

Hydraulic Motor Driven

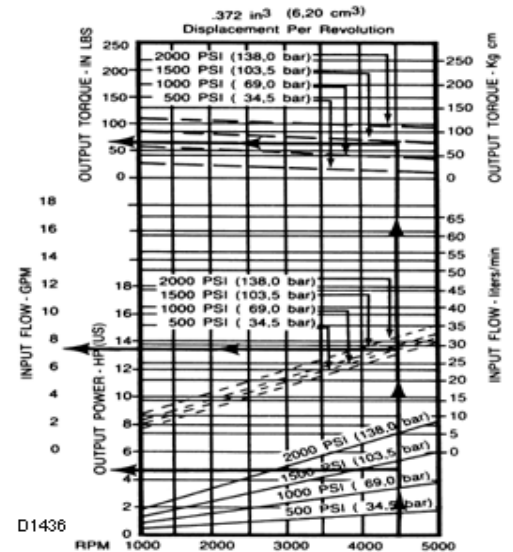
How to Determine the Proper Motor for Various Centrifugal Pumps

Go to the centrifugal pump curve and determine the RPM required to give you satisfactory centrifugal pump operation. Let us assume for the discussion that your require 2500 RPM.

Refer to the motor curves for M2-169 and go up from 2500 RPM until you hit the Flow Chart. Go over to 21 GPM. RPM will require between 19 and 23 GPM depending on the pressure of the system.

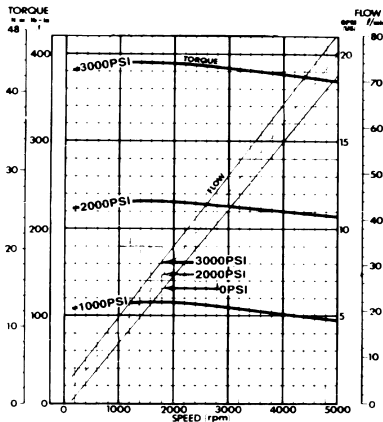
Next, go up from the bottom until you hit the PSI of the system. Here we are assuming 1000 PSI. 1000 PSI gives you a torque about 245 pound-inches. Using the horsepower formula ($HP = 245 \times 2500 / 63025$) this equal 9.72 horsepower. If 9.72 HP is sufficient horsepower at the selected 2500 RPM speed, then you have a good hydraulic motor selection for your centrifugal pump.

Hydraulic motors should be sized to bypass as little oil flow as possible to avoid excessive heat build up. Proper sizing of the hydraulic motor to the hydraulic system is essential. Select the motor that will deliver the RPM and torque (HP) required to drive the centrifugal pump at the required speed (see pump curve).



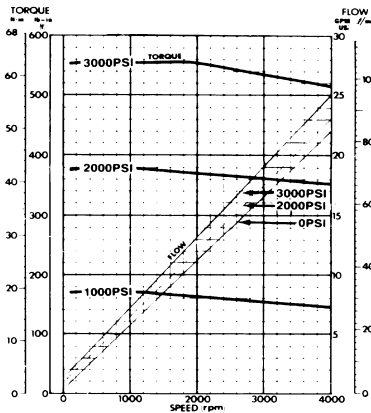
HYDRAULIC MOTOR
FLOW 12 - 16 GPM
SPEED 3000 - 4000 RPM
HPI NICHOLS# M2B085-16T-40NB

D1437



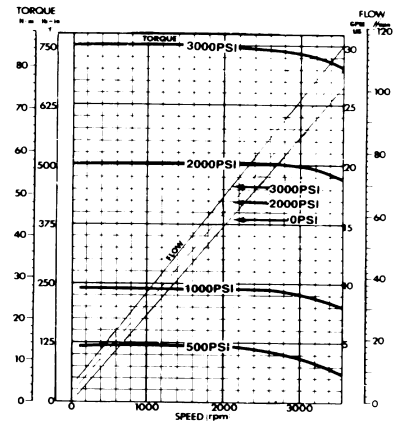
HYDRAULIC MOTOR
FLOW 16 - 22 GPM
SPEED 3000 - 4000 RPM
HPI NICHOLS# M2B127-16T-40NB

D1438



HYDRAULIC MOTOR
FLOW 22 - 30 GPM
SPEED 1500 - 3500 RPM
HPI NICHOLS# M2B169-16T-40NB

D1449



Explanation of Performance Curves

1. Torque curve pressures are based on the pressure differential across the motor as measured at the inlet and outlet ports.

2. Torque is read in either pounds-inch or Newton-meters

3. Flow is read in either GPM or liters-minute

Pressure

140 BAR	Continuous Ration
2000 PSI	100 PSI
210 BAR	Intermittent Duty
3000 PSI	1500 PSI

Fluids

To ensure ultimate component life, use premium quality hydraulic oils

1100 Centistrokes	Max.
5000 SUS	
13.5 Centistrokes	Min.
70 SUS	

The above viscosities must be maintained at operating temperatures. Fluids with effective quantities if any-wear agents or additives (such as Mobile Oil DTE 26) are highly recommended. Agents can be zinc or sulphur-phosphorus complexes.

Recommended Operating Temperature Range

180-1/3°F (82°C) to -403-1/3° F oil temperature. For different operating conditions, fluids and/or temperatures, consult the factory.

Hydraulic Motor Formulae

$$HP \text{ (input)} = \frac{PSI \times GPM}{1714}$$

$$HP \text{ (output)} = \frac{T \times RPM}{63025}$$

T = Torque in pounds-inch
 GPM = Gallons per minute

Pressure Range

0-2000 PSI continuous (140 BAR)

Oil

300 SUS Mobil DTE-26 (65cST)

Temperature

100°F (38°C)