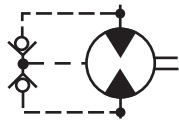
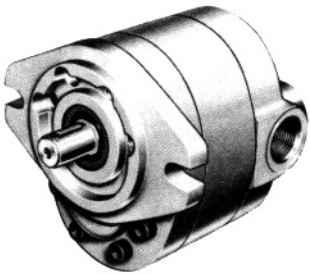


50 Series

Cross Gear Pumps/Motors



The **CROSS Series 50** 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 7 sizes, with displacements from 1.52 to 5.20 cubic inches per revolution, this compact unit can deliver up to 45 US. gpm. in a space less than 6-1/2" x 5-3/4" x 7-1/4".

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

1.52	1.95	2.32	2.74	3.30	3.80	5.20	cu.in./ Rev
24.9	32.0	38.0	44.9	54.1	62.3	85.2	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)	45 gpm (170 l/m)
Maximum speed (continuous - see Inlet Vacuum Curves)	Up to 3000 RPM
Maximum horsepower (at rated speed and pressure)	78 hp (58 kw)
Mounting (any position)	SAE 'B' size, 2-Bolt
Weight	Approx. 19 lbs (8.6 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)	Up to 56 gpm (227 l/m)
Maximum speed (continuous)	Up to 3000 RPM
Maximum horsepower (at rated speed and pressure)	Up to 100 hp (74.6 kw)
Mounting (any position)	SAE 'B' size, 2-Bolt
Weight	Approx. 19 lbs (8.6 kg)

50 Series

Cross Gear Pumps/Motors



STANDARD FEATURES

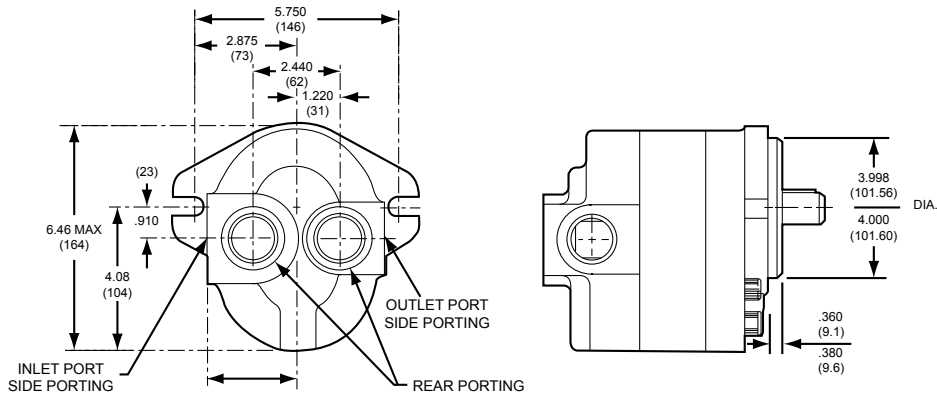
- Rotation: Bi-directional (Dual Rotation)
- Ports: Side, SAE #16 (1-5/16" - 12) U.N. O'Ring thread
- Internal check valves (no external drain required if back pressure is below shaft seal rating)
- Shaft: 7/8" Dia Woodruff keyed (short)
- Shaft Seal: 250 psi. (17 bar)

OPTIONAL FEATURES AVAILABLE

- Ports: Rear inlet and outlet location (See 'How to Order' for port size options)
- Shaft: 7/8" Dia SAE splined (13 tooth)

NOTE: Shafts 'B' and 'D' are available for quantity indent order only.

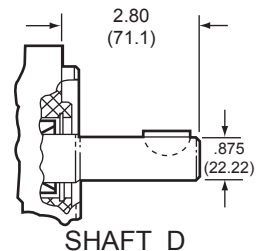
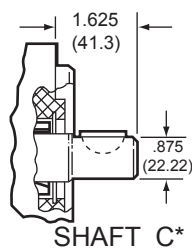
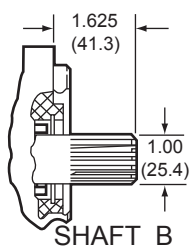
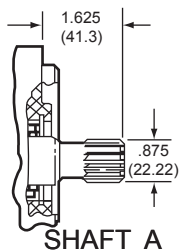
DIMENSIONAL DATA in inches and (millimeters)



DISPLACEMENTS (Cu.In./Rev.) (cc/rev)	1.52 24.9	1.95 32.0	2.32 38.0	2.74 44.9	3.30 54.1	3.80 62.3	5.20 85.2
'A' Dimension (Inches) (mm)	5.60 142.2	5.80 147.3	5.96 151.3	6.15 156.2	6.40 162.6	6.62 168.1	7.21 183.1
'B' Dimensions (Inches) (mm)	4.23 107.4	4.43 112.5	4.56 115.8	4.78 121.4	5.03 127.8	5.25 133.3	5.84 148.3

OUTPUT SHAFT

SHAFT 'A' 13 Tooth, 16/32 pitch; 30° pressure angle; Flat root side fit; Class I.	SHAFT 'B' 15 Tooth, 16/32 pitch; 30° pressure angle; Flat root side fit; Class I.	SHAFT 'C' Woodruff Key: 1" Diameter x 1.4" wide.	SHAFT 'D' Woodruff Key: 1" Diameter x 1.4" wide.
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50 Series

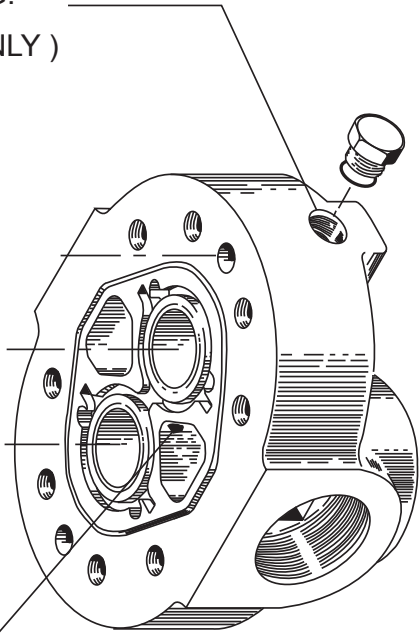
Cross Gear Pumps/Motors



REAR COVER OPTIONS				
Part Number	Series	Port Position	Inlet	Outlet
5P0007007	All - SC Porting	Side	1-5/16" UNO	1-5/16" UNO
5P0007008	All - RF Porting	Rear	1-5/16" UNO	1-5/16" UNO
5P0007012	All - SB Porting	Side	1-5/8" UNO	1-5/16" UNO
5P0007015	All - SA Porting	Side	1-7/8" UNO	1-5/16" UNO
5P0007016	All - RE Porting	Rear	1-5/8" UNO	1-5/16" UNO
5P0007019	All - RD Porting	Rear	1-7/8" UNO	1-5/16" 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.

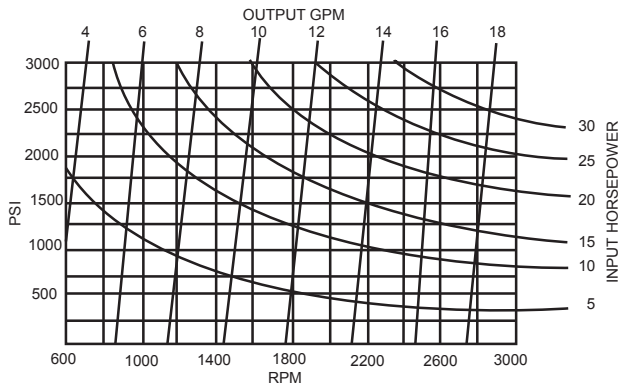




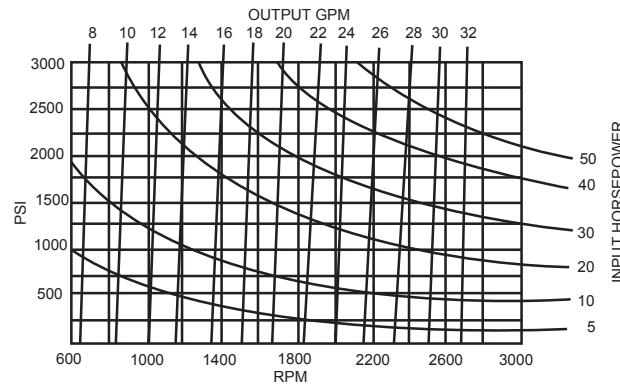
GEAR PUMP - DELIVERY CHARACTERISTICS

TYPICAL PERFORMANCE DATA

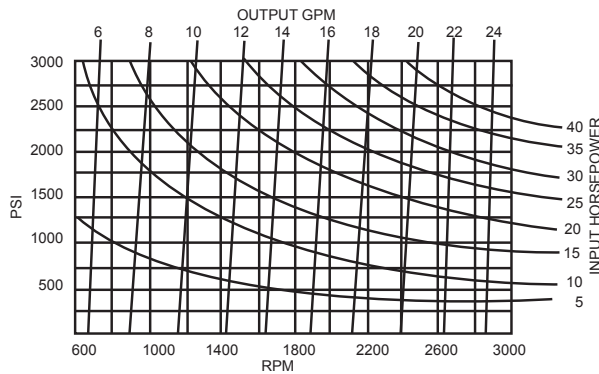
MODEL 50P015



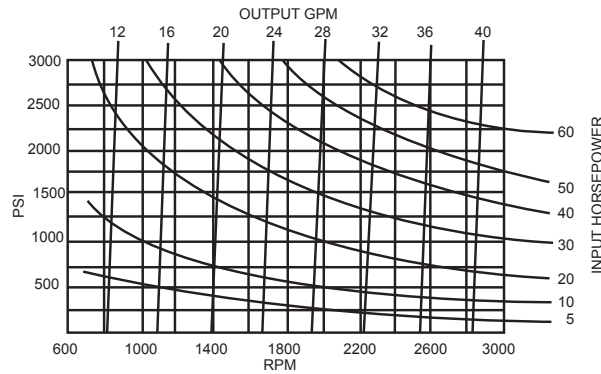
MODEL 50P027



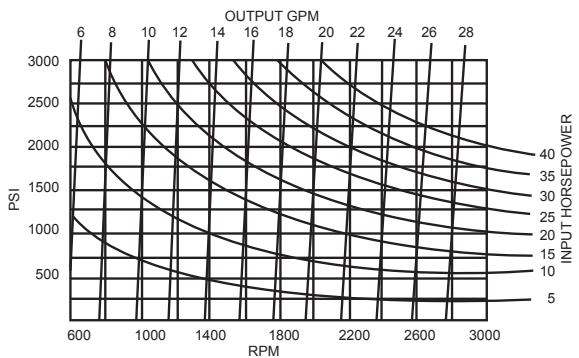
MODEL 50P019



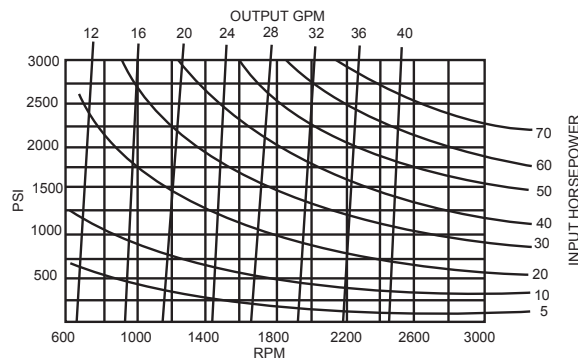
MODEL 50P033



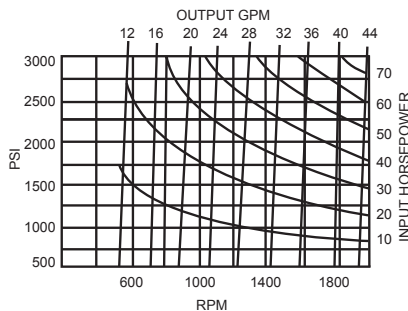
MODEL 50P023



MODEL 50P038



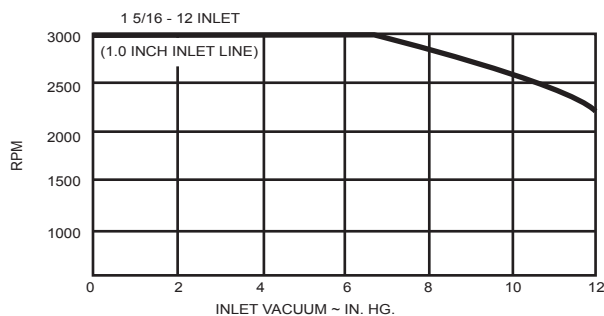
MODEL 50P052



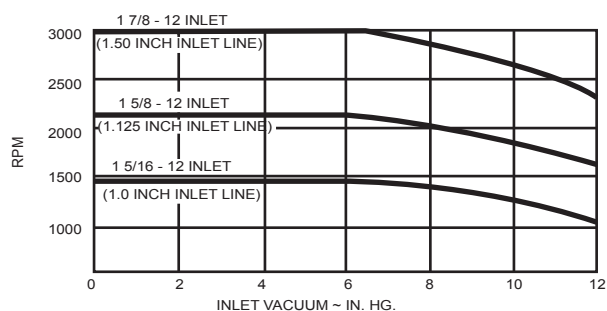
GEAR PUMP - SUCTION CHARACTERISTICS

TYPICAL PERFORMANCE DATA

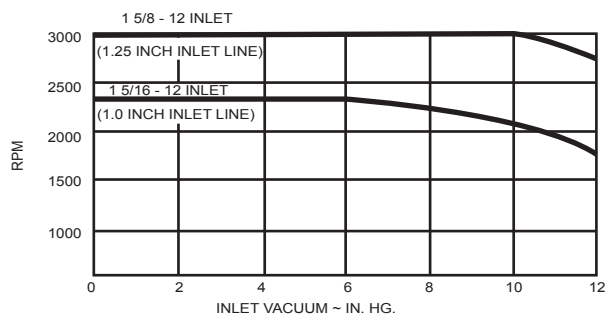
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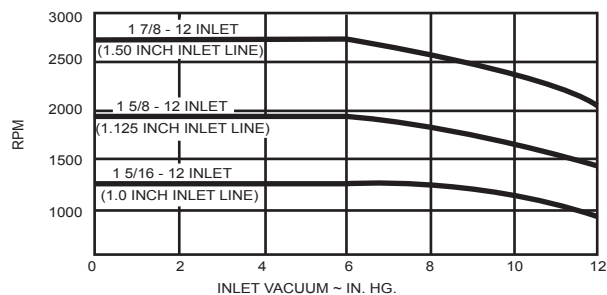
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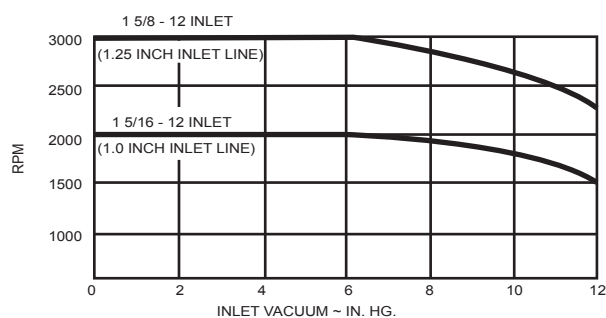
MODEL 50P019



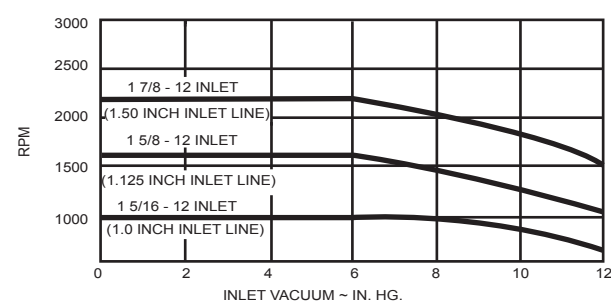
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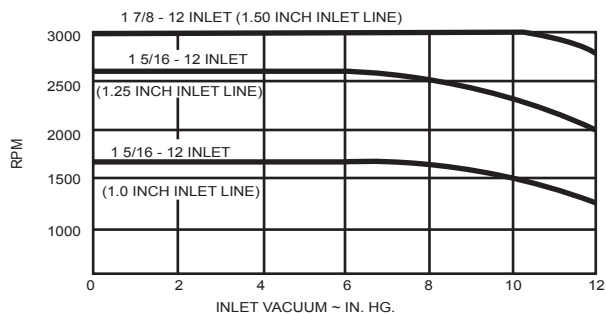
MODEL 50P023



MODEL 50P052



MODEL 50P027



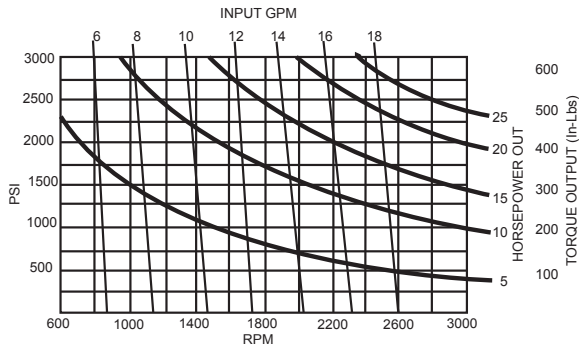
DO NOT operate above the RPM-inlet vacuum curve or 8 in. Hg. for specific inlet port sizes shown.



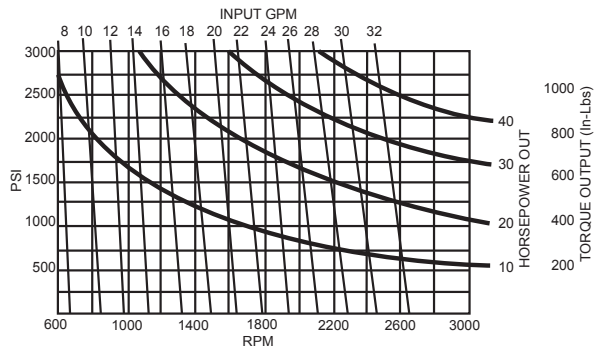
GEAR MOTORS

TYPICAL PERFORMANCE DATA

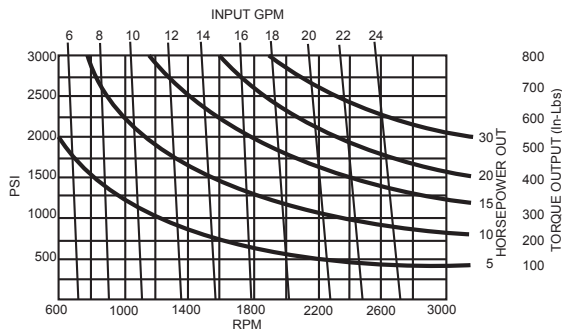
MODEL 50M015



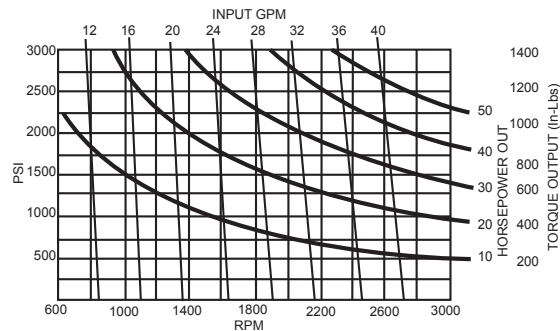
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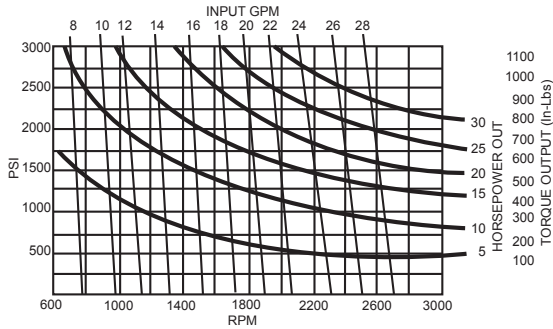
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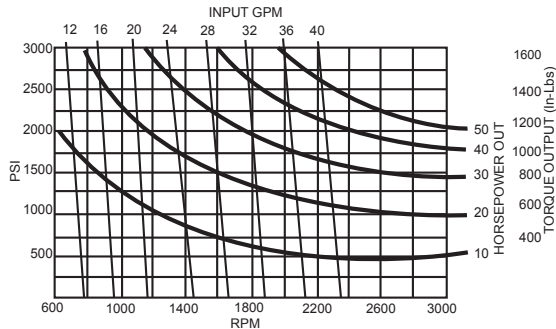
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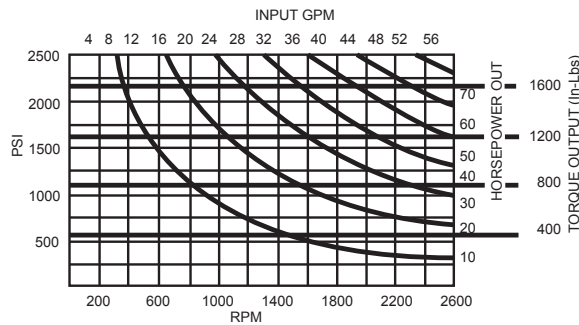
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MODEL 50M038

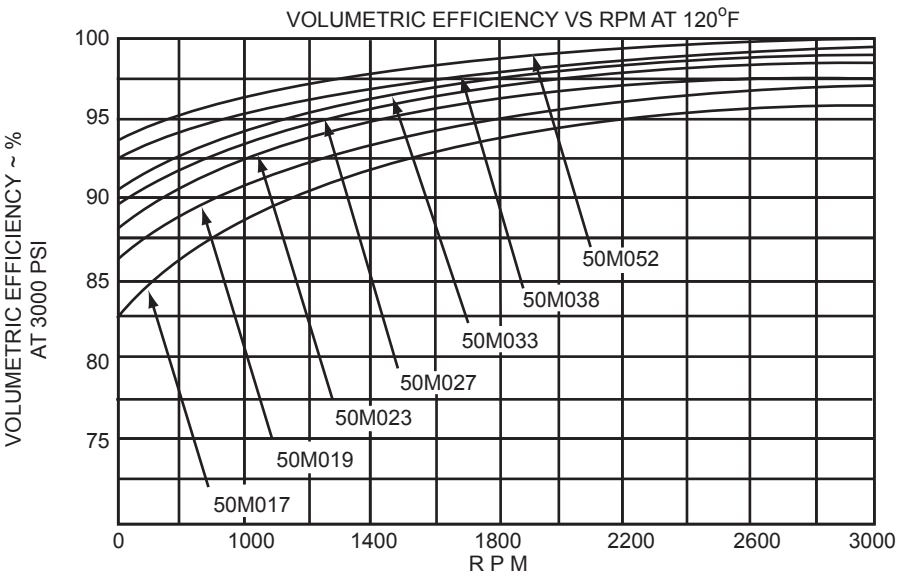


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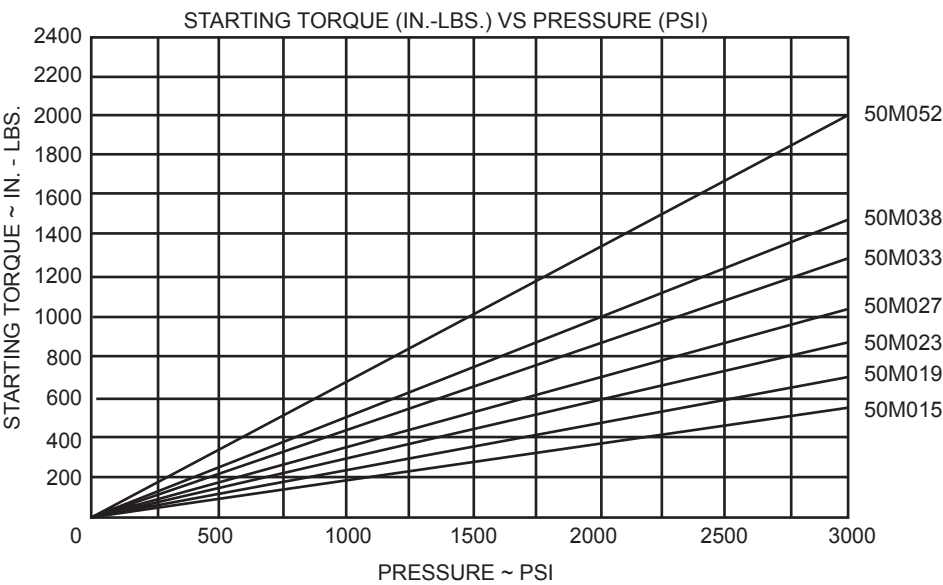


GEAR MOTORS

TYPICAL PERFORMANCE DATA



VOLUMETRIC EFFICIENCY



STARTING TORQUE

50 Series

Cross Gear Pumps/Motors



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	
50	P* (Pump) M (Motor)	O None H* 250 psi Shaft Seal	15 19 23 27 33 38 52	D* Dual R Right L Left	B* SAE 'B' 2-Bolt	A 7/8" Spline B* 1" Spline C 7/8" Dia Keyed	D 7/8" Dia Keyed (Long)	SA	1-7/8" UN O'Ring	1-5/16" UN O'Ring	Side
								SB	1-5/8" UN O'Ring	1-5/16" UN O'Ring	
								SC	1-5/16" UN O'Ring	1-5/16" UN O'Ring	
								RD	1-7/8" UN O'Ring	1-5/16" UN O'Ring	Rear
								RE	1-5/8" UN O'Ring	1-5/16" UN O'Ring	
								RF	1-5/16" UN O'Ring	1-5/16" UN O'Ring	

* Standard

EXAMPLE: 50PH23DBCSC

Describes a Series 50 Gear Pump/Motor fitted with a high pressure shaft seal; a displacement of 2.3 cu.in./rev; Bi-directional rotation; SAE 'B' 2-Bolt Mount, 7/8" Dia keyed shaft and 1-5/16" UN O'Ring side Inlet & Outlet Ports.

NOTE: Series 50 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.