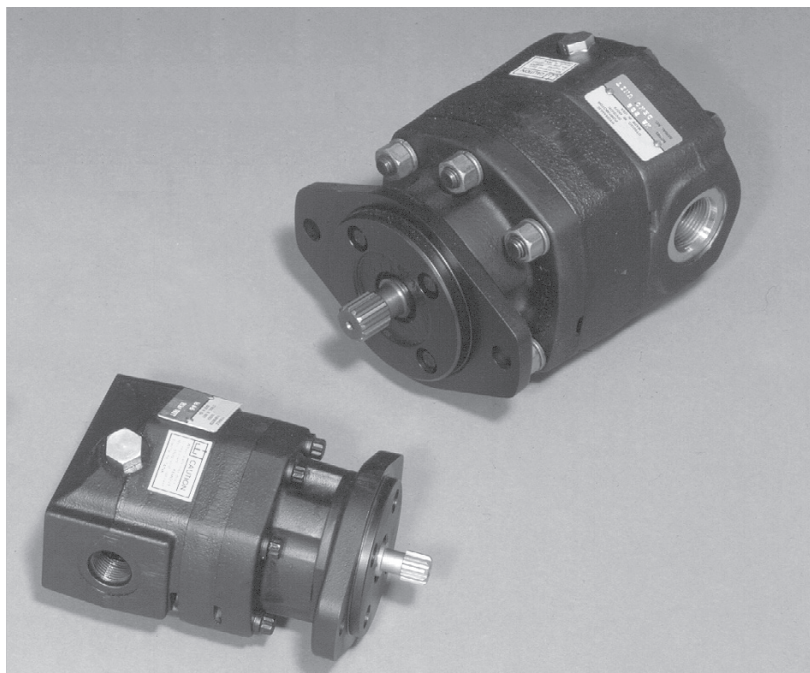
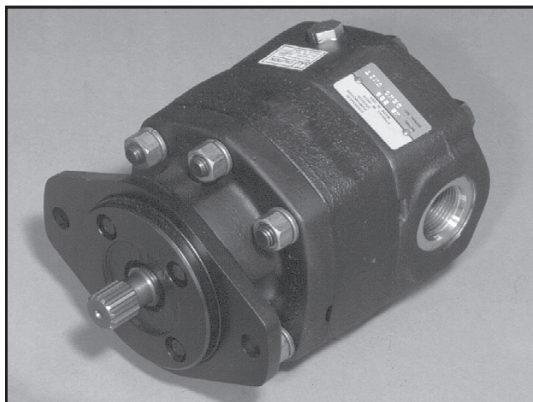




# *High Speed Hydraulic Motors*

*Catalog HY13-2600-800-001/NA*





## Features

- **High Starting Torque** typically 90% of running torque.
- **Smooth Output Torque** throughout the entire speed range of the motor.
- **High Speed Capabilities** up to 7500 rpm on some models.
- **BiDirectional Operation** built in checks internally relieve high pressure from the shaft seal.
- **High Pressure Shaft Seal** allows back pressure to 400 PSI without the requirement of Case Drain.
- **Standard SAE Mounting** 2 or 4 bolt mounting flanges, shaft and port dimensions conform to SAE standards.
- **Long Life & Quiet Operation** Precision Gerotor Design results in a motor with extended operating life and noise levels below most other hydraulic motors.
- **Heavy Duty Bearings** capable of withstanding radial and thrust loads.

| Series |                   |
|--------|-------------------|
| Code   | Type              |
| M2     | SAE 101 (B-Frame) |
| M4     | SAE 82 (A-Frame)  |

**SAE Port & Mounting**

| Code | Ports | Mtg.   |
|------|-------|--------|
| B    | Side  | 2-Bolt |
| D†   | Side  | 4-Bolt |

† M4 not available.

| Port Size |      |     |
|-----------|------|-----|
| Series    | Code | SAE |
| M4        | 10   | 10  |
|           | 12   | 12  |
| M2        | 12   | 12  |
|           | 16   | 16  |

**Port Type**

| Code | Type                |
|------|---------------------|
| S    | SAE Straight Thread |

**Shaft Style**

| Code | Type              |
|------|-------------------|
| 20†  | Long, Single-End  |
| 30   | Short, Single-End |
| 40   | Spine, Single-End |

† M4 only available with 20 code shaft.

**Drain**

| Code | Type     |
|------|----------|
| N    | Internal |

Includes plugged external drain.

**Shaft Seal**

| Code | Type         |
|------|--------------|
| B    | Nitrile      |
| V    | Fluorocarbon |

**Product Code**

| Series | Code | Theoretical cm³/rev | Displacement in³/rev |
|--------|------|---------------------|----------------------|
| M4     | 015  | 2.45                | .15                  |
|        | 030  | 4.91                | .30                  |
|        | 045  | 7.37                | .45                  |
|        | 060  | 9.83                | .60                  |
|        | 075  | 12.29               | .75                  |
| M2     | 085  | 13.9                | .85                  |
|        | 127  | 20.8                | 1.27                 |
|        | 169  | 27.7                | 1.69                 |
|        | 254  | 41.6                | 2.54                 |
|        | 339  | 55.6                | 3.39                 |
|        | 508  | 83.2                | 5.08                 |

**THERMAL SHOCK WARNING:**

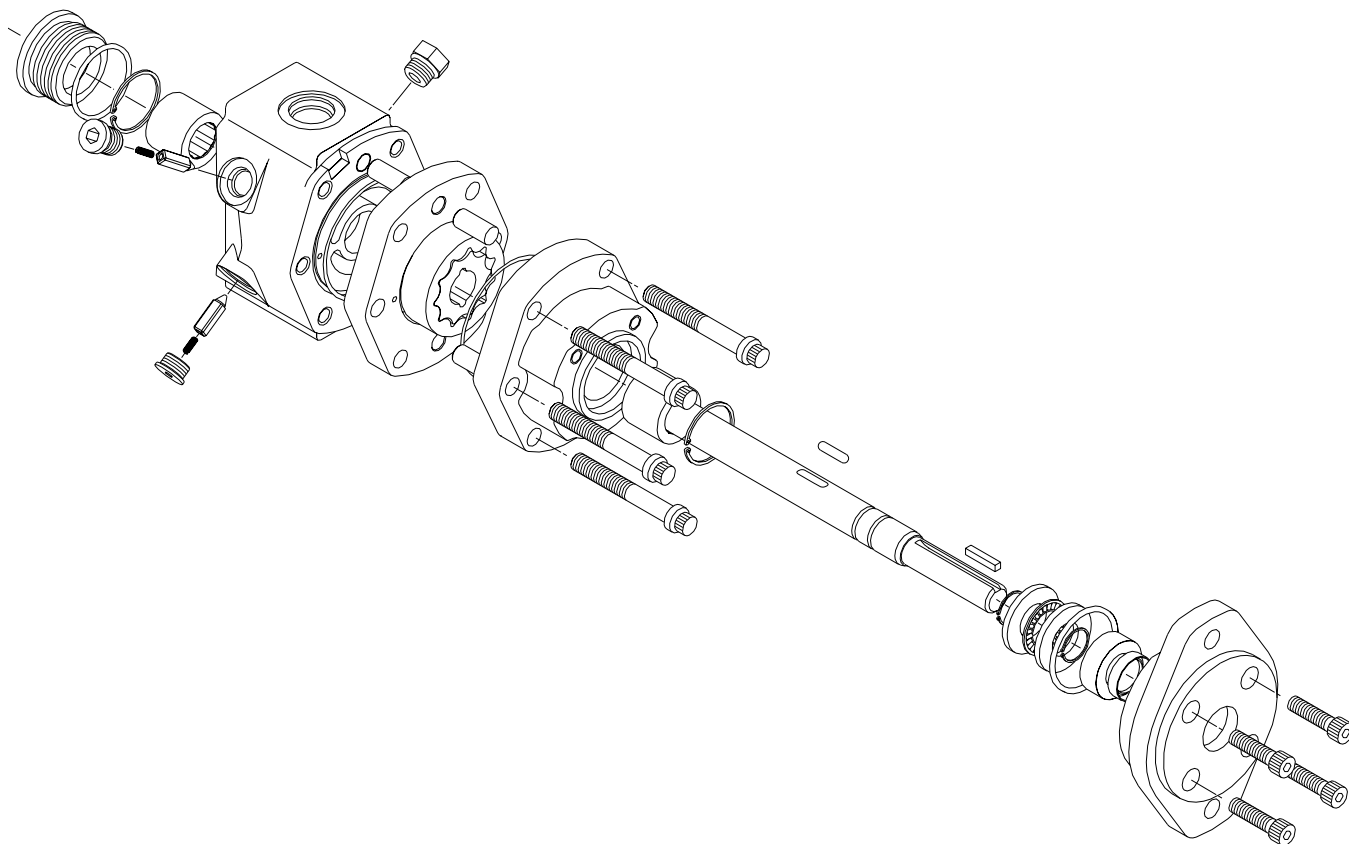
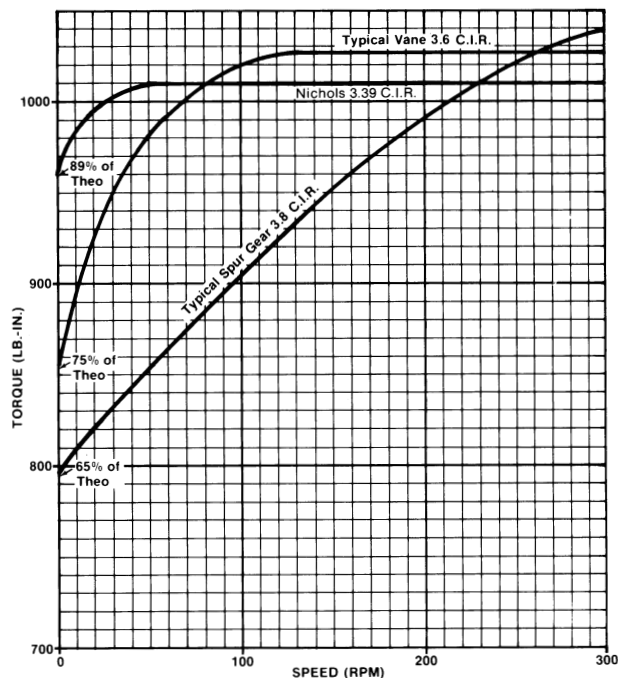
IF THE MOTOR IS TO OPERATED BY FLUID WHICH IS 80°F OR MORE ABOVE THE OPERATING ENVIRONMENT TEMPERATURE, CONSULT FACTORY.

## Applications

Parker motors serve our customers worldwide in many industries and in many applications. Typical applications include:

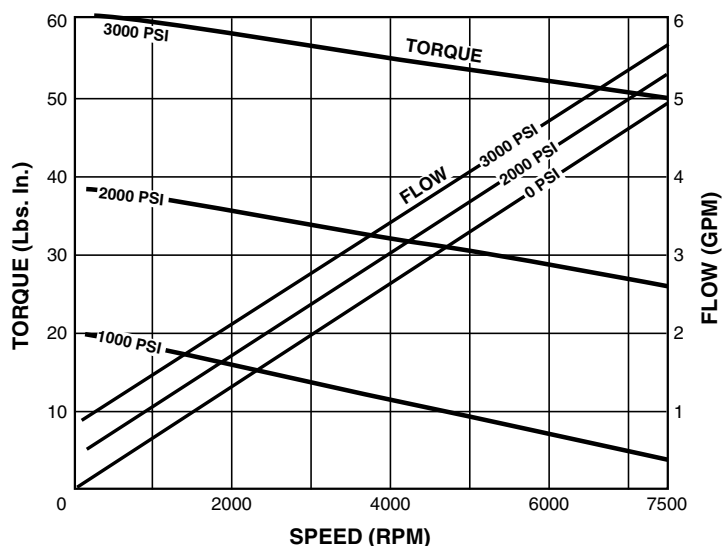
- Fan Drives** High speed capabilities means increased cooling capacity. Rugged bearing design allows the fan to be mounted directly on the motor shaft.
- Swing Drives** High starting torque and smooth output torque throughout the motor's speed range means optimum control.
- Vibratory Drives** Rugged design, high speed capabilities, and optional cross port relief valve means maximum life for vibratory drives.
- Wheel Drives** High speed capabilities and high starting torque means faster road speeds and increased productivity.
- Winch Drives** Smooth output torque throughout the speed range, high speed capabilities, and high starting torque means increased control, greater productivity.

### Starting and running torque comparison between Parker Gerotor and typical Spur Gear and Vane Motors.

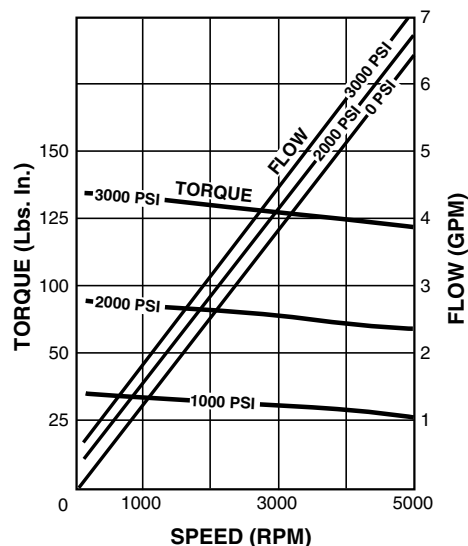


## Performance Data & Mounting Data

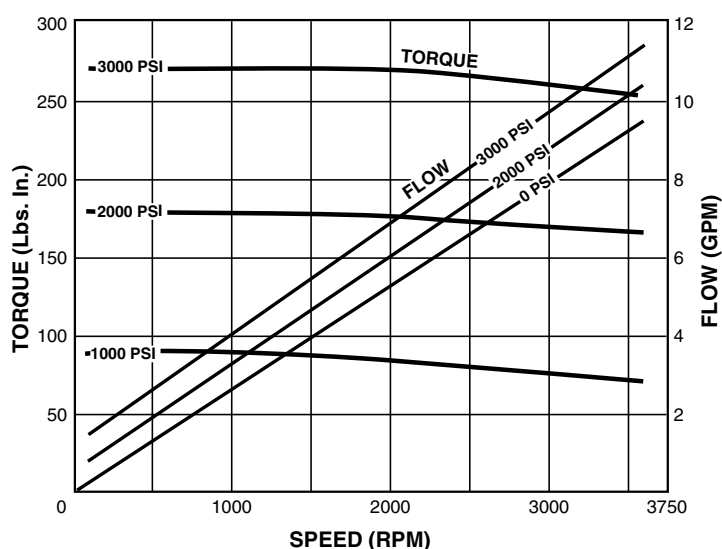
### M4-015



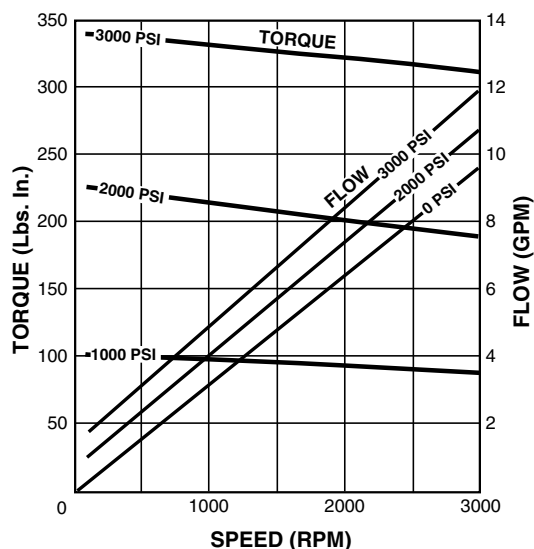
### M4-030



### M4-060



### M4-075



#### Displacement

|          | cm <sup>3</sup> /rev | (in <sup>3</sup> /rev) |
|----------|----------------------|------------------------|
| 015 Unit | 2.45                 | (.15)                  |
| 030 Unit | 4.91                 | (.30)                  |
| 045 Unit | 7.37                 | (.45)                  |
| 060 Unit | 9.83                 | (.60)                  |
| 075 Unit | 12.29                | (.75)                  |

#### Speed

| Recommended Range |                |
|-------------------|----------------|
| 015 Unit          | 75 to 7500 rpm |
| 030 Unit          | 50 to 5000 rpm |
| 045 Unit          | 50 to 5000 rpm |
| 060 Unit          | 36 to 3600 rpm |
| 075 Unit          | 30 to 3000 rpm |

#### Weight

|          | Kg  | (lb) |
|----------|-----|------|
| 015 Unit | 7.3 | (16) |
| 030 Unit | 7.7 | (17) |
| 045 Unit | 8.2 | (18) |
| 060 Unit | 8.6 | (19) |
| 075 Unit | 9.1 | (20) |

Minimum speeds indicated are based on constant load. For speeds outside of the recommended range, consult the factory.

#### Performance Curves:

Data based on:

Oil: 65 cst (300 SSU)  
Mobil DTE-26  
Temp: 38°C (100°F)

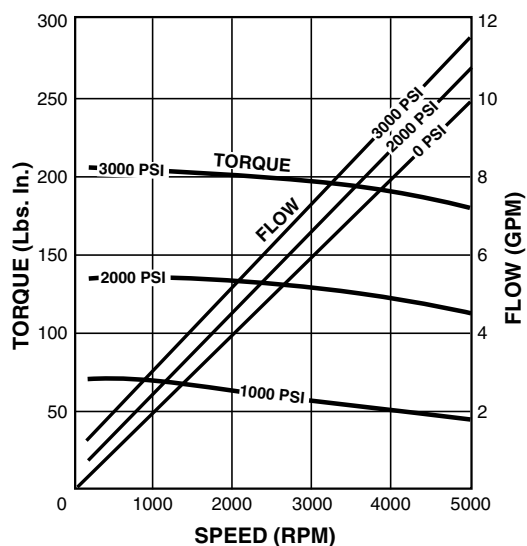
#### Pressure

Continuous: 2000 PSI  
† Intermittent, Max: 2400 PSI  
‡ Transient, Max: 3000 PSI

† Intermittent conditions are to be less than 10% of each minute.  
‡ Transient conditions are to be less than 1% of every minute.

## Performance Data & Mounting Data

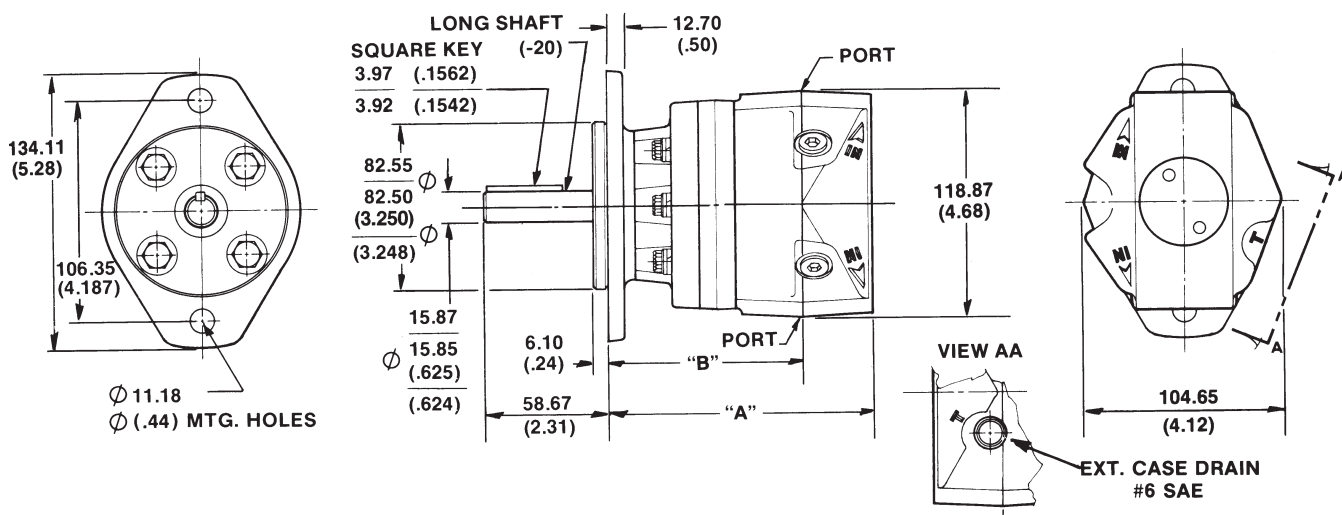
### M4-045



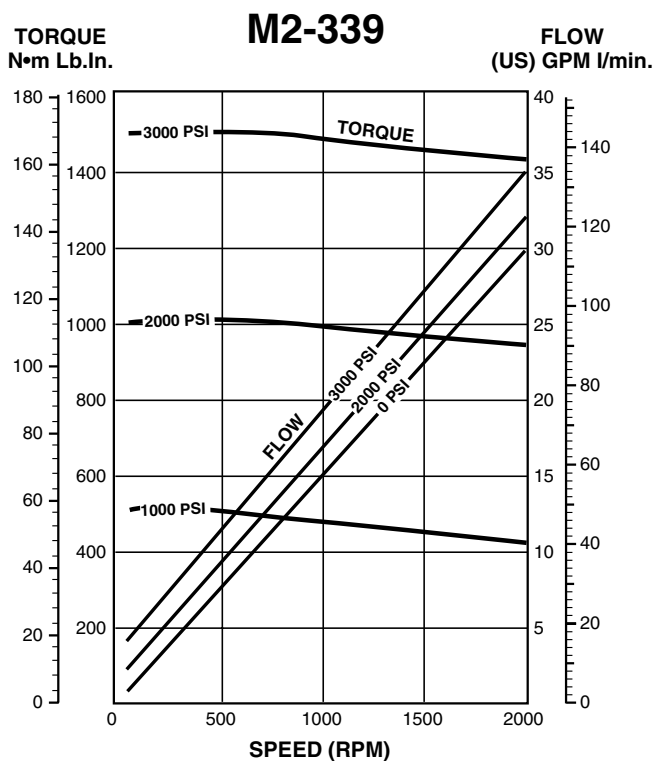
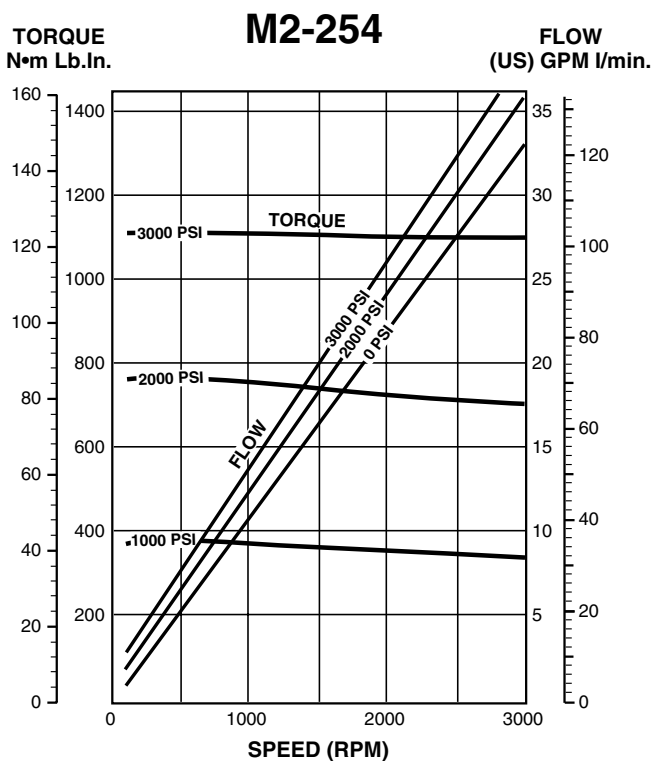
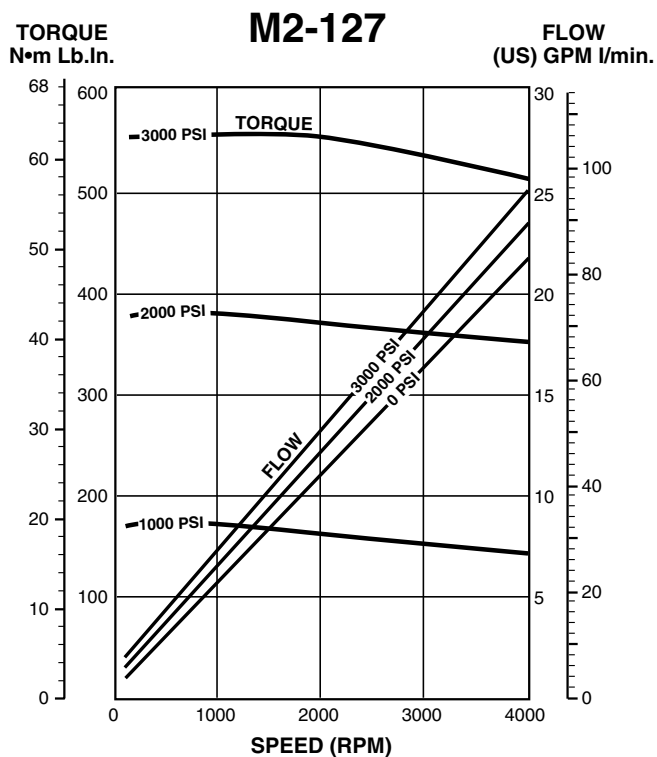
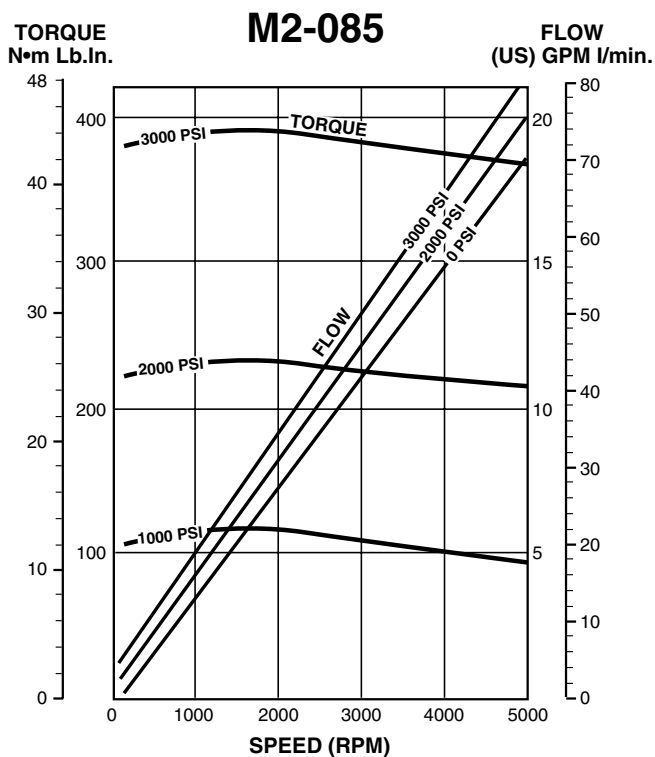
Dimensions are shown in millimeters.  
Dimensions within ( ) are in inches.

| Code | A             | B             |
|------|---------------|---------------|
| 015  | 143.26 (5.64) | 107.44 (4.23) |
| 030  | 149.61 (5.89) | 113.79 (4.48) |
| 045  | 156.21 (6.15) | 120.14 (4.73) |
| 060  | 162.31 (6.39) | 126.49 (4.98) |
| 075  | 168.66 (6.64) | 132.84 (5.23) |

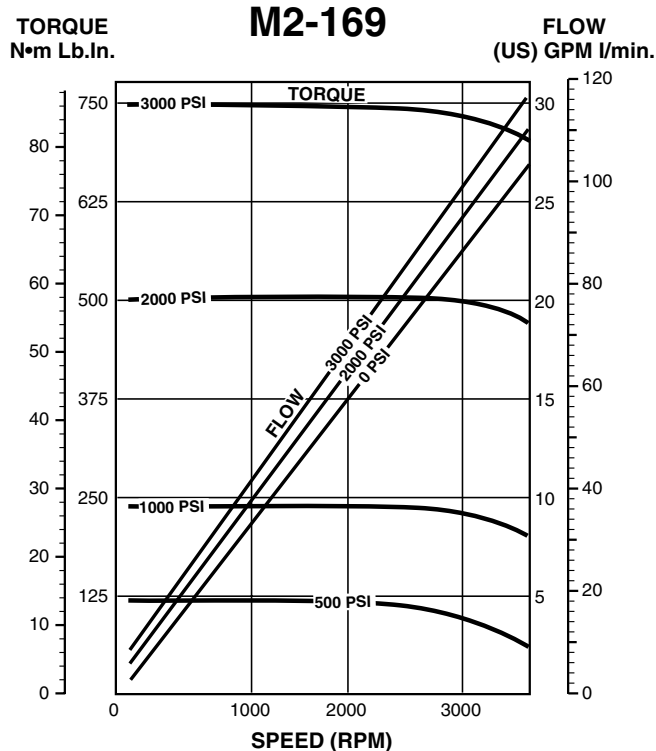
## MOUNTING DATA



# Performance Data



## Performance Data



## Displacement

|          | cm <sup>3</sup> /rev | (in <sup>3</sup> /rev) |
|----------|----------------------|------------------------|
| 085 Unit | 13.9                 | (0.85)                 |
| 127 Unit | 20.8                 | (1.27)                 |
| 169 Unit | 27.7                 | (1.69)                 |
| 254 Unit | 41.6                 | (2.54)                 |
| 339 Unit | 55.6                 | (3.39)                 |
| 508 Unit | 83.2                 | (5.08)                 |

## Pressure

Continuous:

M2-508 1000 PSI

All other Units 2000 PSI

† Intermittent, Max:

M2-508 1400 PSI

All other Units 2400 PSI

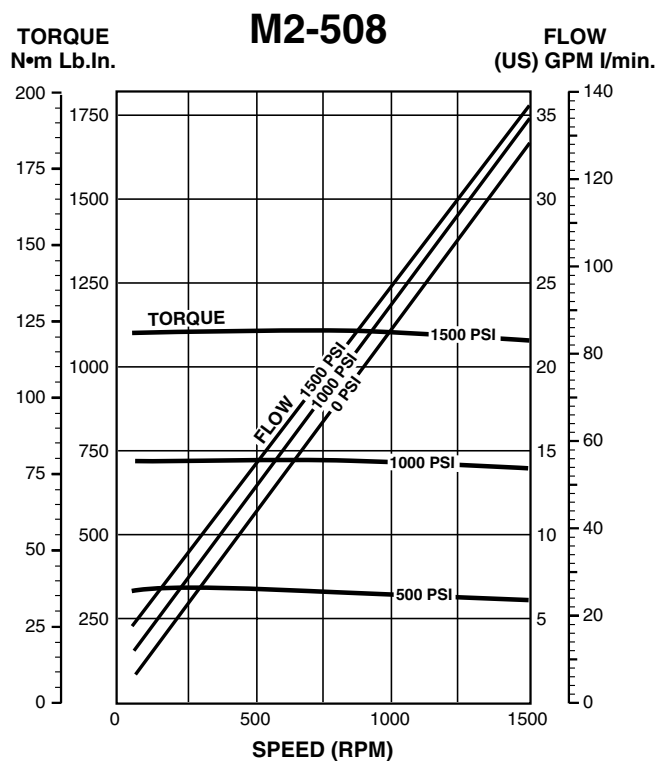
‡ Transient, Max:

M2-508 1700 PSI

All other Units 3000 PSI

† Intermittent conditions are to be less than 10% of each minute.

‡ Transient conditions are to be less than 1% of every minute.



## Speed

### Recommended Range

|          |                |
|----------|----------------|
| 085 Unit | 50 to 5000 rpm |
| 127 Unit | 40 to 4000 rpm |
| 169 Unit | 36 to 3600 rpm |
| 254 Unit | 30 to 3000 rpm |
| 339 Unit | 20 to 2000 rpm |
| 508 Unit | 15 to 1500 rpm |

Minimum speeds indicated are based on constant load.  
For speeds outside of the recommended range, consult the factory.

## Weight

|          |         |         |
|----------|---------|---------|
| 085 Unit | 15.4 Kg | (34 lb) |
| 127 Unit | 16.3 Kg | (36 lb) |
| 169 Unit | 17.2 Kg | (38 lb) |
| 254 Unit | 18.6 Kg | (41 lb) |
| 339 Unit | 20.4 Kg | (45 lb) |
| 508 Unit | 24.0 Kg | (52 lb) |

## Performance Curves:

Data based on:

Oil: 65 cst (300 SSU) Mobil DTE-26

Temp: 38°C (100°F)

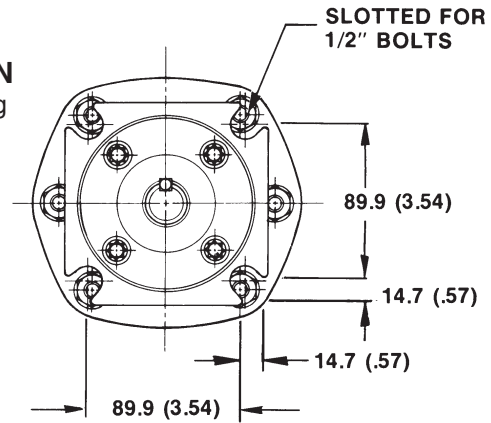
\* Stall torque band is application dependent, consult factory.

## Mounting Data

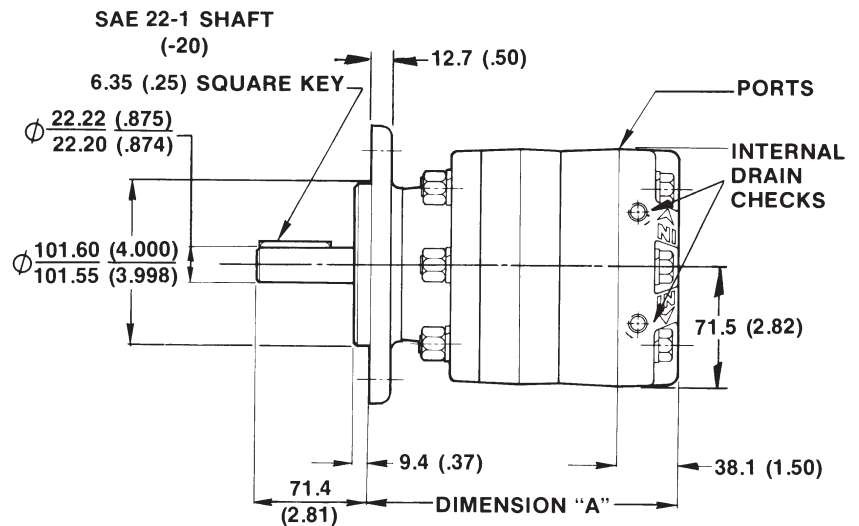
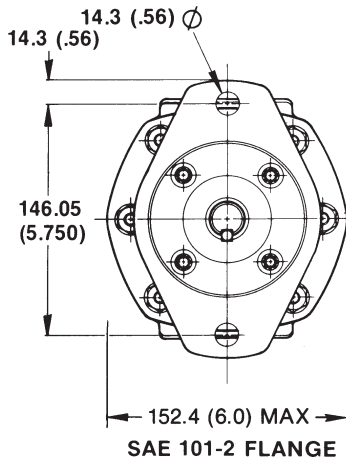
Dimensions are shown in millimeters.  
Dimensions within ( ) are in inches.

| Code | Dimension "A" |
|------|---------------|
| 085  | 158.8 (6.25)  |
| 127  | 165.1 (6.50)  |
| 169  | 171.5 (6.75)  |
| 254  | 184.2 (7.25)  |
| 339  | 196.9 (7.75)  |
| 508  | 222.3 (8.75)  |

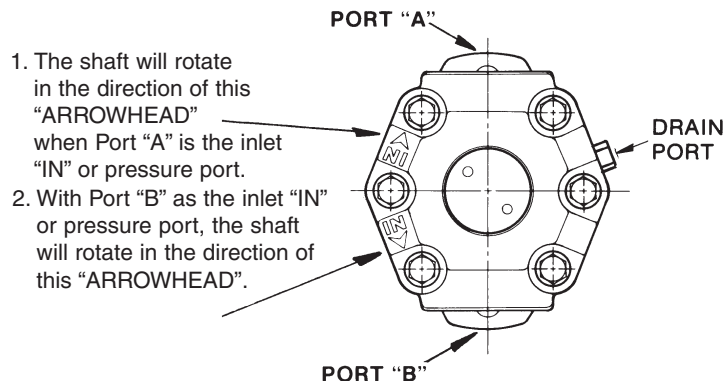
### FLANGE OPTION SAE 101-4 Mounting



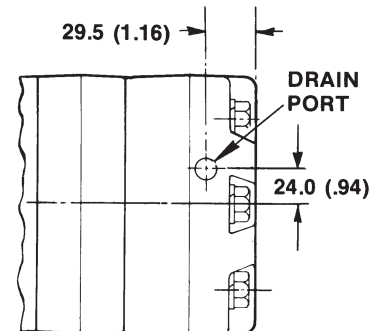
## DIMENSIONS



## PORT LOCATION



## DRAIN PORT

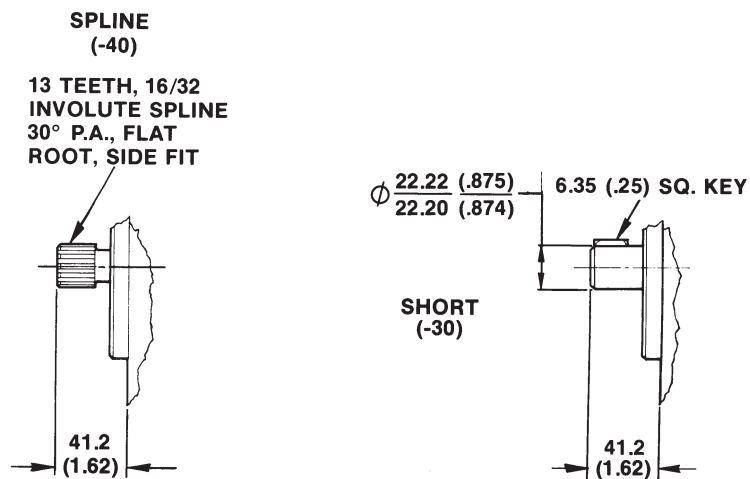


Drain Port Will Be:

- No. 6- $\frac{1}{8}$ "-SAE for the SAE ported motors.

## Mounting Data

### SHAFT OPTIONS



## Operating Pressures

Continuous:

M2-508 1000 PSI

All other Units 2000 PSI

Intermittent, Max:

M2-508 1400 PSI

All other Units 2400 PSI

Transient, Max:

M2-508 1700 PSI

All other Units 3000 PSI

## Filtration

25 micron or less

## Fluids

To insure ultimate component life, use premium quality hydraulic oils. Fluids with effective quantities of anti-wear agents or additives, (such as Mobil Oil DTE-26), are highly recommended.

## Viscosity

Maximum 1000 centistokes  
5000 SSU

Minimum 13.5 centistokes  
70 SSU

## Recommended Temperature Range

-40°C (-40°F) to 82°C (180°F)

## Case Drain Precaution

If outlet port exceeds 400 PSI, the external case drain should be used with no more than 400 PSI back pressure.

## Dimensions

Published dimensions are nominal. Allowances should be made for dimensional variations of cast parts.

## Installation Requirements

Pulleys, sprockets, and belts should be properly aligned on the shaft; and fan blades should be properly sized to prevent excessive thrust loads.

## Shaft Seal

The standard Nitrile shaft seal is adequate for most applications. For applications which involve shaft speeds above 2500 rpm or synthetic fluids, the operational Viton shaft seal should be specified.

## Static Seals

All the o-rings included within the motor and the shaft dust seal are Nitrile. They may be used with all types of hydraulic fluids. However, since these seals swell after exposure to ester base synthetic fluids, they should be replaced if the motor is repaired.

## Motor Precaution

A hydraulic motor is not designed to hold a suspended load. Therefore, if the application requires a locked position, a mechanical holding device (such as a brake) must be employed. Consult factory for availability.

**For different operating conditions, consult the factory.**