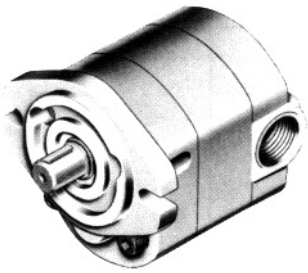
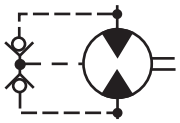
40 Series

Cross Gear Pumps/Motors





The **CROSS Series 40** gear pumps/motors feature a gear tooth design that provides more displacement within a given package size. The gear tooth design and pressure balanced loading plates provide for a high volumetric and overall efficiency while operating at a low noise level. Available in 6 sizes, with displacements from 0.50 to 1.80 cubic inches per revolution, this compact unit can deliver up to 17.5 US. gpm. in a space less than 5” x 5-1/4” x 5-1/4”.

MATERIAL SPECIFICATIONS

Body and end covers ..... Die cast aluminium alloy
Gears ..... Sintered metal
Shafts ..... Hardened steel
Seals ..... Buna N
Bearings ..... Pressure lubricated, Teflon impregnated sleeve

GENERAL SPECIFICATIONS

Displacement sizes

0.50	0.75	1.00	1.25	1.50	1.80	cu.in./ Rev
8.2	12.3	16.4	20.5	24.6	29.5	cc/Rev

HYDRAULIC PUMPS

Rated working pressure (max. relief valve setting at full flow) ..... 3000 psi (207 bar)
Maximum shock & surge pressure ..... 3500 psi (242 bar)
Maximum flow rate (delivery) ..... 17.5 gpm (66 l/m)
Maximum speed (continuous - see Inlet Vacuum Curves) ..... 3600 RPM
Maximum horsepower (at rated speed and pressure) ..... 41 hp (30.5 kw)
Mounting (any position) ..... SAE ‘A’ size, 2-Bolt
Weight ..... Approx. 7 lbs (3.2 kg)

HYDRAULIC MOTORS

Rated working pressure (max. relief valve setting at full flow) ..... 3000 psi (207 bar)
Maximum shock & surge pressure ..... 3500 psi (242 bar)
Maximum flow rate (input) ..... 20.45 gpm (77.4 l/m)
Maximum speed (continuous) ..... up to 4000 RPM
Maximum horsepower (at rated speed and pressure) ..... 49 hp (36.5 kw)
Mounting (any position) ..... SAE ‘A’ size, 2-Bolt
Weight ..... Approx. 7 lbs (3.2 kg)

STANDARD FEATURES

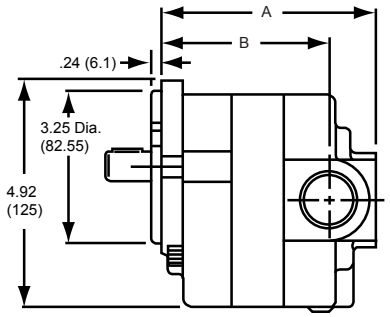
- Rotation: Bi-directional (Dual Rotation)
- Ports: Side, SAE #12 (1-1/16” - 12) U.N. O’Ring thread
- Internal check valves (no external drain required if back pressure is below shaft seal rating)
- Shaft: 5/8” Dia Woodruff keyed (short)
- Shaft Seal: 250 psi. (17 bar)

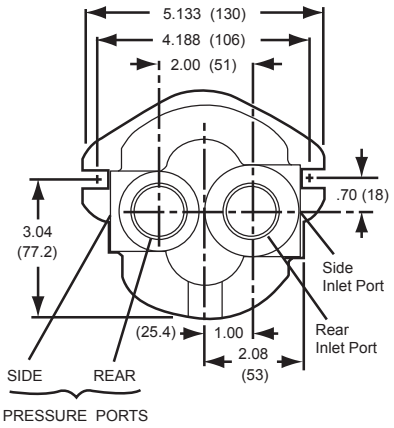
OPTIONAL FEATURES AVAILABLE

- Ports: Rear inlet and outlet location
- Shaft: 5/8” Dia SAE splined (9 tooth); 3/4” Dia Woodruff keyed (long)

NOTE: Shafts ‘D’ and ‘J’ are available for quantity indent order only.

DIMENSIONAL DATA in inches and (millimeters)

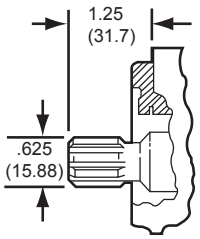




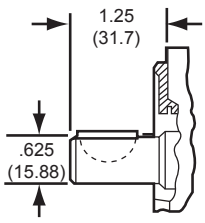
Displacement cu.in./Rev. (cc/Rev.)	Dim. ‘A’ inches (mm)	Dim. ‘B’ inches (mm)
.50 (8.2)	4.25 (108)	3.23 (82)
.75 (12.3)	4.44 (113)	3.42 (87)
1.00 (16.4	4.62 (117)	3.60 (91)
1.25 (20.5)	4.81 (112)	3.79 (96)
1.50 (24.6)	4.99 (127)	3.97 (101)
1.80 (29.5)	5.22 (133)	4.20 (107)

OUTPUT SHAFT

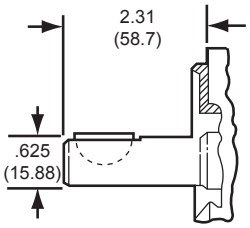
Shaft A



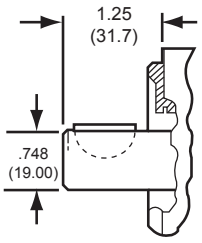
Shaft C*



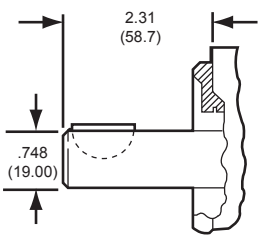
Shaft D



Shaft J



Shaft K



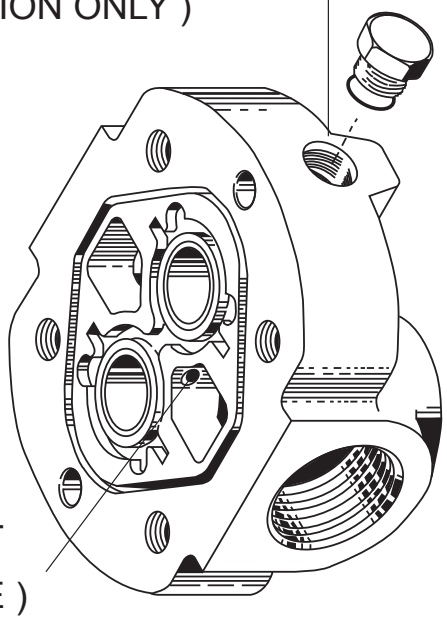
Shaft ‘A’: 9 Tooth, 16/32 pitch, 30° pressure angle, flat root side fit, Class I.

Shaft ‘C’ and ‘D’: Woodruff key - 3/4” dia x 5/32.

Shaft ‘J’ and ‘K’: Woodruff key - 3/4” dia x 5/32.

REAR COVER OPTIONS				
Part Number	Series	Port Position	Inlet	Outlet
4P0007001	All - RB Porting	Rear	1-5/16” UNO	1-1/16” UNO
4P0007002	All - RD Porting	Rear	1-1/16” UNO	1-1/16” UNO
4P0007003	All - SA Porting	Side	1-5/16” UNO	1-1/16” UNO
4P0007004	All - SC Porting	Side	1-1/16” UNO	1-1/16” UNO

CASE DRAIN PORT -
USE WHEN BACK PRESSURE
EXCEED SEAL RATING.
(DUAL ROTATION ONLY)

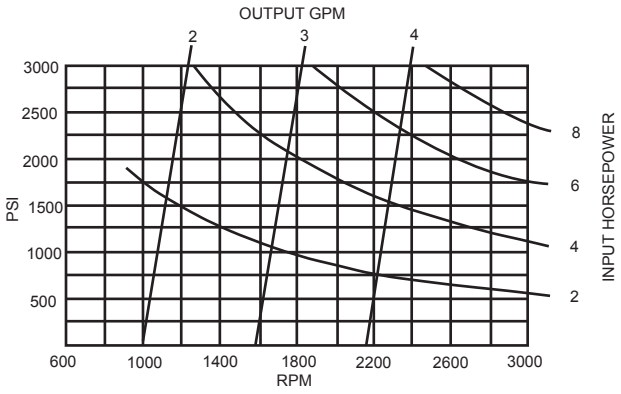


VENT HOLE ON INLET
(LOW PRESSURE SIDE)
SINGLE ROTATION PUMPS ONLY.

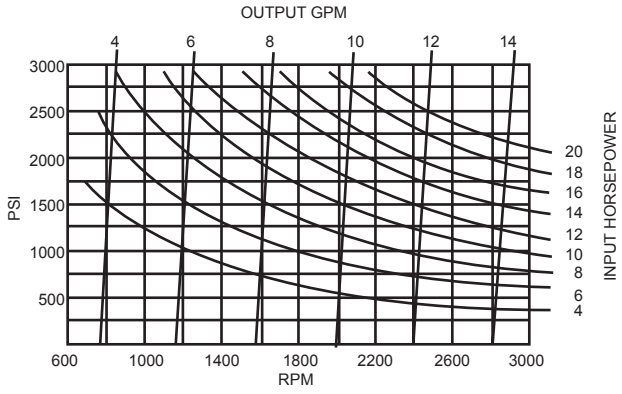
GEAR PUMP - DELIVERY CHARACTERISTICS

TYPICAL PERFORMANCE DATA

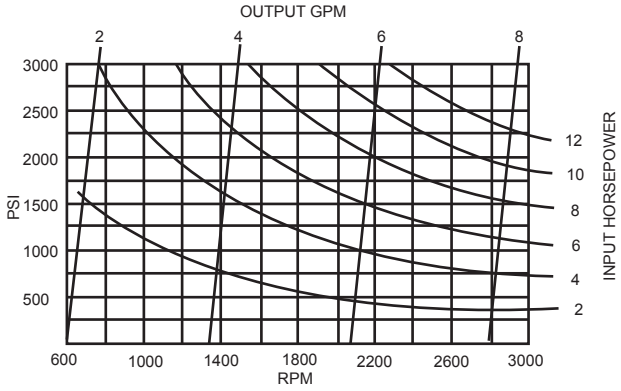
MODEL 40P005



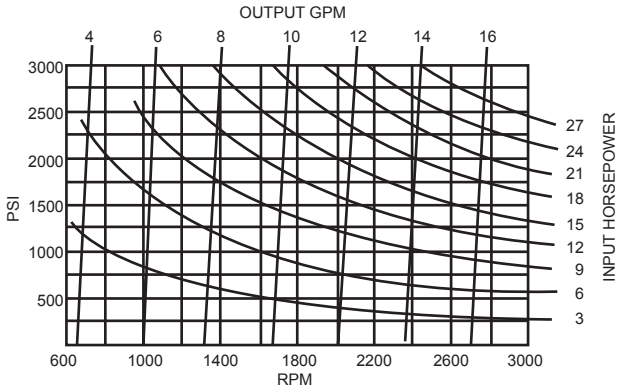
MODEL 40P012



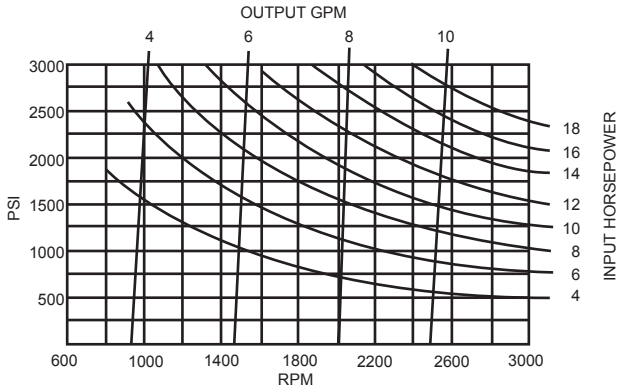
MODEL 40P007



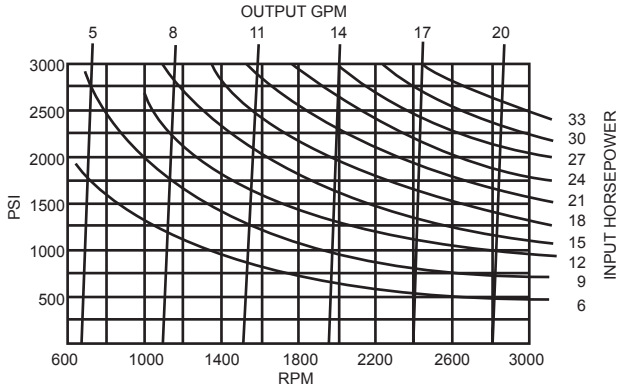
MODEL 40P015



MODEL 40P010



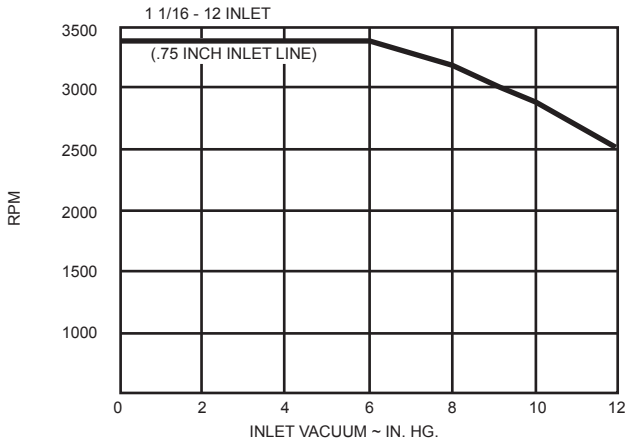
MODEL 40P018



GEAR PUMP - SUCTION CHARACTERISTICS

TYPICAL PERFORMANCE DATA

MODEL 40P005



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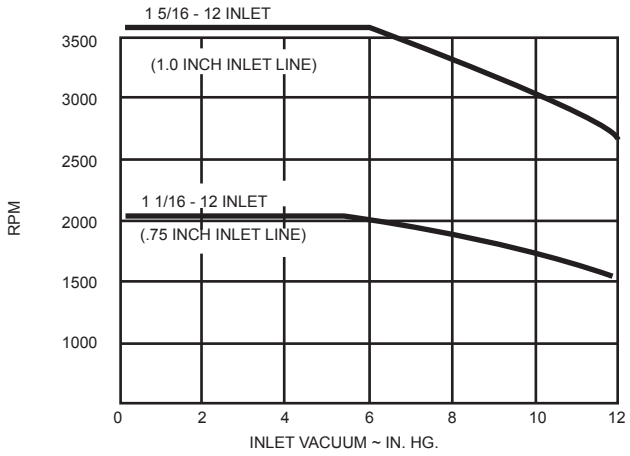

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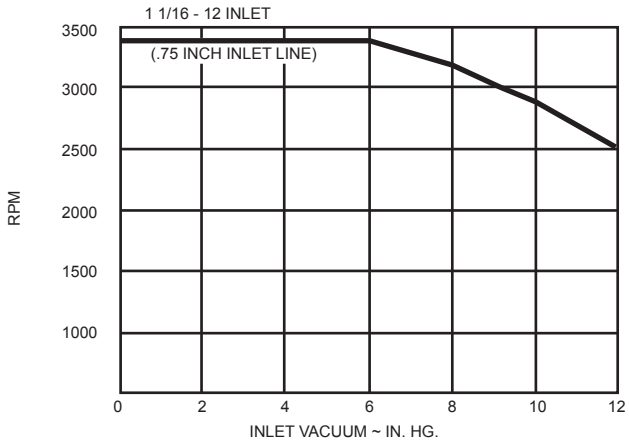

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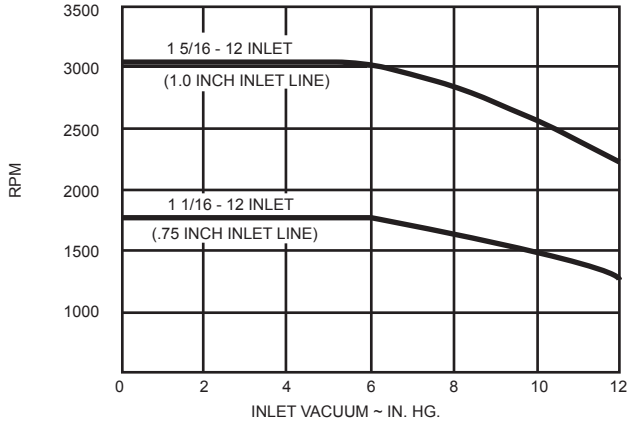
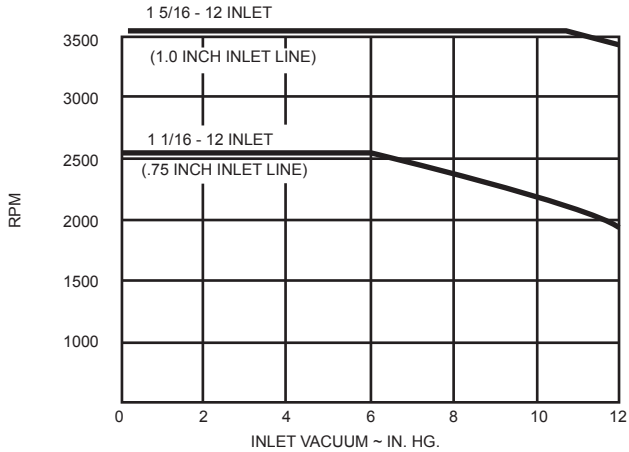
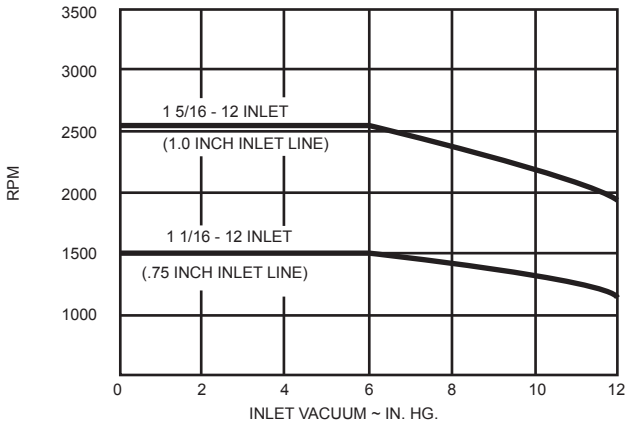


MODEL 40P010



MODEL 40P018

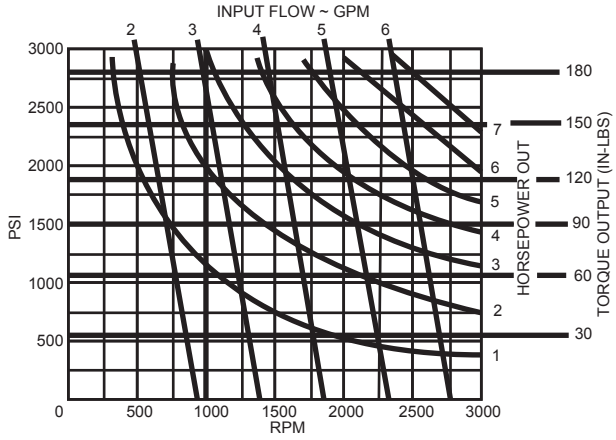


DO NOT operate above the RPM-inlet vacuum curve or 8 in. Hg. for specific inlet port sizes shown.

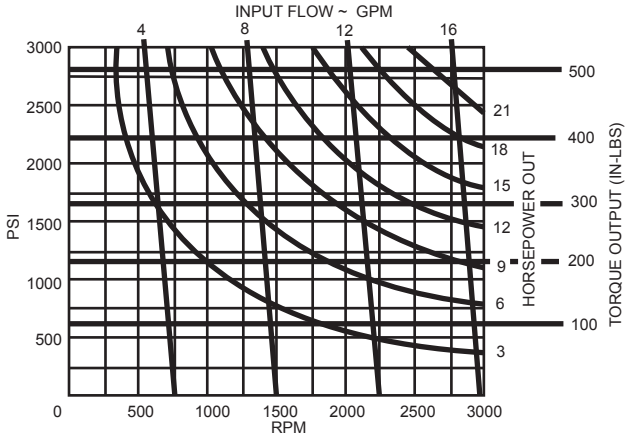
GEAR MOTORS

TYPICAL PERFORMANCE DATA

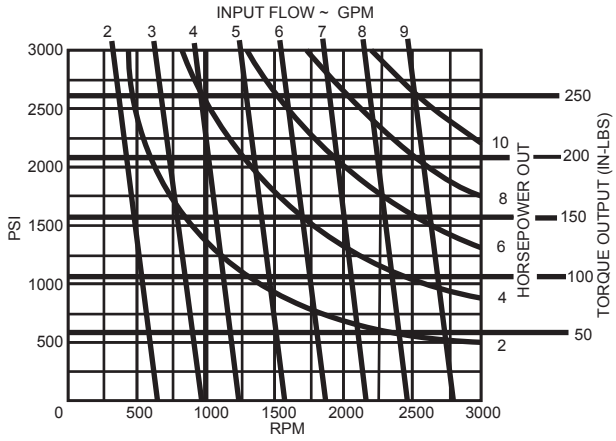
MODEL 40M005



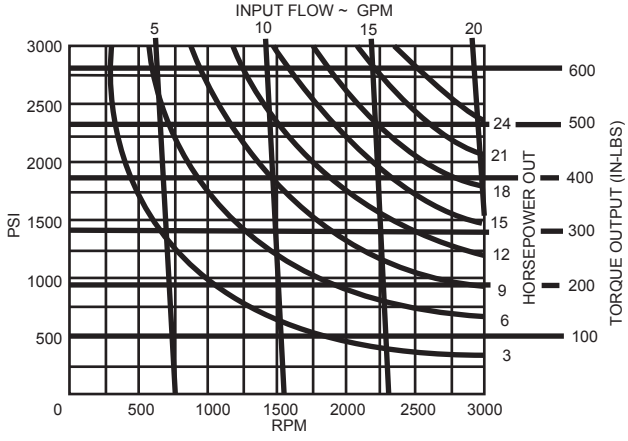
MODEL 40M012



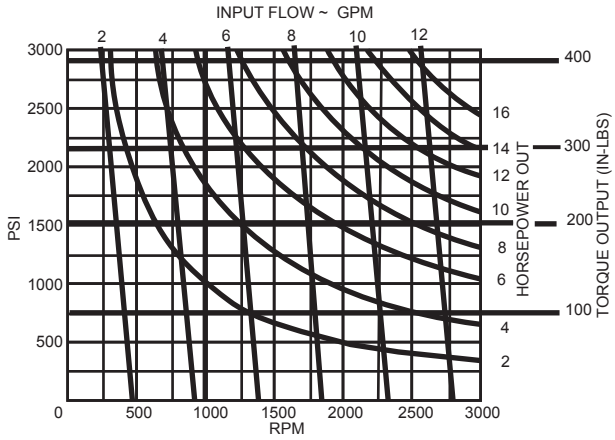
MODEL 40M007



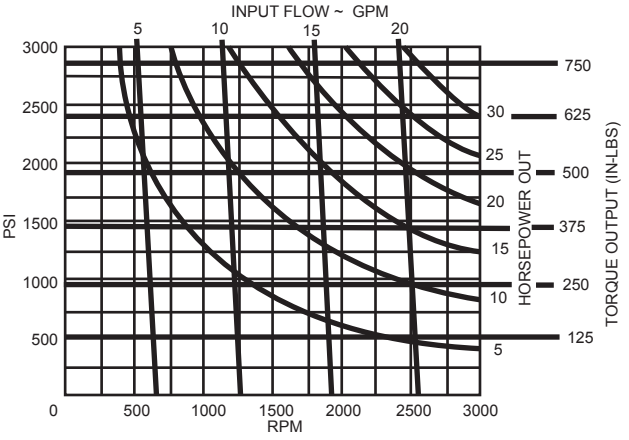
MODEL 40M015



MODEL 40M010



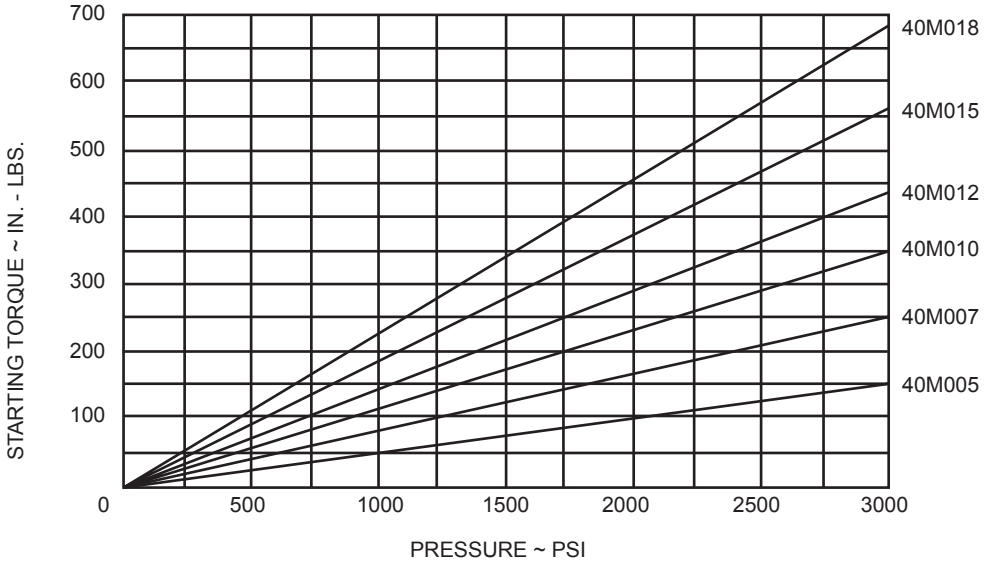
MODEL 40M018



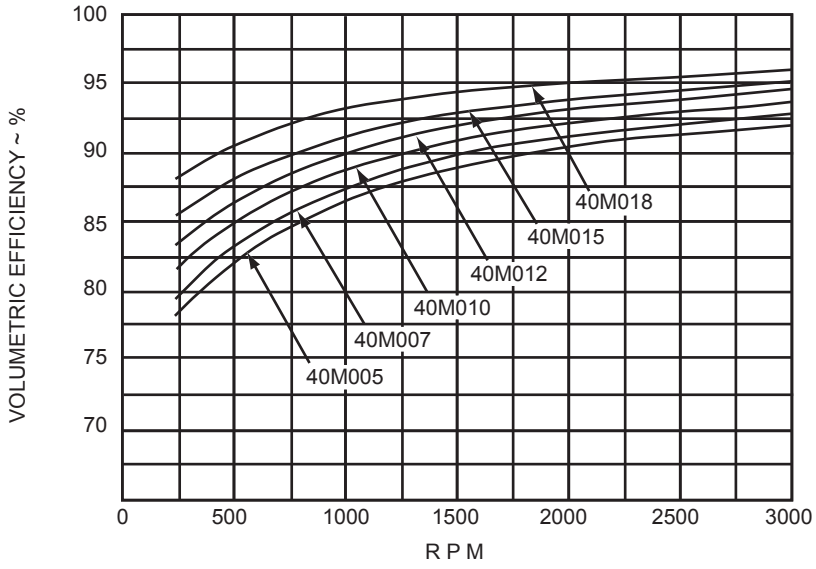
GEAR MOTORS

TYPICAL PERFORMANCE DATA

STARTING ENGINE TORQUE (in. lbs.) vs. PRESSURE (PSI)



VOLUMETRIC EFFICIENCY (%) vs. RPM (TYPICAL)



HOW TO ORDER

Series	Type	Special Options	Size cu.in. /rev x 0.1	Rotation	Mounting	Shaft Size & Type		Ports			
								Location Code	Size		
									Inlet	Outlet	
40	**P** (Pump) **M** (Motor)	**O** None **H*** 250 psi Shaft Seal	**05** **07** **10** **12** **15** **18**	**D*** Dual **R** Right **L** Left	**A*** SAE 'A' 2-Bolt	**A** 5/8" Spline **C*** 5/8" Dia Keyed **D** 5/8" Dia Keyed (Long)	**J** 3/4" Dia Keyed **K** 3/4" Dia Keyed (Long)	**SA**	1-5/16" UN O'Ring	1-1/16" UN O'Ring	**Side**
								SC*	1-1/16" UN O'Ring	1-1/16" UN O'Ring	
								RB	1-5/16" UN O'Ring	1-1/16" UN O'Ring	**Rear**
								RD	1-1/16" UN O'Ring	1-1/16" UN O'Ring	

* Standard

EXAMPLE: 40PH10DACSC

Describes a Series 40 Gear Pump/Motor fitted with a high pressure shaft seal; a displacement of 1.0 cu.in./rev; Bi-directional rotation; SAE 'A' 2-Bolt Mount, 5/8" Dia keyed shaft and 1-1/16" UN O'Ring side Inlet & Outlet Ports.

NOTE: Series 40 Pumps only are stocked. Because of the high pressure shaft seal and the dual rotation feature they can be substituted where required for use as motors.
When used as a motor a case drain connection is only required when the outlet/return pressure is likely to exceed 250 psi.