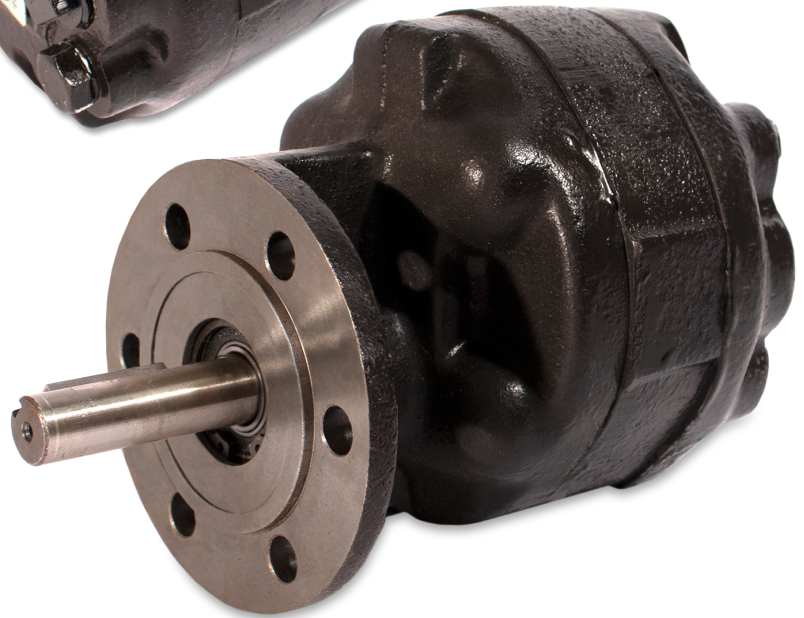


1500M Series

Roller Bearing Gear Pumps and Motors (Bi-Rotational)



1500M



► DESCRIPTION:

The 1500M Series Pump/Motor utilizes the many design and application features of the widely accepted HYDRECO gear pump and motor technology. The series maintains its bi-rotational pump or motor capabilities made possible by use of check valves which drain back to the low pressure side.

► PERFORMANCE:

Max operating pressure:	PSI [bar]	2500 [172]
Maximum flow rate in the controlled line P	GPM [l/min]	21 [80]
Maximum flow rate in the free lines		26 [100]
Drain flow rate		≤ 0.21 [≤ 0.8]
Ambient temperature range	°F [°C]	-4 to 140 [-20 to +60]
Fluid temperature range	°F [°C]	-4 to 176 [-20 to +80]
Fluid viscosity range	cSt	10 - 400
Recommended viscosity	cSt	25
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15	

1500M RPM RATINGS				
Model	Max. Continuous psi (bar)	Max. rpm as Pump	Max. rpm as Motor	Mass:
1506M	2000 (138)	3200	3600	16 lbs
1510M	2000 (138)	3000	3600	17 lbs
1512M	2000 (138)	2800	3600	18 lbs
1515M	2000 (138)	2800	3600	19 lbs

► FLUIDS:

FIRE RESISTANT FLUIDS

Non-Mineral Based Fluids change the rating of units due to specific gravity and lubricity of the fluid.

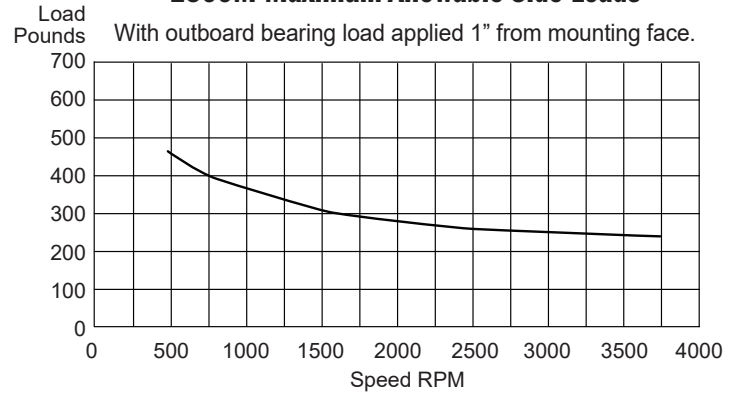
FLUIDS					
Type	Maximum RPM	Maximum Pressure	Maximum Temperature	Minimum Inlet Pressure	Bearing life in comparison to petroleum based fluid
Synthetic	2000	1500 psi (103.4 bar)	180° F (82.2° C)	5 inches of Hg.	100%
Water Glycol	1800	750 psi (51.7 bar)	130° F (54.4° C)	3 inches of Hg.	100%
Invert Emulsion	1800	1000 psi (68.8 bar)	130° F (54.4° C)	3 inches of Hg.	100%

► **FEATURES:**

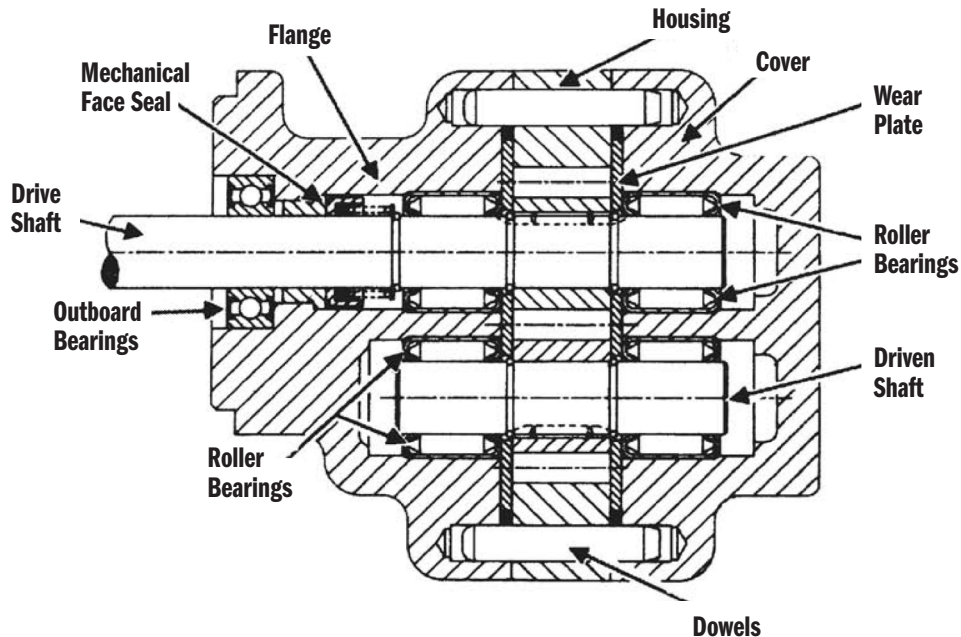
1500M Bi-Rotational Gear Pump/Motor

- The 1500M can be used as a pump or motor without adding a case drain as a motor
- The most important feature of the 1500M is its mechanical face seal. The seal allows for back pressure up to 2000 psi with no case drain. By eliminating case drain lines, system costs are greatly reduced, especially in series circuit applications.
- The 1500 configuration uses heavy-duty-cast-iron construction and maintains the unique four-bolt design, which places all four assembly bolts within the area of greatest internal pressure. This greatly reduces internal distortion and the wear of internal parts.
- The roller-bearing design, which uses fully pressure lubricated, long-life roller bearings, makes these units relatively insensitive to contamination. This feature also makes the units fully repairable and rebuildable.
- The use of an outboard bearing in some models allows limited side loading of the input/output shaft.
- 1500M Thrust Loads: The 1500M can handle much more inward thrust than outward thrust. Maximum thrust loading depends on system pressure. Contact sales for more information

1500M Maximum Allowable Side Loads



CROSS SECTION OF 1500M BI-ROTATIONAL SERIES



► **IDENTIFICATION CODE:**

1506M



SERIES 1500M	
CODE	GPM / 2000 RPM CIR (CCR)
06	0.738 (12.10 ccr)
10	1.180 (19.84 ccr)
12	1.467 (24.19 ccr)
15	1.771 (29.02 ccr)

DESIGN	
CODE	DESCRIPTION
A	No outboard bearing
C	With shielded outboard bearing

HOUSING	
CODE	DESCRIPTION
1	No Ports (Standard)

ROTATION	
CODE	DESCRIPTION
B	Bi-rotational (Standard)

SHAFT				
CODE	NAME	DIA.	DESCRIPTION	ADAPTERS
1	SAE "A" Spline	5/8"	1.03" Long Full spline 9 teeth	A & C Only
2	SAE "B" Parallel ST. Shaft W/Key	5/8"	1.03" Long 3/16" Sq. Key 7/8" Long	A & C Only
3	Parallel Shaft ST. Shaft W/Key	5/8"	2" Long 3/16" Sq. Key 1-1/4" Long	B, E & G Only

FLANGES		
CODE	DESCRIPTION	USE WITH SHAFTS
A	6 Bolt round. No outboard bearing	1 & 2 Only
B	6 Bolt round with outboard bearing	3 Only
C	SAE "A" 2 Bolt with 5/8" shaft. No outboard bearing	1 & 2 Only
E	SAE "A" 2 Bolt 5/8" shaft with outboard bearing	3 Only

COVERS	
CODE	DESCRIPTION
B	3/4" NPT both ports (rear)
C	7/8" Straight Thread both ports (rear)

ADDITIONAL SHAFT OPTIONS ARE AVAILABLE

Contact Sales for more details.

- Motor rotation as viewed from the shaft end: clockwise rotation - inlet on left; counter-clockwise rotation - inlet on right
- Mounting flanges noted as SAE conform to SAE J744C.

SIDE PORT OPTIONS ARE AVAILABLE

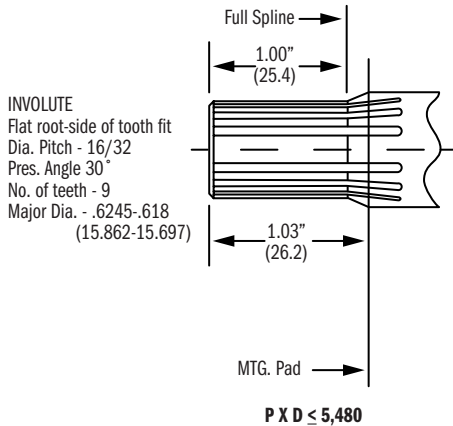
Contact Sales for additional port options.

TYPICAL ORDERING CODE:
1506MA2A1BB

► **SHAFT OPTIONS:**

Dimensions:
inches (± .125")
millimeters (± 1 mm)

NO. 1
SAE "A" SPLINE



SHAFT				
CODE	NAME	DIA.	DESCRIPTION	ADAPTERS
1	SAE "A" Spline	5/8"	1.03" Long Full spline 9 teeth	A & C Only
2	SAE "B" Parallel ST. Shaft W/Key	5/8"	1.03" Long 3/16" Sq. Key 7/8" Long	A & C Only
3	Parallel Shaft ST. Shaft W/Key	5/8"	2" Long 3/16" Sq. Key 1-1/4" Long	B, E & G Only

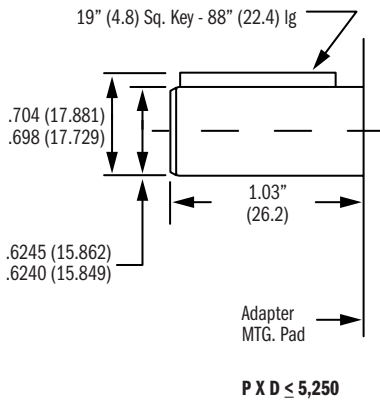
**ADDITIONAL SHAFT OPTIONS
ARE AVAILABLE**

Contact Sales for more details.

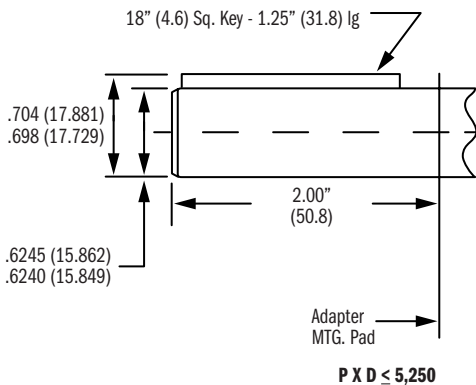
**MAXIMUM RECOMMENDED DRIVE SHAFT
TORQUE TRANSMISSION CAPACITY**

Satisfactory drive shaft torque transmission capacity is indicated with the product of pressure (P) and is displacement (D) is less then or equal to (<) a given constant. The unit of "P" and "D" are expressed in psig and in³/rev. (cir) respectively.

NO. 2
SAE "B" Parellel ST. Shaft W/Key



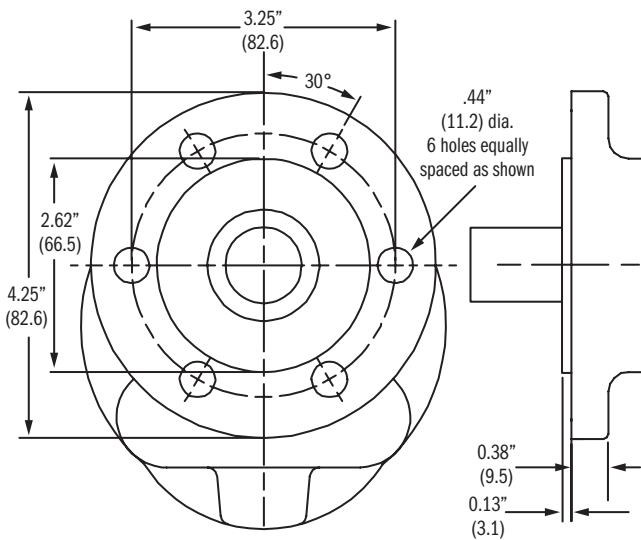
NO. 3
Parallel Shaft ST. Shaft W/Key



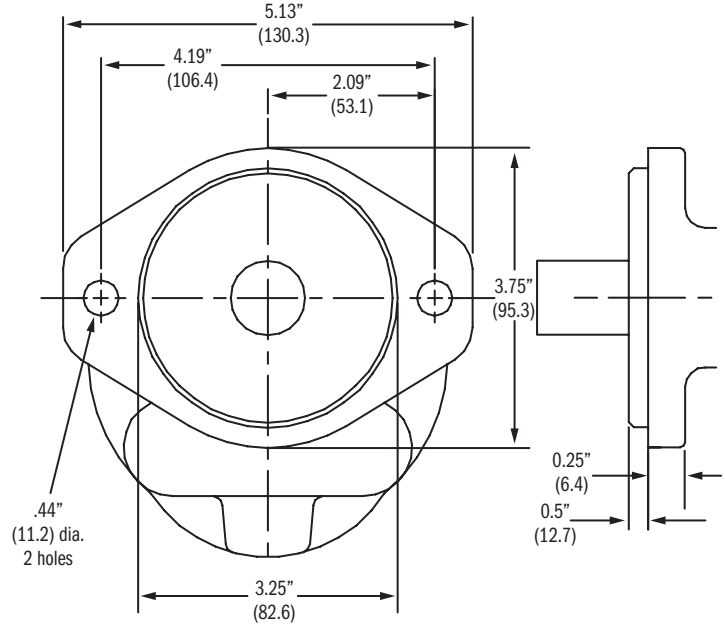
► **FLANGE OPTIONS:**

Dimensions:
inches (± .125")
millimeters (± 1 mm)

Flange A and B

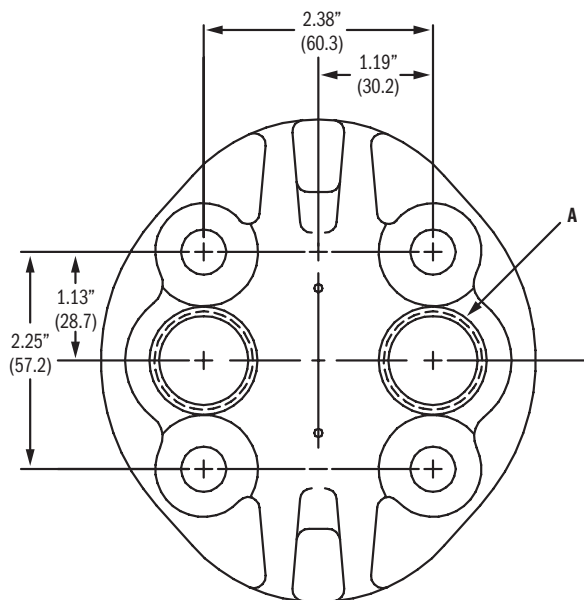


Flange C and E



FLANGES		
CODE	DESCRIPTION	USE WITH SHAFTS
A	6 Bolt round. No outboard bearing	1 & 2 Only
B	6 Bolt round with outboard bearing	3 Only
C	SAE "A" 2 Bolt with 5/8" shaft. No outboard bearing	1 & 2 Only
E	SAE "A" 2 Bolt 5/8" shaft with outboard bearing	3 Only

► **REAR PORT DETAILS:**



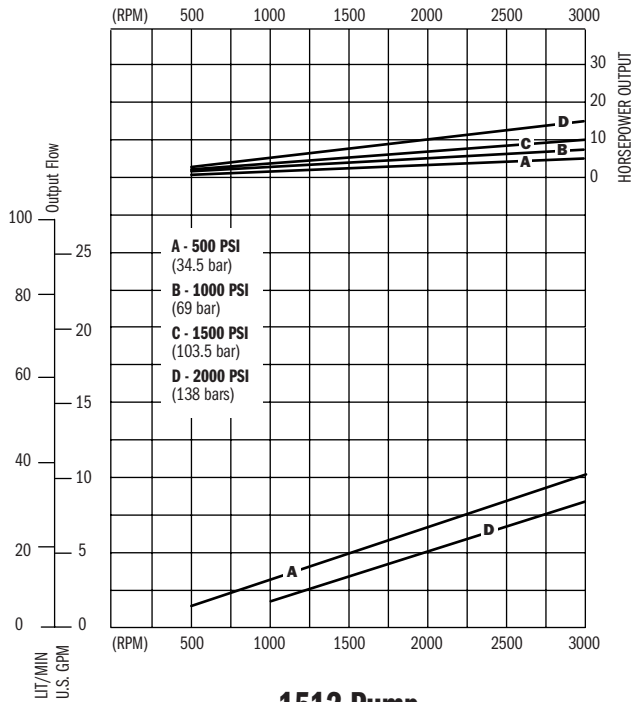
COVERS	
CODE	Dimension (A)
B	3/4" NPT both ports (rear)
C	7/8" Straight Thread both ports (rear)

1500M Series

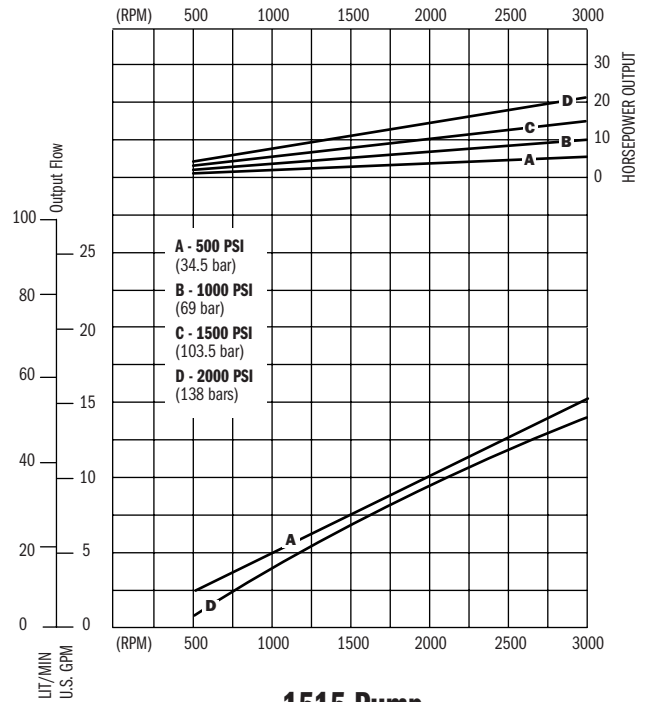
► **PERFORMANCE DATA:**

- Tests performed at 115 SSU 120° F.
- Consult Hydreco for operation of pumps at
 - (1) pressures and speeds above those shown on charts,
 - (2) temperatures above 1 80° F,
 - (3) speeds under 600 rpm when under load.
- Inlet conditions: max. 5" Hg. vacuum at rated speed.

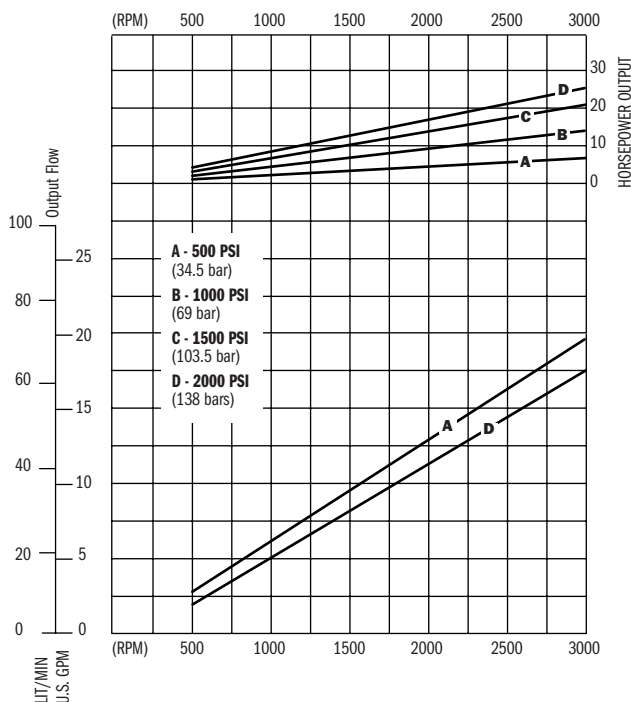
1506 Pump



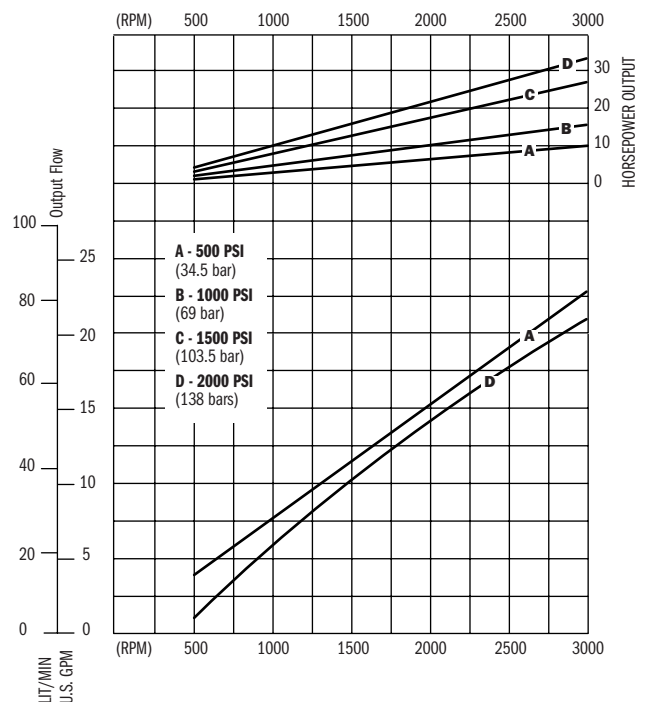
1510 Pump



1512 Pump



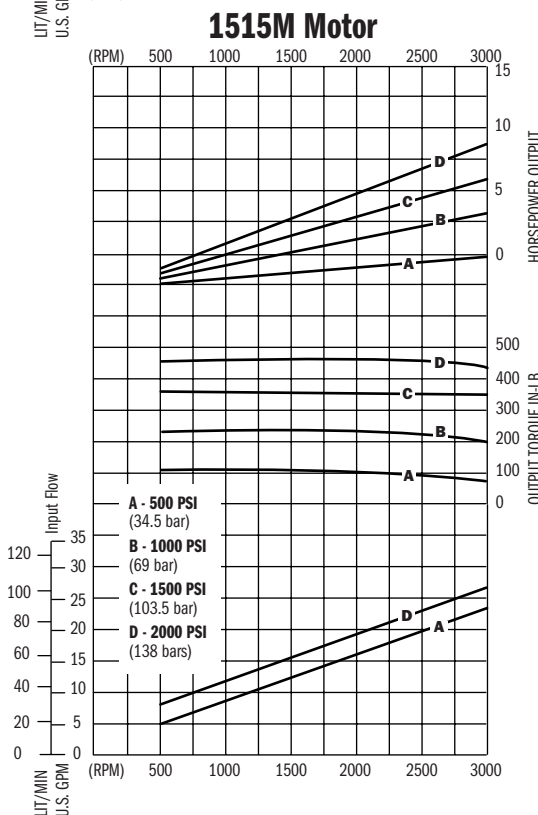
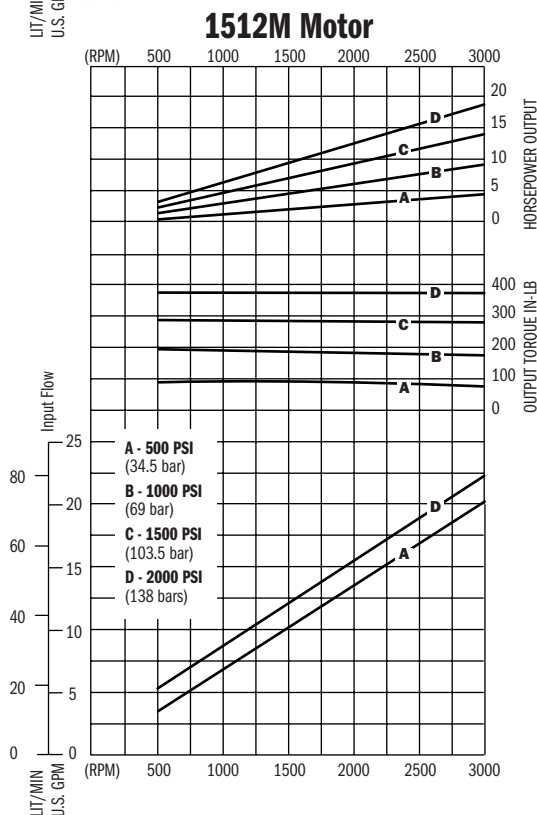
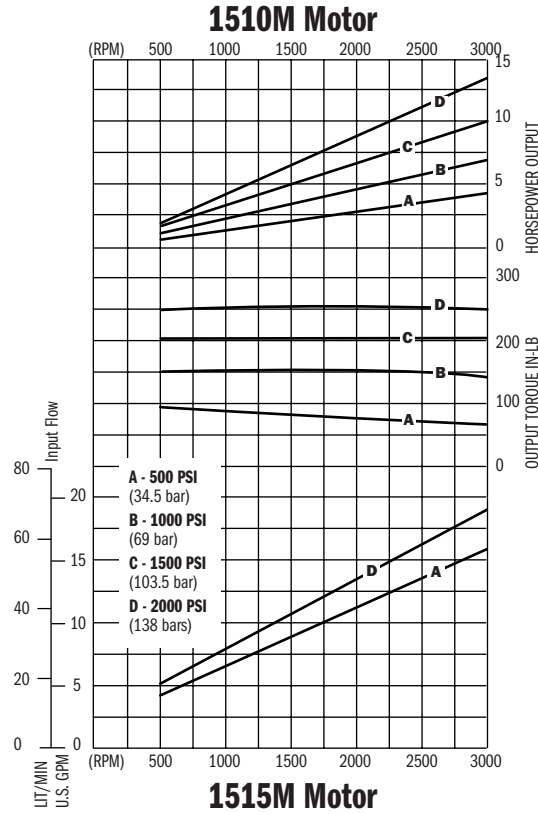
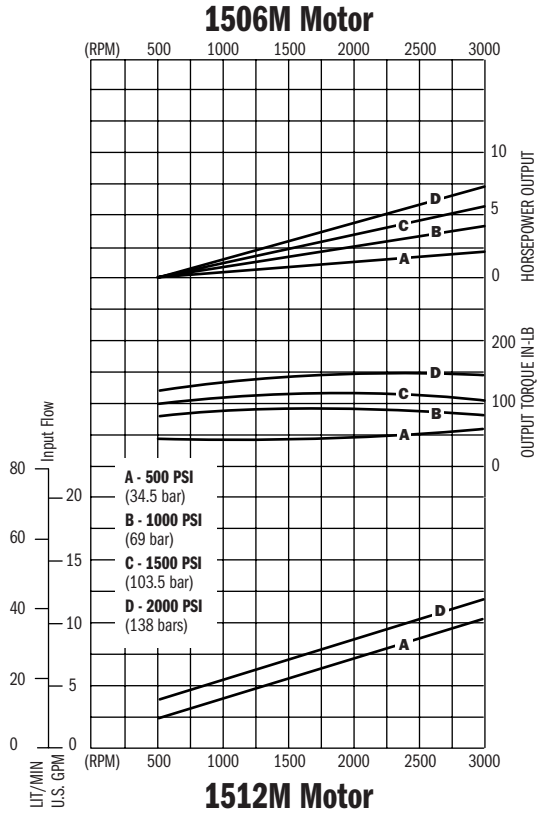
1515 Pump



1500M Series

► **PERFORMANCE DATA:**

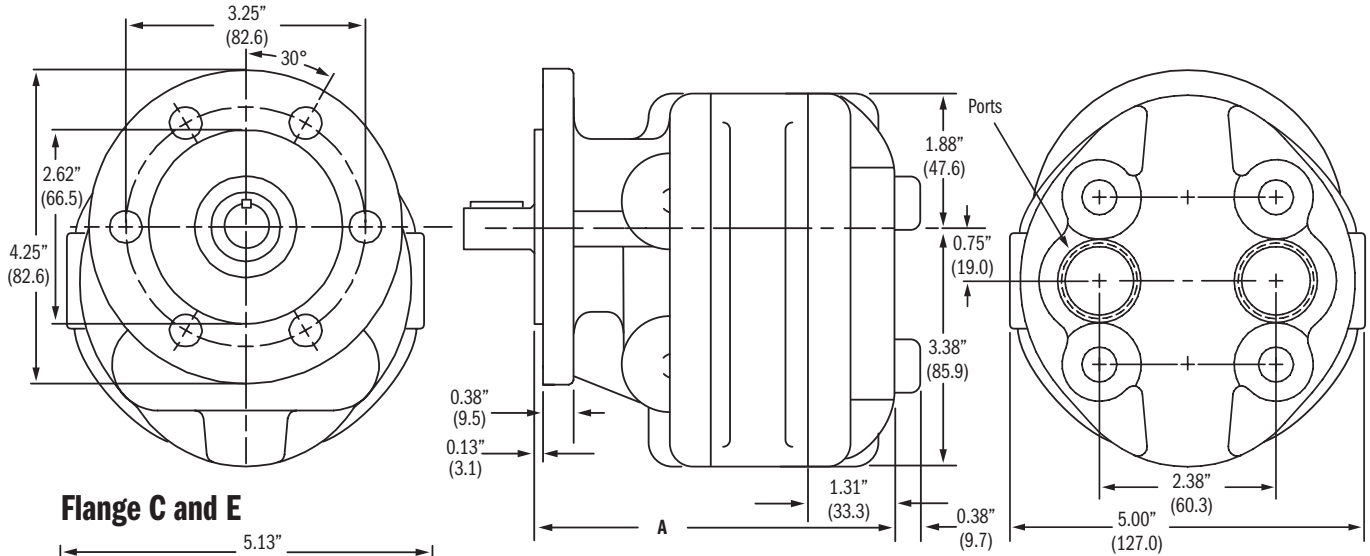
- Tests performed at 115 SSU 120° F.
- Consult Hydreco for operation of motors at
 - (1) pressures and speeds above those shown on charts,
 - (2) temperatures above 1 800° F,
 - (3) speeds under 600 rpm when under load.
- Positive inlet pressure recommended at all speeds.



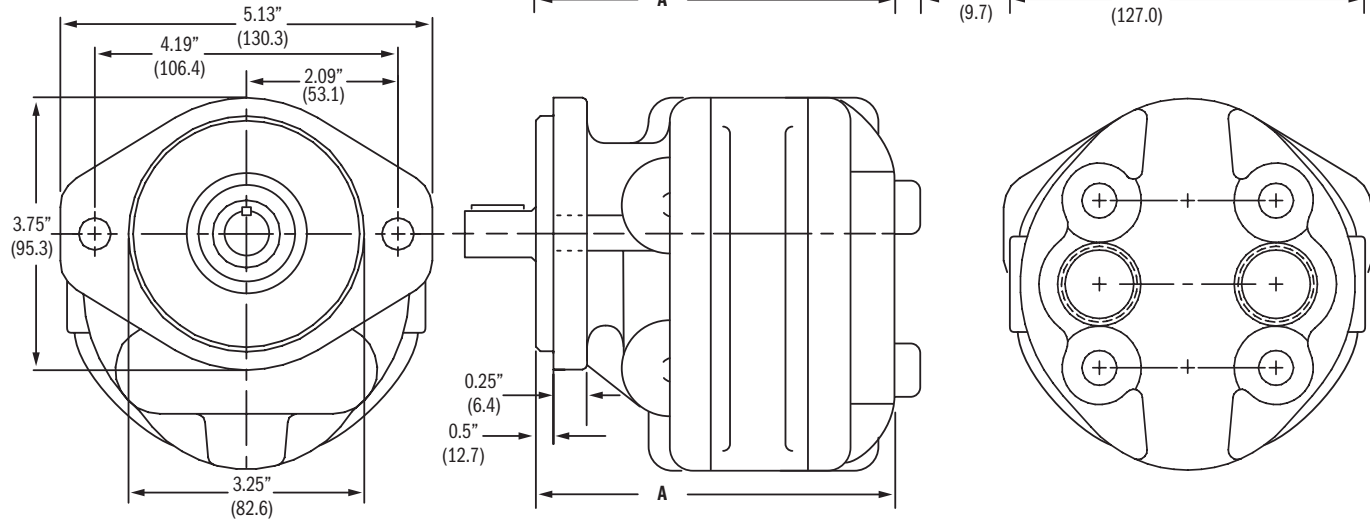
► INSTALLATION DATA:

Dimensions:
inches (± .125")
millimeters (± 1 mm)

Flange A and B



Flange C and E



DIMENSION (A) PER FLANGE TYPE				
Model	A	B	C	E
1506	4.40" (111.8)	4.90" (124.5)	4.22" (107.2)	4.78" (121.4)
1510	4.78" (121.4)	5.28" (134.1)	4.60" (116.8)	5.16" (131.1)
1512	5.03" (127.8)	5.53" (140.5)	4.85" (123.2)	5.41" (137.4)
1515	5.28" (134.1)	5.78" (146.8)	5.10" (129.5)	5.66" (143.8)



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