029	-1030	-1031	-1032	—
	Manifold*	101-1708	-1041	-1709	-1042	-1043	-1710	-1711	-1044	-1045	-1046	-1047	-1048	—
1 in. SAE 6B Splined	7/8-14 O-Ring	101-1721	-1081	-1722	-1082	-1083	-1723	-1724	-1084	-1085	-1086	-1087	-1088	—
	1/2 NPTF	101-1725	-1073	-1726	-1074	-1075	-1727	-1728	-1076	-1077	-1078	-1079	-1080	—
	Manifold*	101-1729	-1089	-1730	-1090	-1091	-1731	-1732	-1092	-1093	-1094	-1095	-1096	—
1 in. Straight w/ .31 Dia. Crosshole	7/8-14 O-Ring	101-1796	-1797	-1798	-1799	-1800	-1801	-1802	-1803	—	—	—	—	—
	1/2 NPTF	101-1804	-1805	-1806	-1807	-1808	-1870	-1809	-1810	—	—	—	—	—
	Manifold*	101-1811	-1812	-1813	-1814	-1815	-1816	-1817	-1818	—	—	—	—	—
1 in. Straight w/ .40 Dia. Crosshole	7/8-14 O-Ring	101-1819	-1323	-1820	-1324	-1325	-1821	-1822	-1326	—	—	—	—	—
	1/2 NPTF	101-1823	-1319	-1824	-1320	-1825	-1826	-1827	-1828	—	—	—	—	—
	Manifold*	101-1829	-1463	-1830	-1831	-1832	-1833	-1834	-1871	—	—	—	—	—

101-1834

4 Bolt Flange

SHAFT	PORT SIZE	DISPL. cm³/r [in³/r] / PRODUCT NUMBER												
		36 [2.2]	46 [2.8]	59 [3.6]	74 [4.5]	97 [5.9]	120 [7.3]	146 [8.9]	159 [9.7]	185 [11.3]	231 [14.1]	293 [17.9]	370 [22.6]	740 [45.0]
1 in. Straight w/Woodruff key	7/8-14 O-Ring	101-1749	-1009	-1750	-1010	-1011	-1751	-1752	-1012	-1013	-1014	-1015	-1016	—
	1/2 NPTF	101-1753	-1001	-1754	-1002	-1003	-1755	-1756	-1004	-1005	-1006	-1007	-1008	—
	Manifold*	101-1757	-1017	-1758	-1018	-1019	-1759	-1760	-1020	-1021	-1022	-1023	-1024	—
1 in. SAE 6B Splined	7/8-14 O-Ring	101-1761	-1057	-1762	-1058	-1059	-1872	-1763	-1060	-1061	-1062	-1063	-1064	—
	1/2 NPTF	101-1764	-1049	-1765	-1050	-1051	-1766	-1767	-1052	-1053	-1054	-1055	-1056	—
	Manifold*	101-1768	-1065	-1769	-1066	-1067	-1770	-1771	-1068	-1069	-1070	-1071	-1072	—
1 in. Straight w/ .31 Dia. Crosshole	7/8-14 O-Ring	101-1835	-1836	-1837	-1838	-1839	-1840	-1841	-1842	—	—	—	—	—
	1/2 NPTF	101-1843	-1497	-1844	-1449	-1352	-1845	-1846	-1847	—	—	—	—	—
	Manifold*	101-1848	-1466	-1849	-1459	-1850	-1851	-1852	-1853	—	—	—	—	—
1 in. Straight w/ .40 Dia. Crosshole	7/8-14 O-Ring	101-1854	-1311	-1855	-1856	-1857	-1858	-1859	-1860	—	—	—	—	—
	1/2 NPTF	101-1861	-1313	-1862	-1312	-1314	-1863	-1864	-1315	—	—	—	—	—
	Manifold*	101-1865	-1305	-1866	-1306	-1307	-1867	-1868	-1869	—	—	—	—	—

101-1868

4 Bolt Flange with Corrosion Protection

SHAFT	PORT SIZE	DISPL. cm³/r [in³/r] / PRODUCT NUMBER												
		36 [2.2]	46 [2.8]	59 [3.6]	74 [4.5]	97 [5.9]	120 [7.3]	146 [8.9]	159 [9.7]	185 [11.3]	231 [14.1]	293 [17.9]	370 [22.6]	740 [45.0]
1 in. Straight w/ Woodruff Key	1/2 NPTF	101-2032	-2014	-2093	-2027	-2013	-2094	-2095	-2015	-2028	-2029	-2030	-2031	—
	Manifold*		-2067							-2068	-2069			

*Manifold product numbers shown are for motors with four 5/16-18 port face mounting threads. Manifold, manifold mounting O-Rings and bolts are NOT included.

For H Series Motors with a configuration Not Shown in the charts above: Use the model code system on page B-2-11 to specify the product in detail.

H Series (101-)

Model Code

The following 25-digit coding system has been developed to identify all of the configuration options for the H motor. Use this model code to specify a motor with the desired features. All 25-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.

M	H 0	* * *	* *	* *	* *	*	*	*	* *	*	0	* *	*	*	0	J
1	2 3	4 5 6	7 8	9 10	11 12	13	14	15	16 17	18	19	20 21	22	23	24	25

1 Product

M - Motor

2, 3 Series

H0 - H Motor

4, 5, 6 Displacement cm3/r [in3/r]

022 – 36 [2.2]†

028 – 46 [2.8]

035 – 58 [3.5]†

045 – 74 [4.5]

059 – 96 [5.9]

073 – 120 [7.3]

089 – 146 [8.9]

097 – 159 [9.7]

113 – 185 [11.3]

141 – 231 [14.1]

179 – 294 [17.9]

226 – 370 [22.6]

451 – 739 [45.1]

†The H Series motors with displacement code "**022**" or "**035**" must also specify free running gerotor (option "**AA**" in position **11,12**).

7, 8 Mounting Type

AA – 2 Bolt (Standard) 82.50 [3.248] Dia. x 3.05 [.120] Pilot, 13.59 [.535] Dia. Mounting Holes on 106.35 [4.187] Dia. B.C.

BA – 4 Bolt (Standard) 44.40 [1.748] Dia. x 3.05 [.120] Pilot, .375-16 UNC-2B Mounting Holes on 82.55 [3.250] Dia. B.C.

CA – 2 Bolt (Standard) 82.50 [3.248] Dia. x 6.10 [.240] Pilot, 10.41 [.410] Dia. Mounting Holes on 106.35 [4.187] Dia. B.C. (SAE A)

DD – 2 Bolt (Standard) 101.60 [4.000] Dia. x 6.10 [.240] Pilot, 14.35 [.565] Dia. Mounting Holes on 146.05 [5.750] Dia. B.C. (SAE B)

FA – 4 Bolt (Standard) 44.40 [1.748] Dia. x 3.05 [.120] Pilot, M10 x 1.5-6H Mounting Holes on 82.55 [3.250] Dia. B.C.

GA – 4 Bolt (Round) 82.50 [3.248] Dia. x 6.35 [.250] Pilot, 19.05 [.750] Dia. Mounting Holes on 109.48 [4.310] Dia. B.C.

9, 10 Output Shaft

01 – 25.4 [1.00] Dia. Straight, Woodruff Key, .250-20 UNC-2B Hole in Shaft End

02 – 25.4 [1.00] Dia. SAE 6B Spline, .250-20 UNC-2B Hole in Shaft End

07 – 25.4 [1.00] Dia. Straight, 8.03 [.316] Dia. Cross Hole 11.2 [.44] from End, 5.6 [.22] Extra Length

08 – 25.4 [1.00] Dia. Straight, 10.31 [.406] Dia. Cross Hole 15.7 [.62] from End, .250-20 UNC-2B Hole in Shaft End

16 – 22.22 [.875] Dia. SAE 13 Tooth Spline (SAE B)

17 – 22.22 [.875] Dia. Straight, 6.4 [.25] x 19.0 [.75] Square Key (SAE B)

18 – 25.4 [1.00] Dia. Tapered, Woodruff Key and Nut, 34.92 [1.375] Taper Length

24 – 25.00 [.984] Dia. Straight, 8.00 [.315] KEY, M8 x 1.25-6H Hole in Shaft End

11, 12 Ports

AA – .875-14 UNF-2B SAE O-Ring Ports

AB – .500-14 NPTF Dry Seal Pipe Thread Ports

AC – Manifold Ports (.3125-18 UNC-2B Mounting Holes)

AD – Manifold Ports (M8 x 1.25-6H Mounting Holes)

AF – G 1/2 BSP Straight Thread Ports

EB†† – End Ports: .750-16 UNF-2B SAE O-Ring Ports

EC†† – End Ports: G 1/2 BSP Straight Thread Ports

†† Note: End ported motor pressure is derated. Reference page B-2-2 for ratings.

13 Case Flow Options

0 – None

1 – .4375-20 UNF-2B SAE O-Ring Port (End Cap)

2 – G 1/4 BSP Straight THD Port (End Cap)

A – Internal Check Valves

14 Gerotor Options

0 – None

A – Free Running

15 Shaft Options

0 – None

N – Electroless Nickel Plated

16, 17 Seal Options

00 – Standard Seals

02 – Seal Guard

03 – Viton Seals

04 – Viton Shaft Seal

05 – Vented Two-Stage Seal

07 – High Pressure Shaft Seal

18 Speed Sensor Options

0 – None

A – Digital Speed Pickup (15 Pulse), No Lead Wire with M12 Connector (A=Power, B=Common, C=Signal)

B – Magnetic Speed Pickup (60 Pulse by Quadrature), No Lead Wire with M12 Connector (A=Power, B=Common, C=Signal)

19 Manifold Block Options

0 – None

* – Contact your Eaton Sales Representative for available options.

20, 21 Special Features (Hardware)

00 – None

AB – Low Speed Valving

SS – Stainless Steel Flange Bolts

22 Special Features (Assembly)

0 – None

1 – Reverse Rotation

2 – Flange Rotated 90°

23 Paint/ Special Packaging

0 – No Paint

A – Painted Low Gloss Black

D – Environmental Coated Gloss White

F – Environmental Coated Black

24 Eaton Assigned Code when Applicable

0 – Assigned Code

25 Eaton Assigned Design Code

J – Nine (9)

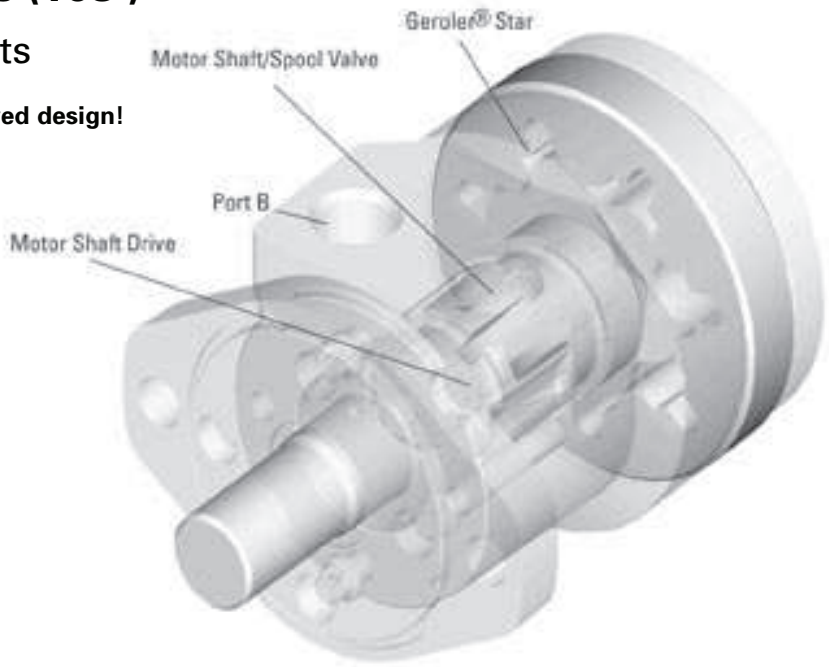
Feature in **bold** are preferred and allow for shorter lead time.

Notes

S Series (103-)

Highlights

New, improved design!



Description

The new improved Char-Lynn S Series motors with optimized Geroler geometry offers enhanced performance with reduced drive-running angle while retaining the overall package size of the original S series. Design improvements include upgraded steel end cap, O-Ring section seals, and optimized Geroler set. The Geroler set has precision-machined rollers in the outer ring which provide support with rolling contact between the star and ring. This improves mechanical efficiency, especially at start-up and at low speed conditions. Improvements incorporated into the latest S Series motor provide reliable leak-free performance and smooth operation at start-up conditions.

Specifications

Geroler Element	10 Displacements
Flow l/min [GPM]	55 [15] Continuous***
	75 [20] Intermittent**
Speed	Up to 963 RPM
Pressure bar [PSI]	135 [2000] Cont.***
	170 [2500] Inter.**
Torque Nm [lb-in]	528 [4672] Cont.***
	587 [5190] Inter.**

*** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.
** Intermittent— (Inter.) Intermittent operation, 10% of every minute.

Features:

- Constant clearance Geroler, design
- Three moving components (gerotor, drive, shaft)
- Optimized drive running angle
- Three-zone pressure design (inlet, return and case)
- Variety of displacements, shafts and mounts
- Special options to meet customer needs!

Benefits:

- High efficiency
- Smooth low speed operation!
- Extended motor life
- Design flexibility
- Ability to optimize designs for your application needs
- Extended leak-free performance

Applications:

- Agricultural augers, harvesters, seeders
- Car wash brushes
- Food processing
- Railroad maintenance equipment
- Machine tools
- Conveyors
- Industrial sweepers and floor polishers
- Saw mill works
- Turf equipment
- Concrete and asphalt equipment
- Skid steer attachments
- Many more


Conveyor

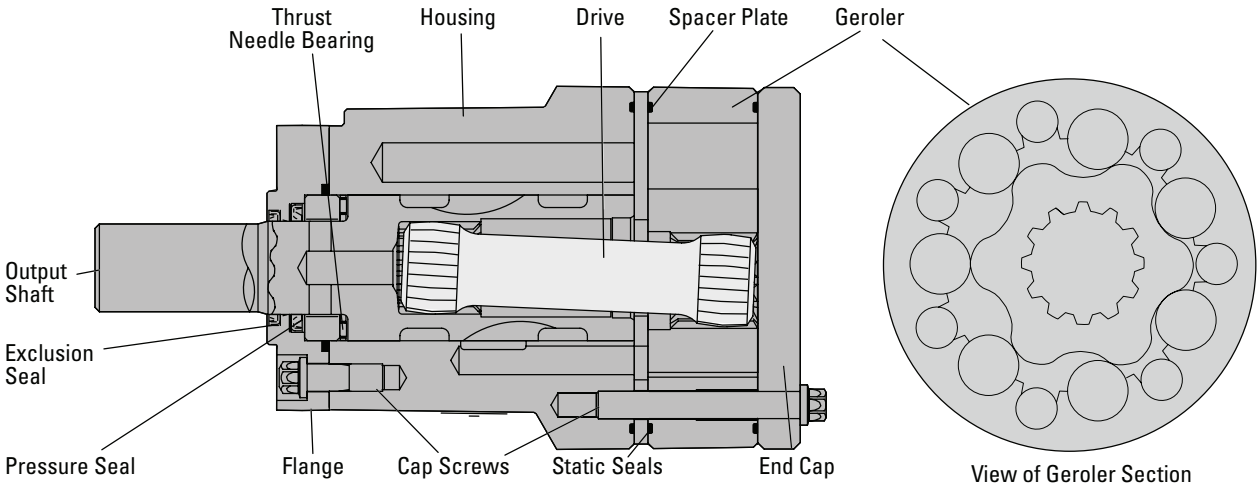

Casting


Amusement ride


Combine

S Series (103-)

Specifications



SPECIFICATION DATA — S MOTORS

Displ. cm^3/r [in^3/r]		59 [3.6]	75 [4.6]	97 [5.7]	120 [7.3]	144 [8.8]	166 [10.1]	187 [11.4]	225 [13.7]	298 [18.2]	372 [22.7]
Max. Speed (RPM) @ Continuous Flow		963	792	607	472	394	343	304	253	190	153
Flow LPM [GPM]	Continuous	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]
	Intermittent	68 [18]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]
Torque Nm [lb-in]	Continuous	115 [1021]	150 [1325]	183 [1623]	237 [2010]	265 [2347]	301 [2662]	333 [2950]	372 [3290]	491 [4345]	528 [4672]
	Intermittent	144 [1271]	186 [1649]	225 [1992]	292 [2582]	324 [2870]	360 [3191]	399 [3533]	434 [3843]	505 [4467]	587 [5200]
Min. Starting Torque Nm[lb-in]	@ Cont. Pressure	90 [800]	113 [1000]	148 [1310]	184 [1630]	212 [2050]	232 [2330]	263 [2670]	302 [2990]	338 [3270]	369 [3270]
	@ Int. Pressure	116 [1030]	146 [1290]	190 [1680]	236 [2090]	271 [2400]	289 [2560]	329 [2910]	374 [3310]	417 [3690]	438 [3880]
Pressure Bar [PSI]	Continuous	138 [2000]	138 [2000]	138 [2000]	138 [2000]	131 [1900]	131 [1900]	128 [1850]	117 [1700]	103 [1500]	90 [1300]
	Intermittent	172 [2500]	172 [2500]	172 [2500]	172 [2500]	162 [2350]	159 [2300]	155 [2250]	141 [2050]	124 [1800]	103 [1500]

A simultaneous maximum torque and maximum speed NOT recommended.

Note:

To assure best motor life, run motor for approximately one hour at 30% of rated pressure before application to full load. Be sure motor is filled with fluid prior to any load applications.

Maximum Inlet Pressure:

172 Bar [2500 PSI] without regard to Δ Bar [Δ PSI] and/ or back pressure ratings or combination thereof.

6B Splined or Tapered shafts are recommended whenever operating above 282 NM [2500 lb-in] of torque, especially for those applications subject to frequent reversals.

Δ Pressure:

The true Δ bar [Δ PSI] between inlet port and outlet port

Continuous Rating:

Motor may be run continuously at these ratings

Intermittent Operation:

10% of every minute

Recommended Fluids:

Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 70 SUS at operating temperature.

Recommended Maximum System Operating Temp.:

82°C [180°F]

Recommended Filtration:

per ISO Cleanliness Code 4406, level 20/18/13

S Series (103-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production

Continuous

Intermittent

S Motor 59 cm³/r [3.6 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1800] **124**	[2000] **138**	[2500] **172**
[2]	86	190	292	390	484	578	662	729	764	803	
	10	*22*	*33*	*44*	*55*	*65*	*75*	*82*	*86*	*91*	
7,6	**126**	**121**	**115**	**107**	**97**	**85**	**75**	**63**	**45**	**24**	
[4]	79	185	289	395	498	600	702	804	903	998	1156
	9	*21*	*33*	*45*	*56*	*68*	*79*	*91*	*102*	*113*	*131*
15,1	**256**	**250**	**243**	**235**	**224**	**212**	**199**	**183**	**166**	**147**	**89**
[6]	71	177	280	387	495	602	704	808	909	1011	1257
	8	*20*	*32*	*44*	*56*	*68*	*80*	*91*	*103*	*114*	*142*
22,7	**383**	**377**	**369**	**360**	**349**	**336**	**320**	**302**	**284**	**266**	**207**
[8]	62	166	274	379	488	594	699	806	907	1007	1264
	7	*19*	*31*	*43*	*55*	*67*	*79*	*91*	*102*	*114*	*143*
30,3	**514**	**508**	**500**	**490**	**477**	**464**	**448**	**430**	**409**	**390**	**333**
[10]	52	155	264	369	475	583	686	793	897	1000	1257
	6	*17*	*30*	*42*	*54*	*66*	*78*	*90*	*101*	*113*	*142*
37,9	**642**	**635**	**628**	**617**	**605**	**591**	**575**	**557**	**538**	**517**	**461**
[12]	38	141	248	354	462	568	674	777	884	987	1244
	4	*16*	*28*	*40*	*52*	*64*	*76*	*88*	*100*	*111*	*141*
45,4	**772**	**764**	**757**	**747**	**736**	**722**	**706**	**687**	**670**	**648**	**592**
[14]	21	125	231	337	445	551	658	763	868	972	1233
	2	*14*	*26*	*38*	*50*	*62*	*74*	*86*	*98*	*110*	*139*
53,0	**900**	**893**	**885**	**876**	**866**	**852**	**836**	**819**	**798**	**778**	**721**
[15]	8	116	223	328	434	543	648	756	862	965	1225
	1	*13*	*25*	*37*	*49*	*61*	*73*	*85*	*97*	*109*	*138*
56,8	**482**	**958**	**949**	**940**	**929**	**915**	**900**	**882**	**863**	**842**	**784**
[18]		86	191	296	403	511	617	726	831	935	1195
		10	*22*	*33*	*46*	*58*	*70*	*82*	*94*	*106*	*135*
68,1		**1151**	**1139**	**1128**	**1117**	**1105**	**1090**	**1074**	**1054**	**1033**	**977**

S Motor 75 cm³/r [4.6 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1800] **124**	[2000] **138**	[2500] **172**
[2]	91	218	343	467	590	708	815	900	981	1086	
	10	*25*	*39*	*53*	*67*	*80*	*92*	*102*	*111*	*123*	
7,6	**93**	**89**	**81**	**75**	**66**	**59**	**43**	**21**	**23**	**16**	
[4]	87	217	352	484	616	748	874	1001	1123	1236	1472
	10	*25*	*40*	*55*	*70*	*85*	*99*	*113*	*127*	*140*	*166*
15,1	**193**	**188**	**181**	**173**	**163**	**150**	**139**	**125**	**107**	**89**	**37**
[6]	82	219	355	492	627	763	898	1027	1155	1284	1590
	9	*25*	*40*	*56*	*71*	*86*	*101*	*116*	*131*	*145*	*180*
22,7	**292**	**286**	**277**	**269**	**258**	**244**	**228**	**214**	**202**	**186**	**140**
[8]	69	202	341	481	619	761	896	1032	1165	1296	1618
	8	*23*	*38*	*54*	*70*	*86*	*101*	*117*	*132*	*146*	*183*
30,3	**390**	**384**	**375**	**364**	**355**	**342**	**326**	**309**	**295**	**276**	**230**
[10]	56	193	330	471	610	751	887	1025	1162	1297	1628
	6	*22*	*37*	*53*	*69*	*85*	*100*	*116*	*131*	*147*	*184*
37,9	**489**	**484**	**476**	**467**	**457**	**444**	**431**	**416**	**399**	**381**	**336**
[12]	39	175	315	453	595	736	873	1011	1148	1284	1617
	4	*20*	*36*	*51*	*67*	*83*	*99*	*114*	*130*	*145*	*183*
45,4	**587**	**582**	**573**	**564**	**552**	**540**	**526**	**510**	**494**	**476**	**427**
[14]	12	153	290	431	571	716	856	993	1129	1265	1605
	1	*17*	*33*	*49*	*65*	*81*	*97*	*112*	*128*	*143*	*181*
53,0	**343**	**680**	**673**	**665**	**654**	**641**	**628**	**613**	**594**	**578**	**533**
[15]	9	143	281	424	567	708	846	985	1121	1259	1599
	1	*16*	*32*	*48*	*64*	*80*	*96*	*111*	*127*	*142*	*181*
56,8	**491**	**729**	**723**	**714**	**704**	**690**	**675**	**661**	**644**	**628**	**580**
[20]		82	220	362	505	645	784	922	1061	1200	1545
		9	*25*	*41*	*57*	*73*	*89*	*104*	*120*	*136*	*175*
75,7		**970**	**963**	**957**	**948**	**935**	**921**	**906**	**888**	**871**	**825**

[143] Torque [lb-in]
16 Nm
729 Speed RPM

S Series (103-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production

Continuous

Intermittent

S Motor 93 cm³/r [5.7 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1800] **124**	[2000] **138**	[2500] **172**
[2]	146	308	466	620	771	913	1031	1086	1176	1281	
	16	*35*	*53*	*70*	*87*	*103*	*116*	*123*	*133*	*145*	
7,6	**76**	**72**	**64**	**55**	**48**	**34**	**22**	**7**	**4**	**1**	
[4]	136	301	466	633	797	959	1116	1275	1430	1570	1798
	15	*34*	*53*	*72*	*90*	*108*	*126*	*144*	*162*	*177*	*203*
15,1	**158**	**153**	**146**	**138**	**126**	**115**	**103**	**90**	**77**	**59**	**17**
[6]	113	278	446	616	786	952	1116	1280	1444	1603	1971
	13	*31*	*50*	*70*	*89*	*108*	*126*	*145*	*163*	*181*	*223*
22,7	**238**	**232**	**225**	**215**	**206**	**191**	**175**	**161**	**145**	**129**	**87**
[8]	98	262	431	604	777	947	1112	1279	1446	1610	2006
	11	*30*	*49*	*68*	*88*	*107*	*126*	*144*	*163*	*182*	*227*
30,3	**319**	**313**	**306**	**296**	**284**	**270**	**255**	**240**	**224**	**208**	**165**
[10]	81	246	415	590	763	935	1100	1271	1439	1604	2012
	9	*28*	*47*	*67*	*86*	*106*	*124*	*144*	*163*	*181*	*227*
37,9	**400**	**394**	**388**	**378**	**366**	**353**	**340**	**324**	**306**	**288**	**244**
[12]	65	232	401	574	746	916	1081	1255	1425	1591	2001
	7	*26*	*45*	*65*	*84*	*103*	*122*	*142*	*161*	*180*	*226*
45,4	**481**	**476**	**469**	**460**	**448**	**435**	**423**	**408**	**394**	**374**	**326**
[14]	42	207	376	552	721	893	1064	1235	1405	1570	1983
	5	*23*	*43*	*62*	*81*	*101*	*120*	*140*	*159*	*177*	*224*
53,0	**561**	**557**	**549**	**541**	**531**	**519**	**504**	**489**	**470**	**455**	**412**
[15]	31	196	364	538	708	881	1052	1223	1391	1560	1974
	4	*22*	*41*	*61*	*80*	*100*	*119*	*138*	*157*	*176*	*223*
56,8	**602**	**597**	**591**	**582**	**571**	**559**	**546**	**530**	**514**	**498**	**453**
[20]		119	290	461	633	807	976	1145	1315	1485	1904
		13	*33*	*52*	*72*	*91*	*110*	*129*	*149*	*168*	*215*
75,7		**799**	**792**	**785**	**775**	**762**	**748**	**734**	**717**	**702**	**660**

S Motor 120 cm³/r [7.3 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1800] **124**	[2000] **138**	[2500] **172**
[2]	191	403	605	801	978	1146	1288	1440	1552	1679	
	22	*46*	*68*	*91*	*110*	*129*	*146*	*163*	*175*	*190*	
7,6	**60**	**56**	**50**	**43**	**36**	**29**	**19**	**15**	**8**	**6**	
[4]	188	403	617	829	1031	1236	1438	1632	1816	1990	1914
	21	*46*	*70*	*94*	*117*	*140*	*162*	*184*	*205*	*225*	*216*
15,1	**122**	**118**	**112**	**106**	**98**	**87**	**78**	**67**	**56**	**49**	**16**
[6]	172	391	607	821	1030	1241	1449	1654	1858	2056	2522
	19	*44*	*69*	*93*	*116*	*140*	*164*	*187*	*210*	*232*	*285*
22,7	**186**	**180**	**175**	**167**	**159**	**149**	**137**	**126**	**114**	**103**	**73**
[8]	156	375	593	807	1015	1229	1439	1648	1855	2059	2557
	18	*42*	*67*	*91*	*115*	*139*	*163*	*186*	*210*	*233*	*289*
30,3	**249**	**244**	**237**	**229**	**220**	**210**	**199**	**185**	**174**	**162**	**128**
[10]	130	349	567	785	995	1210	1420	1630	1838	2045	2559
	15	*39*	*64*	*89*	*112*	*137*	*160*	*184*	*208*	*231*	*289*
37,9	**311**	**307**	**301**	**293**	**286**	**275**	**264**	**252**	**239**	**227**	**193**
[12]	103	320	539	756	965	1175	1383	1593	1799	2003	2500
	12	*36*	*61*	*85*	*109*	*133*	*156*	*180*	*203*	*226*	*282*
45,4	**374**	**369**	**363**	**355**	**346**	**336**	**327**	**314**	**303**	**288**	**253**
[14]	70	285	502	715	923	1131	1335	1540	1745	1948	2452
	8	*32*	*57*	*81*	*104*	*128*	*151*	*174*	*197*	*220*	*277*
53,0	**437**	**433**	**427**	**419**	**411**	**402**	**391**	**379**	**369**	**355**	**322**
[15]	54	267	485	705	913	1122	1329	1540	1746	1947	2441
	6	*30*	*55*	*80*	*103*	*127*	*150*	*174*	*197*	*220*	*276*
56,8	**469**	**465**	**459**	**452**	**444**	**433**	**423**	**411**	**400**	**386**	**349**
[20]		159	377	600	815	1026	1232	1444	1651	1859	2383
		18	*43*	*68*	*92*	*116*	*139*	*163*	*186*	*210*	*269*
75,7		**621**	**618**	**612**	**603**	**594**	**583**	**571**	**560**	**549**	**515**

[267] } Torque [lb-in]
30 } Nm
465 } Speed RPM

S Series (103-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production

Continuous

Intermittent

S Motor 144 cm³/r [8.8 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

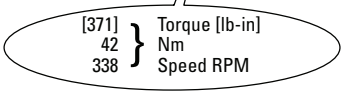
	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1800] **124**	[1900] **138**	[2350] **172**
[2]	222	480	729	967	1190	1402	1591	1786	2031	2107	
	25	*54*	*82*	*109*	*134*	*158*	*180*	*202*	*229*	*238*	
7,6	**49**	**45**	**40**	**34**	**29**	**21**	**17**	**13**	**14**	**14**	
[4]	217	475	728	987	1237	1488	1727	1957	2181	2292	2310
	24	*54*	*82*	*112*	*140*	*168*	*195*	*221*	*246*	*259*	*261*
15,1	**101**	**97**	**91**	**84**	**77**	**69**	**61**	**52**	**45**	**42**	**22**
[6]	193	453	715	976	1234	1494	1746	1995	2239	2358	2867
	22	*51*	*81*	*110*	*139*	*169*	*197*	*225*	*253*	*266*	*324*
22,7	**153**	**149**	**143**	**136**	**128**	**119**	**110**	**101**	**91**	**86**	**66**
[8]	173	434	699	961	1218	1479	1735	1984	2235	2358	2894
	20	*49*	*79*	*109*	*138*	*167*	*196*	*224*	*252*	*266*	*327*
30,3	**205**	**202**	**195**	**187**	**179**	**170**	**160**	**150**	**139**	**134**	**109**
[10]	144	407	673	940	1197	1459	1715	1967	2218	2344	2890
	16	*46*	*76*	*106*	*135*	*165*	*194*	*222*	*251*	*265*	*327*
37,9	**259**	**254**	**247**	**240**	**231**	**221**	**211**	**202**	**191**	**185**	**158**
[12]	118	380	644	907	1167	1429	1685	1941	2194	2319	2878
	13	*43*	*73*	*102*	*132*	*161*	*190*	*219*	*248*	*262*	*325*
45,4	**312**	**307**	**301**	**294**	**286**	**277**	**267**	**257**	**246**	**241**	**217**
[14]	87	346	610	871	1131	1395	1651	1907	2163	2289	2851
	10	*39*	*69*	*98*	*128*	*158*	*187*	*215*	*244*	*259*	*322*
53,0	**363**	**359**	**354**	**346**	**339**	**330**	**319**	**309**	**299**	**293**	**266**
[15]	69	327	592	853	1113	1376	1633	1890	2146	2271	2835
	8	*37*	*67*	*96*	*126*	*156*	*185*	*214*	*242*	*257*	*320*
56,8	**389**	**386**	**380**	**372**	**364**	**355**	**344**	**336**	**323**	**317**	**289**
[20]		200	460	726	987	1251	1512	1770	2025	2153	2724
		23	*52*	*82*	*112*	*141*	*171*	*200*	*229*	*243*	*308*
75,7		**516**	**513**	**507**	**499**	**491**	**480**	**470**	**459**	**454**	**427**

S Motor 166 cm³/r [10.1 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1800] **124**	[1900] **138**	[2300] **172**
[2]	267	563	841	1105	1364	1622	1852	2081	2288		
	30	*64*	*95*	*125*	*154*	*183*	*209*	*235*	*259*		
7,6	**43**	**39**	**35**	**30**	**27**	**21**	**16**	**13**	**13**		
[4]	247	544	838	1129	1418	1707	1988	2255	2514	2641	3116
	28	*61*	*95*	*128*	*160*	*193*	*225*	*255*	*284*	*298*	*352*
15,1	**89**	**85**	**80**	**74**	**68**	**60**	**53**	**47**	**41**	**38**	**28**
[6]	217	517	813	1108	1401	1700	1994	2281	2559	2692	3214
	25	*58*	*92*	*125*	*158*	*192*	*225*	*258*	*289*	*304*	*363*
22,7	**134**	**131**	**125**	**120**	**113**	**105**	**96**	**88**	**79**	**75**	**58**
[8]	195	494	794	1089	1387	1687	1983	2269	2552	2691	3239
	22	*56*	*90*	*123*	*157*	*191*	*224*	*256*	*288*	*304*	*366*
30,3	**180**	**176**	**171**	**164**	**156**	**147**	**138**	**128**	**118**	**114**	**96**
[10]	176	477	776	1072	1371	1668	1960	2249	2537	2676	3228
	20	*54*	*88*	*121*	*155*	*188*	*221*	*254*	*287*	*302*	*365*
37,9	**227**	**222**	**217**	**210**	**203**	**194**	**185**	**175**	**165**	**160**	**136**
[12]	136	436	737	1037	1335	1636	1928	2217	2509	2651	3210
	15	*49*	*83*	*117*	*151*	*185*	*218*	*251*	*284*	*300*	*363*
45,4	**272**	**269**	**264**	**258**	**249**	**241**	**233**	**223**	**214**	**208**	**186**
[14]	93	394	696	995	1296	1599	1890	2185	2475	2617	3178
	11	*44*	*79*	*112*	*146*	*181*	*214*	*247*	*280*	*296*	*359*
53,0	**318**	**315**	**310**	**303**	**296**	**287**	**279**	**269**	**259**	**254**	**230**
[15]	73	371	672	973	1272	1575	1867	2159	2453	2596	3158
	8	*42*	*76*	*110*	*144*	*178*	*211*	*244*	*277*	*293*	*357*
56,8	**341**	**338**	**333**	**326**	**319**	**309**	**300**	**290**	**280**	**274**	**253**
[20]		227	527	829	1128	1430	1724	2020	2313	2457	3030
		26	*60*	*94*	*127*	*162*	*195*	*228*	*261*	*278*	*342*
75,7		**452**	**449**	**443**	**435**	**426**	**417**	**407**	**396**	**390**	**366**



S Series (103-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production

Continuous

Intermittent

S Motor 187 cm³/r [11.4 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1800] **124**	[1850] **138**	[2250] **172**
[2]	298	627	944	1244	1532	1805	2030	2250	2478		
	34	*71*	*107*	*141*	*173*	*204*	*229*	*254*	*280*		
7,6	**37**	**34**	**31**	**25**	**22**	**18**	**10**	**9**	**7**		
[4]	298	640	969	1291	1607	1919	2219	2511	2799	2869	3411
	34	*72*	*109*	*146*	*182*	*217*	*251*	*284*	*316*	*324*	*385*
15,1	**78**	**75**	**70**	**65**	**60**	**53**	**47**	**41**	**35**	**33**	**19**
[6]	279	621	953	1283	1608	1930	2243	2551	2850	2922	3502
	32	*70*	*108*	*145*	*182*	*218*	*253*	*288*	*322*	*330*	*396*
22,7	**119**	**115**	**110**	**104**	**97**	**89**	**82**	**74**	**66**	**64**	**50**
[8]	252	593	928	1257	1579	1905	2224	2542	2855	2932	3539
	28	*67*	*105*	*142*	*178*	*215*	*251*	*287*	*323*	*331*	*400*
30,3	**160**	**156**	**151**	**144**	**137**	**129**	**120**	**110**	**101**	**99**	**78**
[10]	211	555	888	1217	1546	1872	2193	2516	2831	2909	3518
	24	*63*	*100*	*138*	*175*	*211*	*248*	*284*	*320*	*329*	*397*
37,9	**201**	**198**	**193**	**187**	**180**	**173**	**164**	**154**	**143**	**141**	**114**
[12]	162	502	835	1164	1490	1818	2139	2463	2780	2857	3476
	18	*57*	*94*	*131*	*168*	*205*	*242*	*278*	*314*	*323*	*393*
45,4	**243**	**240**	**235**	**229**	**222**	**214**	**206**	**196**	**184**	**181**	**154**
[14]	118	452	786	1117	1443	1772	2095	2417	2736	2814	3438
	13	*51*	*89*	*126*	*163*	*200*	*237*	*273*	*309*	*318*	*388*
53,0	**283**	**280**	**276**	**270**	**262**	**254**	**245**	**235**	**224**	**221**	**194**
[15]	91	425	759	1089	1418	1747	2068	2389	2708	2786	3410
	10	*48*	*86*	*123*	*160*	*197*	*234*	*270*	*306*	*315*	*385*
56,8	**304**	**301**	**296**	**290**	**283**	**274**	**265**	**256**	**243**	**240**	**214**
[20]		259	590	925	1255	1585	1907	2229	2552	2633	3265
		29	*67*	*105*	*142*	*179*	*216*	*252*	*288*	*297*	*369*
75,7		**403**	**400**	**394**	**387**	**379**	**370**	**359**	**347**	**344**	**319**

S Motor 225 cm³/r [13.7 in³/r]

Δ Pressure Bar [PSI]

Flow LPM [GPM]

	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1600] **110**	[1700] **124**	[2050] **138**
[2]	358	765	1139	1498	1842	2163	2474	2738	2894	
	40	*86*	*129*	*169*	*208*	*244*	*280*	*309*	*327*	
7,6	**32**	**29**	**27**	**23**	**20**	**16**	**12**	**10**	**8**	
[4]	367	774	1177	1577	1956	2325	2680	3022	3191	3753
	41	*87*	*133*	*178*	*221*	*263*	*303*	*341*	*361*	*424*
15,1	**66**	**63**	**60**	**55**	**50**	**46**	**40**	**34**	**31**	**23**
[6]	348	758	1161	1567	1960	2344	2716	3083	3264	3863
	39	*86*	*131*	*177*	*221*	*265*	*307*	*348*	*369*	*437*
22,7	**99**	**96**	**92**	**88**	**82**	**76**	**70**	**63**	**59**	**45**
[8]	313	721	1124	1529	1921	2312	2696	3073	3265	3894
	35	*81*	*127*	*173*	*217*	*261*	*305*	*347*	*369*	*440*
30,3	**133**	**132**	**127**	**123**	**117**	**111**	**104**	**96**	**92**	**76**
[10]	262	669	1069	1473	1859	2247	2627	2997	3184	3810
	30	*76*	*121*	*166*	*210*	*254*	*297*	*339*	*360*	*430*
37,9	**167**	**165**	**161**	**157**	**152**	**146**	**139**	**130**	**126**	**107**
[12]	203	609	1006	1400	1782	2160	2531	2912	3098	3721
	23	*69*	*114*	*158*	*201*	*244*	*286*	*329*	*350*	*420*
45,4	**202**	**199**	**196**	**191**	**186**	**180**	**173**	**165**	**160**	**141**
[14]	143	544	938	1324	1700	2079	2452	2824	3008	3639
	16	*62*	*106*	*150*	*192*	*235*	*277*	*319*	*340*	*411*
53,0	**236**	**233**	**230**	**225**	**219**	**214**	**207**	**199**	**194**	**177**
[15]	106	504	897	1281	1653	2027	2393	2761	2944	3576
	12	*57*	*101*	*145*	*187*	*229*	*270*	*312*	*333*	*404*
56,8	**253**	**251**	**248**	**243**	**237**	**231**	**224**	**215**	**211**	**192**
[20]		303	697	1091	1477	1854	2214	2581	2765	3399
		34	*79*	*123*	*167*	*210*	*250*	*292*	*312*	*384*
75,7		**336**	**334**	**330**	**325**	**318**	**312**	**304**	**298**	**282**

[504] Torque [lb-in]
57 Nm
251 Speed RPM

S Series (103-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed, however for best motor life select a motor to run with a torque and speed range printed in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production

Continuous

Intermittent

S Motor 298 cm³/r [18.2 in³/r]

Δ Pressure Bar [PSI]

Flow **LPM** [GPM]	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1500] **110**	[1800] **124**
[2]	487	1009	1509	1991	2460	2931	3360	3577	4113
	55	*114*	*170*	*225*	*278*	*331*	*380*	*404*	*465*
7,6	**24**	**22**	**20**	**18**	**17**	**14**	**11**	**10**	**8**
[4]	498	1043	1576	2093	2597	3087	3567	3798	4500
	56	*118*	*178*	*236*	*293*	*349*	*403*	*429*	*508*
15,1	**49**	**47**	**45**	**41**	**38**	**34**	**31**	**29**	**25**
[6]	470	1017	1552	2080	2594	3097	3594	3835	4536
	53	*115*	*175*	*235*	*293*	*350*	*406*	*433*	*513*
22,7	**74**	**72**	**69**	**66**	**62**	**57**	**52**	**49**	**42**
[8]	423	967	1502	2031	2549	3062	3563	3807	4526
	48	*109*	*170*	*229*	*288*	*346*	*403*	*430*	*511*
30,3	**100**	**98**	**95**	**92**	**88**	**83**	**77**	**73**	**64**
[10]	357	901	1433	1961	2477	2989	3486	3730	4456
	40	*102*	*162*	*222*	*280*	*338*	*394*	*421*	*504*
37,9	**126**	**124**	**121**	**118**	**113**	**108**	**101**	**97**	**87**
[12]	287	826	1357	1884	2402	2917	3410	3652	4363
	32	*93*	*153*	*213*	*271*	*330*	*385*	*413*	*493*
45,4	**152**	**150**	**147**	**144**	**140**	**134**	**126**	**121**	**109**
[14]	199	733	1261	1786	2303	2818	3316	3561	4276
	22	*83*	*142*	*202*	*260*	*318*	*375*	*402*	*483*
53,0	**177**	**176**	**173**	**170**	**165**	**160**	**152**	**147**	**134**
[15]	154	688	1218	1742	2258	2771	3273	3518	4241
	17	*78*	*138*	*197*	*255*	*313*	*370*	*398*	*479*
56,8	**190**	**189**	**186**	**183**	**178**	**173**	**165**	**160**	**146**
[20]		418	945	1471	1986	2502	3004	3253	3997
		47	*107*	*166*	*224*	*283*	*339*	*368*	*452*
75,7		**253**	**251**	**248**	**244**	**239**	**231**	**226**	**212**

S Motor 372 cm³/r [22.7 in³/r]

Δ Pressure Bar [PSI]

Flow **LPM** [GPM]	[200] **14**	[400] **28**	[600] **41**	[800] **55**	[1000] **69**	[1200] **83**	[1400] **97**	[1500] **110**
[2]	629	1287	1905	2501	3066	3624	3886	4370
	71	*145*	*215*	*283*	*346*	*409*	*439*	*494*
7,6	**19**	**18**	**16**	**14**	**13**	**11**	**9**	**7**
[4]	628	1304	1962	2600	3206	3799	4082	4642
	71	*147*	*222*	*294*	*362*	*429*	*461*	*525*
15,1	**40**	**38**	**36**	**34**	**30**	**27**	**25**	**23**
[6]	587	1261	1926	2578	3203	3813	4112	4687
	66	*142*	*218*	*291*	*362*	*431*	*465*	*530*
22,7	**60**	**59**	**56**	**54**	**50**	**45**	**43**	**38**
[8]	529	1201	1867	2518	3148	3769	4072	4657
	60	*136*	*211*	*285*	*356*	*426*	*460*	*526*
30,3	**81**	**79**	**77**	**75**	**71**	**66**	**64**	**58**
[10]	451	1124	1779	2429	3056	3678	3983	4583
	51	*127*	*201*	*274*	*345*	*416*	*450*	*518*
37,9	**102**	**100**	**98**	**96**	**92**	**86**	**84**	**78**
[12]	359	1030	1688	2333	2963	3587	3889	4482
	41	*116*	*191*	*264*	*335*	*405*	*439*	*506*
45,4	**122**	**121**	**119**	**117**	**113**	**107**	**104**	**98**
[14]	256	922	1577	2226	2864	3487	3787	4381
	29	*104*	*178*	*252*	*324*	*394*	*428*	*495*
53,0	**143**	**142**	**140**	**137**	**134**	**128**	**126**	**119**
[15]	199	862	1514	2167	2797	3424	3727	4322
	22	*97*	*171*	*245*	*316*	*387*	*421*	*488*
56,8	**153**	**152**	**150**	**148**	**144**	**138**	**135**	**129**
[20]		534	1187	1832	2470	3093	3402	4004
		60	*134*	*207*	*279*	*349*	*384*	*452*
75,7		**204**	**202**	**200**	**197**	**192**	**189**	**183**

[862] Torque [lb-in]
97 Nm
152 Speed RPM

S Series (103-)

Dimensions

(Refer to pages B-4-19 thru B-4-22 for shaft and port dimensions.)

Ports

7/8-14 SAE O-Ring

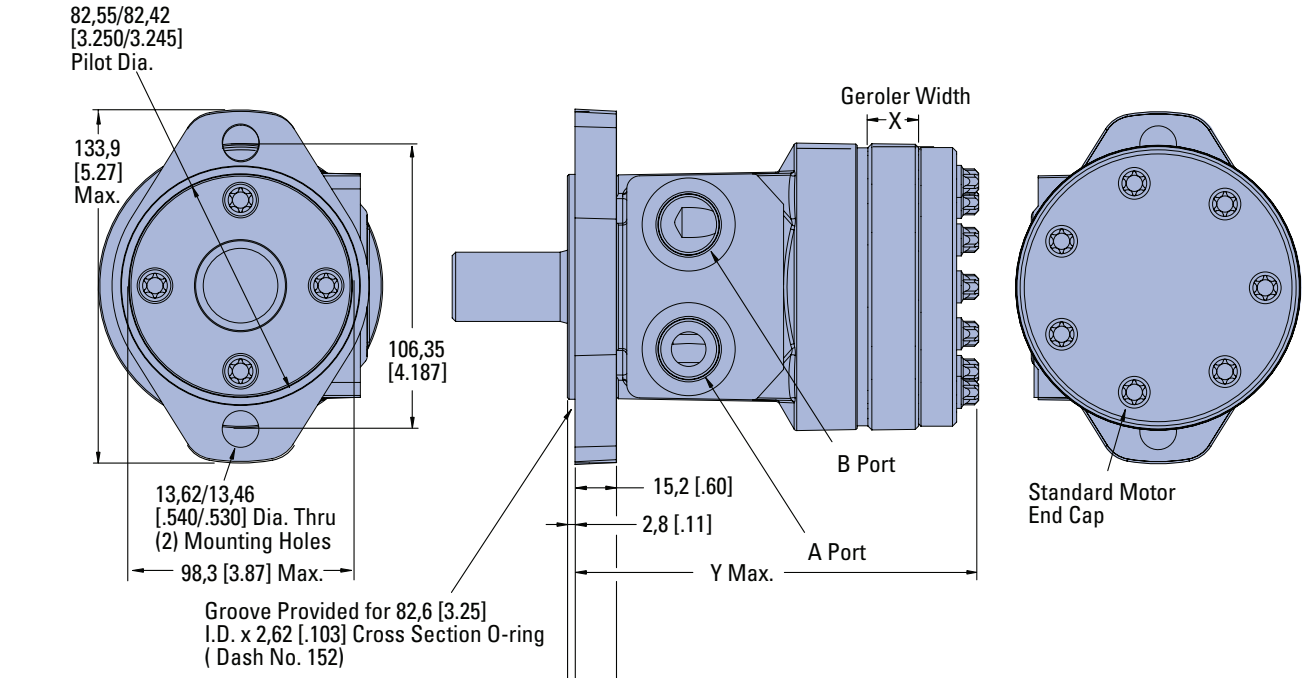
6-1/2 (BSP) Straight thread manifold

Standard Rotation Viewed from Shaft End

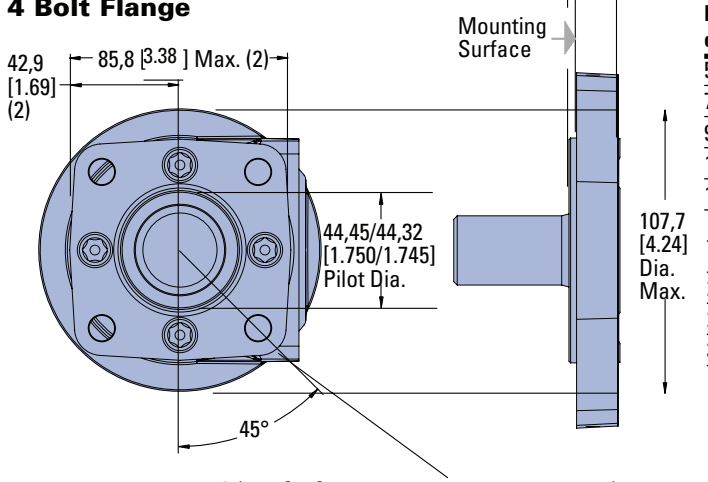
Port A Pressurized — CW

Port B Pressurized — CCW

2 Bolt Flange



4 Bolt Flange



Displacement cm³/r [in³/r]	X mm [inch]	Y mm [inch]
58 [3.6]	7,5 [.30]	138,0 [5.43]
76 [4.6]	9,8 [.39]	140,3 [5.52]
93 [5.7]	12,0 [.47]	142,5 [5.61]
120 [7.3]	15,5 [.61]	146,0 [5.75]
144 [8.8]	18,6 [.73]	149,1 [5.87]
165 [10.1]	21,3 [.84]	151,8 [5.98]
186 [11.4]	24,0 [.94]	154,5 [6.08]
225 [13.7]	28,9 [1.14]	159,4 [6.28]
299 [18.2]	38,5 [1.52]	169,0 [6.66]
371 [22.7]	47,9 [1.88]	178,4 [7.02]

3/8-16 UNC (15,2 [.60] Max. Bolt Thread Engagement) Mounting Holes (4) Equally Spaced on 82,6 [3.25] Dia. Bolt Circle
or
M10 x 1,5 (15,2 [.60] Max. Bolt Thread Engagement) Mounting Holes (4) Equally Spaced on 82,6 [3.25] Dia. Bolt Circle

S Series (103-)

Product Numbers

Use three-digit prefix (103-) plus four-digit number from charts for complete product number (ex: 103-1093). Orders will not be accepted without the three-digit prefix.

2 Bolt Flange

SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER									
		59 [3.6]	75 [4.6]	93 [5.7]	120 [7.3]	144 [8.8]	166 [10.1]	187 [11.4]	225 [13.7]	298 [18.2]	372 [22.7]
1 in. Straight w/Woodruff Key	7/8-14 O-Ring	103-1537	-1034	-1035	-1538	-1539	-1036	-1037	-1038	-1039	-1040
	1/2 NPTF	103-1540	-1026	-1027	-1541	-1542	-1028	-1029	-1030	-1031	-1032
	Manifold	103-1543	-1042	-1043	-1544	-1545	-1044	-1045	-1046	-1047	-1048
1 in. SAE 6B Splined	7/8-14 O-Ring	103-1552	-1082	-1083	-1553	-1554	-1084	-1085	-1086	-1087	-1088
	1/2 NPTF	103-1555	-1074	-1075	-1556	-1557	-1076	-1077	-1078	-1079	-1080
	Manifold	103-1558	-1090	-1091	-1559	-1560	-1092	-1093	-1094	-1095	-1096

103-1093

4 Bolt Flange

SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER									
		59 [3.6]	75 [4.6]	93 [5.7]	120 [7.3]	144 [8.8]	166 [10.1]	187 [11.4]	225 [13.7]	298 [18.2]	372 [22.7]
1 in. Straight w/Woodruff Key	7/8-14 O-Ring	103-1570	-1010	-1011	-1571	-1572	-1012	-1013	-1014	-1015	-1016
	1/2 NPTF	103-1573	-1002	-1003	-1574	-1575	-1004	-1005	-1006	-1007	-1008
	Manifold	103-1576	-1018	-1019	-1577	-1578	-1020	-1021	-1022	-1023	-1024
1 in. SAE 6BSplined	7/8-14 O-Ring	103-1579	-1058	-1059	-1580	-1581	-1060	-1061	-1062	-1063	-1064
	1/2 NPTF	103-1582	-1050	-1051	-1583	-1584	-1052	-1053	-1054	-1055	-1056
	Manifold	103-1585	-1066	-1067	-1586	-1587	-1068	-1069	-1070	-1071	-1072

103-1069

S Series Motors with Corrosion Protection

SHAFT	MOUNTING	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER									
			59 [3.6]	75 [4.6]	93 [5.7]	120 [7.3]	144 [8.8]	166 [10.1]	187 [11.4]	225 [13.7]	298 [18.2]	372 [22.7]
1 in. Straight w/ Woodruff Key	2 Bolt Flange	7/8-14 O-Ring	103-1645	–	–	–	–	–	–	-1649	–	-1650
	4 Bolt Flange	1/2 NPTF	–	–	–	–	–	–	–	-1620	–	-1621

*Manifold product numbers shown are for motors with four 5/16 z-18 port face mounting threads. Manifold, manifold mounting O-Rings and bolts are NOT included.

For S Series Motors with a configuration Not Shown in the charts above: Use the model code number system on page B-3-11 to specify the product in detail.

S Series with Low Speed Valving

Product Number

Motors with the low speed valving option enable very smooth low speed operation while maintaining high torque.

Designed to run continuously at up to 200 RPM at standard rated pressures and reduced flows, this option provides smooth operation at low speeds. Furthermore, they resist slippage and have more momentary load holding ability than the standard H and S Series motors. Motors with this valving are not intended for low pressure applications (41 Bar [600 PSI] Minimum). Shaft side / radial load ratings are not affected by this valving.

Use digit prefix—103- plus four digit number from charts for complete product number—Example: 103-2678.

Orders will not be accepted without the three-digit prefix.

2 Bolt Flange

SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER									
		59 [3.6]	75 [4.6]	93 [5.7]	120 [7.3]	144 [8.8]	166 [10.1]	187 [11.4]	225 [13.7]	298 [18.2]	372 [22.7]
1 in. Straight w/Woodruff Key	7/8 -14 O-Ring	103- —	-1427	-1428	—	—	-1429	-1430	-1431	-1432	-1433
	1/2 NPTF	103- —	-1419	-1420	—	—	-1421	-1422	-1423	-1424	-1425
	Manifold*	103- —	—	—	—	—	—	—	—	—	—
1 in. SAE 6B Splined	7/8 -14 O-Ring	103- —	-1525	—	—	-2692	—	—	-1675	—	—
	1/2 NPTF	103- —	—	-1634	—	—	—	—	—	—	—
	Manifold*	103- —	-1522	-2678	—	—	—	—	—	—	-1527

4 Bolt Flange

SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER										
		59 [3.6]	75 [4.6]	93 [5.7]	120 [7.3]	144 [8.8]	166 [10.1]	187 [11.4]	225 [13.7]	298 [18.2]	372 [22.7]	
1 in. Straight w/Woodruff Key	7/8 -14 O-Ring		103-1625	-1410	-1411	-1626	-2531	-1412	-1413	-1414	-1415	-1416
	1/2 NPTF	103-1644	-1402	-1403	—	—	-1404	-1405	-1406	-1407	-1408	

*Manifold product numbers shown are for motors with four 5/16 -18 port face mounting threads. Manifold, manifold mounting O-Rings and bolts are NOT included.

For S Series Motors with Low Speed Valving Not Shown in the chart above: Use the model code number system on page B-3-11 to specify the product in detail.

S Series (103-)

Model Code

The following 25-digit coding system has been developed to identify all of the configuration options for the S motor. Use this model code to specify a motor with the desired features. All 25-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.

M	S0	* * *	* *	* *	* *	*	*	*	* *	*	0	* *	*	*	0	M
1	2 3	4 5 6	7 8	9 10	11 12	13	14	15	16 17	18	19	20 21	22	23	24	25

1 Product

M – Motor

2, 3 Series

S0 – S Series Motor

4, 5, 6 Displacement cm³/r [in³/r]

036 – 58 [3.6]

046 – 76 [4.6]

057 – 93 [5.7]

073 – 120 [7.3]

088 – 144 [8.8]

101 – 165 [10.1]

114 – 186 [11.4]

137 – 224 [13.7]

182 – 299 [18.2]

227 – 371 [22.7]

7, 8 Mounting Type

AA – 2 Bolt Std: 82.50 [3.248] Dia. x 3.05 [.120] Pilot, 13.59 [.535] Dia. Mounting Holes on 106.35 [4.187] Dia. B.C.

BA – 4 Bolt Std: 44.40 [1.748] Dia. x 3.05 [.120] Pilot, .375-16 UNC-2B Mounting Holes on 82.55 [3.250] Dia. B.C.

CA – 2 Bolt Std: 82.50 [3.248] Dia. x 6.10 [.240] Pilot, 10.41 [.410] Dia. Mounting Holes on 106.35 [4.187] Dia. B.C. (SAE A)

DD – 2 Bolt Std: 101.60 [4.000] Dia. x 6.10 [.240] Pilot, 14.35 [.565] Dia. Mounting Holes on 146.05 [5.750] Dia. B.C. (SAE B) (Ductile)

EA – 4 Bolt Magneto: 82.50 [3.248] Dia. x 3.05 [.120] Pilot, 13.59 [.535] Dia. Mounting Holes on 106.35 [4.187] Dia. B.C.

FA – 4 Bolt Std: 44.40 [1.748] Dia. x 3.05 [.120] Pilot, M10 x 1.5-6h Mounting Holes on 82.55 [3.250] Dia. B.C.

LA – 2 Bolt Std: 44.45 [1.750] Dia. x 3.05 [.120] Pilot, 13.59 [.535] Dia. Mounting Holes on 106.35 [4.187] Dia. B.C.

9, 10 Output Shaft

01 – 25.4 [1.00] Dia. Straight, Woodruff Key, .250-20 UNC-2B Hole in Shaft End

02 – 25.4 [1.00] Dia. SAE 6B Spline, .250-20 UNC-2B Hole in Shaft End

07 – 25.4 [1.00] Dia. Straight, 8.03 [.316] Dia. Crosshole 11.2 [.44] From End, 5.6 [.22] Extra Length

08 – 25.4 [1.00] Dia. Straight, 10.31 [.406] Dia. Crosshole 15.7 [.62] From End, .250-20 UNC-2B Hole in Shaft End

16 – 22.22 [.875] Dia. SAE 13 Tooth Spline (SAE B)

17 – 22.22 [.875] Dia. Straight, 6.4 [.25] x 19.0 [.75] Square Key (SAE B)

18 – 25.4 [1.00] Dia. Tapered, Woodruff Key and Nut, 34.92 [1.375] Taper Length

24 – 25.00 [.984] Dia. Straight, 8.00 [.315] Key, M8 x 1.25-6H Hole in Shaft End

11, 12 Port Type

AA – .875-14 UNF-2B SAE O-Ring Ports

AB – .500-14 NPTF Dryseal Pipe Thread Ports

AC – Manifold Ports (.3125-18 UNC-2B Mounting Holes)

AD – Manifold Ports (M8 x 1.25-6H Mounting Holes)

AF – G 1/2 BSP Straight Thread Ports

13 Case Flow Options ††

0 – None Specified

1 – 4375-20 UNF-2B SAE O-Ring Port (End Cap)

2 – G 1/4 BSP Straight THD Port (End Cap)

3 – Manifold Case Drain

†† – Internal check valves are standard features.

14 Geroler Options

0 – None Specified

15 Shaft Options

0 – None Specified

N – Electroless Nickel Plated

16, 17 Seal Options

00 – Standard Seals

02 – Seal Guard

03 – Viton Seals

04 – Viton Shaft Seal

05 – Vented Two-Stage Seal

07 – High Pressure Shaft Seal

18 Speed Sensor Options

0 – None

A – Speed Sensor Options 12mm Digital Speed Pickup (15 pulse) without lead wire

B – Magnetic Speed Pickup (60 Pulse by Quadrature), No lead wire with M12 connector

(A=Power, B=Common, C=Signal)

19 Manifold Block Options

0 – None

* Contact your Eaton sales representative for available options.

20, 21 Special Features (Hardware)

00 – None Specified

AB – Low Speed Valving

SS – Stainless Steel Flange Bolts

22 Special Assembly Instructions

0 – None

1 – Reverse Rotation

2 – Flange Rotated 90°

3 – Reverse Rotation, Flange Rotated 90°

23 Paint/Packaging Options

0 – No Paint

A – Painted Low Gloss Black

D – Environmental Coated Gloss White

F – Environmental Coated Black

24 Eaton Assigned Code When Applicable

0 – Assigned Code

25 Eaton Assigned Design Code

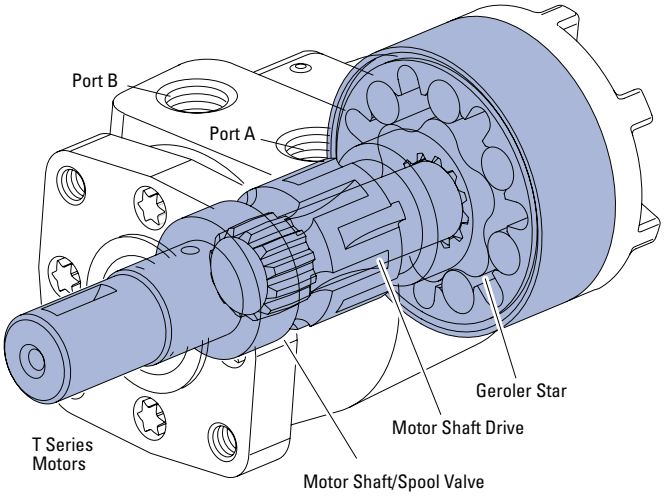
M – Twelve (12)

Feature in **bold** are preferred and allow for shorter lead time.

Notes

T Series (158-)

Highlights



Description

The newest Geroler motor, the "T Series, features the latest innovations in Geroler technology. These innovations include optimized Geroler geometry with lower drive running angle for improved life and improved low speed performance. In addition, the improved housing and smaller diameter end cap results in increased envelope rigidity which improves efficiency under high pressure loads. All of these innovations come together to make the T Series motor the highest performing motor in its class.

Specifications for T Series Motors

Geroler Element	11 Displacements
Flow l/min [GPM]	55 [15] Continuous***
	75 [20] Intermittent**
Speed	Up to 1021 RPM
Pressure bar [PSI]	155 [2250] Cont.***
	190 [2750] Inter.**
Torque Nm [lb-in]	441 [3905] Cont.***
	486 [4300] Inter.**

*** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.
** Intermittent— (Inter.) Intermittent operation, 10% of every minute.

Features:

- Constant clearance Geroler, geometry
- Optimized drive system with reduced running angle
- Three-pressure zone design (ability to reduce case pressure)
- Variety of displacements, shafts and mounts
- Special options to meet customer needs

Benefits:

- High efficiency
- Smooth low-speed operation
- Extended motor life (especially at low speed conditions)
- Design flexibility
- Ability to optimize designs for your application needs
- Extends leak-free performance

Applications:

- Agricultural augers, harvesters, seeders
- Car wash brushes
- Food processing
- Railroad maintenance equipment
- Machine tools
- Conveyors
- Industrial sweepers and floor polishers
- Saw mill works
- Turf equipment
- Concrete and asphalt equipment
- Skid steer attachments
- Many more


Crane (winch)

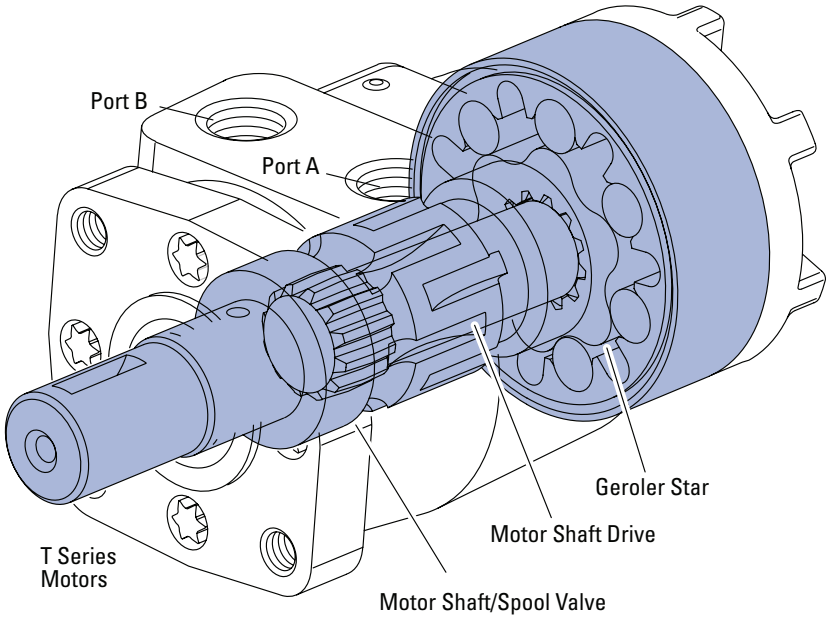

Paving


Harvester


Crane and winches

T Series (158-)

Specifications



SPECIFICATION DATA — T MOTORS

Displ. cm^3/r [in^3/r]		36 [2.2]	49 [3.0]	66 [4.0]	80 [4.9]	102 [6.2]	131 [8.0]	157 [9.6]	195 [11.9]	244 [14.9]	306 [18.7]	370 [22.6]
Max. Speed (RPM) @ Continuous Flow		1021	906	849	694	550	426	355	287	229	183	152
Flow LPM [GPM]	Continuous	38 [10]	45 [12]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]
	Intermittent	38 [10]	57 [15]	68 [18]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]
Torque Nm [lb-in]	Continuous	76 [672]	105 [928]	138 [1222]	174 [1541]	219 [1936]	251 [2226]	297 [2628]	359 [3178]	410 [3633]	441 [3905]	430 [3811]
	Intermittent **	93 [824]	118 [1131]	168 [1488]	212 [1872]	264 [2339]	307 [2718]	359 [3178]	437 [3864]	485 [4290]	483 [4275]	486 [4300]
Pressure Δ Bar Δ PSI]	Continuous*	155 [2250]	155 [2250]	155 [2250]	155 [2250]	155 [2250]	138 [2000]	138 [2000]	138 [2000]	127 [1850]	110 [1600]	90 [1300]
	Intermittent**	190 [2750]	190 [2750]	190 [2750]	190 [2750]	190 [2750]	172 [2500]	172 [2500]	172 [2500]	155 [2250]	124 [1800]	103 [1500]

A simultaneous maximum torque and maximum speed NOT recommended.

Note:

To assure best motor life, run motor for approximately one hour at 30% of rated pressure before application to full load. Be sure motor is filled with fluid prior to any load applications.

Maximum Inlet Pressure:

190 Bar [2750 PSI] without regard to Δ Bar [D PSI] and/ or back pressure ratings or combination thereof.

6B splined or Tapered shafts are recommended whenever operation above 282 NM [2500 lb-in] of torque, especially for those applications subject to frequent reversals.

Δ Pressure:

The true Δ bar [Δ PSI] between inlet port and outlet port

Continuous Rating:

Motor may be run continuously at these ratings

Intermittent Operation:

10% of every minute

Recommended Fluids:

Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 70 SUS at operating temperature.

Recommended Maximum System Operating Temp.:

82°C [180°F]

Recommended Filtration:

per ISO Cleanliness Code 4406, level 20/18/13

T Series (158-, 185-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

36 cm³/r [2.2 in³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2250] 155	Max. Continuous [2750] 190
[2] 7,6	[50] 6 209	[110] 12 203	[172] 19 197	[233] 26 191	[291] 33 189	[348] 39 181	[401] 45 167	[455] 51 164	[501] 57 153	[546] 62 139	[590] 67 122	[596] 67 116	[635] 72 64
[4] 15,1	[50] 6 415	[109] 12 411	[172] 19 398	[233] 26 388	[296] 33 384	[355] 40 381	[414] 47 368	[475] 54 357	[534] 60 354	[584] 66 323	[646] 73 304	[659] 74 302	[786] 89 283
[6] 22,7	[43] 5 617	[108] 12 613	[171] 19 602	[233] 26 595	[298] 34 585	[361] 41 570	[420] 47 563	[479] 54 558	[538] 61 534	[595] 67 520	[657] 74 504	[672] 76 496	[824] 93 425
[8] 30,3	[39] 4 821	[101] 11 815	[164] 19 803	[226] 26 797	[292] 33 784	[354] 40 774	[415] 47 758	[475] 54 747	[538] 61 732	[592] 67 707	[656] 74 688	[670] 76 680	[819] 92 607
Max. Continuous [10] 37,9	[30] 3 1021	[93] 11 1014	[155] 18 1002	[214] 24 999	[278] 31 981	[342] 39 965	[406] 46 953	[473] 53 937	[532] 60 921	[590] 67 903	[650] 73 880	[668] 75 873	[805] 91 799

[93] 11 1014 } Torque [lb-in] Nm Speed RPM

49 cm³/r [3.0 in³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2250] 155	Max. Continuous [2750] 190
[2] 7,6	[73] 8 152	[161] 18 152	[245] 28 148	[327] 37 147	[408] 46 142	[486] 55 141	[563] 64 134	[641] 72 124	[710] 80 115	[786] 89 109	[849] 96 95	[866] 98 92	[1023] 116 58
[4] 15,1	[72] 8 303	[160] 18 298	[246] 28 294	[329] 37 290	[416] 47 276	[500] 56 273	[584] 66 265	[668] 75 261	[746] 84 245	[825] 93 243	[901] 102 235	[922] 104 228	[1123] 127 152
[6] 22,7	[58] 7 461	[148] 17 450	[234] 26 445	[326] 37 438	[413] 47 434	[500] 56 421	[583] 66 419	[663] 75 410	[746] 84 407	[827] 93 389	[909] 103 376	[928] 105 373	[1131] 128 344
[8] 30,3	[44] 5 607	[127] 14 603	[216] 24 600	[306] 35 590	[392] 44 583	[480] 54 576	[566] 64 564	[652] 74 554	[734] 83 545	[815] 92 536	[897] 101 522	[917] 104 520	[1125] 127 503
[10] 37,9	[39] 4 755	[128] 14 750	[213] 24 745	[302] 34 738	[391] 44 732	[477] 54 719	[562] 63 713	[647] 73 702	[731] 83 696	[815] 92 682	[897] 101 663	[917] 104 661	[1121] 127 638
Max. Continuous [12] 45,4	[33] 4 906	[119] 13 902	[203] 23 895	[291] 33 883	[378] 43 875	[464] 52 862	[551] 62 859	[635] 72 844	[719] 81 835	[802] 91 819	[883] 100 806	[900] 102 804	[1061] 120 788
Max. Intermittent [15] 56,8	[26] 3 1132	[86] 10 1124	[172] 19 1113	[256] 29 1115	[342] 39 1106	[430] 49 1106	[505] 57 1098	[591] 67 1093	[674] 76 1079	[745] 84 1070	[830] 94 1058	[851] 96 1056	

T Series (158-, 185-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

66 cm³/r [4.0 in³/r]

Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2250] 155	Max. Continuous [2750] 190
[2] 7,6	[78] 9 114	[191] 22 111	[303] 34 110	[414] 47 107	[522] 59 105	[625] 71 101	[706] 80 96	[804] 91 92	[898] 101 87	[991] 112 81	[1081] 122 73	[1103] 125 72	[1318] 149 48
[4] 15,1	[97] 11 229	[209] 24 229	[325] 37 217	[441] 50 216	[548] 62 212	[657] 74 205	[766] 87 194	[873] 99 190	[972] 110 186	[1077] 122 183	[1181] 133 181	[1205] 136 178	[1437] 162 170
[6] 22,7	[79] 9 344	[192] 22 343	[309] 35 335	[426] 48 334	[534] 60 321	[649] 73 320	[760] 86 319	[874] 99 315	[984] 111 291	[1090] 123 288	[1190] 134 279	[1218] 138 276	[1488] 168 270
[8] 30,3	[75] 8 456	[191] 22 451	[304] 34 447	[419] 47 442	[532] 60 431	[645] 73 426	[759] 86 419	[871] 98 415	[982] 111 412	[1092] 123 401	[1197] 135 391	[1222] 138 386	[1458] 165 339
[10] 37,9	[49] 6 569	[163] 18 565	[283] 32 560	[398] 45 552	[509] 58 547	[623] 70 541	[742] 84 532	[856] 97 525	[971] 110 512	[1080] 122 504	[1186] 134 498	[1209] 137 496	[1425] 161 475
[12] 45,4	[24] 3 681	[156] 18 678	[270] 31 671	[385] 43 665	[502] 57 658	[614] 69 651	[729] 82 641	[845] 95 635	[963] 109 623	[1067] 121 612	[1182] 134 604	[1209] 137 601	[1472] 166 571
[14] 53,0	[19] 2 793	[143] 16 788	[261] 29 787	[370] 42 778	[485] 55 771	[602] 68 762	[718] 81 753	[837] 95 746	[948] 107 733	[1064] 120 723	[1175] 133 715	[1199] 135 711	[1436] 162 677
Max. Continuous [15] 56,8	[13] 1 849	[120] 14 844	[236] 27 839	[352] 40 832	[471] 53 826	[590] 67 819	[707] 80 806	[823] 93 800	[939] 106 786	[1052] 119 779	[1165] 132 770	[1192] 135 766	[1462] 165 725
Max. Intermittent [18] 68,1		[107] 12 1006	[215] 24 1003	[326] 37 998	[442] 50 988	[555] 63 976	[669] 76 975	[786] 89 965	[900] 102 952	[1016] 115 940	[1123] 127 924	[1152] 130 919	

80 cm³/r [4.9 in³/r]

Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2250] 155	Max. Continuous [2750] 190
[2] 7,6	[123] 14 93	[265] 30 90	[405] 46 86	[544] 61 83	[680] 77 80	[804] 91 75	[934] 106 70	[1052] 119 63	[1181] 133 57	[1079] 122 43	[937] 106 24	[895] 101 20	
[4] 15,1	[120] 14 187	[264] 30 185	[406] 46 183	[551] 62 179	[689] 78 175	[828] 94 171	[965] 109 166	[1101] 124 162	[1237] 140 156	[1369] 155 150	[1505] 170 142	[1537] 174 140	[1857] 210 121
[6] 22,7	[113] 13 279	[255] 29 275	[398] 45 271	[542] 61 267	[682] 77 265	[823] 93 258	[963] 109 253	[1101] 124 248	[1239] 140 240	[1373] 155 232	[1508] 170 223	[1541] 174 221	[1868] 211 198
[8] 30,3	[99] 11 372	[243] 27 367	[386] 44 364	[528] 60 359	[669] 76 354	[812] 92 351	[954] 108 343	[1094] 124 338	[1233] 139 333	[1368] 155 324	[1503] 170 315	[1537] 174 313	[1872] 212 289
[10] 37,9	[84] 9 463	[228] 26 460	[371] 42 456	[514] 58 450	[655] 74 446	[798] 90 441	[941] 106 435	[1080] 122 428	[1219] 138 420	[1357] 153 412	[1496] 169 403	[1530] 173 399	[1870] 211 368
[12] 45,4	[63] 7 557	[209] 24 552	[354] 40 547	[498] 56 543	[638] 72 537	[782] 88 530	[926] 105 523	[1067] 121 515	[1208] 136 509	[1346] 152 500	[1484] 168 489	[1520] 172 487	[1864] 211 470
[14] 53,0	[55] 6 649	[185] 21 646	[331] 37 642	[476] 54 635	[620] 70 630	[762] 86 622	[904] 102 616	[1046] 118 609	[1188] 134 599	[1327] 150 592	[1467] 166 581	[1502] 170 578	[1842] 208 550
Max. Continuous [15] 56,8	[51] 6 694	[176] 20 691	[316] 36 687	[463] 52 680	[609] 69 673	[748] 85 668	[891] 101 660	[1037] 117 650	[1177] 133 642	[1316] 149 634	[1457] 165 622	[1491] 168 619	[1844] 208 598
Max. Intermittent [20] 75,7		[160] 18 916	[305] 34 910	[455] 51 893	[578] 65 893	[737] 83 875	[857] 97 866	[968] 109 877	[1144] 129 843	[1277] 144 833	[1412] 160 839	[1446] 163 836	

[176] 20 691 } Torque [lb-in] Nm Speed RPM

T Series (158-, 185-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

102 cm³/r [6.2 in³/r]

Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	Max. Continuous [2200] 152	[2250] 155	Max. Intermittent [2750] 190
[2] 7,6	[161] 18 73	[341] 39 71	[519] 59 68	[697] 79 66	[871] 98 63	[1030] 116 60	[1193] 135 56	[1349] 152 51	[1511] 171 46	[1496] 169 36	[1441] 163 23	[1421] 161 20	
[4] 15,1	[157] 18 149	[340] 38 146	[520] 59 144	[702] 79 141	[879] 99 138	[1056] 119 135	[1229] 139 131	[1401] 158 128	[1567] 177 124	[1727] 195 118	[1889] 213 111	[1925] 217 109	[2271] 257 92
[6] 22,7	[147] 17 221	[329] 37 217	[510] 58 214	[692] 78 211	[871] 98 208	[1050] 119 204	[1227] 139 199	[1401] 158 195	[1571] 178 190	[1731] 196 184	[1895] 214 176	[1936] 219 174	[2339] 264 154
[8] 30,3	[132] 15 294	[315] 36 290	[497] 56 287	[675] 76 284	[857] 97 280	[1038] 117 277	[1216] 137 271	[1392] 157 267	[1564] 177 262	[1725] 195 255	[1891] 214 247	[1932] 218 245	[2326] 263 220
[10] 37,9	[109] 12 367	[293] 33 363	[477] 54 360	[657] 74 355	[839] 95 351	[1018] 115 347	[1198] 135 343	[1374] 155 337	[1542] 174 332	[1711] 193 325	[1878] 212 318	[1918] 217 315	[2326] 263 287
[12] 45,4	[84] 9 440	[271] 31 436	[457] 52 432	[638] 72 429	[818] 92 424	[999] 113 419	[1179] 133 414	[1354] 153 409	[1527] 173 402	[1697] 192 395	[1858] 210 386	[1901] 215 384	[2323] 262 364
[14] 53,0	[59] 7 513	[242] 27 510	[428] 48 506	[611] 69 501	[794] 90 497	[974] 110 492	[1151] 130 487	[1328] 150 482	[1502] 170 475	[1674] 189 469	[1841] 208 458	[1883] 213 456	[2301] 260 428
Max. Continuous [15] 56,8	[39] 4 550	[227] 26 545	[411] 46 542	[595] 67 537	[780] 88 532	[957] 108 528	[1136] 128 522	[1314] 148 516	[1486] 168 510	[1658] 187 502	[1828] 207 492	[1869] 211 490	[2285] 258 463
Max. Intermittent [20] 75,7		[154] 17 724	[328] 37 718	[515] 58 720	[710] 80 709	[874] 99 707	[1060] 120 696	[1243] 140 684	[1405] 159 683	[1579] 178 670	[1763] 199 659	[1803] 204 660	

131 cm³/r [8.0 in³/r]

Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	Max. Continuous [2000] 138	Max. Intermittent [2500] 172
[2] 7,6	[219] 25 57	[450] 51 55	[682] 77 53	[915] 103 51	[1144] 129 49	[1348] 152 47	[1561] 176 43	[1771] 200 40	[1979] 224 36	[2159] 244 30	
[4] 15,1	[212] 24 115	[449] 51 113	[681] 77 110	[917] 104 109	[1148] 130 107	[1376] 155 105	[1600] 181 102	[1822] 206 99	[2025] 229 96	[2221] 251 91	[2629] 297 75
[6] 22,7	[197] 22 171	[435] 49 168	[669] 76 166	[903] 102 163	[1139] 129 160	[1370] 155 157	[1600] 181 154	[1818] 205 150	[2032] 230 147	[2226] 252 142	[2718] 307 125
[8] 30,3	[181] 20 227	[417] 47 225	[657] 74 222	[886] 100 219	[1122] 127 217	[1359] 154 213	[1589] 180 209	[1812] 205 206	[2022] 228 202	[2215] 250 196	[2699] 305 175
[10] 37,9	[144] 16 284	[389] 44 281	[631] 71 278	[859] 97 275	[1098] 124 271	[1330] 150 267	[1562] 176 265	[1783] 201 261	[1993] 225 258	[2198] 248 252	[2687] 304 231
[12] 45,4	[114] 13 341	[361] 41 338	[605] 68 334	[838] 95 332	[1075] 121 328	[1307] 148 325	[1532] 173 321	[1755] 198 318	[1965] 222 312	[2177] 246 307	[2671] 302 285
[14] 53,0	[82] 9 397	[327] 37 394	[569] 64 391	[803] 91 387	[1042] 118 384	[1273] 144 361	[1498] 169 378	[1722] 195 374	[1935] 219 370	[2147] 243 365	[2655] 300 339
Max. Continuous [15] 56,8	[66] 7 426	[302] 34 423	[550] 62 422	[785] 89 415	[1025] 116 412	[1254] 142 409	[1480] 167 405	[1704] 193 402	[1915] 216 398	[2119] 239 392	[2648] 299 367
Max. Intermittent [20] 75,7		[177] 20 565	[429] 48 560	[678] 77 556	[908] 103 553	[1143] 129 549	[1375] 155 546	[1596] 180 541	[1811] 205 536	[2017] 228 527	

[302] 34 423 } Torque [lb-in] Nm Speed RPM

T Series (158-, 185-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

157 cm³/r [9.6 in³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	Max. Continuous [2000] 138	Max. Intermittent [2500] 172
[2] 7,6	[264] 30 47	[541] 61 45	[819] 93 44	[1092] 123 42	[1357] 153 40	[1605] 181 37	[1847] 209 34	[2084] 235 30	[2311] 261 25	[1858] 210 16	
[4] 15,1	[259] 29 96	[541] 61 95	[822] 93 92	[1101] 124 91	[1373] 155 90	[1638] 185 88	[1890] 214 85	[2145] 242 82	[2383] 269 78	[2613] 295 73	[3063] 346 60
[6] 22,7	[241] 27 142	[526] 59 140	[808] 91 138	[1090] 123 136	[1368] 155 134	[1638] 185 132	[1900] 215 129	[2150] 243 125	[2399] 271 121	[2628] 297 114	[3169] 358 99
[8] 30,3	[219] 25 189	[506] 57 187	[789] 89 185	[1068] 121 183	[1348] 152 181	[1625] 184 178	[1885] 213 175	[2140] 242 172	[2388] 270 166	[2619] 296 159	[3178] 359 140
[10] 37,9	[180] 20 237	[472] 53 234	[759] 86 232	[1037] 117 230	[1319] 149 227	[1590] 180 224	[1853] 209 222	[2111] 239 218	[2355] 266 211	[2594] 293 203	[3170] 358 183
[12] 45,4	[141] 16 284	436] 49 282	[728] 82 279	[1010] 114 277	[1292] 146 274	[1561] 176 272	[1821] 206 269	[2079] 235 265	[2331] 263 257	[2573] 291 248	[3162] 357 225
[14] 53,0	[101] 11 332	[397] 45 329	[687] 78 326	[969] 109 323	[1252] 141 321	[1519] 172 319	[1778] 201 316	[2040] 230 311	[2295] 259 305	[2539] 287 296	[3147] 356 274
Max. Continuous [15] 56,8	[81] 9 355	[367] 41 353	[665] 75 350	[944] 107 347	[1231] 139 344	[1497] 169 342	[1755] 198 339	[2018] 228 334	[2273] 257 327	[2512] 284 318	[3136] 354 300
Max. Intermittent [20] 75,7		[221] 25 472	[519] 59 467	[814] 92 464	[1095] 124 462	[1368] 155 459	[1631] 184 455	[1891] 214 450	[2149] 243 443	[2396] 271 433	

195 cm³/r [11.9 in³/r]

Δ Pressure Bar [PSI]

Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1750] 121	[1800] 125	Max. Continuous [2000] 138	Max. Intermittent [2500] 172
[2] 7,6	[330] 37 38	[671] 76 36	[1016] 115 34	[1345] 152 33	[1654] 187 31	[1969] 222 28	[2242] 253 25	[2507] 283 20	[2689] 304 16	[2748] 310 14	[2973] 336 8	
[4] 15,1	[328] 37 77	[675] 76 77	[1026] 116 75	[1366] 154 73	[1692] 191 73	[2010] 227 71	[2289] 259 68	[2586] 292 65	[2799] 316 62	[2867] 324 61	[3144] 355 55	[3797] 429 40
[6] 22,7	[306] 35 115	[658] 74 113	[1011] 114 111	[1360] 154 110	[1698] 192 109	[2021] 228 107	[2324] 263 104	[2604] 294 100	[2829] 320 97	[2901] 328 95	[3178] 359 87	[3831] 433 68
[8] 30,3	[272] 31 153	[634] 72 151	[980] 111 150	[1331] 150 148	[1675] 189 146	[2003] 226 144	[2300] 260 142	[2592] 293 139	[2815] 318 134	[2888] 326 132	[3174] 359 123	[3864] 437 99
[10] 37,9	[238] 27 192	[596] 67 189	[945] 107 188	[1296] 146 186	[1637] 185 184	[1960] 221 183	[2255] 255 181	[2565] 290 176	[2786] 315 168	[2857] 323 166	[3140] 355 156	[3816] 431 133
[12] 45,4	[181] 20 230	[545] 62 228	[908] 103 226	[1260] 142 224	[1607] 182 222	[1924] 217 221	[2223] 251 219	[2529] 286 213	[2759] 312 207	[2836] 320 204	[3121] 353 192	[3807] 430 160
[14] 53,0	[154] 17 268	[500] 56 266	[860] 97 264	[1211] 137 261	[1556] 176 259	[1869] 211 259	[2175] 246 256	[2483] 281 251	[2713] 307 244	[2792] 315 242	[3080] 348 229	[3778] 427 199
Max. Continuous [15] 56,8	[140] 16 287	[465] 53 285	[832] 94 283	[1179] 133 281	[1525] 172 279	[1835] 207 278	[2144] 242 275	[2459] 278 269	[2693] 304 262	[2768] 313 260	[3061] 346 247	[3764] 425 220
Max. Intermittent [20] 75,7		[291] 33 382	[653] 74 378	[1013] 114 375	[1366] 154 373	[1689] 191 372	[1987] 225 368	[2298] 260 363	[2540] 287 356	[2622] 296 353	[2928] 331 342	

[465] 53 285 } Torque [lb-in] Nm Speed RPM

T Series (158-, 185-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

Continuous

Intermittent

244 cm³/r [14.9 in³/r]

Pressure Bar [PSI] Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1650] 114	[1800] 125	[1850] 127	Max. Continuous	Max. Intermittent
[2] 7,6	[406] 46 30	[833] 94 29	[1260] 142 27	[1655] 187 26	[2038] 230 24	[2403] 272 22	[2707] 306 17	[2597] 293 12	[2552] 288 11	[2373] 268 7	[2299] 260 6		
[4] 15,1	[404] 46 62	[843] 95 62	[1277] 144 60	[1695] 192 59	[2083] 235 59	[2468] 279 57	[2820] 319 55	[3177] 359 50	[3261] 368 49	[3509] 396 46	[3589] 406 44		[4194] 474 35
[6] 22,7	[382] 43 92	[823] 93 91	[1261] 142 90	[1687] 191 89	[2088] 236 88	[2477] 280 86	[2843] 321 82	[3196] 361 78	[3285] 371 76	[3547] 401 72	[3633] 410 71		[4290] 485 60
[8] 30,3	[341] 39 123	[787] 89 122	[1220] 138 121	[1651] 187 120	[2059] 233 119	[2454] 277 116	[2820] 319 113	[3177] 359 108	[3265] 369 106	[3530] 399 101	[3615] 408 99		[4285] 484 85
[10] 37,9	[297] 34 154	[744] 84 152	[1177] 133 151	[1611] 182 150	[2017] 228 148	[2412] 273 146	[2774] 313 143	[3151] 356 136	[3241] 366 134	[3504] 396 127	[3593] 406 125		[4269] 482 107
[12] 45,4	[225] 25 184	[687] 78 183	[1132] 128 181	[1553] 175 180	[1967] 222 179	[2360] 267 177	[2734] 309 173	[3105] 351 166	[3194] 361 163	[3466] 392 156	[3554] 402 153		[4237] 479 134
[14] 53,0	[154] 17 214	[628] 71 213	[1072] 121 212	[1498] 169 211	[1910] 216 209	[2298] 260 207	[2674] 302 202	[3052] 345 195	[3148] 356 193	[3419] 386 185	[3510] 397 182		[4226] 477 161
Max. Continuous [15] 56,8	[119] 13 229	[586] 66 228	[1035] 117 227	[1458] 165 226	[1872] 212 224	[2261] 255 222	[2637] 298 217	[3022] 341 209	[3116] 352 207	[3389] 383 200	[3488] 394 197		[4220] 477 174
Max. Intermittent [20] 75,7		[372] 42 305	[816] 92 303	[1251] 141 301	[1663] 188 300	[2067] 234 297	[2448] 277 292	[2832] 320 284	[2928] 331 281	[3214] 363 273	[3312] 374 270		

306 cm³/r [18.7 in³/r]

Pressure Bar [PSI] Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1500] 103	[1600] 110	Max. Continuous [1800] 124	Max. Intermittent
[2] 7,6	[499] 56 24	[1035] 117 23	[1560] 176 22	[2034] 230 21	[2501] 283 19	[2912] 329 16	[3239] 366 11	[2859] 323 8	[2400] 271 5		
[4] 15,1	[497] 56 49	[1052] 119 49	[1590] 180 48	[2101] 237 48	[2561] 289 47	[3023] 342 47	[3464] 391 44	[3680] 416 41	[3886] 439 38	[4221] 477 30	
[6] 22,7	[480] 54 74	[1031] 116 74	[1578] 178 72	[2096] 237 72	[2564] 290 71	[3023] 342 69	[3464] 391 64	[3689] 417 62	[3905] 441 60	[4275] 483 51	
[8] 30,3	[427] 48 99	[975] 110 98	[1520] 172 97	[2051] 232 97	[2525] 285 96	[2998] 339 94	[3448] 390 89	[3667] 414 86	[3881] 438 83	[4264] 482 73	
[10] 37,9	[370] 42 123	[930] 105 122	[1467] 166 121	[2001] 226 120	[2477] 280 120	[2955] 334 117	[3406] 385 112	[3631] 410 108	[3852] 435 104	[4264] 482 92	
[12] 45,4	[281] 32 147	[871] 98 146	[1410] 159 145	[1908] 216 145	[2400] 271 145	[2887] 326 142	[3352] 379 136	[3573] 404 131	[3790] 428 127	[4189] 473 112	
[14] 53,0	[192] 22 171	[791] 89 171	[1338] 151 170	[1851] 209 170	[2338] 264 169	[2816] 318 165	[3281] 371 159	[3511] 397 154	[3743] 423 150	[4135] 467 133	
Max. Continuous [15] 56,8	[148] 17 183	[738] 83 183	[1288] 146 182	[1803] 204 182	[2287] 258 181	[2773] 313 177	[3243] 366 171	[3475] 393 165	[3705] 419 160	[4098] 463 146	
Max. Intermittent [20] 75,7		[476] 54 243	[1020] 115 242	[1544] 174 242	[2010] 227 241	[2519] 285 238	[3010] 340 231	[3243] 366 226	[3495] 395 209		

[738] 83 183 } Torque [lb-in] Nm Speed RPM

370 cm³/r [22.6 in³/r]

Pressure Bar [PSI] Continuous

Flow LPM [GPM]	[200] 14	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1300] 90	Max. Continuous [1500] 103	Max. Intermittent
[2] 7,6	[590] 67 20	[1237] 140 19	[1858] 210 18	[2406] 272 17	[2953] 334 15	[3388] 383 12	[3586] 405 11		
[4] 15,1	[588] 66 41	[1263] 143 41	[1906] 215 40	[2506] 283 40	[3029] 342 39	[3557] 402 38	[3811] 431 37	[4252] 480 36	
[6] 22,7	[580] 66 61	[1245] 141 60	[1899] 215 60	[2506] 283 59	[3029] 342 58	[3544] 400 57	[3788] 428 56	[4300] 486 54	
[8] 30,3	[514] 58 82	[1164] 132 81	[1824] 206 80	[2452] 277 79	[2975] 336 78	[3518] 397 77	[3783] 427 77	[4284] 484 75	
[10] 37,9	[444] 50 102	[1119] 126 102	[1759] 199 101	[2391] 270 101	[2928] 331 100	[3479] 393 97	[3750] 424 96	[4275] 483 93	
[12] 45,4	[337] 38 122	[1062] 120 121	[1690] 191 120	[2256] 255 119	[2813] 318 119	[3393] 383 118	[3685] 416 116	[4273] 483 112	
[14] 53,0	[231] 26 142	[958] 108 141	[1608] 182 140	[2201] 249 139	[2748] 310 138	[3319] 375 137	[3610] 408 134	[4198] 474 129	
Max. Continuous [15] 56,8	[178] 20 152	[896] 101 152	[1543] 174 151	[2147] 243 150	[2683] 303 149	[3272] 370 147	[3572] 404 146	[4187] 473 140	
Max. Intermittent [20] 75,7		[587] 66 202	[1228] 139 201	[1833] 207 201	[2331] 263 200	[2948] 333 198	[3273] 370 196		

T Series (158-)

Dimensions

(Refer to pages B-4-19 thru B-4-22 for shaft and port dimensions.)

Ports

7/8 -14 INF O-Ring Ports (2)

1/2 -14 NPTF (2)

G 1/2 BSP (2)

Manifold Ports (5/16-18 mounting threads

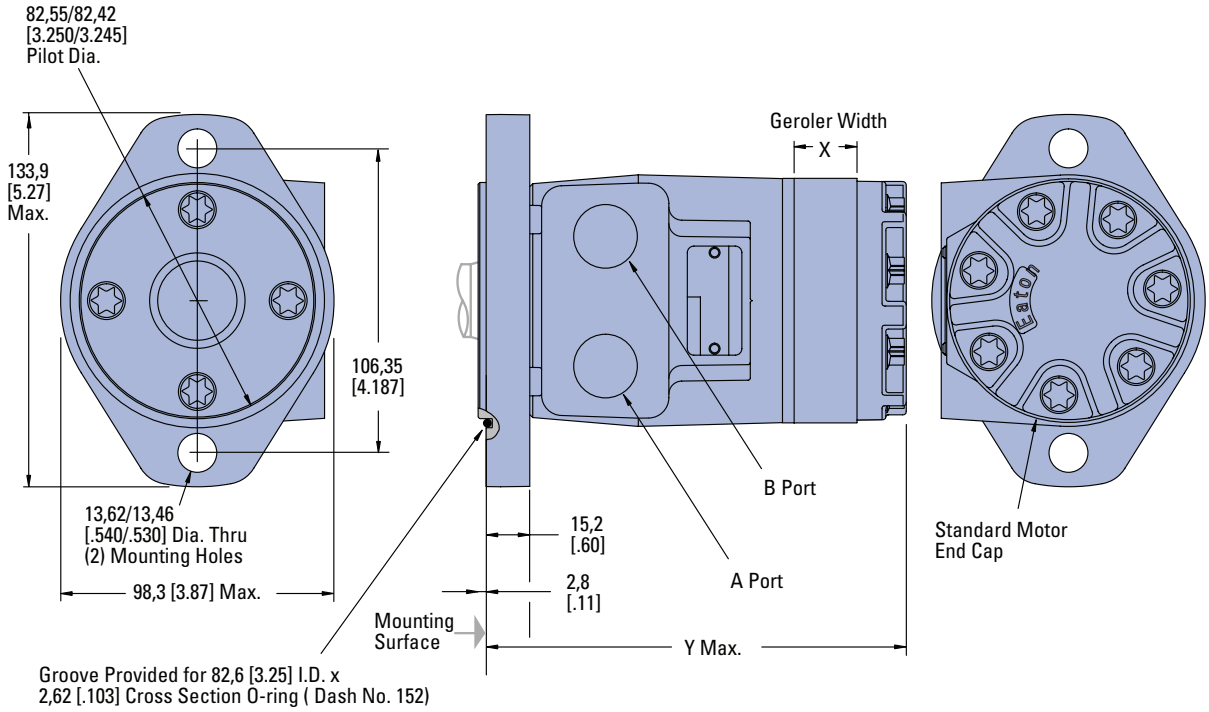
Standard Rotation Viewed from Shaft End

Port A Pressurized — CW
Port B Pressurized — CCW

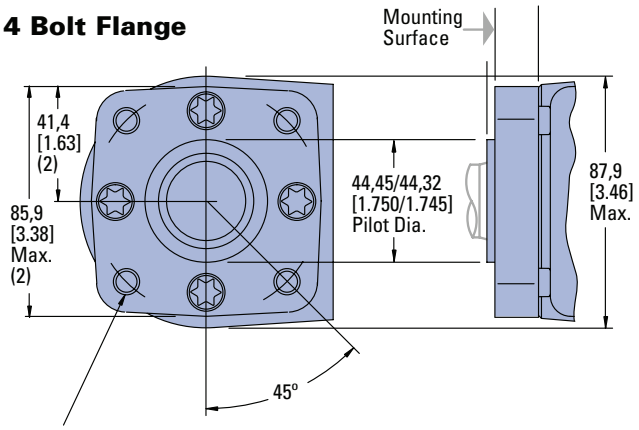
Note:

Mounting Surface Flatness Requirement is ▱,13 mm [.005 inch] Max.

2 Bolt Flange



4 Bolt Flange



2 AND 4 BOLT FLANGE PORT DIMENSIONS

Displacement cm³/r [in³/r]	X mm [inch]	Y mm [inch]
36 [2.2]	6,6 [.26]	132,2 [5.21]
49 [3.0]	9,1 [.36]	134,6 [5.30]
66 [4.0]	12,2 [.48]	137,7 [5.42]
80 [4.9]	14,7 [.58]	140,3 [5.53]
102 [6.2]	18,5 [.73]	144,3 [5.68]
131 [8.0]	24,1 [.95]	149,6 [5.89]
157 [9.6]	29,0 [1.14]	154,5 [6.09]
195 [11.9]	35,6 [1.40]	161,3 [6.35]
244 [14.9]	44,7 [1.76]	170,3 [6.71]
306 [18.7]	56,1 [2.21]	181,6 [7.16]
370 [22.6]	72,1 [2.84]	197,9 [7.79]

T Series (158-)

Product Numbers

Use digit prefix—158- plus four digit number from charts for complete product number—Example: 158-1067.

Orders will not be accepted without the three-digit prefix.

Standard

MOUNTING	SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER										
			36 [2.2]	49 [3.0]	66 [4.0]	80 [4.9]	102 [6.2]	131 [8.0]	157 [9.6]	195 [11.9]	244 [14.9]	306 [18.7]	370 [22.6]
2 Bolt Flange	1 in. Straight w/Woodruff Key	7/8 -14 O-Ring	158- —	—	-1537	-1034	-1035	-1538	-1036	-1037	-1038	-1039	-1040
		1/2 NPTF	158- —	—	-1540	-1026	-1027	-1541	-1028	-1029	-1030	-1031	-1032
		Manifold*	158- —	—	-1543	-1042	-1043	-1544	-1044	-1045	-1046	-1047	-1048
	1 in. SAE 6B Splined	7/8 -14 O-Ring	158- —	—	-1552	-1082	-1083	-1553	-1084	-1085	-1086	-1087	-1088
		1/2 NPTF	158- —	—	-1555	-1074	-1075	-1556	-1076	-1077	-1078	-1079	-1080
		Manifold*	158- —	—	-1558	-1090	-1091	-1559	-1092	-1093	-1094	-1095	-1096
4 Bolt Flange	1 in. Straight w/Woodruff Key	7/8 -14 O-Ring	158- —	—	-1570	-1010	-1011	-1571	-1012	-1013	-1014	-1015	-1016
		1/2 NPTF	158- —	—	-1573	-1002	-1003	-1574	-1004	-1005	-1006	-1007	-1008
		Manifold*	158- —	—	-1576	-1018	-1019	-1577	-1020	-1021	-1022	-1023	-1024
	1 in. SAE 6B Splined	7/8 -14 O-Ring	158- —	—	-1579	-1058	-1059	-1580	-1060	-1061	-1062	-1063	-1064
		1/2 NPTF	158- —	—	-1582	-1050	-1051	-1583	-1052	-1053	-1054	-1055	-1056
		Manifold*	158- —	—	-1585	-1066	-1067	-1586	-1068	-1069	-1070	-1071	-1072

158-1067

T Series Motors with Corrosion Protection

MOUNTING	SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER										
			36 [2.2]	49 [3.0]	66 [4.0]	80 [4.9]	102 [6.2]	131 [8.0]	157 [9.6]	195 [11.9]	244 [14.9]	306 [18.7]	370 [22.6]
2 Bolt Flange	1 in. Straight w/ Woodruff Key	7/8 -14 O-Ring	158- —	—	—	1645	—	—	—	—	-1649	—	-1650
4 Bolt Flange		1/2 NPTF	158- —	—	—	—	—	—	—	—	-1620	—	-1621

158-1620

T Series Motors with Low Speed Valving

MOUNTING	SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER										
			36 [2.2]	49 [3.0]	66 [4.0]	80 [4.9]	102 [6.2]	131 [8.0]	157 [9.6]	195 [11.9]	244 [14.9]	306 [18.7]	370 [22.6]
2 Bolt Flange	1 in. Straight w/Woodruff Key	7/8 -14 O-Ring	158- —	—	—	-1427	-1428	—	—	-1430	-1431	-1432	-1433
		1/2 NPTF	158- —	—	—	-1419	-1420	—	—	-1422	-1423	-1424	-1425
		Manifold*	158- —	—	—	—	—	—	—	—	—	—	—
	1 in. SAE 6B Splined	7/8 -14 O-Ring	158- —	—	—	-1525	—	—	—	—	-1675	—	—
		1/2 NPTF	158- —	—	—	—	-1634	—	—	—	—	—	—
4 Bolt Flange	1 in. Straight w/ Woodruff Key	Manifold*	158- —	—	—	-1522	-2678	—	—	—	—	—	-1527
		7/8 -14 O-Ring	158- —	—	-1625	-1410	-1411	-1626	-1412	-1413	-1414	-1415	-1416
		1/2 NPTF	158- —	—	-1644	-1402	-1403	—	-1404	-1405	-1406	-1407	-1408

158-1403

*Manifold product numbers shown are for motors with four 5/16 -18 port face mounting threads. Manifold, manifold mounting O-Rings and bolts are NOT included.

For T Series Motors with a configuration Not Shown in the charts above: Use the model code system on page B-4-10 to specify the product in detail.

T Series (158-)

Model Code

The following 25-digit coding system has been developed to identify all of the configuration options for the T motor. Use this model code to specify a motor with the desired features. All 25-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.

M	T 0	* * *	* *	* *	* *	*	*	*	* *	*	0	* *	*	*	0	A
1	2 3	4 5 6	7 8	9 10	11 12	13	14	15	16 17	18	19	20 21	22	23	24	25

1 Product

M – Motor

2, 3 Product Series

T0 – T Series

4, 5, 6 Displacement cm³/r [in³/r]

022 – 35 [2.2]

030 – 49 [3.0]

040 – 65 [4.0]

049 – 80 [4.9]

062 – 102 [6.2]

080 – 131 [8.0]

096 – 158 [9.6]

119 – 195 [11.9]

149 – 244 [14.9]

187 – 306 [18.7]

226 – 370 [22.6]

7, 8 Mounting Type

AA – 2 Bolt (Standard) 82,6 [3.248] Dia. and 3,05 [.120] pilot, 13,59 [.535] Dia. Mounting Holes 106,35 [4.187] Dia. B.C.

BA – 4 Bolt (Standard) 44,40 [1.748] Dia. x 3,05 [.120] pilot, .375-16 UNC-2B Mounting Holes 82,55 [3.250] Dia. B.C.

CA – 2 Bolt (Standard) 82,50 [3.248] Dia. x 6,10 [.240] pilot, 10,41 [.410] Dia. Mounting Holes 106,35 [4.187] Dia. B.C. (SAE A)

DD – 2 Bolt (Std.) 101,60 [4.000] Dia. x 6.10 [.240] pilot, 14,35 [.565] Dia. Mounting Holes 146,05 [5.750] Dia. B.C. (SAE B) (Ductile)

EA – 4 Bolt Magneto 82,50 [3.248] Dia. x 3,05 [.120] Pilot, 13,59 [.535] Dia. Mounting Holes 106,35 [4.187] Dia. B.C.

FA – 4 Bolt (Standard) 44,40 [1.748] Dia. x 3,05 [.120] pilot, M10 x 1.5-6H Mounting Holes on 82,55 [3.250] Dia. B.C.

9, 10 Output Shaft Description

01 – 25,4 [1.00] Dia. Straight, Woodruff Key, .250-20 UNC-2B Hole in Shaft End

02 – 25,4 [1.00] Dia. SAE 6B Spline, .25-20 UNC-2B Hole in Shaft End

07 – 25,4 [1.00] Dia. Straight, 8,03 [.316] Dia. Crosshole 11,2 [.44] from End, 5,6 [.22] Extra Length

08 – 25,4 [1.00] Dia. Straight, 10,31 [.406] Dia. Crosshole 15,7 [.62] from End, .250-20 UNC-2B Hole in Shaft End

16 – 22,22 [.875] Dia. SAE 13 Tooth Spline (SAE B)

17 – 22,22 [.875] Straight Dia. 6,4 [2.5] x 19,0 [.75] Square Key (SAE B)

18 – 25,4 [1.00] Dia. Tapered, Woodruff Key and Nut, 34,92 [1.375] Taper Length

24 – 25.00 [.984] Dia. Straight, 8.0 [.315] Key, MB x 1.25-6H Hole in Shaft End

11, 12 Port Type

AA – .875-14 UNF-2B SAE O-Ring Ports

AB – .500-14 NPTF Dryseal Pipe Thread Ports

AC – Manifold (.3125-18 UNC-2B Mounting Holes)

AD – Manifold Ports (MB x 1.25-6H Mounting Holes)

AF – G 1/2 BSP Straight Thread Ports

13 Case Flow Options

0 – None Specified

1 – .4375-20 UNF-2B SAE O-Ring Port (End Cap)

2 – G 1/4 BSP Straight Thread Port (End Cap)

A – Internal Check Valves

14 Geroler Options

0 – None

A – Free Running

15 Shaft Options

0 – None

N – Electroless Nickel Plated

16, 17 Seal Options

00 – Standard Seals

02 – Seal Guard

03 – Vitron Seals

04 – Vitron Shaft Seal

05 – Vented Two-Stage Seal

07 – High Pressure Shaft Seal

18 Speed Sensor Options

0 – None

A – 12 mm Digital Speed Pickup (15 Pulse) without Lead Wire

B – Magnetic Speed Pickup (60 Pulse by Quadrature), No Lead Wire with M12 Connector

(A=Power, B=Common, C=Signal)

19 Valve Options

A – None

20, 21 Special Features (Hardware)

00 – None Specified

AB – Low Speed Valving

SS – Stainless Steel Flange Bolts

22 Special Assembly Instructions

0 – None

A – Reverse Rotation

2 – Flange Rotation 90°

23 Paint/Packaging Options

0 – No Paint

A – Painted Low Gloss Black

D – Environmental Coated Gloss White

24 Customer ID/ Nameplate Options

A – None Specified

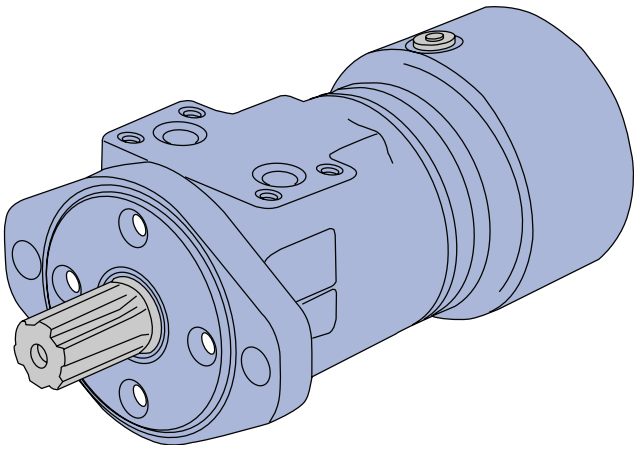
25 Design Code

A – One (1)

Feature in **bold** are preferred and allow for shorter lead time.

T Series with Parking Brake (185-)

Highlights



Description

Eaton's latest offering in LSHT motor technology is the new T Series Motor with Parking Brake.

T Series Motor with Parking Brake utilizes brake pads that rotate at 6 times the speed of the output shaft, thereby giving the brake a 6-to-1 mechanical advantage. The T Series Motor with Parking Brake utilizes the same Geroler, and Spool Valve technologies as the standard Char-Lynn motors. Therefore, in addition to providing dependable load-holding capability, T Series Motor with Parking Brake provides the same smooth, reliable operation, with similar performance, as the T Series Motor.

Specifications

Geroler Element	11 Displacements
Flow l/min [GPM]	55 [15] Continuous***
	75 [20] Intermittent**
Speed	Up to 1055 RPM
Pressure bar [PSI]	155 [2250] Cont.***
	190 [2750] Inter.**
Torque Nm [lb-in]	441 [3905] Cont.***
	486 [4300] Inter.**

*** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.
** Intermittent— (Inter.) Intermittent operation, 10% of every minute.

Features

- Integrated, Compact, Patented Design
- Capability of Combining 4 inventory items into a single assembly (motor, brake, counter-balance valve, brake release line)
- Rear-mounted integrated brake with 6:1 torque advantage
- Access port for manual brake release (for over-riding brake in the event of loss of release pressure.)

Benefits

- Cost-effective Packaged System Solution
- Simplifies ordering and inventory requirements
- Reduces assembly labor
- Design Flexibility
- Wet brake is environmentally protected and provides long life

Applications

- Truck-Mounted Equipment (boom rotate and winch)
- Conveyors – Positioners – Indexers
- Marine Cranes (boom rotate and winch)
- Fishing Winches
- Recycling and Refuse Equipment
- Vehicle Recovery Winches
- Mining Equipment
- Specialty Utility Vehicles/ Machines
- Forestry Grapples
- Agricultural Equipment
- Railroad Equipment
- Airport Support Vehicles
- Lawn & Turf Equipment
- Anywhere Load-Holding is Needed in a Low-Speed High-Torque Drive System

Crane and winches

Boom Lift (Swing)

Maintenance Equipment

T Series with Parking Brake (185-)

Application Information

Principle of Operation

The wet brake is a spring-applied / pressure release design. Load-holding is applied by a mechanical spring and released by hydraulic pressure. The spring force holds the brake on when hydraulic pressure is absent.

Release Pressure

Release pressure is defined as the amount of pressure required to fully release the brake. The brake pressure cavity is common (shared) with the motor case. As a result, maximum release pressure is constrained by the motor case-pressure capability. The T Series Motor with Parking Brake incorporates a shaft seal capable up to 1500 psi (see page B-4-15). However, seal life is reduced at higher case pressure.

Residual Pressure

Residual pressure is the pressure trapped in the system by restrictions or long return lines.

Residual pressure in the motor case will lower the rated load holding torque of the brake.

Therefore, special attention needs to be given when applying this product. Keep in mind that long return lines create higher pressure that will reduce brake holding torque. In applications with high system pressures, the use of a pressure reducing valve to limit case and release pressure is recommended.

Holding Torque and Motor Output Torque

Holding torque is based on grade holding requirements for a vehicle or other load holding requirements in the application. System pressure and motor displacement are the factors in determining motor output torque. Motor displacement, measured in cubic centimeters or cubic inches, is the volume of fluid required to make one revolution. Motor output torque is the rotary force and is usually measured in inch pounds, newton meters or foot pounds. Maximum motor torque depends on pressure and motor displacement. Both output shaft size and shaft type can also affect motor torque. The T Series Motor with Parking Brake load holding capacity is factory set to match any limiting factor in each specific motor configuration (e.g. displacement, output shaft, etc).

Note:

Eaton Corporation does not approve any products for customer applications. It is the sole responsibility of the customer to qualify and verify the correct operation of products in their systems.

Note:

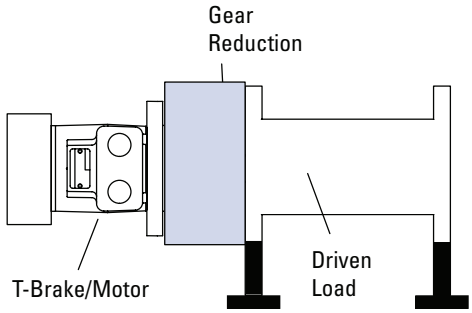
Special attention should be given to system back pressure. System back pressure directly affects brake release pressure and can cause the brake to release at undesired conditions.

Note:

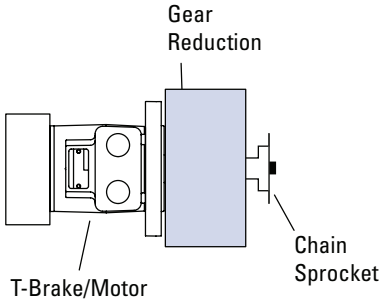
The T Series with parking brake is not compatible with water based fluids.

Typical Applications

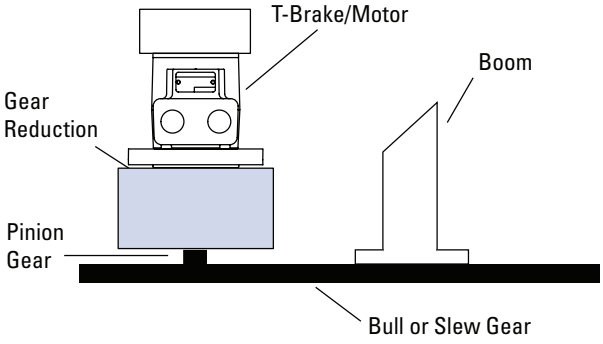
Winch



Machine Drive

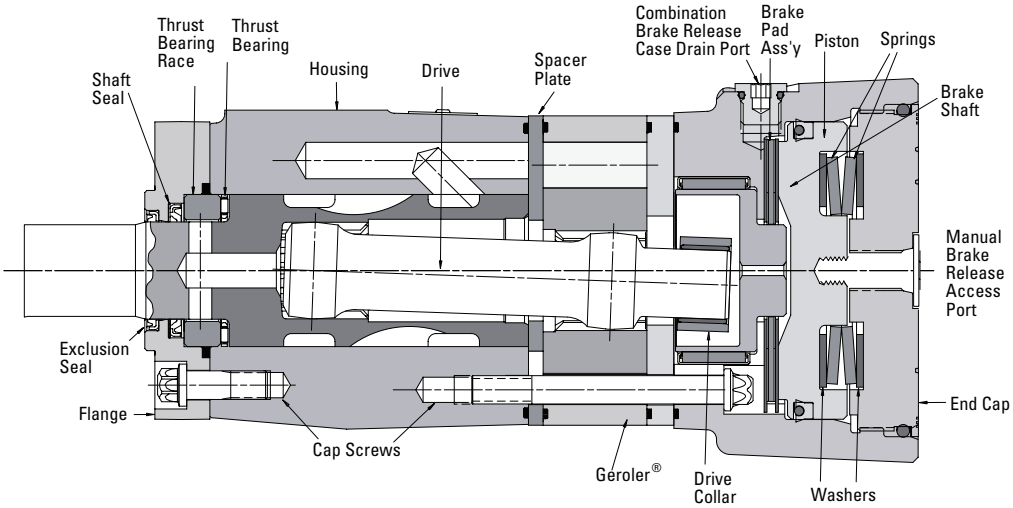


Swing Boom



T Series with Parking Brake (185-)

Specifications



SPECIFICATION DATA — T SERIES WITH PARKING BRAKE MOTORS

Displ. cm³/r [in³/r]		36 [2.2]	49 [3.0]	66 [4.0]	80 [4.9]	102 [6.2]	131 [8.0]	157 [9.6]	195 [11.9]	244 [14.9]	306 [18.7]	370 [22.6]
Max. Speed (RPM) @ Continuous Flow		1021	906	849	694	550	426	355	287	229	183	152
Flow LPM [GPM]	Continuous	38 [10]	45 [12]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]	57 [15]
	Intermittent	38 [10]	57 [15]	68 [18]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]
Torque Nm [lb-in]	Continuous	76 [672]	105 [928]	138 [1222	174 [1541]	219 [1936]	251 [2226]	297 [2628]	359 [3178]	410 [3633]	441 [3905]	430 [3811]
	Intermittent **	93 [824]	118 [1131]	168 [1488]	212 [1872]	264 [2339]	307 [2718]	359 [3178]	437 [3864]	485 [4290]	483 [4275]	486 [4300]
Pressure Δ Bar [Δ PSI]	Continuous *	155 [2250]	155 [2250]	155 [2250]	155 [2250]	155 [2250]	138 [2000]	138 [2000]	138 [2000]	127 [1850]	110 [1600]	90 [1300]
	Intermittent * **	190 [2750]	190 [2750]	190 [2750]	190 [2750]	190 [2750]	172 [2500]	172 [2500]	172 [2500]	155 [2250]	124 [1800]	103 [1500]

Note:

See page B-4-2 for additional motor specification notes and definitions. The T Series with Parking Brake performance is similar to the standard T Series motor. High speed conditions may reduce performance on T Series with Parking Brake.

T SERIES BRAKE HOLDING TORQUE SETTINGS:

Shaft Code	Output Shaft Description [in³/r]	2.2	3.0	4.0	4.9	6.2	8.0	9.6	11.9	14.9	18.7	22.6
18	1 Tapered w/key and nut	2,000	2,000	2,000	3,500	3,500	3,500	5,000	5,000	5,000	5,000	5,000
02	1 SAE 6B Splined	2,000	2,000	2,000	3,500	3,500	3,500	5,000	5,000	5,000	5,000	5,000
24	25mm Straight w/key	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
01	1 Straight w/key	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
07	1 Straight w/.31 dia. crosshole	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
08	1 Straight w/.40 dia. crosshole	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
16	7/8 SAE B 13T Splined	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
17	7/8 SAE B Straight w/key	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000

in-lbs Full Capacity Brake

in-lbs Limited Capacity Brake

Note:

The factory setting values are used for each motor based on motor displacement and shaft type.

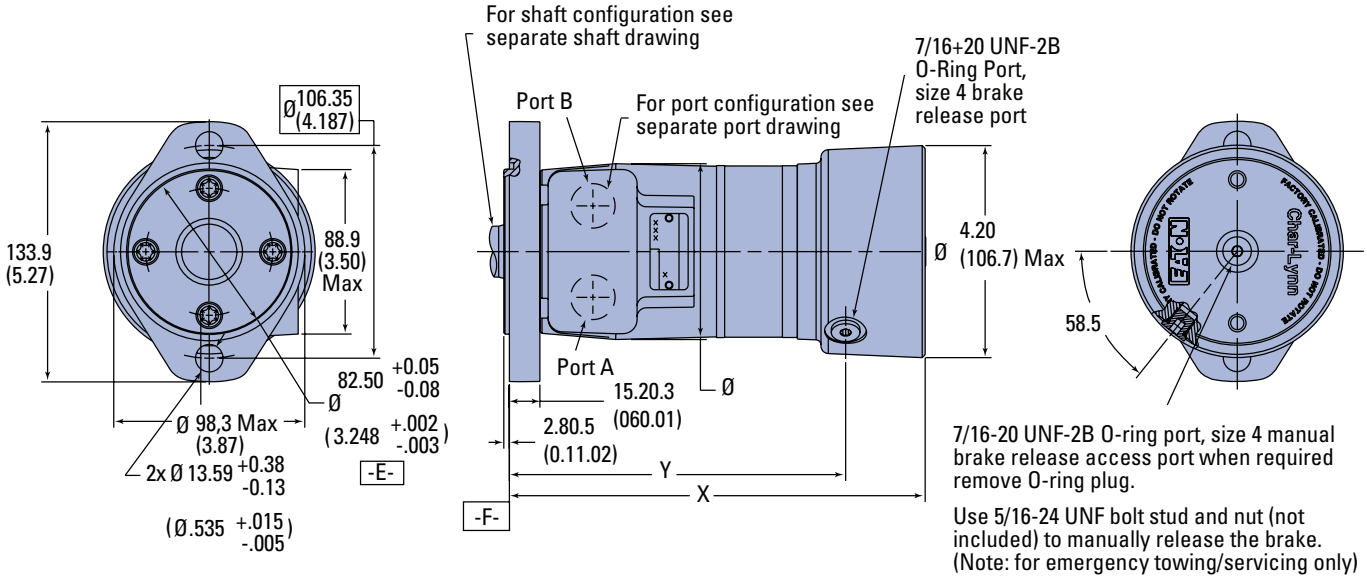
T Series with Parking Brake (185-)

Dimensions

(Refer to pages B-4-19 thru B-4-22 for shaft and port dimensions.)

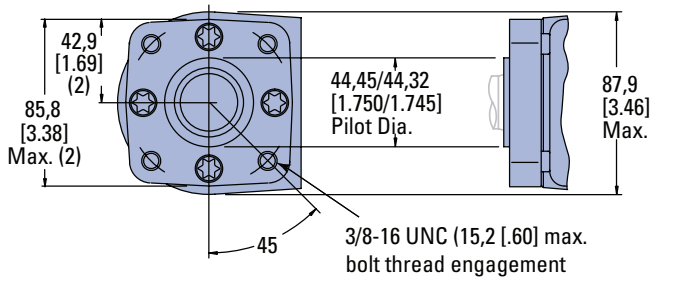
Standard Rotation Viewed from Shaft End

Port A Pressurized — CW
Port B Pressurized — CCW



7/16-20 UNF-2B O-ring port, size 4 manual brake release access port when required remove O-ring plug.

Use 5/16-24 UNF bolt stud and nut (not included) to manually release the brake. (Note: for emergency towing/servicing only)



T-SERIES WITH PARKING BRAKE DIMENSIONS

Displacement cm^3/r [in^3/r]	X mm [inch]	Y mm [inch]
02	190.2 [7.49]	143.9±0.9 [5.66±0.3]
A2	190.8 [7.51]	144.5±0.9 [5.69±0.3]
03	192.5 [7.58]	146.3±0.9 [5.76±0.3]
A3	194.3 [7.65]	148.1±0.9 [5.83±0.3]
04	195.6 [7.70]	149.3±0.9 [5.88±0.3]
05	198.4 [7.81]	152.0±0.9 [5.98±0.3]
06	202.2 [7.96]	155.9±0.9 [6.14±0.3]
08	207.5 [8.17]	161.3±0.9 [6.35±0.3]
10	212.6 [8.37]	166.2±0.9 [6.54±0.3]
12	219.2 [8.63]	172.9±0.9 [6.81±0.3]
15	228.3 [8.99]	181.9±0.9 [7.16±0.3]
19	239.5 [9.43]	193.3±0.9 [7.61±0.3]
23	251.2 [9.89]	205.0±0.9 [8.07±0.3]

Note:

Standard Rotation
When facing shaft end of motor shaft to rotate clockwise when port "A" is pressurized, counterclockwise when port "B" is pressurized

Reverse Rotation
When facing shaft end of motor shaft will rotate clockwise when port "B" is pressurized, counterclockwise when port "A" is pressurized

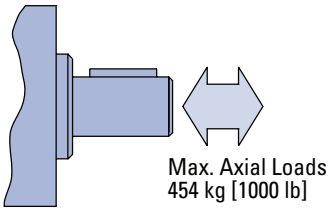
T Series with Parking Brake (185-)

Brake Release and Motor Case Pressure

The T Series Motor with Parking Brake is durable and has long life as long as the recommended case pressure is not exceeded. Allowable case pressure is highest at low shaft speeds.

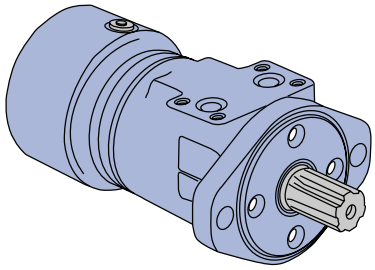
Motor life will be shortened if case pressure exceeds recommended ratings (acceptability may vary with application).

Refer to the Case Pressure/ Shaft Seal chart below. This chart is based on case pressure and motor shaft speed. A minimum release pressure of 17 Bar [250 PSI] must be maintained to fully release the brake.

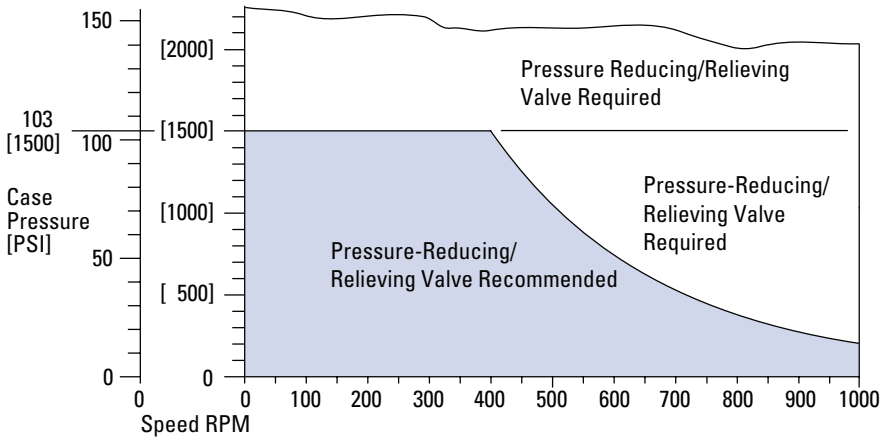


$P_C \approx .6\ DP + P_2$

P_C = Case Pressure
P_1 = Inlet Line Pressure
P_2 = Back Pressure
$DP = P_1 - P_2$



Case Pressure/Shaft Seal



T Series with Parking Brake (185-)

Product Numbers

Use digit prefix — 185 plus four digit number from charts for complete product number — Example 185-2068.

Orders will not be accepted without three digit prefix.

Standard Valving

MOUNTING	SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER									
			3.0	4.0	4.9	6.2	8.0	9.6	11.9	14.9	18.7	22.6
2-Bolt	1 Keyed	7/8-14 O-Ring Manifold	185-2000 185-2010	2001 2011	2002 2012	2003 2013	2004 2014	2005 2015	2006 2016	2007 2017	2008 2018	2009 2019
	6B Splined	7/8-14 O-Ring Manifold	185-2020 185-2030	2021 2031	2022 2032	2023 2033	2024 2034	2025 2035	2026 2036	2027 2037	2028 2038	2029 2039
	13T Splined 16/32 pitch	7/8-14 O-Ring Manifold	185-2040 185-2050	2041 2051	2042 2052	2043 2053	2044 2054	2045 2055	2046 2056	2047 2057	2048 2058	2049 2059
4-Bolt	1 Keyed	7/8-14 O-Ring Manifold	185-2060 185-2070	2061 2071	2062 2072	2063 2073	2064 2074	2065 2075	2066 2076	2067 2077	2068 2078	2069 2079
	6B Splined	7/8-14 O-Ring Manifold	185-2080 185-2090	2081 2091	2082 2092	2083 2093	2084 2094	2085 2095	2086 2096	2087 2097	2088 2098	2089 2099
	13T Splined 16/32 pitch	7/8-14 O-Ring Manifold	185-2100 185-2110	2101 2111	2102 2112	2103 2113	2104 2114	2105 2115	2106 2116	2107 2117	2108 2118	2109 2119
2-Bolt SAE B	1 Keyed	7/8-14 O-Ring Manifold	185-2120 185-2130	2121 2131	2122 2132	2123 2133	2124 2134	2125 2135	2126 2136	2127 2137	2128 2138	2129 2139
	6B Splined	7/8-14 O-Ring Manifold	185-2140 185-2150	2141 2151	2142 2152	2143 2153	2144 2154	2145 2155	2146 2156	2147 2157	2148 2158	2149 2159
	13T Splined 16/32 pitch	7/8-14 O-Ring Manifold	185-2160 185-2170	2161 2171	2162 2172	2163 2173	2164 2174	2165 2175	2166 2176	2167 2177	2168 2178	2169 2179

Low Speed Valving

MOUNTING	SHAFT	PORT SIZE	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER									
			3.0	4.0	4.9	6.2	8.0	9.6	11.9	14.9	18.7	22.6
2-Bolt	1 Keyed	7/8-14 O-Ring Manifold	185-2180 185-2190	2181 2191	2182 2192	2183 2193	2184 2194	2185 2195	2186 2196	2187 2197	2188 2198	2189 2199
	6B Splined	7/8-14 O-Ring Manifold	185-2200 185-2210	2201 2211	2202 2212	2203 2213	2204 2214	2205 2215	2206 2216	2207 2217	2208 2218	2209 2219
	13T Splined 16/32 pitch	7/8-14 O-Ring Manifold	185-2220 185-2230	2221 2231	2222 2232	2223 2233	2224 2234	2225 2235	2226 2236	2227 2237	2228 2238	2229 223
4-Bolt	1 Keyed	7/8-14 O-Ring Manifold	185-2240 185-2250	2241 2251	2242 2252	2243 2253	2244 2254	2245 2255	2246 2256	2247 2257	2248 2258	2249 2259
	6B Splined	7/8-14 O-Ring Manifold	185-2260 185-2270	2261 2271	2262 2272	2263 2273	2264 2274	2265 2275	2266 2276	2267 2277	2268 2278	2269 2279
	13T Splined 16/32 pitch	7/8-14 O-Ring Manifold	185-2280 185-2290	2281 2291	2282 2292	2283 2293	2284 2294	2285 2295	2286 2296	2287 2297	2288 2298	2289 2299
2-Bolt SAE B	1 Keyed	7/8-14 O-Ring Manifold	185-2300 185-2310	2301 2311	2302 2312	2303 2313	2304 2314	2305 2315	2306 2316	2307 2317	2308 2318	2309 2319
	6B Splined	7/8-14 O-Ring Manifold	185-2320 185-2330	2321 2331	2322 2332	2323 2333	2324 2334	2325 2335	2326 2336	2327 2337	2328 2338	2329 2339
	13T Splined 16/32 pitch	7/8-14 O-Ring Manifold	185-2340 185-2350	2341 2351	2342 2352	2343 2353	2344 2354	2345 2355	2346 2356	2347 2357	2348 2358	2349 2359

185-2357

Motors with the low speed valving option enable very smooth low speed operation while maintaining high torque.

Designed to run continuously at up to 200 RPM at standard rated pressures and reduced flows, this option provides smooth operation at low speeds. Furthermore, they resist slippage and have more momentary load holding ability than the standard motors.

Motors with this valving are not intended for low pressure applications (41 Bar [600 PSI] Minimum).

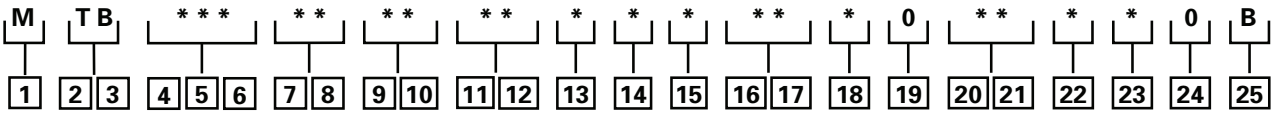
Shaft side / radial load ratings are not affected by this valving.

For a T Series motor with parking brake configuration not shown in the charts above use the model code system on page B-4-17 to specify the product in detail.

T Series with Parking Brake (185-)

Model Code

The following 25-digit coding system has been developed to identify all of the configuration options for the T Series Motor with Parking Brake. Use this model code to specify a motor with the desired features. All 25-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.



1 Product

M – Motor

2, 3 Series

T B – T Series Motor with Parking Brake

4, 5, 6 Displacement cm^3/r [in^3/r]

022 – 36 [2.2]

030 – 49 [3.0]

040 – 66 [4.0]

049 – 80 [4.9]

062 – 102 [6.2]

080 – 131 [8.0]

096 – 157 [9.6]

119 – 195 [11.9]

149 – 244 [14.9]

187 – 306 [18.7]

226 – 370 [22.6]

7, 8 Mounting Type

AA – 2 Bolt (Standard) 82,5 [3.248] Dia. and 3,05 [.120] pilot, 13,59 [.535] Dia. Mounting Holes 106,35 [4.187] Dia. B.C.

BA – 4 Bolt (Standard) 44,40 [1.748] Dia. x 3,05 [.120] pilot, .375-16 UNC-2B Mounting Holes 82,55 [3.250] Dia. B.C.

CA – 2 Bolt (Standard) 82,50 [3.248] Dia. x 6,10 [.240] pilot, 10,41 [.410] Dia. Mounting Holes 106,35 [4.187] Dia. B.C. (SAE A)

DA – 2 Bolt (Std.) 101,60 [4.000] Dia. x 6.10 [.240] pilot, 14,35 [.565] Dia. Mounting Holes 146,05 [5.750] Dia. B.C. (SAE B)

EA – 4 Bolt Magneto 82,50 [3.248] Dia. x 3,05 [.120] Pilot, 13,59 [.535] Dia. Mounting Holes 106,35 [4.187] Dia. B.C.

FA – 4 Bolt (Standard) 44,40 [1.748] Dia. x 3,05 [.120] pilot, M10 x 1.5-6H Mounting Holes on 82,55 [3.250] Dia. B.C.

9, 10 Output Shaft Description

01 – 25,4 [1.00] Dia. Straight, Woodruff Key, .250-20 UNC-2B Hole in Shaft End

02 – 25,4 [1.00] Dia. SAE 6B Spline, .25-20 UNC-2B Hole in Shaft End

16 – SAE 13 Tooth Spline, 16/32 Pitch, 21,74 (.856) Dia. (SAE B)

18 – 25,4 [1.00] Dia. Tapered, Woodruff Key and Nut, 34,92 [1.375] Taper Length

24 – 25.00 [.984] Dia. Straight, 8.0 [.315] Key, MB x 1.25-6H Hole in Shaft End

11, 12 Port Type

AA – .875-14 UNF-2B SAE O-Ring Ports

AB – .500-14 NPTF Dryseal Pipe Thread Ports

AC – Manifold (.3125-18 UNC-2B Mounting Holes)

AD – Manifold Ports (MB x 1.25-6H Mounting Holes)

13 Case Flow Options

0 – None Specified

3 – Manifold Case Drain

14 Geroler Options

A – Standard

B – Free Running

15 Shaft Options

0 – None

N – Electroless Nickel Plated

16, 17 Seal Options

00 – Standard Seals

03 – Vitron Seals

05 – Vented Two-Stage Seal

07 – High Pressure Shaft Seal

18 Speed Sensor Options

0 – None

A – 12 mm Digital Speed Pickup (15 Pulse) without Lead Wire

(A=Power, B=Common, C=Signal)

19 Valve Options

A – None

20, 21 Special Features (Hardware)

00 – None Specified

AB – Low Speed Valving

22 Special Assembly Instructions

0 – None

2 – Flange Rotation 90°

23 Paint/Packaging Options

0 – No Paint

A – Painted Low Gloss Black

24 Customer ID/ Nameplate Options

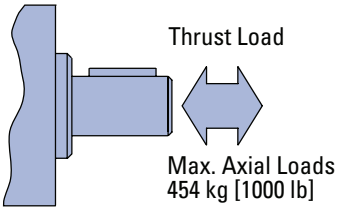
0 – None Specified

25 Design Code

B – Two (2)

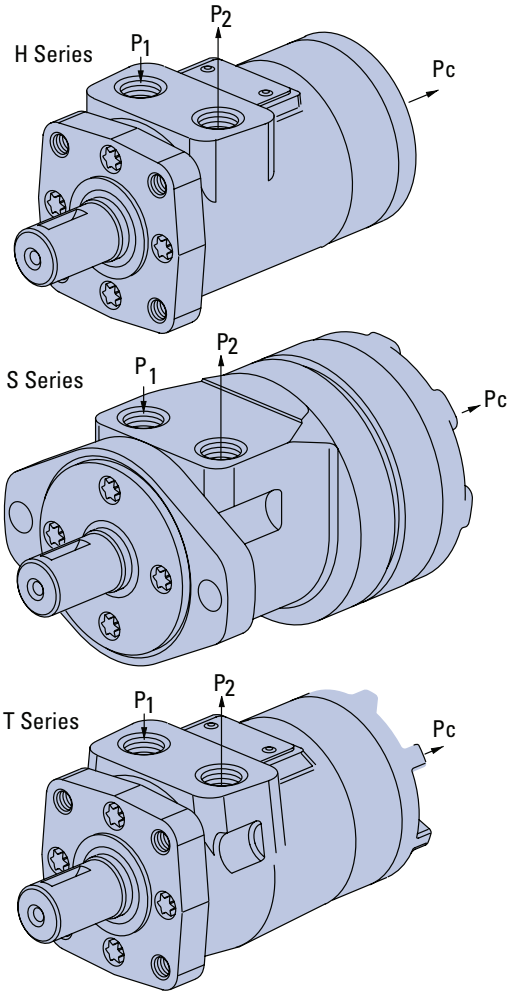
Case Pressure and Case Drain — H, S, and T Series

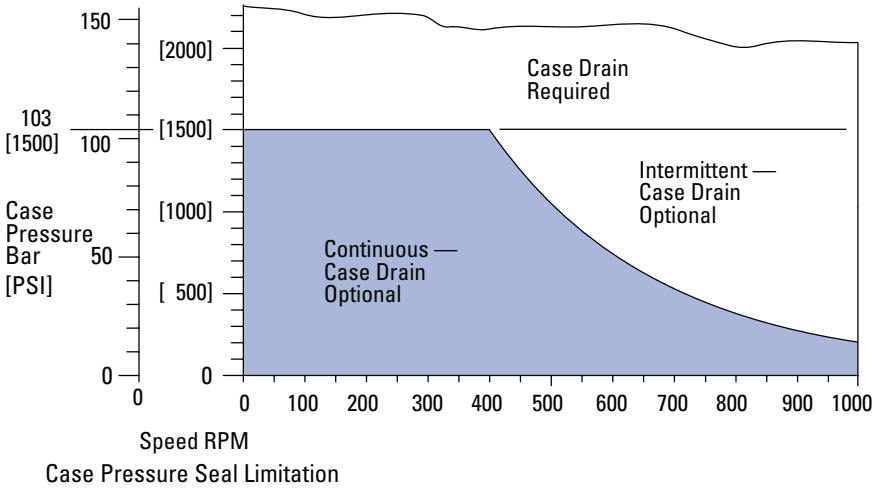
Char-Lynn H Series, S Series and T Series motors are durable and have long life as long as the recommended case pressure is not exceeded. Allowable case pressure is highest at low shaft speeds. Consequently, motor life will be shortened if case pressure exceeds these ratings (acceptability may vary with application). Determine if an external case drain is required from the case pressure seal limitation chart below — chart based on case pressure and shaft speed. If a case drain line is needed, connect drain line to assure that the motor will always remain full of fluid. A pressure restriction should be added to the case drain line, during which a motor case pressure of 3,5 Bar [50 PSI] is maintained.



$P_C \approx .6 \, ?P + P_2$

P_C = Case Pressure
P_1 = Inlet Line Pressure
P_2 = Back Pressure
$?P = P_1 - P_2$





Case Pressure Seal Limitation

H, S and T Series (101-, 103-, 158-, 185-)

Side Load Capacity

The hydrodynamic bearing has infinite life when shaft load ratings are not exceeded. Hence, the shaft side load capacity is more than adequate to handle most externally applied loads (such as belts, chains, etc.), providing the motor to shaft size is applied within its torque rating.

Allowable side load chart, shaft load location drawing and load curves (below) are based on the side / radial loads being applied to shaft at locations A, B, and C, to determine the shaft side load capacity at locations other than those shown use the formula (shown below).

For more information about shaft side loads on Char-Lynn motors contact your Eaton representative.

Note:

When the speed sensor option is used, side load ratings are reduced 25%.

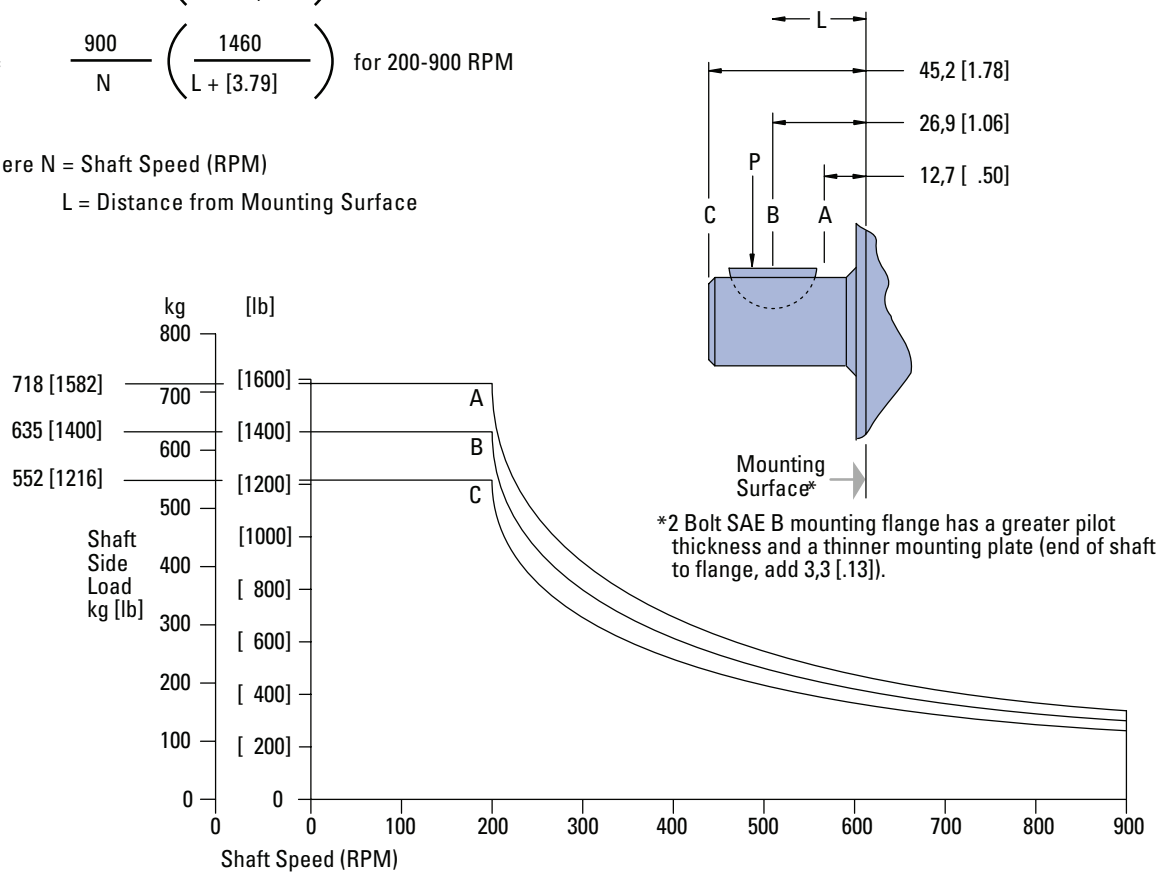
RPM	ALLOWABLE SHAFT SIDE LOAD — KG [LB]		
	A	B	C
900	154 [339]	136 [300]	118 [261]
625	205 [452]	181 [400]	158 [348]
500	256 [565]	227 [500]	197 [435]
400	307 [678]	272 [600]	237 [522]
300	410 [904]	363 [800]	316 [696]
200	718 [1582]	635 [1400]	552 [1216]

$$\text{Sideload P kg} = \frac{900}{N}\left(\frac{16800}{L + 96{,}3}\right) \quad \text{for 200-900 RPM}$$

$$\text{Sideload P [lb]} = \frac{900}{N}\left(\frac{1460}{L + [3.79]}\right) \quad \text{for 200-900 RPM}$$

Where N = Shaft Speed (RPM)

L = Distance from Mounting Surface



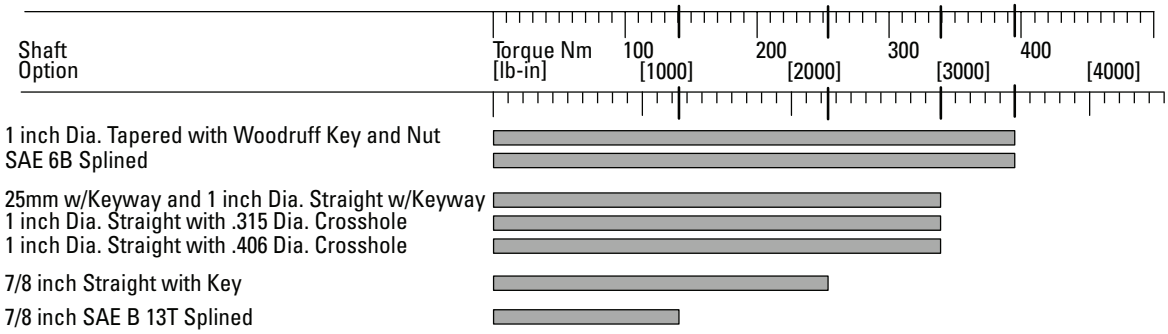
*2 Bolt SAE B mounting flange has a greater pilot thickness and a thinner mounting plate (end of shaft to flange, add 3,3 [.13]).

H, S and T Series (101, 103- 158, 185)

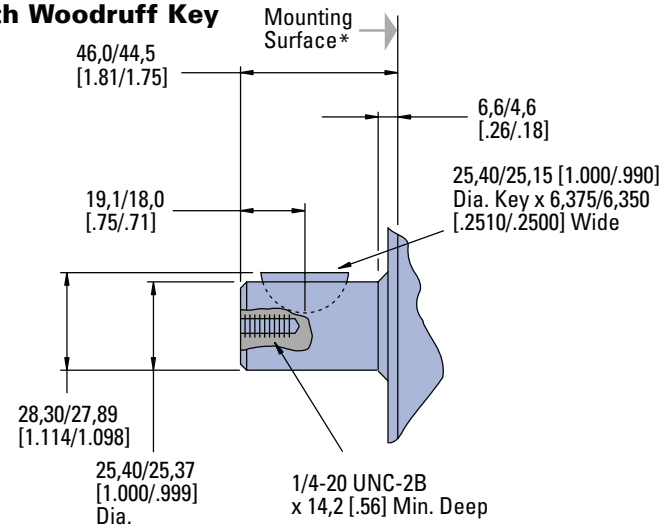
Dimensions

Shafts

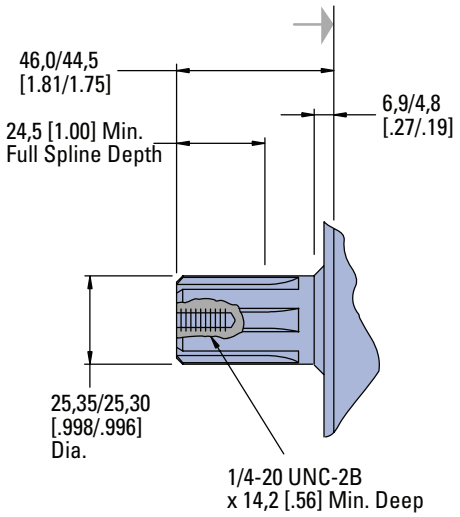
Shaft Size Motor Torque Combination Limit Guide



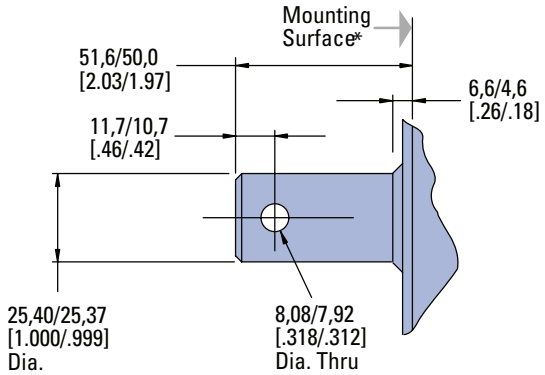
1 in. Dia. Straight with Woodruff Key



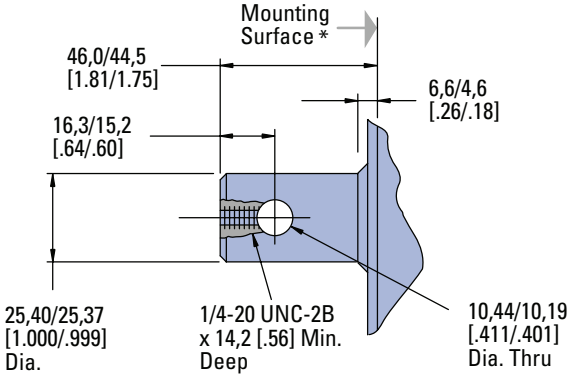
SAE 6B Splined Shaft



1 in. Dia. Straight Shaft with .315 Dia. Crosshole



1 in. Dia. Straight Shaft with .406 Dia. Crosshole



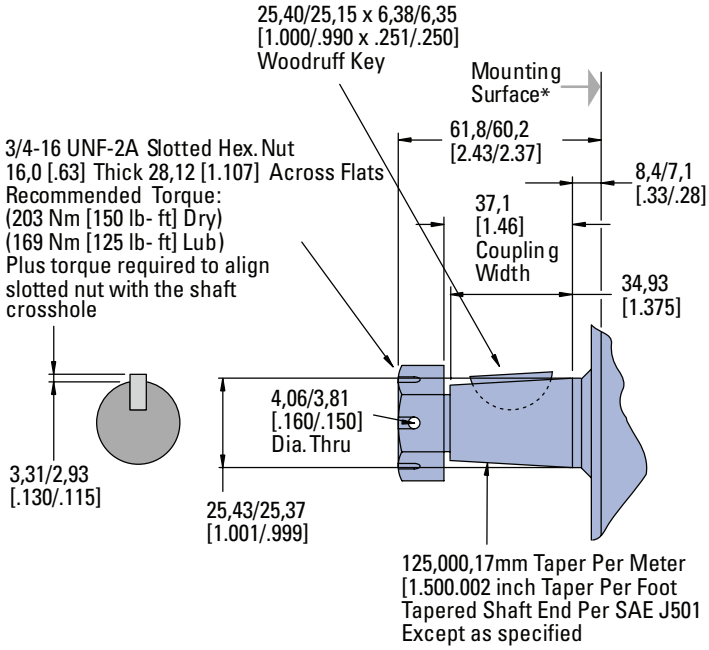
* 2 Bolt SAE B mounting flange has a greater pilot thickness and a thinner mounting plate (end of shaft to flange, add 3,3 [.13]).

H, S and T Series (101-, 103- 158-, 185-)

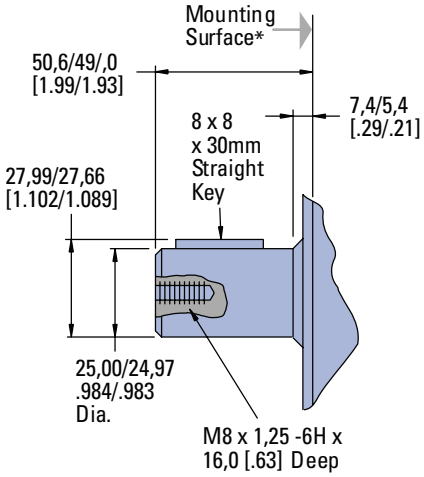
Dimensions

Shafts

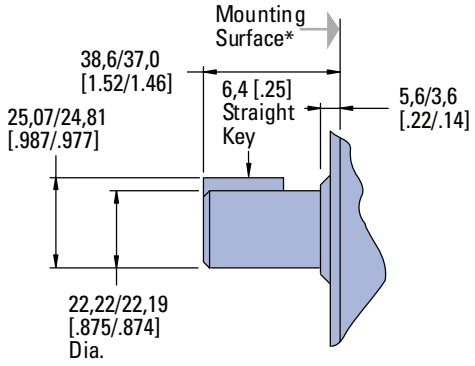
1 in. Dia. Tapered Shaft with Woodruff Key and Nut



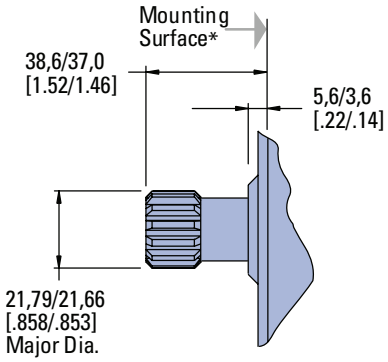
25mm Dia. Straight Shaft with 8mm Keyway



7/8 in. Dia. Straight Shaft with Key



7/8 in. Dia. SAE B Shaft 13 T Spline d



* 2 Bolt SAE B mounting flange has a greater pilot thickness and a thinner mounting plate (end of shaft to flange, add 3,3 [.13]).

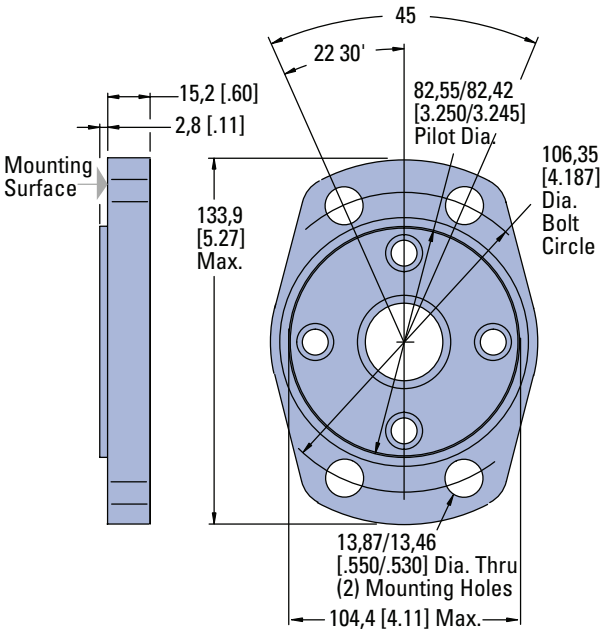
H, S and T Series (101-, 103- 158-, 185-)

Mounting Options

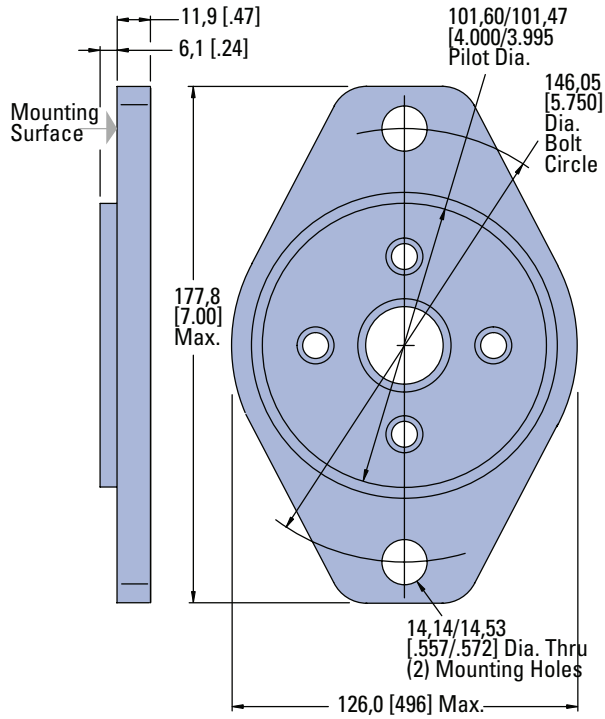
Note:

Mounting Surface Flatness Requirement is ▱,13mm [.005 inch] Max.

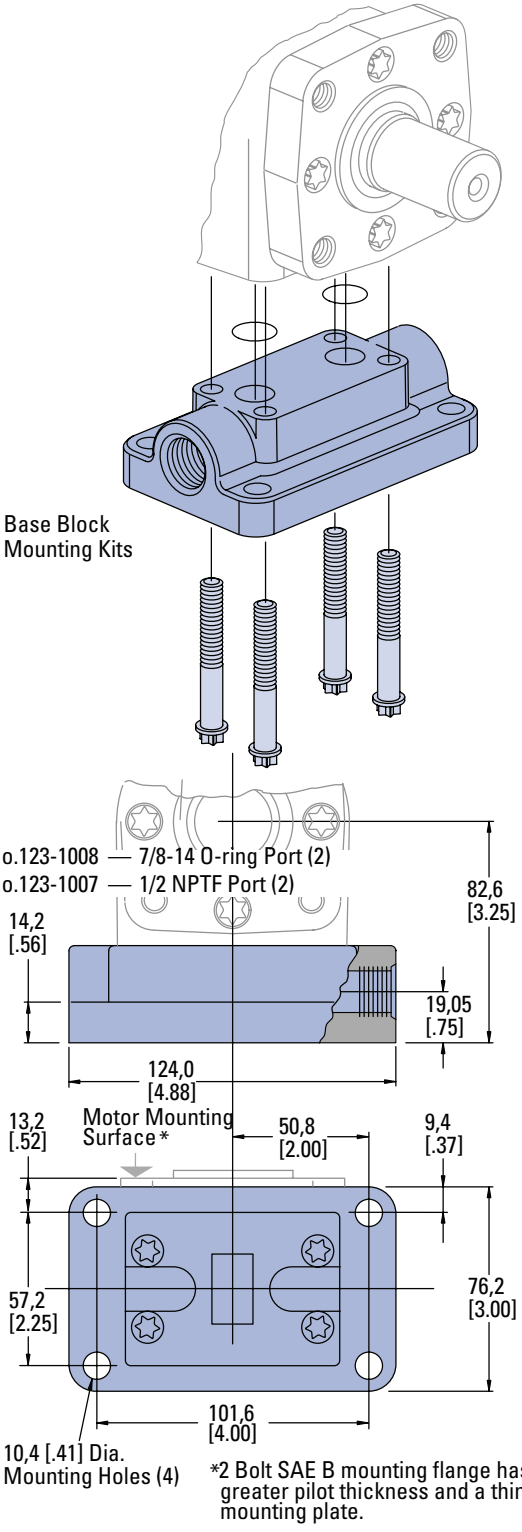
4 Bolt Magneto



2 Bolt SAE B



Base Bock Mounting Kits



*2 Bolt SAE B mounting flange has a greater pilot thickness and a thinner mounting plate.

H, S and T Series (101-, 103-, 158-, 185-)

Dimensions

Ports

Ports

End Ports — H Series only

G 1/2 (BSP) (2)

or 3/4-16 O-Ring (2)

Standard Rotation Viewed from Drive End

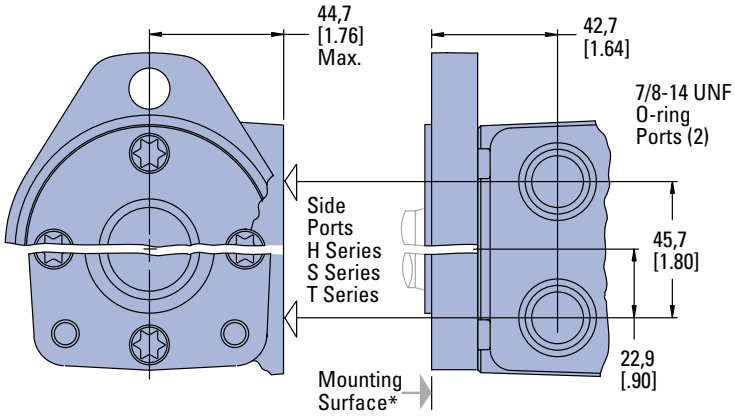
Port A Pressurized — CW

Port B Pressurized — CCW

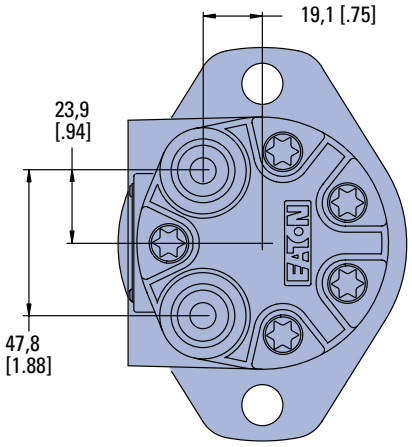
Note:

End ported motor pressure is derated. Reference page B-2-2 for ratings.

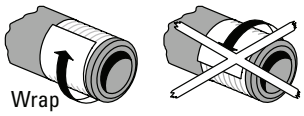
7/8-14 ports



End Ports (H Series only)



Use of Teflon Tape Sealant/ Lubricant (with 1/2 14 NPTF Port Connectors only).

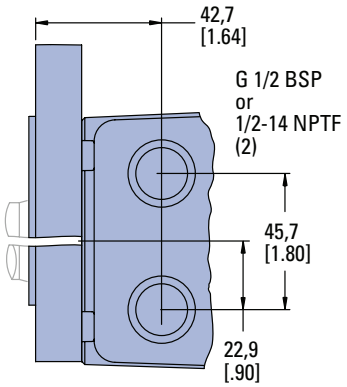


When using fittings with Teflon tape, be careful when taping and tightening. Over tightening or improperly taped fittings can cause damage to housing or leakage.

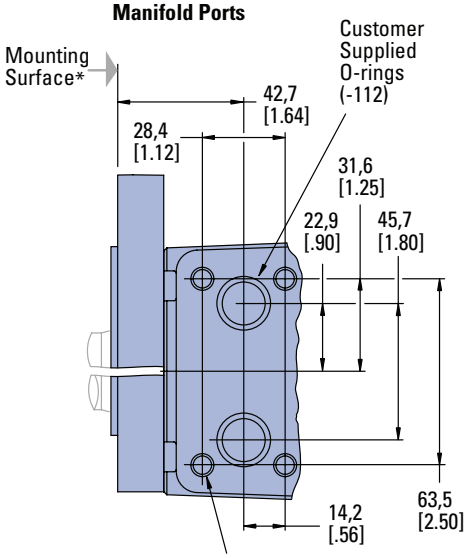
Use the following procedures:

- Wrap approx. 1 1/2 Turns of 13 mm [1/2 in.] wide Teflon Tape around fitting threads — start tape 2 threads up from end of fitting.
- Tighten threads to a Maximum of 34 Nm [25 lb-ft]. — Do Not Tighten Further —
- If fittings leak when tightened to maximum torque, either retape, reseal, or replace fittings.

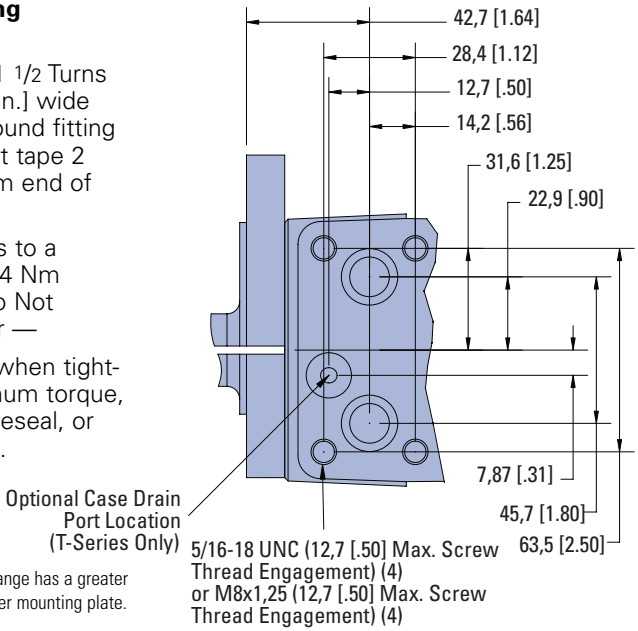
6-1/2 or 1/2 NPTF ports



Manifold Ports



Manifold Ports w/manifold case port



Note:

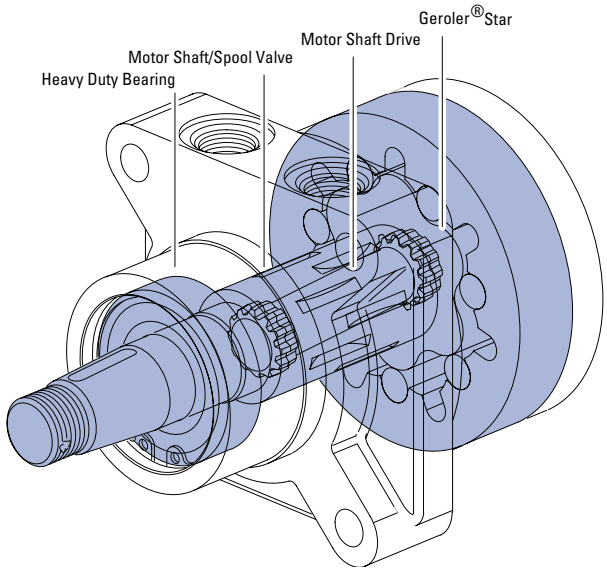
End ported motor option is derated to 1400 continuous, 1700 psi intermittent.

*2 Bolt SAE B mounting flange has a greater pilot thickness and a thinner mounting plate.

Notes

W Series (162-)

Highlights



Description

Char-Lynn W Series motors with the Geroler displacement element offer the same low friction and long-life advantages as the S and T Series.

The W Series features the simplicity of Eaton's proven spool valve and a Geroler element that provides superior drive life and smooth performance. In addition, this motor has a rugged housing with an extra large capacity side load bearing.

W Series Motors

Geroler Element	7 Displacements
Flow l/min [GPM]	68 [18] Continuous***
	76 [20] Intermittent**
Speed	288 RPM
Pressure bar [PSI]	165 [2400] Cont.***
	179 [2600] Inter.**
Torque Nm [lb-in]	410 [3624] Cont.***
	562 [4970] Inter.**

*** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.
** Intermittent— (Inter.) Intermittent operation, 10% of every minute.

Features:

- Heavy duty bearing
- Wheel drive interface
- Three-pressure zone design (ability to reduce case pressure)
- Variety of displacements, shafts, mounts and special options
- Special options to meet customer needs

Benefits:

- High side-load capacity
- High shock load capability
- Wheel mount interface
- Compact powerful package
- High efficiency
- Smooth low-speed operation
- Extended leak-free performance

Applications:

- Scissors lifts
- Boom lifts
- Mid-size ZTR mowers
- Turf equipment
- Greens mowers
- Sand trap rakes
- Railroad maintenance equipment
- Industrial sweepers and floor polishers
- Skid steer attachments
- Many more


Scissor Lift

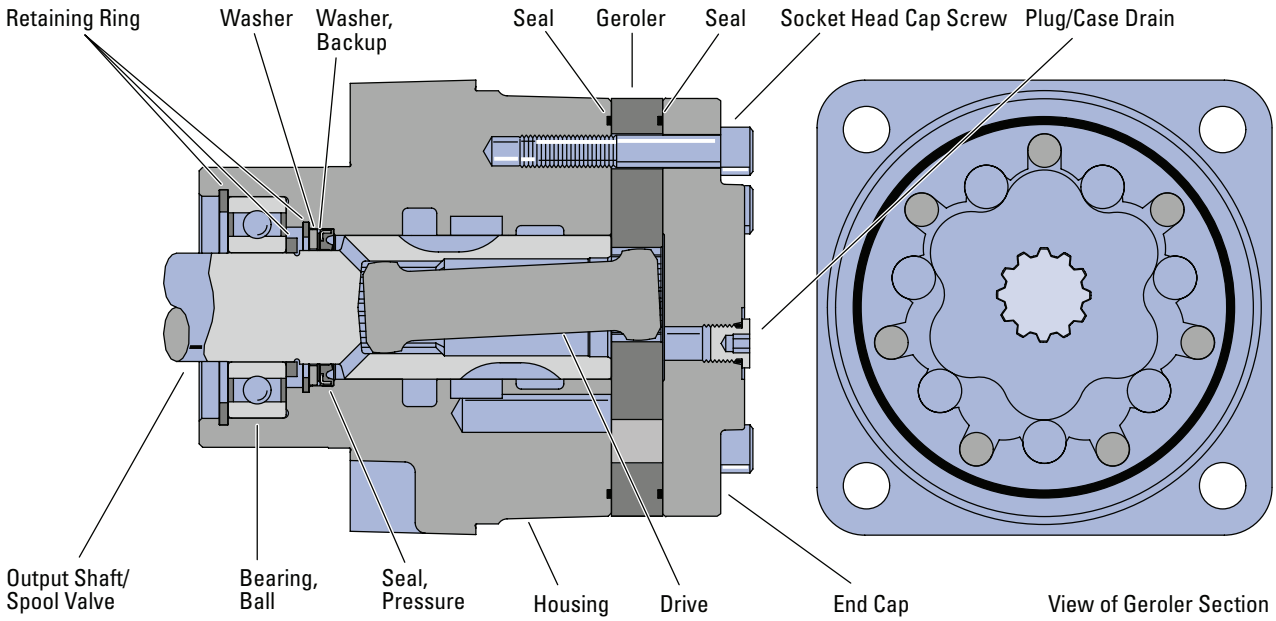

Sweeper


Trencher


Boom Lift

W Series (162-)

Specifications



SPECIFICATION DATA — W SERIES MOTORS

Displ. cm3/r [in3/r]		80 [4.9]	126 [7.7]	154 [9.4]	195 [11.9]	251 [15.3]	303 [18.5]	374 [22.8]
Max. Speed (RPM)		267	288	214	200	200	200	200
Flow l/min [GPM]	Continuous	23 [6]	30 [8]	34 [9]	38 [10]	53 [14]	62 [16.5]	68 [18]
	Intermittent	23 [6]	30 [8]	34 [9]	38 [10]	53 [14]	62 [16.5]	76 [20]
Theo. Torque Nm [lb-in]	Continuous	176 [1555]	279 [2470]	318 [2813]	318 [2816]	375 [3319]	387 [3429]	410 [3624]
	Intermittent	189 [1676]	298 [2640]	373 [3301]	439 [3882]	548 [4849]	539 [4769]	562 [4970]
Pressure Δbar [ΔPSI]	Continuous	165 [2400]	165 [2400]	152 [2200]	124 [1800]	110 [1600]	97 [1400]	83 [1200]
	Intermittent	179 [2600]	179 [2600]	179 [2600]	179 [2600]	165 [2400]	138 [2000]	124 [1800]

Note:

To assure best motor life, run motor for approximately one hour at 30% of rated pressure before application to full load. Be sure motor is filled with fluid prior to any load applications.

Maximum Inlet Pressure:

179 bar [2600 PSI]

Do Not Exceed Δ Pressure Rating (for displacement size see chart above).

Return Pressure (Back-Pressure):

Do not exceed Δ pressure rating (see chart above). Case drain required.

Note:

Optional version can be used without case drain.

Case Pressure:

Minimum – No Pressure

Maximum – 103 bar [1500 PSI] without case drain.

Note:

The case must be flooded when the motor is operating.

Δ Pressure:

The true Δ bar [Δ PSI] between inlet port and return port

Continuous Rating:

Motor may be run continuously at these ratings

Intermittent Operation:

10% of every minute

Recommended Fluids:

Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 70 SUS at operating temperature.

Recommended Maximum System Operating Temp.:

82°C [180°F]

Recommended Filtration:

per ISO Cleanliness Code, level 20/18/13

W Series (162-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from motor to motor in production.

Continuous

Intermittent

80 cm³/r [4.9 in³/r]

Δ Pressure bar [PSI]

Continuous

Flow l/min [GPM]	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2400] 165	[2600] 179
[2]	[204]	[337]	[474]	[612]	[748]	[883]	[1019]	[1149]	[1281]	[1412]	[1540]	[1610]
	23	38	54	69	85	100	115	130	145	160	174	182
7,6	**93**	**89**	**88**	**84**	**83**	**79**	**73**	**69**	**69**	**61**	**56**	**39**
[4]	[223]	[357]	[489]	[627]	[769]	[902]	[1035]	[1169]	[1295]	[1424]	[1555]	[1676]
	25	40	55	71	87	102	117	132	146	161	176	189
15,1	**178**	**172**	**170**	**168**	**165**	**159**	**157**	**154**	**146**	**142**	**131**	**117**
[6]	[255]	[342]	[477]	[612]	[749]	[879]	[1014]	[1154]	[1286]	[1408]	[1533]	[1648]
	29	39	54	69	85	99	115	130	145	159	173	186
22,7	**267**	**265**	**262**	**258**	**257**	**252**	**248**	**241**	**235**	**229**	**219**	**206**

126 cm³/r [7.7 in³/r]

Δ Pressure bar [PSI]

Continuous

Flow l/min [GPM]	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2400] 165	[2600] 179
[2]	[390]	[605]	[817]	[1032]	[1248]	[1448]	[1656]	[1871]	[2069]	[2243]	[2414]	[2513]
	44	68	92	117	141	164	187	211	234	253	273	284
7,6	**58**	**56**	**55**	**51**	**49**	**45**	**43**	**41**	**33**	**32**	**26**	**17**
[4]	[382]	[605]	[817]	[1036]	[1252]	[1463]	[1694]	[1908]	[2113]	[2306]	[2470]	[2640]
	43	68	92	117	141	165	191	216	239	261	279	298
15,1	**113**	**106**	**106**	**104**	**93**	**97**	**94**	**88**	**82**	**79**	**74**	**60**
[6]	[367]	[587]	[802]	[1017]	[1236]	[1444]	[1668]	[1882]	[2091]	[2284]	[2459]	[2637]
	41	66	91	115	140	163	188	213	236	258	278	298
22,7	**172**	**167**	**164**	**161**	**156**	**152**	**147**	**141**	**134**	**130**	**120**	**103**
[8]	[346]	[561]	[769]	[981]	[1203]	[1419]	[1634]	[1849]	[2039]	[2217]	[2432]	[2633]
	39	63	87	111	136	160	185	209	230	250	275	297
30,3	**228**	**225**	**220**	**216**	**213**	**208**	**201**	**195**	**188**	**174**	**163**	**149**

154 cm³/r [9.4 in³/r]

Δ Pressure bar [PSI]

Continuous

Flow l/min [GPM]	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2400] 165	[2600] 179
[2]	[450]	[723]	[989]	[1249]	[1512]	[1769]	[2021]	[2269]	[2502]	[2714]	[2904]	[3019]
	51	82	112	141	171	200	228	256	283	307	328	341
7,6	**47**	**47**	**46**	**44**	**40**	**39**	**36**	**33**	**30**	**26**	**19**	**10**
[4]	[470]	[737]	[1009]	[1276]	[1540]	[1802]	[2064]	[2323]	[2570]	[2813]	[3019]	[3242]
	53	83	114	144	174	204	233	262	290	318	341	366
15,1	**94**	**93**	**90**	**89**	**87**	**84**	**81**	**78**	**73**	**67**	**65**	**52**
[6]	[435]	[715]	[984]	[1252]	[1513]	[1787]	[2020]	[2274]	[2521]	[2812]	[3042]	[3301]
	49	81	111	141	171	202	228	257	285	318	344	373
22,7	**143**	**140**	**138**	**137**	**134**	**131**	**128**	**124**	**117**	**112**	**103**	**91**
[8]	[407]	[677]	[945]	[1214]	[1477]	[1740]	[2005]	[2260]	[2503]	[2735]	[2964]	[3206]
	46	76	107	137	167	197	227	255	283	309	335	362
30,3	**190**	**188**	**186**	**184**	**182**	**179**	**176**	**171**	**166**	**158**	**148**	**137**
[9]	[380]	[648]	[914]	[1183]	[1452]	[1714]	[1981]	[2243]	[2499]	[2733]	[2964]	[3195]
	43	73	103	134	164	194	224	253	282	309	335	361
34	**214**	**212**	**210**	**207**	**206**	**202**	**200**	**196**	**191**	**182**	**173**	**162**

195 cm³/r [11.9 in³/r]

Δ Pressure bar [PSI]

Continuous

Flow l/min [GPM]	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 138	[2200] 152	[2400] 165	[2600] 179
[2]	[478]	[827]	[1171]	[1511]	[1839]	[2153]	[2452]	[2756]	[3027]	[3275]	[3513]	[3673]
	54	93	132	171	208	243	277	311	342	370	397	415
7,6	**38**	**38**	**37**	**36**	**35**	**34**	**34**	**30**	**29**	**26**	**22**	**16**
[4]	[515]	[872]	[1220]	[1558]	[1886]	[2206]	[2518]	[2816]	[3107]	[3382]	[3647]	[3882]
	58	99	138	176	213	249	284	318	351	382	412	439
15,1	**75**	**73**	**73**	**71**	**70**	**69**	**66**	**64**	**62**	**56**	**52**	**44**
[6]	[524]	[878]	[1214]	[1551]	[1875]	[2199]	[2518]	[2824]	[3113]	[3389]	[3666]	
	59	99	137	175	212	248	284	319	352	383	414	
22,7	**114**	**111**	**111**	**110**	**108**	**106**	**105**	**103**	**99**	**95**	**91**	
[8]	[518]	[856]	[1187]	[1524]	[1861]	[2187]	[2499]	[2782]	[3064]	[3334]		
	59	97	134	172	210	247	282	314	346	377		
30,3	**151**	**150**	**150**	**149**	**147**	**145**	**144**	**143**	**141**	**136**		
[10]	[462]	[797]	[1133]	[1468]	[1799]	[2118]	[2442]	[2739]	[3023]	[3281]		
	52	90	128	166	203	239	276	309	342	371		
38	**190**	**188**	**187**	**186**	**184**	**184**	**182**	**179**	**176**	**160**		

[3673] 415 **16** } Torque [lb-in] Nm **Speed RPM**

W Series (162-)

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from motor to motor in production.

Continuous

Intermittent

251 cm³/r [15.3 in³/r]

Δ Pressure bar [PSI]

Continuous

Flow l/min [GPM]	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 140	[2200] 152	[2400] 165
[2] **7,6**	[759] 86 **30**	[1194] 135 **29**	[1683] 190 **29**	[2122] 240 **28**	[2535] 286 **27**	[2928] 331 **27**	[3319] 375 **25**	[3634] 411 **22**	[3946] 446 **17**	[4242] 479 **15**	[4553] 514 **14**
[4] **15,1**	[806] 91 **59**	[1257] 142 **58**	[1691] 191 **58**	[2130] 241 **56**	[2563] 290 **55**	[2988] 338 **55**	[3381] 382 **52**	[3799] 429 **48**	[4147] 469 **47**	[4515] 510 **41**	[4849] 548 **40**
[6] **22,7**	[780] 88 **90**	[1219] 138 **88**	[1646] 186 **87**	[2084] 235 **86**	[2515] 284 **85**	[2933] 331 **83**	[3336] 377 **83**	[3716] 420 **79**			
[8] **30,3**	[720] 81 **120**	[1148] 130 **118**	[1590] 180 **117**	[2029] 229 **117**	[2449] 277 **114**	[2861] 323 **112**	[3236] 366 **111**	[3627] 410 **108**			
[10] **37,9**	[645] 73 **148**	[1080] 122 **147**	[1513] 171 **147**	[1947] 220 **145**	[2371] 268 **145**	[2779] 314 **143**	[3151] 356 **141**	[3515] 397 **137**			
[12] **45,4**	[557] 63 **178**	[992] 112 **177**	[1428] 161 **176**	[1864] 211 **174**	[2292] 259 **174**	[2697] 305 **172**	[3087] 349 **169**				
[14] **53,0**	[460] 52 **208**	[888] 100 **206**	[1330] 150 **206**	[1761] 199 **203**	[2191] 248 **202**	[2615] 295 **200**	[3035] 343 **197**				

303 cm³/r [18.5 in³/r]

Δ Pressure bar [PSI]

Continuous

Flow l/min [GPM]	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124	[2000] 140
[2] **7,6**	[920] 104 **24**	[1454] 164 **24**	[1974] 223 **24**	[2480] 280 **23**	[2969] 335 **22**	[3429] 387 **22**	[3859] 436 **20**	[4230] 478 **18**	[4583] 518 **16**
[4] **15,1**	[960] 108 **49**	[1487] 168 **49**	[2007] 227 **47**	[2513] 284 **47**	[3006] 340 **46**	[3457] 391 **45**	[3905] 441 **44**	[4338] 490 **41**	[4769] 539 **39**
[6] **22,7**	[911] 103 **73**	[1445] 163 **73**	[1961] 222 **72**	[2473] 279 **72**	[2952] 334 **71**	[3411] 385 **69**	[3842] 434 **68**	[4276] 483 **66**	
[8] **30,3**	[843] 95 **99**	[1375] 155 **98**	[1888] 213 **97**	[2393] 270 **96**	[2886] 326 **95**	[3350] 379 **94**	[3763] 425 **93**		
[10] **37,9**	[752] 85 **123**	[1274] 144 **122**	[1789] 202 **122**	[2303] 260 **120**	[2792] 316 **119**	[3274] 370 **119**	[3650] 412 **118**		
[12] **45**	[652] 74 **148**	[1170] 132 **147**	[1691] 191 **146**	[2199] 248 **145**	[2691] 304 **145**	[3123] 353 **144**			
[14] **53**	[526] 59 **172**	[1039] 117 **172**	[1560] 176 **171**	[2064] 233 **170**	[2548] 288 **169**	[2999] 339 **168**			
[16.5] **62**	[353] 40 **203**	[864] 98 **203**	[1367] 154 **201**	[1876] 212 **200**	[2369] 268 **200**				

[4583] 518 **16** } Torque [lb-in] Nm **Speed RPM**

374 cm³/r [22.8 in³/r]

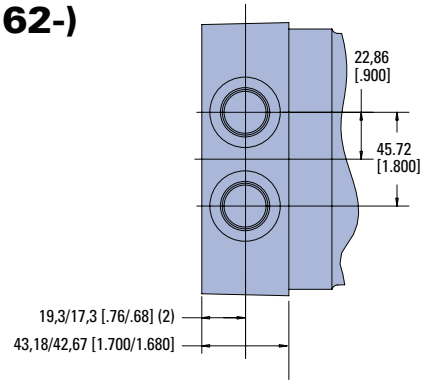
Δ Pressure bar [PSI]

Continuous

Flow l/min [GPM]	[400] 28	[600] 41	[800] 55	[1000] 69	[1200] 83	[1400] 97	[1600] 110	[1800] 124
[2] **7,6**	[1086] 123 **20**	[1753] 198 **19**	[2365] 267 **17**	[2960] 334 **16**	[3533] 399 **14**	[4025] 455 **12**	[4484] 507 **12**	[4970] 562 **11**
[4] **15,1**	[1152] 130 **39**	[1797] 203 **39**	[2431] 275 **38**	[3048] 344 **36**	[3624] 409 **34**	[4129] 467 **33**	[4599] 520 **31**	
[6] **22,7**	[1099] 124 **60**	[1749] 198 **58**	[2377] 269 **57**	[2996] 339 **56**	[3557] 402 **54**	[4077] 461 **53**		
[8] **30,3**	[1018] 115 **80**	[1662] 188 **79**	[2290] 259 **78**	[2894] 327 **76**	[3440] 389 **75**	[3952] 447 **74**		
[10] **37,9**	[940] 106 **100**	[1582] 179 **99**	[2210] 250 **97**	[2812] 318 **96**	[3346] 378 **95**	[3816] 431 **95**		
[12] **45,4**	[809] 91 **120**	[1454] 164 **119**	[2077] 235 **117**	[2677] 302 **116**	[3216] 363 **115**			
[14] **53,0**	[648] 73 **141**	[1284] 145 **139**	[1907] 215 **138**	[2506] 283 **137**	[3033] 343 **137**			
[16] **60,6**	[485] 55 **160**	[1107] 125 **159**	[1722] 195 **157**	[2315] 262 **157**	[2838] 321 **157**			
[18] **68,1**	[307] 35 **180**	[930] 105 **179**	[1543] 174 **178**	[2133] 241 **178**				
[20] **75,7**	[111] 13 **201**	[730] 82 **199**	[1342] 152 **198**	[1939] 219 **197**				

W Series (162-)

Dimensions



Ports

7/8-14 SAE O-Ring Ports

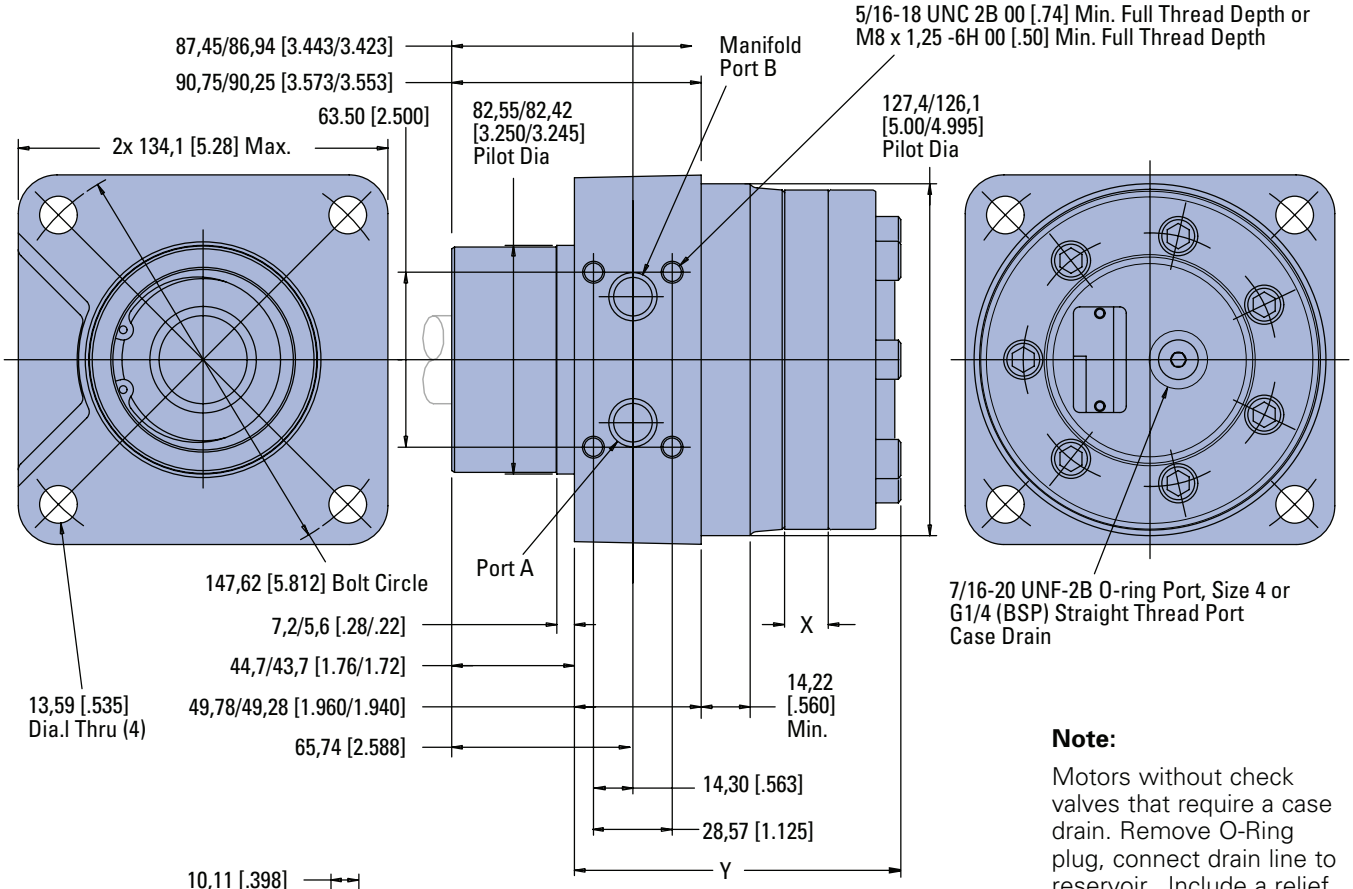
G1/2 BSP Straight Thread Port

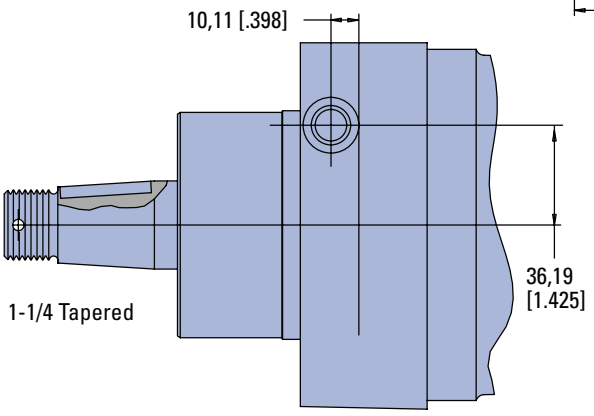
Manifold (15/16-18 Mounting Threads)

Standard Rotation Viewed from Shaft End

Port A Pressurized — CW

Port B Pressurized — CCW





Note:

Motors without check valves that require a case drain. Remove O-Ring plug, connect drain line to reservoir. Include a relief valve (in the drain line) set to maintain 3,4 bar [50 PSI] motor case pressure.

W SERIES DIMENSIONS

Displacement cm^3/r [in^3/r]	X mm [inch]	Y mm [inch]
80 [4.9]	9,1 [.36]	116,6 [4.59]
126 [7.7]	11,9 [.47]	119,6 [4.71]
154 [9.4]	14,7 [.58]	122,2 [4.81]
195 [11.9]	18,5 [.73]	126,2 [4.97]
251 [15.3]	23,9 [.94]	131,6 [5.18]
303 [18.5]	29,0 [1.14]	136,4 [5.37]
374 [22.8]	35,6 [1.40]	143,3 [5.64]

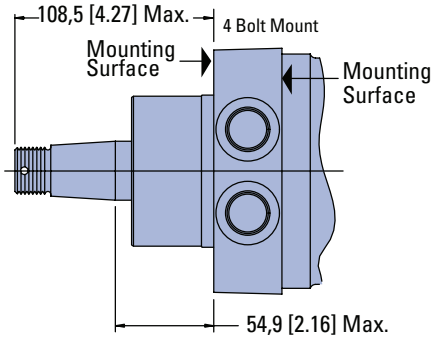
W Series (162-)

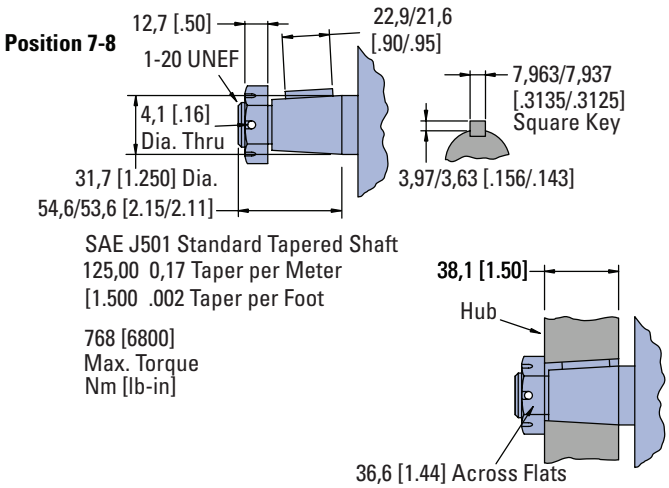
Dimensions
Shafts

Recommended Torque:

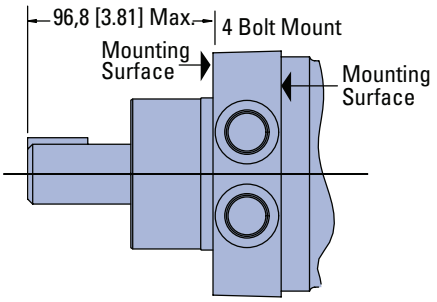
(373 Nm [275 lb-ft] Dry)
(305 Nm [225 lb-ft] Lub) Plus Torque required to align the slotted nut with the Shaft Crosshole.

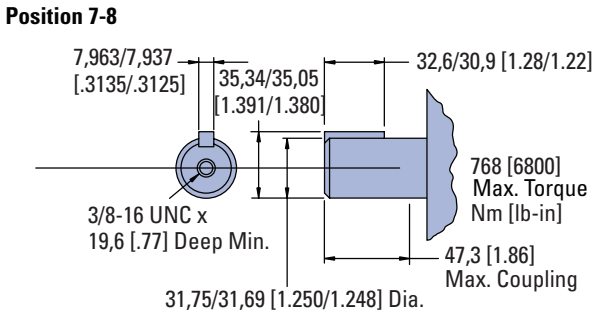
1 1/4 Tapered



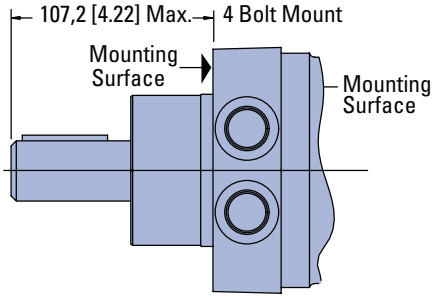


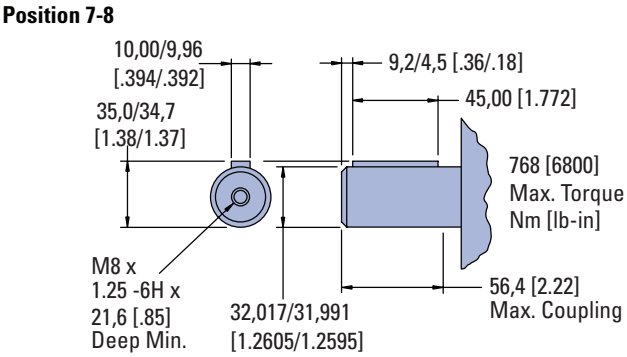
1 1/4 Inch Straight



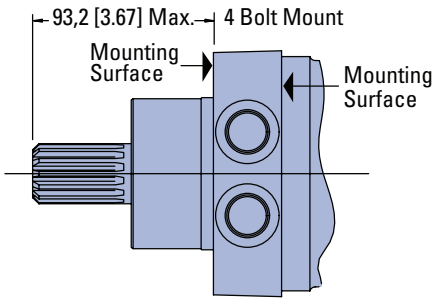


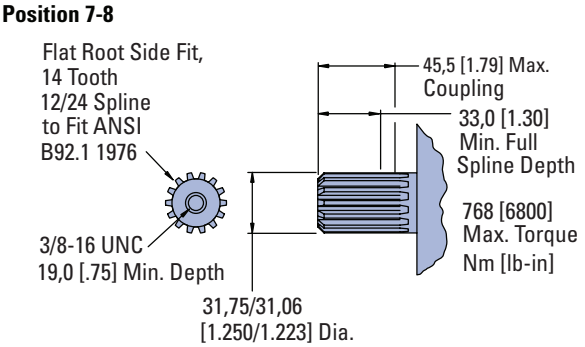
32 mm Straight





1 1/4 14 Tooth Splined





W Series (162-)

Shaft Side Load Capacity

1) Case pressure needs to be added to the outward axial thrust load and subtracted from inward axial thrustload – Case Pressure bar x 87, 1 [PSI x 1.35]
2) Life values in Chart A can be adjusted for speeds up to 200 rpm.

$$\frac{\text{Life value x 100 rpm}}{\text{application rpm}}$$

3) Shaded areas are intermittent loading.
4) To convert application radial load at any load location to sideload at the center of keyway multiply load by the application factor from Chart B.

Example:

Side Load: 4849 N @ 120 mm [1090 lbf @ 4.75 inch] from flange.
Average Thrust Load: 890 N [200 lbf] inward (toward motor).
Case Pressure: 66 bar [960 PSI].
Average Speed: 150 rpm.

Expected Life Calculation: Adjust side load value (due to load variation): from Chart B look at 120mm [4.75 inch] read at angled curve for load adjustment factor of 1.38.
Adjusted load is: (4849 N [1090 lbf]) x (1.38) = 6690 N [1504 lbf]
Thrust Load Value (due to case pressure):
(960 PSI) x (1.35) = [1296 lbf]
(66 bar) x (87,1) = 5750 N
Average thrust load found to be 890 N [200 lbf] inwards so subtract from thrust load due from case pressure:
5750 N - 890 N = 4860 N or
[1296 lbf] - 200 lbf = [1096 lbf]

Read Life Expectancy from Chart A: Value from chart reading across top to 6672 [1500] (6090 N [1504 lbf]) and down left side to 4895 [1100] (4875 N [1096 lbf])
Life = 1800 Hours
Speed Adjustment for over 100 rpm:

$$\frac{\text{(1800 hrs) x (100 rpm)}}{\text{150 rpm}} = \text{1200 Hours}$$

Chart B — Load Adjustment factor

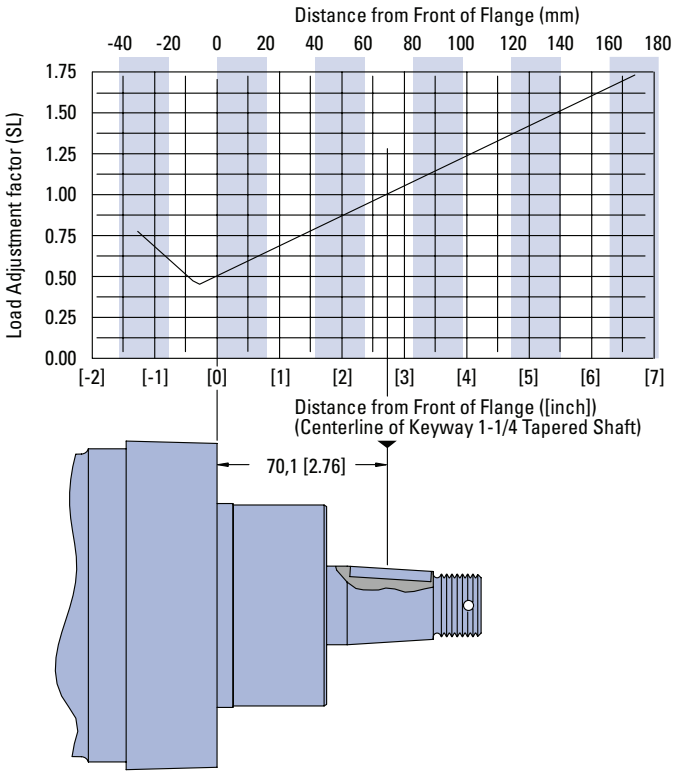


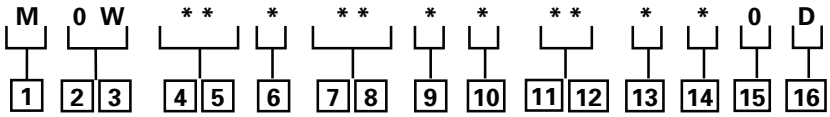
CHART A — EXPECTED B10 LIFE (HOURS) OF BEARING UNDER VARIOUS LOADS

Axial Thrust		Radial Load at Centerline of keyway at 100 RPM									
N	lbf]	1110 [250]	2225 [500]	3335 [750]	4450 [1000]	4560 [1250]	6670 [1500]	7785 [1750]	8895 [2000]	11120 N [2500lbf]	13345 N [3000lbf]
445	[100]	410 600	66 000	19 600	8 300	4 200	2 400	1 500	1 000	530	310
1335	[300]	92 700	40 900	19 600	8 300	4 200	2 400	1 500	1 000	530	310
2225	[500]	39 400	20 900	12 400	7 900	4 200	2 400	1 500	1 000	530	310
3115	[700]	21 400	12 600	8 100	5 500	3 900	2 400	1 500	1 000	530	
4005	[900]	13 300	8 400	5 700	4 000	2 900	2 200	1 500	1 000	530	
4895	[1100]	9 000	6 000	4 200	3 100	2 300	1 800	1 400	1 000		
5785	[1300]	6 500	4 500	3 200	2 400	1 900	1 500	1 200	900		
6670	[1500]	4 800	3 500	2 600	2 000	1 500	1 200	1 000			
7560	[1700]	3 700	2 800	2 100	1 600	1 300					
8450	[1900]	3 000	2 200								
8895	[2000] Max. Thrust										

W Series (162-)

Model Code

The following 16-digit coding system has been developed to identify all of the configuration options for the W Series motor. Use this model code to specify a motor with the desired features. All 16-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.



1 Product

M – Motor

2, 3 Series

0W – W Series

4, 5 Displacement cm³/r [in³/r]

05 – 30 [4.9]

08 – 126 [7.7]

09 – 154 [9.4]

12 – 195 [11.9]

15 – 251 [15.3]

19 – 303 [18.5]

23 – 374 [22.8]

6 Mounting Type

B – 4 Bolt (Wheel) 82,6 [3.25] Pilot Dia. and 13,59 [.535] Dia. Mounting Holes 147,6 [5.81] Dia., B.C., 127,0 127,0 [5.00] rear pilot

7, 8 Output Shaft

02 –1 1/4 inch Dia. Flat Root Side Fit, 14 Tooth, 12/24 DP 30° Involute Spline with 3/8-16 UNC-2B Thread in End, 33,0 [1.30] Min. Full Spline

03 – 1 1/4 inch Dia. .125:1 Tapered Shaft Per SAE J501 with 1– 20 UNEF -2A Threaded Shaft End and Slotted Hex Nut, 7,938 [.3125] Square x 22,22 [.875] Straight Key

04 – 32mm Dia. Straight Shaft with M8 x 1, 25-6H Thread in End, 9,982 [.3930] Wide x 7,995 [.3132] High x 45,00 [1.772] Long Key

06 – 1 1/4 inch Dia. Straight Shaft with 3/8 – 16 UNC 2B Thread in End, 7.938 [.3125] Square x 34,92 [1.375] Straight Key

9 Ports

A – 7/8 -14 UNF - 2B SAE O-Ring Port

B – G 1/2 (BSP) Straight Thread Port

10 Case Flow Options

A – 7/16 - 20 UNF - 2B SAE O-Ring Port

B – G 1/4 (BSP) Straight Thread Port

C – Internal Check Valve

11, 12 Special Features (Hardware)

00 – None

01 – Viton Seals

13 Special Features (Assembly)

0 – None

1 – Reverse Rotation

14 Paint/Special Packaging

0 – No Paint, Individual Box

A – Painted Low Gloss Black, Bulk Box Option

15 Eaton Assigned Code when Applicable

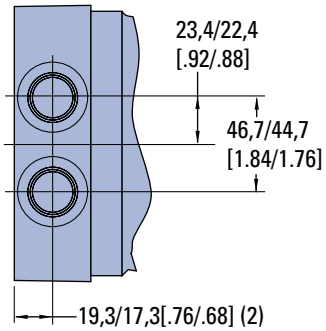
0 – Assigned Code

16 Eaton Assigned Design Code

D – Assigned Design Code

W Series with Parking Brake (162-)

Dimensions



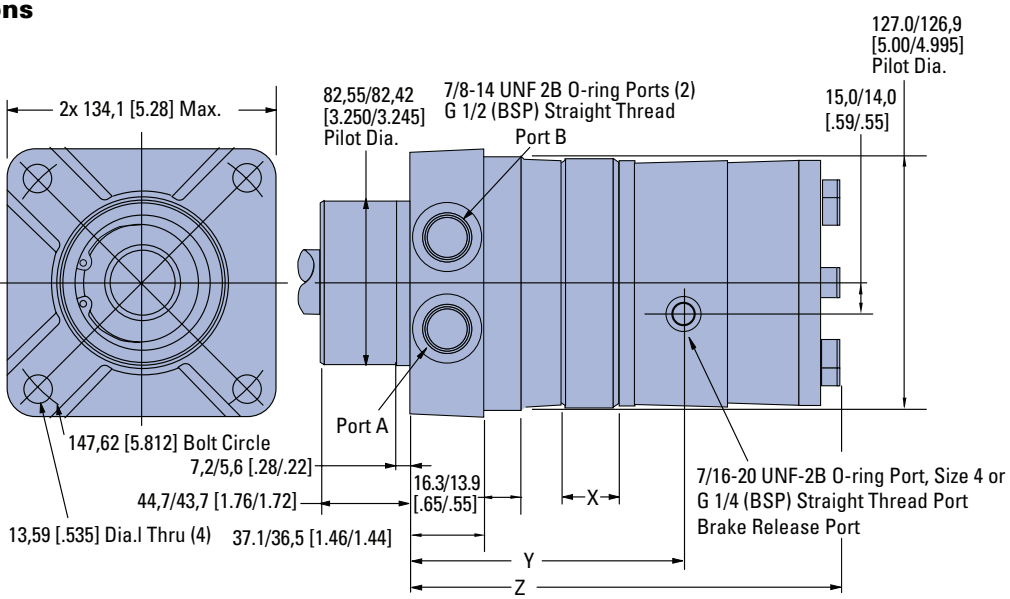
Ports

7/8-14 UNF 2B SAE O-Ring Ports (2) or
G 1/2 (BSP) Straight Thread

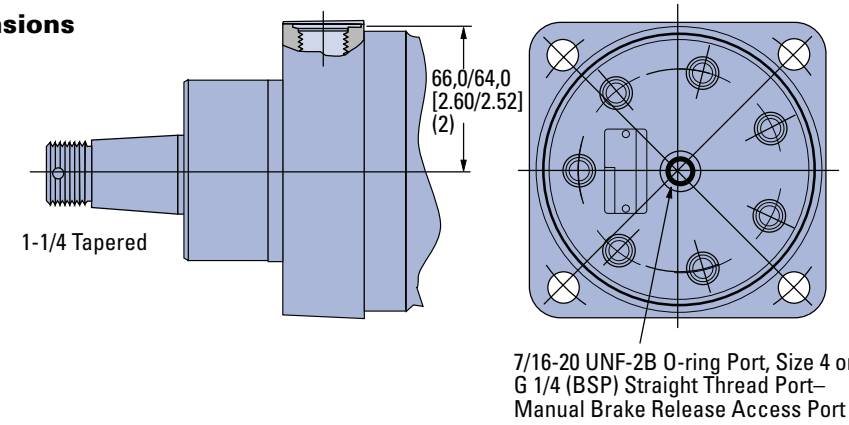
Standard Rotation Viewed from Shaft End

Port A Pressurized — CW
Port B Pressurized — CCW

Port Dimensions



Mounting Dimensions



PORTING AND MOUNTING DIMENSIONS

Displacement cm3/r [in3/r]	X mm [inch]	Y mm [inch]	Z mm [inch]
80 [4.9]	9,1 [0.36]	119,9 [4.72]	198,4 [7.81]
126 [7.7]	11,9 [0.47]	122,9 [4.84]	201,2 [7.92]
154 [9.4]	14.7 [0.58]	125,5 [4.94]	204,0 [8.03]
195 [11.9]	18,5 [0.73]	129,6 [5.10]	207,8 [8.18]
251 [15.3]	23,9 [0.94]	134,9 [5.31]	213,4 [8.40]
303 [18.5]	29,0 [1.14]	139,7 [5.50]	217,7 [8.59]
374 [22.8]	35,6 [1.40]	146,6 [5.77]	226,8 [8.85]

SPECIFICATIONS

Brake Release Pressure	205 bar [3000 PSI] Max.; 15 bar [250 PSI] Min.

W Series, W Series with Parking Brake (162-)

Product Numbers

Use digit prefix — 162 plus four digit number from charts for complete product number — Example 162-1153.

Orders will not be accepted without three digit prefix.

Standard

SHAFT	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER						
	80 [4.9]	126 [7.7]	154 [9.4]	195 [11.9]	251 [15.3]	303 [18.5]	374 [22.8]
Standard	162-1016	-1017	-1018	-1019	-1020	-1021	-1022
w/Case Drain	162-1023	-1024	-1025	-1009	-1008	-1026	-1027

162-1009

W Series with Parking Brake

SHAFT	DISPL. cm^3/r [in^3/r] / PRODUCT NUMBER						
	80 [4.9]	126 [7.7]	154 [9.4]	195 [11.9]	251 [15.3]	303 [18.5]	374 [22.8]
Standard	162-1143	-1144	-1145	-1146	-1183	-1148	-1149

162-1146

Note:

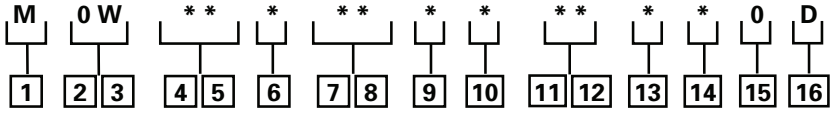
All above motors have 1-1/4 inch tapered output shaft, 7/8 inch O-Ring Ports, internal check valves.

For W Series Motors with a configuration not shown in the chart above: Use the model code number system to specify the product in detail. (see page B-5-8 and use the model code supplement shown on page B-5-11 for spring-applied hydraulic-release parking brake).

W Series with Parking Brake (162-)

Model Code

The following 16-digit coding system has been developed to identify all of the configuration options for the W motor. Use this model code to specify a motor with the desired features. All 16-digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.



1 Product

M – Motor

2, 3 Series

0W – W Series with Parking Brake

4, 5 Displacement cm³/r [in³/r]

05 – 30 [4.9]

08 – 126 [7.7]

09 – 154 [9.4]

12 – 195 [11.9]

15 – 251 [15.3]

19 – 303 [18.5]

23 – 374 [22.8]

6 Mounting Type

B – 4 Bolt (Wheel) 82,6 [3.25] Pilot Dia. and 13,59 [.535] Dia. Mounting Holes 147,6 [5.81] Dia., B.C., 127,0 127,0 [5.00] rear pilot

7, 8 Output Shaft

02 –1 1/4 inch Dia. Flat Root Side Fit, 14 Tooth, 12/24 DP 30° Involute Spline with 3/8-16 UNC-2B Thread in End, 33,0 [1.30] Min. Full Spline

03 – 1 1/4 inch Dia. .125:1 Tapered Shaft Per SAE J501 with 1– 20 UNEF -2A Threaded Shaft End and Slotted Hex Nut, 7,938 [.3125] Square x 22,22 [.875] Straight Key

04 – 32mm Dia. Straight Shaft with M8 x 1, 25-6H Thread in End, 9,982 [.3930] Wide x 7,995 [.3132] High x 45,00 [1.772] Long Key

06 – 1 1/4 inch Dia. Straight Shaft with 3/8 – 16 UNC 2B Thread in End, 7.938 [.3125] Square x 34,92 [1.375] Straight Key

9 Ports

A – 7/8 -14 UNF - 2B SAE O-Ring Port

B – G 1/2 (BSP) Straight Thread Port

10 Case Flow Options

A – 7/16 - 20 UNF - 2B SAE O-Ring Port

B – G 1/4 (BSP) Straight Thread Port

C – Internal Check Valve

11, 12 Special Features (Hardware)

00 – None

01 – Viton Seals

11 – Spring-applied hydraulic-release brake

13 Special Features (Assembly)

0 – None

1 – Reverse Rotation

14 Paint/Special Packaging

0 – No Paint, Individual Box

A – Painted Low Gloss Black - Individual Box

15 Eaton Assigned Code when Applicable

0 – Assigned Code

16 Eaton Assigned Design Code

D – Assigned Design Code