

## High Speed, High Pressure Vane Motors

M - Motors

25M, 35M, 45M, 50M



## Dependable

The M Motor is a proven design that has been operating in the field for decades. They are available with either standard or heavy duty bearings.

These motors start out with high efficiencies, and operates at those levels throughout the life of the motor. This is inherent in this vane motor design.

The bi-rotational design of these motors lends itself to quick reversal motion. They can be stalled at as high as 65% of maximum pressure rating at 1200r/min without damage.

## Versatile

This motor design can operate at as low as 100 rpm to as high as 3,000 rpm at maximum pressures. It can run at faster speeds as system pressures decrease.

Because both ports can be pressurized at the same time, the M-Motor is perfect for multiple motors connected in series.

The heavy duty bearing allows for indirect drive options such as gears, belts and pulleys.

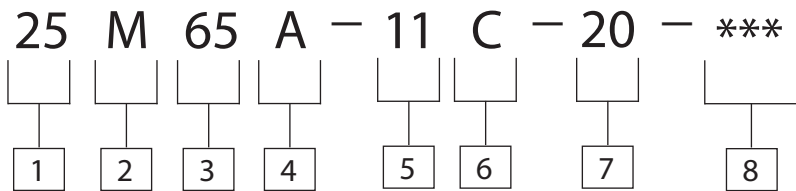
Several port position configurations are available.



## Serviceable

The internal rotating parts are self contained in a cartridge kit in this design. This makes this motor easily field serviceable. In most cases the motor can stay in place while the ring, rotor, and vanes are replaced with new. Port orientation adjustments too can be done in the field.

## Model Codes



### 1 Series

25M }  
35M } Standard  
45M } bearing  
50M }

26M }  
36M } Heavy duty  
46M } bearing  
51M }

### 2 Vane Motor

### 3 Ring Size - Nom. Torque Rating (lb. in./100 psi)

25M - 42, 55 & 65  
35M - 80, 95 & 115  
45M - 130, 155 & 185  
50M - 220, 255 & 300

### 4 Mounting Flange & Port Connections

A - SAE type 2-bolt mounting flange and SAE 4-bolt flange connections

### 5 Shaft

1 - Straight keyed (Optional)  
11 - Splined (STD)

### 6 Cover Position (Viewing cover end)

A - Cover port opposite body port  
B - Cover port 90 CCW from body port  
C - Port connections in line  
D - Cover port 90 CW from body port

### 7 Design 20-29

### 8 Special Features Suffix

114 } \*50M only  
124 }

\* See specification notes for max pressures, etc.

## Physical Specifications

Model Series	Mounting	Std Shaft Splined	Optional Shaft Keyed	Approx Weight kg (lb)
25M	SAE "B" 2 Bolt	7/8" - 13 Tooth	7/8" X .187 Key	18 (40)
35M	SAE "C" 2 Bolt	1 1/4" - 14 Tooth	1 1/4" X .312 Key	29 (64)
45M	SAE "C" 2 Bolt	1 1/4" - 14 Tooth	1 1/4" X .312 Key	39 (85)
50M	SAE "D" 2 Bolt	1 3/4" - 13 Tooth	1 3/4" x .437 Key	73 (160)

## Performance Specifications

Model Series	Torque Nm/6,9 bar (lb. in./100psi)	Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Flow Input @ 1200 r/min L/m in (USgpm)	Max. Torque Nm (lb. in.) @ Max. Pressure	Maximum Speeds & Pressure
25M	4,7 (42) 6,2 (55) 7,3 (65)	43,9 (2.68) 57,7 (3.52) 68,7 (4.19)	52,7 (13.9) 69,4 (18.3) 82,6 (21.8)	115,8 (1025) 151,4 (1340) 180,8 (1600)	3600 r/min @ 34 bar (500 psi) † 4000 r/min @ 34 bar (500 psi) ‡ 2600 r/min @ 155 bar (2250 psi) † 3000 r/min @ 172 bar (2500 psi) ‡
35M	9,0 (80) 10,7 (95) 13,0 (115)	83,6 (5.10) 100,3 (6.12) 121,9 (7.44)	100,4 (26.5) 120,5 (31.8) 146,3 (38.6)	221,5 (1960) 264,4 (2340) 320,9 (2840)	
45M	14,7 (130) 17,5 (155) 20,9 (185)	138,0 (8.42) 163,2 (9.96) 193,2 (11.79)	165,6 (43.7) 195,9 (51.7) 232,3 (61.3)	361,6 (3200) 429,4 (3800) 502,9 (4450)	
50M	24,9 (220) 28,8 (255) 33,9 (300)	231,3 (14.11) 268,2 (16.36) 317,2 (19.35)	277,8 (73.3) 322,2 (85.0) 380,7 (100.5)	615,9 (5450) 717,6 (6350) 844,1 (7470)	2800 r/min @ 34 bar (500 psi) † 3200 r/min @ 34 bar (500 psi) ‡ 2200 r/min @ 155 bar (2250 psi) † 2400 r/min @ 172 bar (2500 psi) ‡●

† Continuous operation

‡ Intermittent operation: 10% of total operating time; each application of pressure and/or speed not to exceed 6 seconds

● 114 model suffix: 2500 psi, counterclockwise; 2250 psi, clockwise. (Rotation viewed from shaft end)

● 124 model suffix: 2500 psi, bi-directional rotation

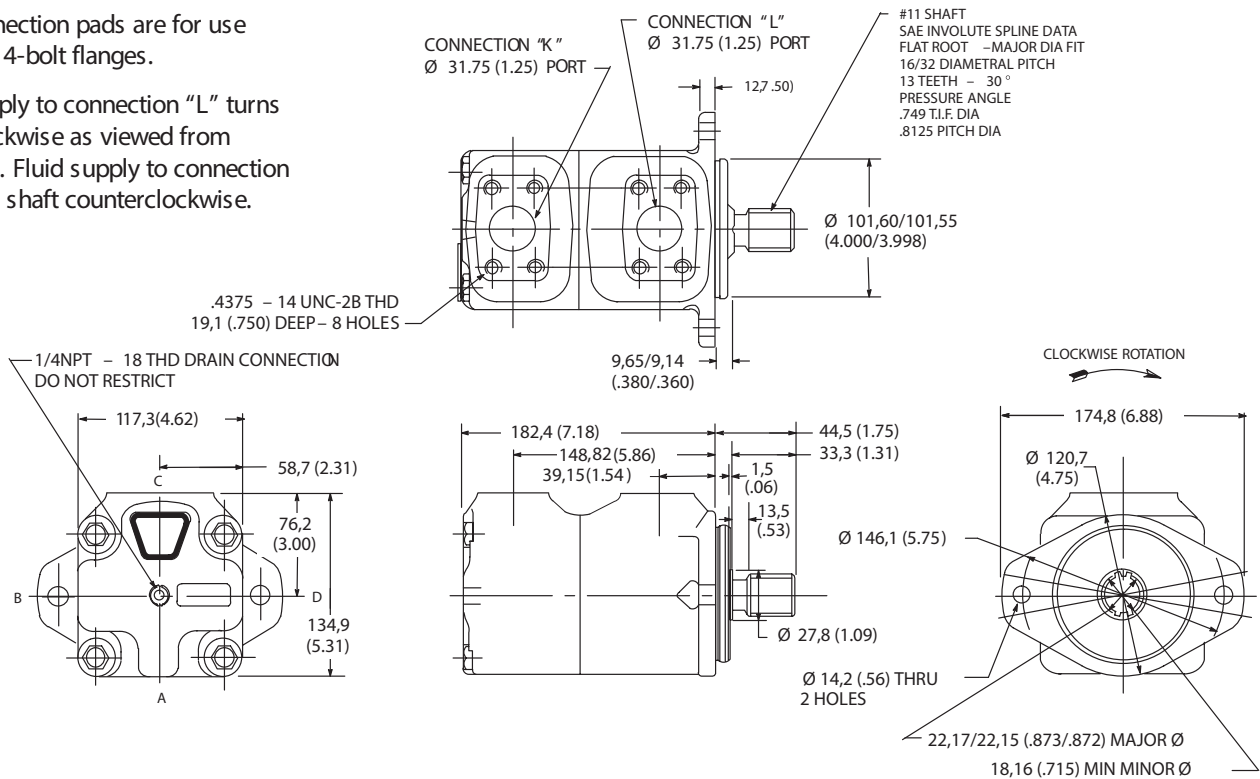
## Installation Dimensions

### 25M Motors

Dimensions in millimeters (inches)

Port connection pads are for use with SAE 4-bolt flanges.

Fluid supply to connection "L" turns shaft clockwise as viewed from shaft end. Fluid supply to connection "K" turns shaft counterclockwise.

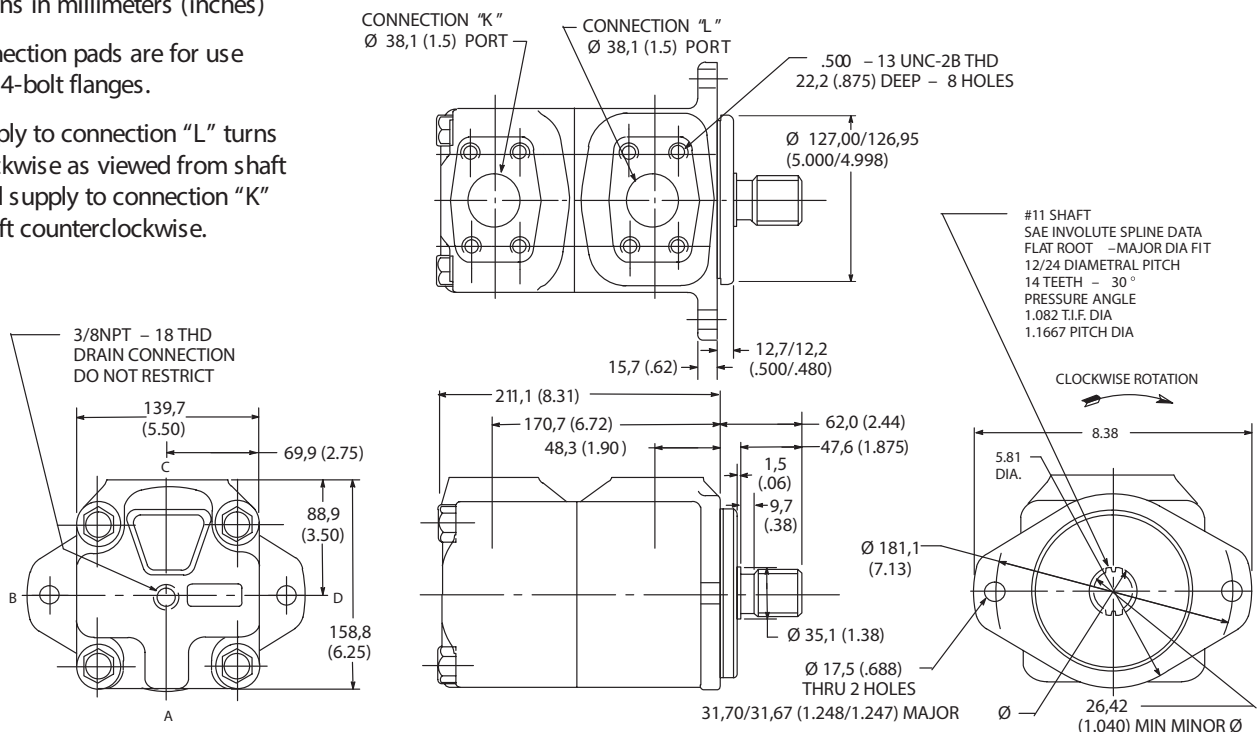


### 35M Motors

Dimensions in millimeters (inches)

Port connection pads are for use with SAE 4-bolt flanges.

Fluid supply to connection "L" turns shaft clockwise as viewed from shaft end. Fluid supply to connection "K" turns shaft counterclockwise.





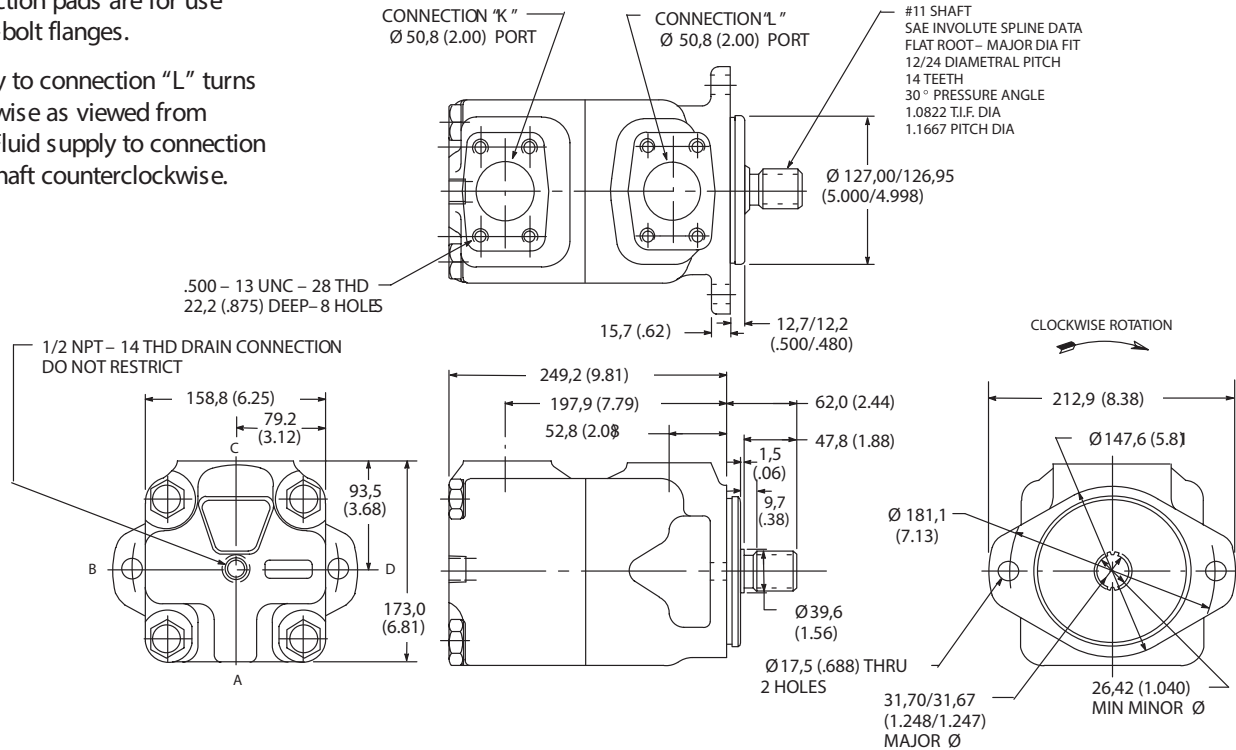
## Installation Dimensions

### 45M Motors

Dimensions in millimeters (inches)

Port connection pads are for use with SAE 4-bolt flanges.

Fluid supply to connection "L" turns shaft clockwise as viewed from shaft end. Fluid supply to connection "K" turns shaft counterclockwise.

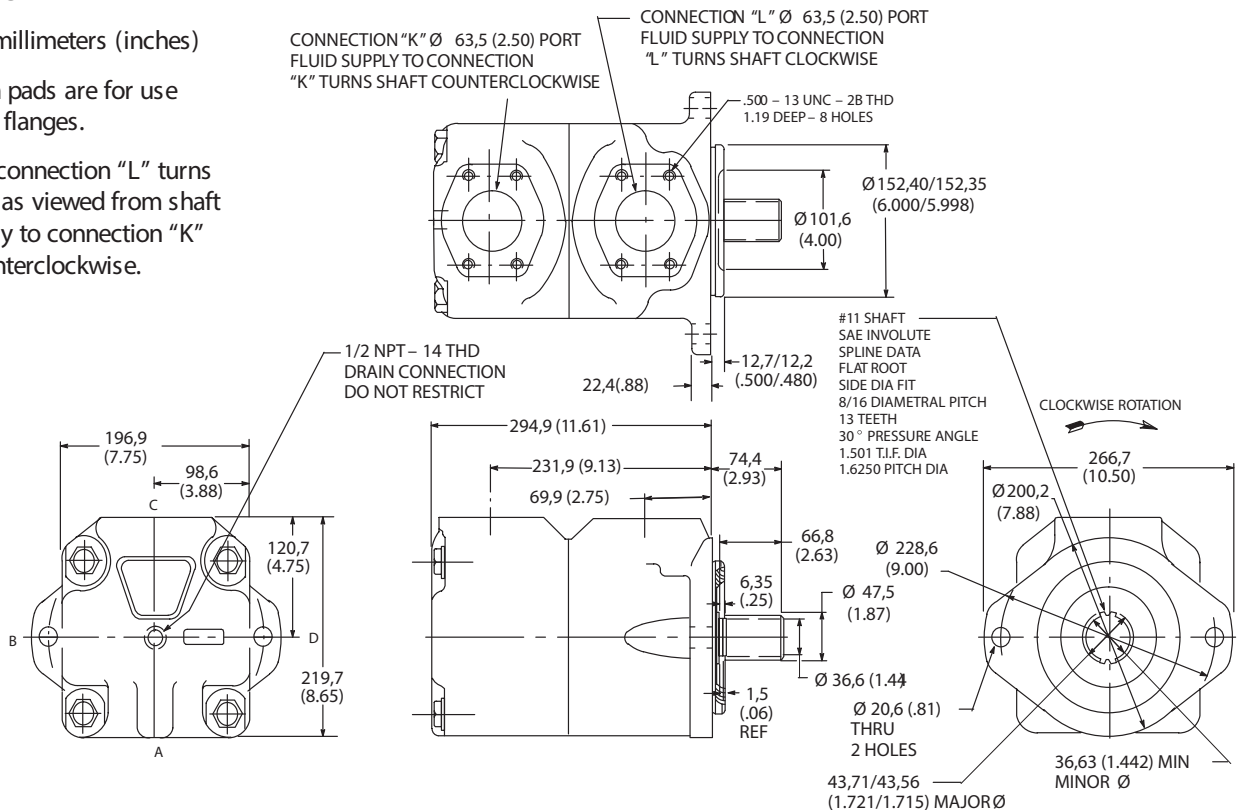


### 50M Motors

Dimensions in millimeters (inches)

Port connection pads are for use with SAE 4-bolt flanges.

Fluid supply to connection "L" turns shaft clockwise as viewed from shaft end. Fluid supply to connection "K" turns shaft counterclockwise.

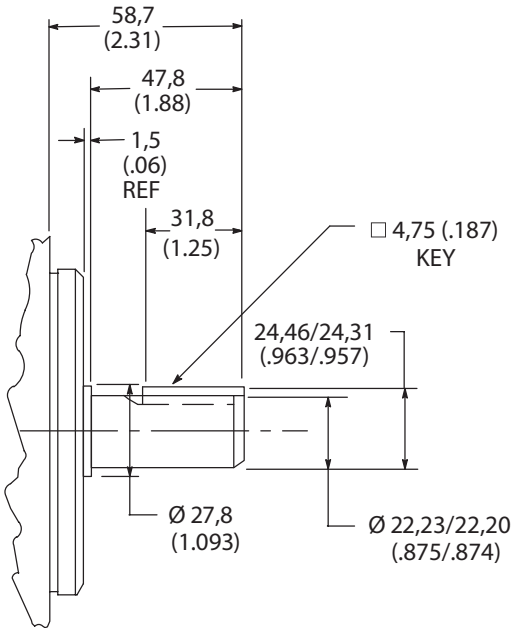


## Optional Shafts

### 25M

No. 1 straight keyed shaft

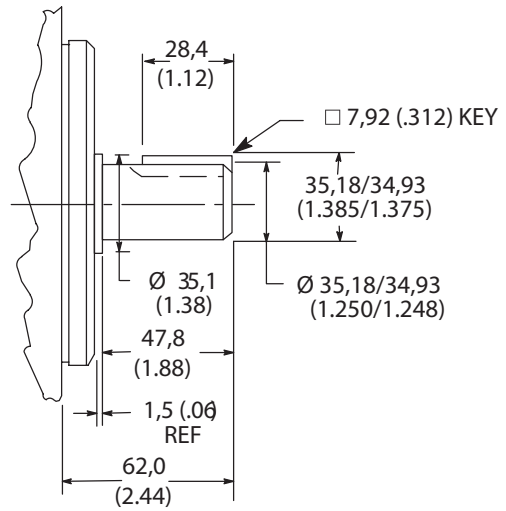
Dimensions in millimeters (inches)



### 35M & 45M

No. 1 straight keyed shaft

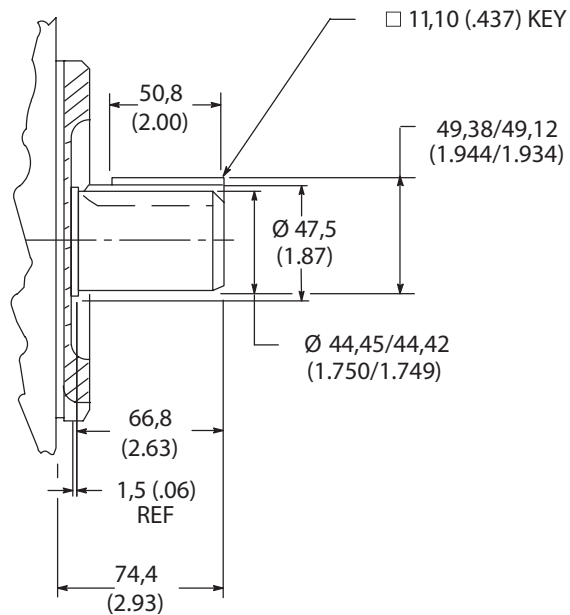
Dimensions in millimeters (inches)



### 50M

No. 1 straight keyed shaft

Dimensions in millimeters (inches)



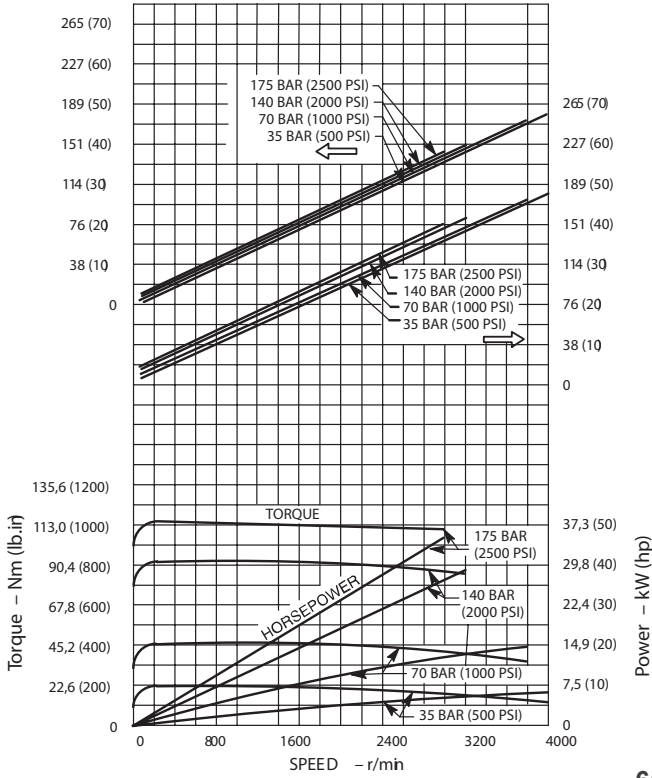
# Typical Performance

## 25M Motors

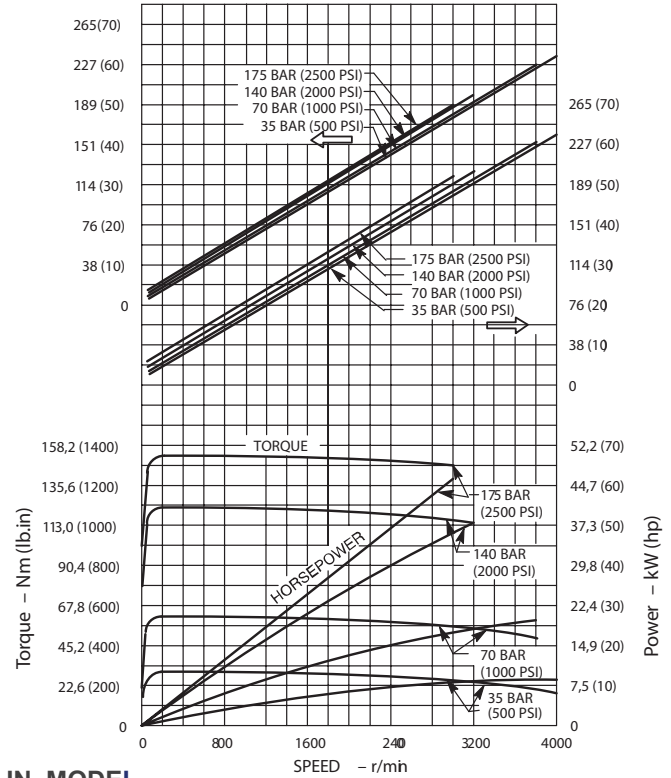
Performance Constants:

Oil SAE 10W, viscosity 32 cSt (150 SUS) @ 38°C (100°F)

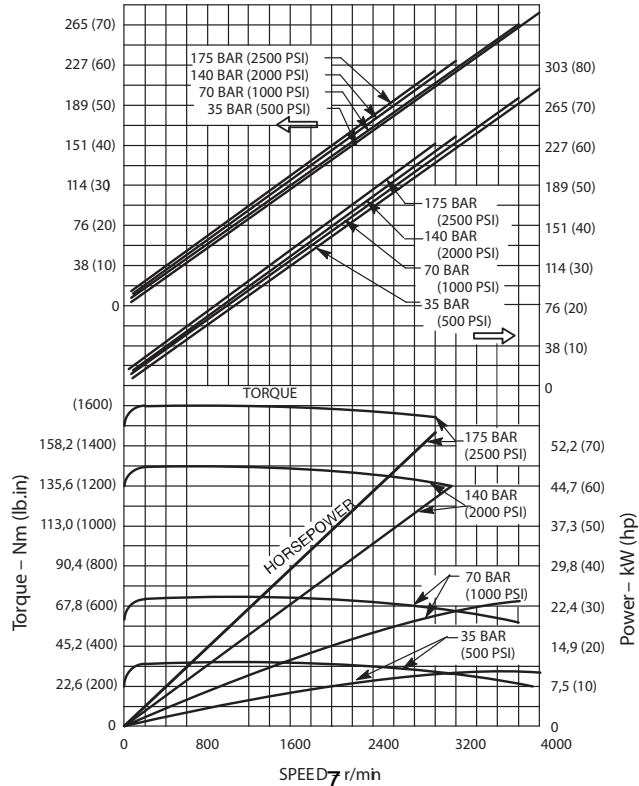
**42 LB. IN. MODEL**



**55 LB. IN. MODEL**



**65 LB. IN. MODEL**



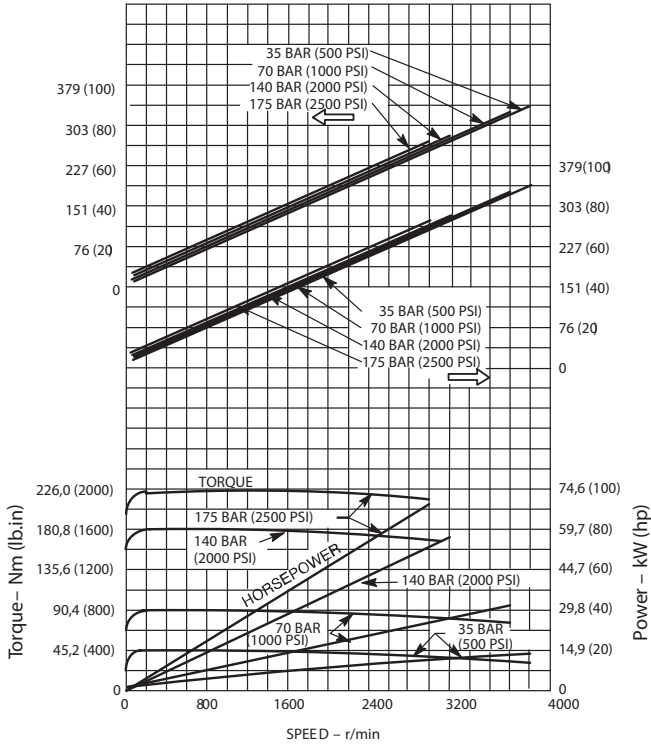
# Typical Performance

## 35M Motors

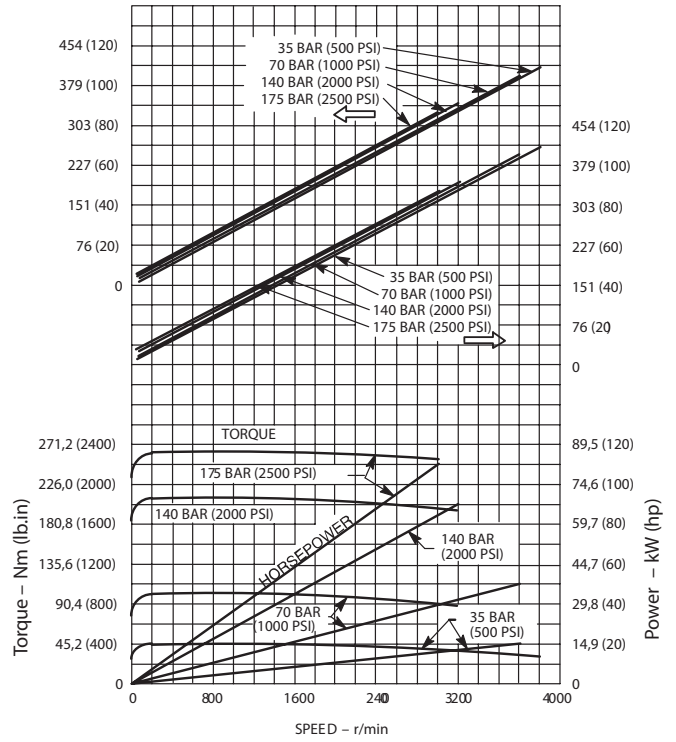
Performance Constants:

Oil SAE 10W, viscosity 32 cSt (150 SUS) @ 38°C (100°F)

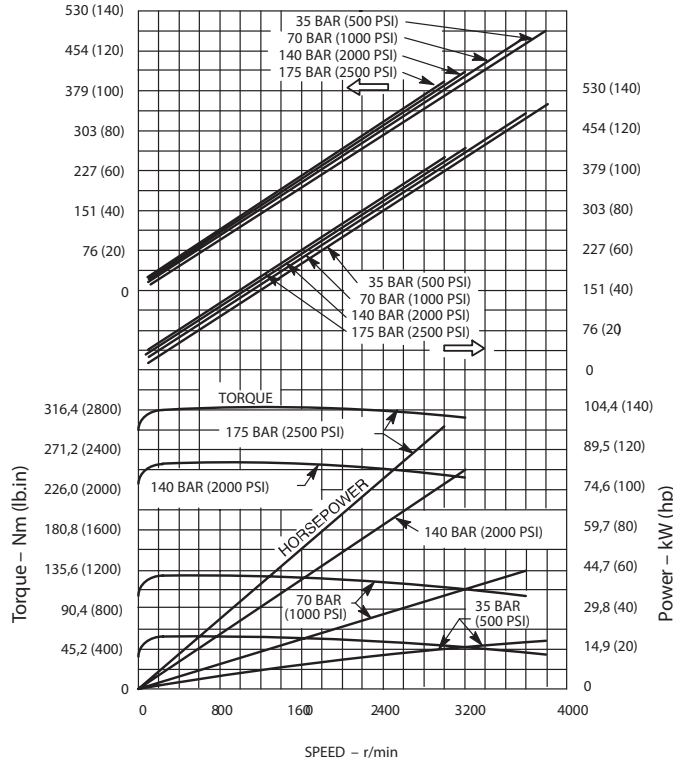
**80 LB. IN. MODEL**



**95 L B. IN. MODEL**



**115LB. N. MODEL**

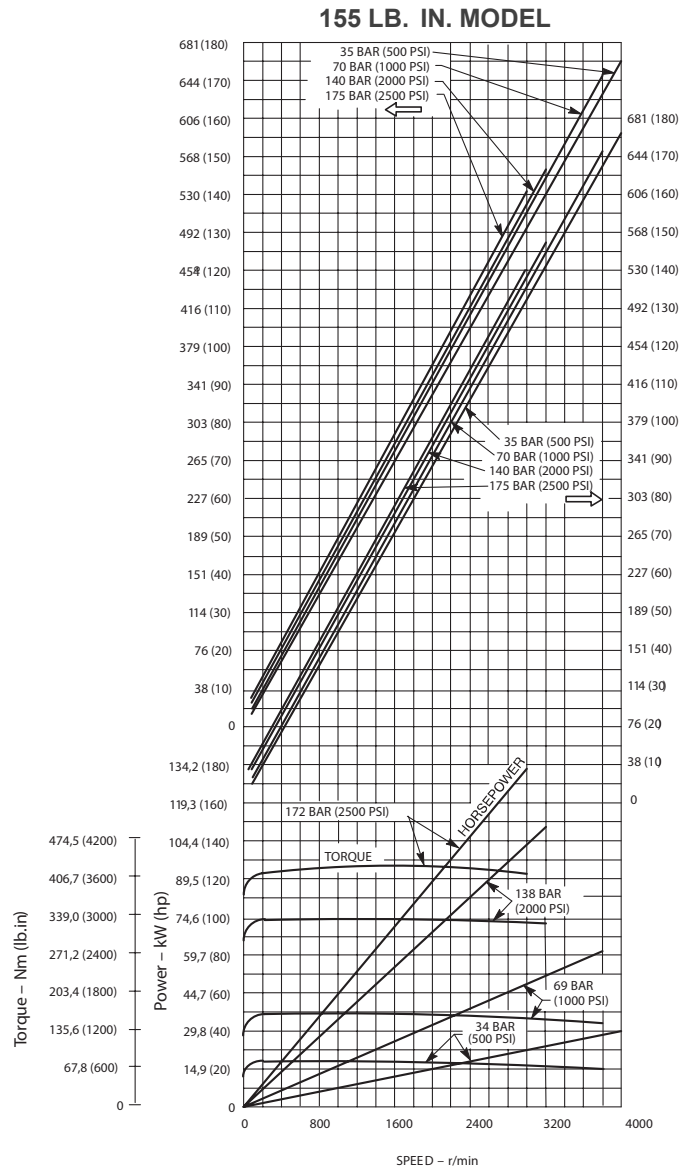
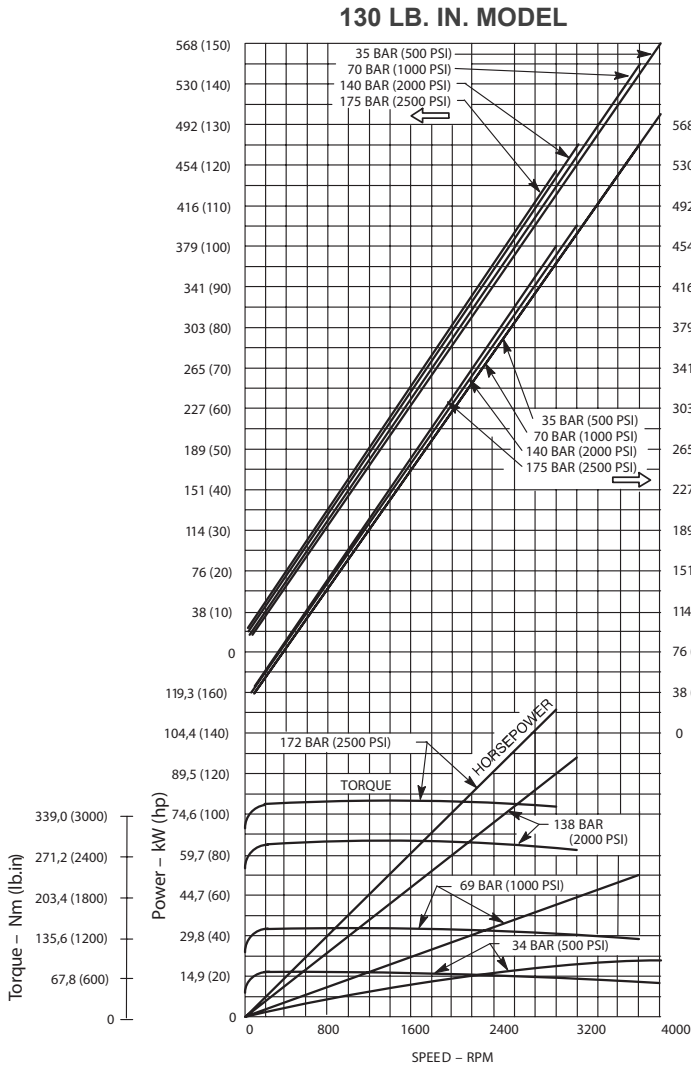


## Typical Performance

### 45M Motors

Performance Constants:

Oil SAE 10W, viscosity 32 cSt (150 SUS) @ 38°C (100°F)

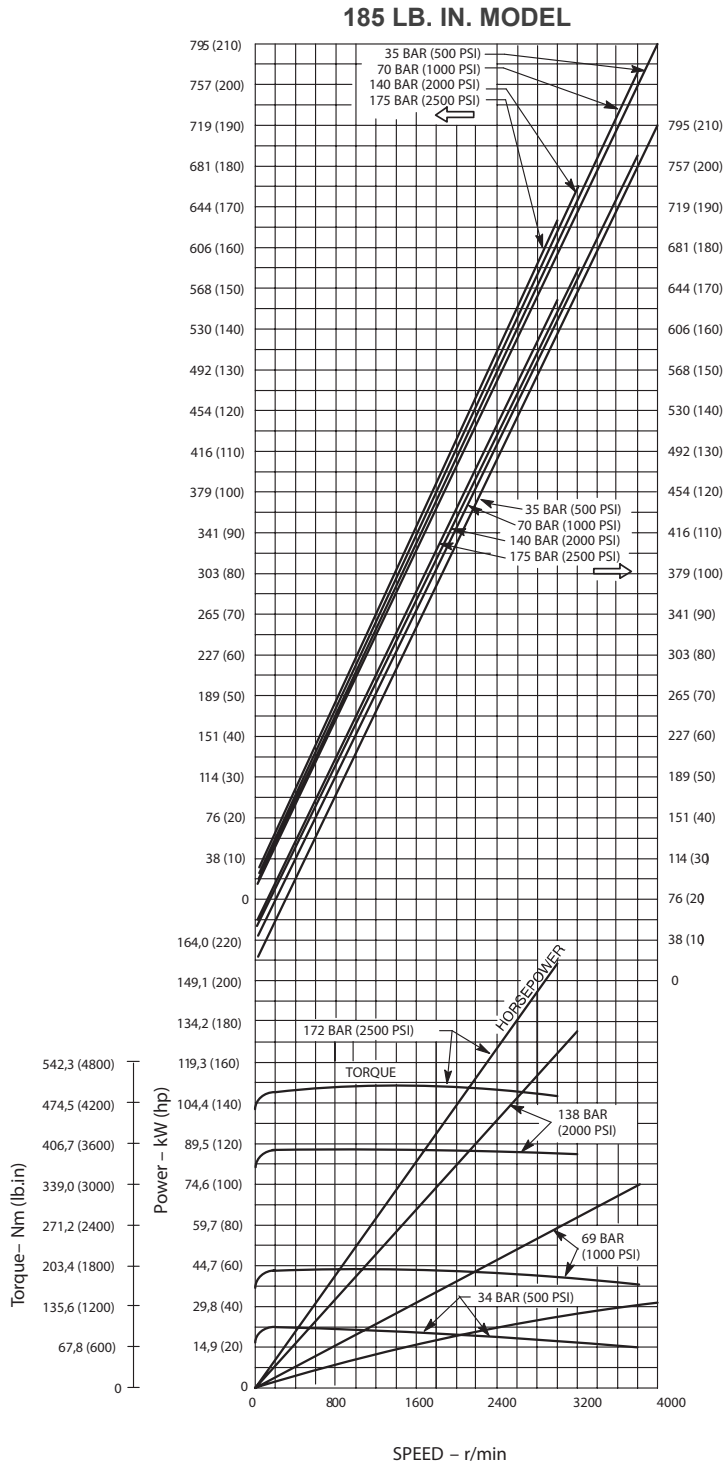


## Typical Performance

### 45M Motors

#### Performance Constants:

Oil SAE 10W, viscosity 32 cSt (150 SUS) @ 38°C (100°F)

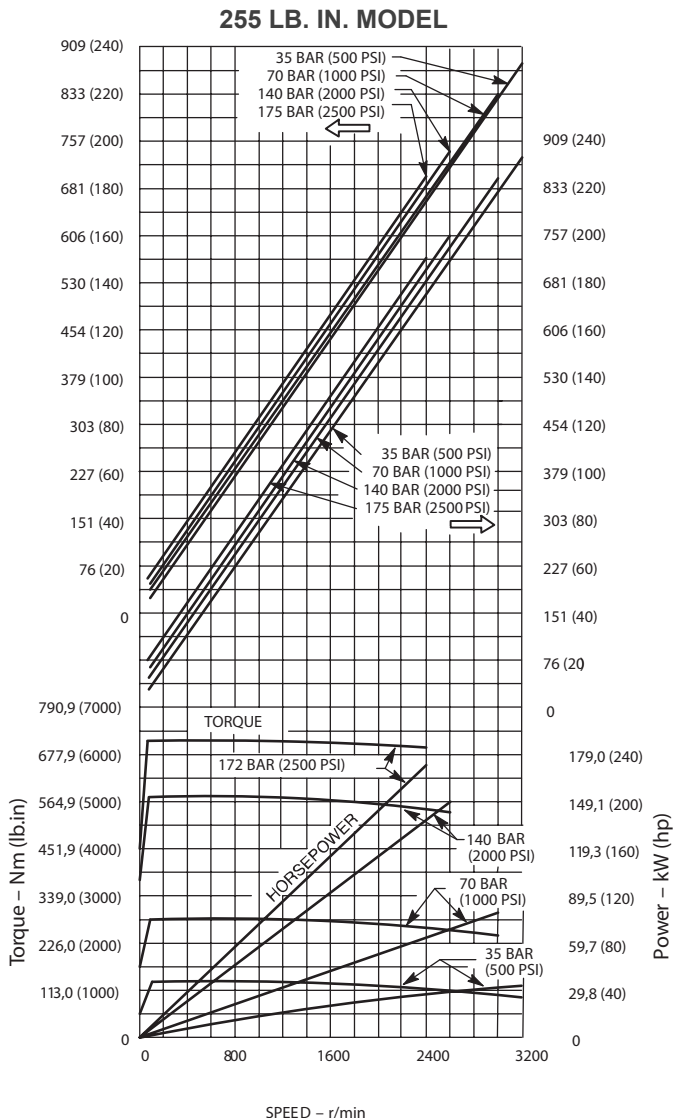
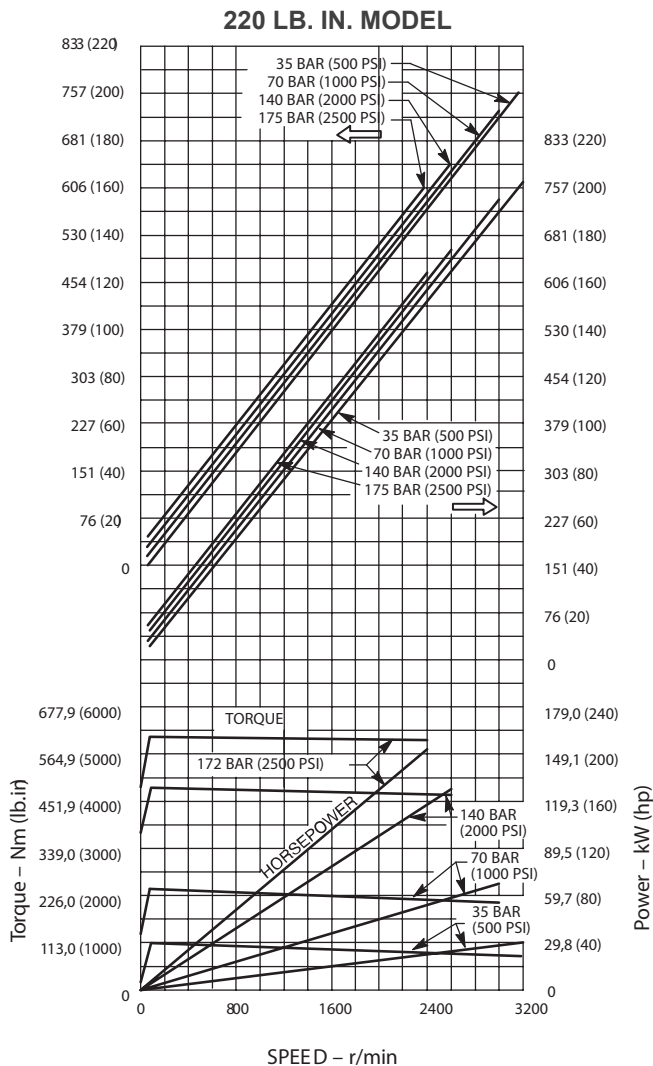


## Typical Performance

### 50M Motors

Performance Constants:

Oil SAE 10W, viscosity 32 cSt (150 SUS) @ 38°C (100°F)



## Typical Performance

### 50M Motors

Performance Constants:

Oil SAE 10W, viscosity 32 cSt (150 SUS) @ 38°C (100°F)

