



## Model 3E

IMO Model 3E pumps are three screw, positive displacement, rotary pumps designed and engineered for excellent suction capability over a wide range of fluid viscosities. Flow rates (1 to 100 GPM) are proportional to rotating speed when the pump is operated within the recommended pressure range. The pump has the ability to self-prime in a piping system designed to facilitate this feature.

The unique IMO design—only three moving parts—is the key to the model 3E pump performance. A precision bored housing encases the driven screw (power rotor) and intermeshing sealing screws (idler rotors). The accurately machined idler rotors conform perfectly to the threads of the power rotor and to the housing bores confining the fluid in a succession of closures or cavities. As the screws rotate, the fluid is moved axially from the inlet port to the outlet port in a continuous, uniform flow. This uniform axial flow results in a minimum of fluid pulsation and extremely quiet operation.

The rotating idler rotors generate a hydrodynamic film of fluid which supports the idlers in the housing bores and prohibits wearing contact. The strength of this film is based on fluid viscosity, pump pressure and speed. As pressure requirements increase, the hydrodynamic film can be strengthened by increasing

### Applications

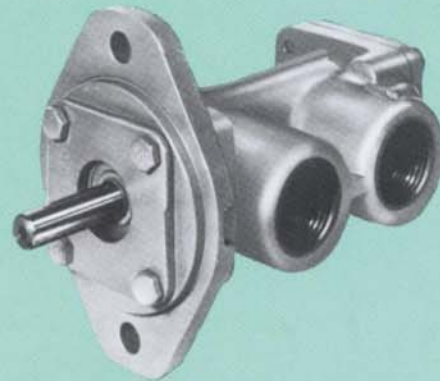
Model 3E pumps are designed to meet the requirements for hydraulic, lubricating, seal, distillate, residual and fuel oil applications. These units have been widely utilized in such places as power plants, refineries, fuel oil burners, petrochemical plants, mechanical transmissions, and lubricating seal oil systems—wherever high performance and reliability in a compact design are required.

Typical applications are:

**Lubrication** of diesel engines, steam turbine/

1-100 GPM

Up to 150 PSI



viscosity or speed. Both the flow rate and pressure capability of the IMO pump increase with speed; thus higher speeds generally result in better performance and longer life.

The symmetrical arrangement of the rotors (screws) eliminates the need for bearings to absorb radial loads. Model 3E pumps contain only one ball bearing which positions the power rotor for proper operation of the mechanical seal. This permanently grease-packed bearing is isolated from the pumpage by the mechanical seal to prevent contamination and improper lubrication.

Model 3E pumps are offered in ten rotor sizes for foot or flange mounted configurations. A variety of construction materials are available to meet operating conditions and job specifications. Complete pump/driver assemblies can be provided as required.

The simple compact design of the Model 3E pump permits fast, easy installation and low maintenance. The bearing and shaft seal are easily replaced when necessary. The pump can be positioned in 90 degree increments to accommodate piping arrangements. Periodic inspection can be made without removing the pump, and routine maintenance can be performed without disturbing system piping.

generator sets, reciprocating and centrifugal compressors, transmission gears, large centrifugal pumps, high inlet pressure refrigeration screw compressors, and other rotating machinery.

**Circulation** of fuel oils, hydraulic oils, transformer insulating oil and most petroleum based fluids in general.

**Transfer, loading and unloading** of clean lube, fuel, waste and similar type oils in refineries, factories, storage or settling tanks and lube oil reservoirs.

# Model 3E Specifications and Features

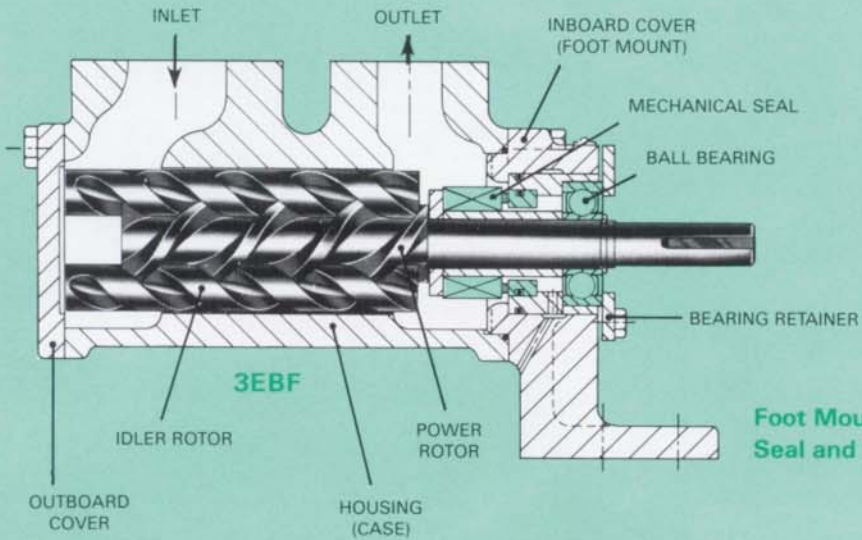
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|--------------------|--|
| CASING             | Pearlitic gray iron. Optional cast steel available in all sizes.   |
| ROTOR HOUSING      | Pearlitic gray iron. Replaceable in all cast steel models, and in 187 + 200 size cast iron models.   |
| POWER ROTOR        | Alloy steel.   |
| IDLER ROTORS       | Pearlitic gray iron.   |
| GASKETS            | Cellulose and non-asbestos fiber.  |
| PUMP INTERNALS     | Type B: (Sizes 87, 87P and 95) Positive drive mechanical seal, Buna-N O-rings and standard external permanently grease packed ball bearing. For all services up to 180°F and/or 25000 SSU.<br>Type B: (Sizes 118-200) Buna-N bellows friction drive mechanical seal, Buna-N O-rings and standard external permanently grease packed ball bearing. Recommended for distillate, lube oil and most lower viscosity, clean oil services in general.<br>Type H: (Sizes 118-200) Positive drive mechanical seal, viton O-rings and external high temperature deep groove ball bearing. Recommended for residual oils and all applications with fluid viscosities above 3000 SSU.<br>Type I: (All sizes) Integral flange mounted pump with sleeve bearing in lieu of a ball bearing and no shaft seal. For applications where pump shaft is within driving machinery enclosure, allowing internal return-to-sump of shaft leakage.<br>Type N: (Available in C.I. case for flange mount—118-200 sizes only) Positive drive balanced mechanical seal, neoprene O-rings, carbon on carbide sealing faces and external grease packed deep groove ball bearing. For applications requiring higher inlet and discharge pressures. |
| DISCHARGE PRESSURE | 150 PSIG maximum (Types B, H and I)<br>350 PSIG maximum (Type N, providing differential pressure does not exceed 150 psi.)   |
| INLET PRESSURE     | 25 PSIG maximum (Types B, H and I)<br>300 PSIG maximum (Type N)  |
| VISCOSITY          | Type B and I: 33-3000 SSU (2.0-650 CST)<br>Type H: 33-25000 SSU (2.0-5400 CST)<br>Type N: 60-5000 SSU (10-1100 CST)  |
| TEMPERATURE        | Type B: 0-180°F<br>Type H, I and N: 0-250°F, assuming fluid is within allowable viscosity limits.  |
| DRIVE              | Direct only.   |
| ROTATION           | Clockwise facing pump shaft. Optional counterclockwise available on all sizes, except Type N and 187M, 187Y.   |
| MOUNTING           | May be foot or flange mounted in any attitude.   |
| CONNECTIONS        | All cast iron casing pumps and size 87P, 87 and 95 steel casing pumps are NPT connections. All other steel case pumps are SAE socket weld flanged (provided with pump).  |
| FILTRATION         | Inlet strainers are required to keep contaminants and abrasives out of pump, but they must be selected by consultation with strainer vendor to prevent pump starvation. Normally, 60 mesh for light and 1/8"-3/16" openings for heavy oils are recommended.  |
| ACCESSORIES        | Pump/motor adapters for NEMA "C" face motors, steel bedplates and completely mounted pump/driver assemblies.   |

## Maximum Operating Speeds (RPM)\*

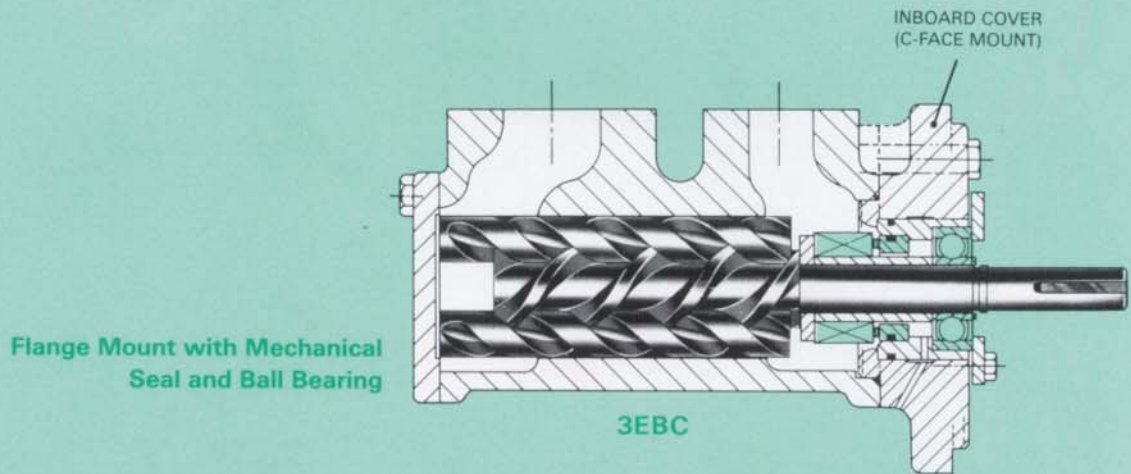
| Size      | 87P, 87, 95 | 118P | 118  | 143J | 143  | 162  | 187,187Y,187M | 200  |
|-----------|-------------|------|------|------|------|------|---------------|------|
| Type B, H | 5000        | 4000 | 4000 | 4000 | 4000 | 4000 | 4000          | 3800 |
| Type N    | 3500        | 3500 | 3500 | 3500 | 3500 | 3500 | 3500          | 3500 |
| Type I    | 8000        | 8000 | 6500 | 7000 | 5500 | 4800 | 4250          | 4000 |

\*Above values assume minimum suction conditions can be met.

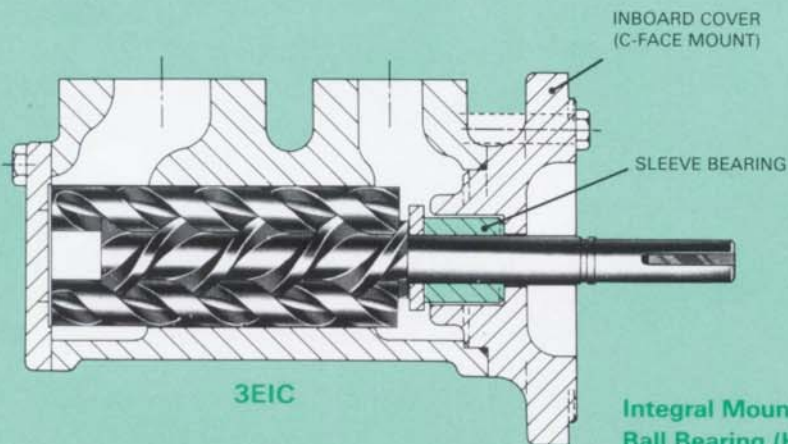
# Typical 3E Assembly and Mounting Options



Foot Mount with Mechanical Seal and Ball Bearing



Flange Mount with Mechanical Seal and Ball Bearing



Integral Mount, No Mechanical Seal or Ball Bearing (High Speed)

# Model 3E Performance Data

| Rotor Size 87P   |                             |     |     |     |     |     |     |                                       |
|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------|
| Speed 3500 RPM   |                             |     |     |     |     |     |     |                                       |
| Viscosity<br>SSU | Differential Pressure — PSI |     |     |     |     |     |     | Net Inlet Pressure<br>Required (PSIA) |
|                  | 25                          | 50  | 75  | 100 | 125 | 150 |     |                                       |
| GPM              | 33                          | 5.8 | 5.2 | 4.7 | 4.3 | 4.0 | 3.6 |                                       |
|                  | 65                          | 6.2 | 5.8 | 5.4 | 5.1 | 4.9 | 4.7 |                                       |
|                  | 100                         | 6.4 | 6.0 | 5.8 | 5.6 | 5.4 | 5.2 |                                       |
|                  | 150                         | 6.6 | 6.3 | 6.0 | 5.9 | 5.7 | 5.6 |                                       |
|                  | 650                         | 6.9 | 6.8 | 6.7 | 6.6 | 6.5 | 6.4 |                                       |
|                  | 1000                        | 7.0 | 6.9 | 6.8 | 6.7 | 6.6 | 6.6 |                                       |
|                  | 5000                        | 7.1 | 7.1 | 7.0 | 7.0 | 7.0 | 6.9 |                                       |
|                  | 10000                       | 7.2 | 7.1 | 7.1 | 7.1 | 7.1 | 7.0 |                                       |
| BHP              | 150                         | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 4.3                                   |
|                  | 650                         | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.2 | 4.4                                   |
|                  | 1000                        | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 4.5                                   |
|                  | 5000                        | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 5.3                                   |
|                  | 10000                       | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 6.1                                   |

| Speed 1750 RPM   |                             |     |     |     |     |     |     |                                       |
|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------|
| Viscosity<br>SSU | Differential Pressure — PSI |     |     |     |     |     |     | Net Inlet Pressure<br>Required (PSIA) |
|                  | 25                          | 50  | 75  | 100 | 125 | 150 |     |                                       |
| GPM              | 33                          | 2.2 | —   | —   | —   | —   | —   |                                       |
|                  | 65                          | 2.6 | 2.1 | —   | —   | —   | —   |                                       |
|                  | 100                         | 2.8 | 2.4 | 2.2 | 1.9 | —   | —   |                                       |
|                  | 150                         | 2.9 | 2.6 | 2.4 | 2.2 | 2.1 | 1.9 |                                       |
|                  | 650                         | 3.3 | 3.2 | 3.0 | 3.0 | 2.9 | 2.8 |                                       |
|                  | 1000                        | 3.4 | 3.2 | 3.2 | 3.1 | 3.0 | 3.0 |                                       |
|                  | 5000                        | 3.5 | 3.5 | 3.4 | 3.4 | 3.4 | 3.3 |                                       |
|                  | 10000                       | 3.5 | 3.5 | 3.5 | 3.5 | 3.4 | 3.4 |                                       |
| BHP              | 150                         | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 3.7                                   |
|                  | 650                         | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 3.8                                   |
|                  | 1000                        | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 3.9                                   |
|                  | 5000                        | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 4.0                                   |
|                  | 10000                       | 0.8 | 0.8 | 0.9 | 0.9 | 1.0 | 1.0 | 4.2                                   |

| Speed 1150 RPM   |                             |     |     |     |     |     |     |                                       |
|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------|
| Viscosity<br>SSU | Differential Pressure — PSI |     |     |     |     |     |     | Net Inlet Pressure<br>Required (PSIA) |
|                  | 25                          | 50  | 75  | 100 | 125 | 150 |     |                                       |
| GPM              | 33                          | —   | —   | —   | —   | —   | —   |                                       |
|                  | 65                          | 1.3 | —   | —   | —   | —   | —   |                                       |
|                  | 100                         | 1.5 | —   | —   | —   | —   | —   |                                       |
|                  | 150                         | 1.7 | 1.4 | —   | —   | —   | —   |                                       |
|                  | 650                         | 2.0 | 1.9 | 1.8 | 1.7 | 1.6 | 1.6 |                                       |
|                  | 1000                        | 2.1 | 2.0 | 1.9 | 1.8 | 1.8 | 1.7 |                                       |
|                  | 5000                        | 2.3 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 |                                       |
|                  | 10000                       | 2.3 | 2.3 | 2.2 | 2.2 | 2.2 | 2.2 |                                       |
| BHP              | 150                         | 0.1 | 0.1 | —   | —   | —   | —   | 3.6                                   |
|                  | 650                         | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 3.6                                   |
|                  | 1000                        | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 3.6                                   |
|                  | 5000                        | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 3.7                                   |
|                  | 10000                       | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 3.8                                   |

| Rotor Size 87    |                             |     |     |     |     |     |     |                                       |
|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------|
| Speed 3500 RPM   |                             |     |     |     |     |     |     |                                       |
| Viscosity<br>SSU | Differential Pressure — PSI |     |     |     |     |     |     | Net Inlet Pressure<br>Required (PSIA) |
|                  | 25                          | 50  | 75  | 100 | 125 | 150 |     |                                       |
| GPM              | 33                          | 7.6 | 7.0 | 6.5 | 6.1 | 5.8 | 5.4 |                                       |
|                  | 65                          | 8.0 | 7.6 | 7.2 | 7.0 | 6.7 | 6.5 |                                       |
|                  | 100                         | 8.2 | 7.9 | 7.6 | 7.4 | 7.2 | 7.0 |                                       |
|                  | 150                         | 8.4 | 8.1 | 7.9 | 7.7 | 7.5 | 7.4 |                                       |
|                  | 650                         | 8.7 | 8.6 | 8.5 | 8.4 | 8.3 | 8.2 |                                       |
|                  | 1000                        | 8.8 | 8.7 | 8.6 | 8.5 | 8.5 | 8.4 |                                       |
|                  | 5000                        | 8.9 | 8.9 | 8.8 | 8.8 | 8.8 | 8.8 |                                       |
|                  | 10000                       | 9.0 | 8.9 | 8.9 | 8.9 | 8.9 | 8.8 |                                       |
| BHP              | 150                         | 0.3 | 0.5 | 0.6 | 0.7 | 0.9 | 1.0 | 4.7                                   |
|                  | 650                         | 0.7 | 0.8 | 0.9 | 1.1 | 1.2 | 1.3 | 4.9                                   |
|                  | 1000                        | 0.8 | 1.0 | 1.1 | 1.2 | 1.4 | 1.5 | 5.0                                   |
|                  | 5000                        | 2.0 | 2.1 | 2.3 | 2.4 | 2.5 | 2.7 | 6.2                                   |
|                  | 10000                       | 3.0 | 3.1 | 3.3 | 3.4 | 3.5 | 3.7 | 7.9                                   |

| Speed 1750 RPM   |                             |     |     |     |     |     |     |                                       |
|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------|
| Viscosity<br>SSU | Differential Pressure — PSI |     |     |     |     |     |     | Net Inlet Pressure<br>Required (PSIA) |
|                  | 25                          | 50  | 75  | 100 | 125 | 150 |     |                                       |
| GPM              | 33                          | 3.1 | 2.4 | —   | —   | —   | —   |                                       |
|                  | 65                          | 3.5 | 3.0 | 2.7 | 2.4 | —   | —   |                                       |
|                  | 100                         | 3.7 | 3.3 | 3.1 | 2.8 | 2.6 | 2.5 |                                       |
|                  | 150                         | 3.8 | 3.6 | 3.3 | 3.1 | 3.0 | 2.8 |                                       |
|                  | 650                         | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 |                                       |
|                  | 1000                        | 4.3 | 4.1 | 4.1 | 4.0 | 3.9 | 3.9 |                                       |
|                  | 5000                        | 4.4 | 4.4 | 4.3 | 4.3 | 4.3 | 4.2 |                                       |
|                  | 10000                       | 4.4 | 4.4 | 4.4 | 4.4 | 4.3 | 4.3 |                                       |
| BHP              | 150                         | 0.1 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 3.9                                   |
|                  | 650                         | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 4.0                                   |
|                  | 1000                        | 0.2 | 0.3 | 0.4 | 0.4 | 0.5 | 0.6 | 4.1                                   |
|                  | 5000                        | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 | 0.9 | 4.4                                   |
|                  | 10000                       | 0.8 | 0.9 | 0.9 | 1.0 | 1.1 | 1.1 | 4.7                                   |

| Speed 1150 RPM   |                             |     |     |     |     |     |     |                                       |
|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|---------------------------------------|
| Viscosity<br>SSU | Differential Pressure — PSI |     |     |     |     |     |     | Net Inlet Pressure<br>Required (PSIA) |
|                  | 25                          | 50  | 75  | 100 | 125 | 150 |     |                                       |
| GPM              | 33                          | 1.5 | —   | —   | —   | —   | —   |                                       |
|                  | 65                          | 1.9 | 1.5 | —   | —   | —   | —   |                                       |
|                  | 100                         | 2.1 | 1.8 | 1.5 | —   | —   | —   |                                       |
|                  | 150                         | 2.3 | 2.0 | 1.8 | 1.6 | —   | —   |                                       |
|                  | 650                         | 2.6 | 2.5 | 2.4 | 2.3 | 2.2 | 2.2 |                                       |
|                  | 1000                        | 2.7 | 2.6 | 2.5 | 2.4 | 2.4 | 2.3 |                                       |
|                  | 5000                        | 2.9 | 2.8 | 2.8 | 2.7 | 2.7 | 2.7 |                                       |
|                  | 10000                       | 2.9 | 2.9 | 2.8 | 2.8 | 2.8 | 2.8 |                                       |
| BHP              | 150                         | 0.1 | 0.1 | 0.2 | 0.2 | —   | —   | 3.7                                   |
|                  | 650                         | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 3.7                                   |
|                  | 1000                        | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 3.8                                   |
|                  | 5000                        | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 3.9                                   |
|                  | 10000                       | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 4.1                                   |

| <b>Rotor Size 95</b>  |                             |      |      |      |      |      |                                    |     |
|-----------------------|-----------------------------|------|------|------|------|------|------------------------------------|-----|
| <b>Speed 3500 RPM</b> |                             |      |      |      |      |      |                                    |     |
| Viscosity SSU         | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |     |
|                       | 25                          | 50   | 75   | 100  | 125  | 150  |                                    |     |
| GPM                   | 33                          | 9.9  | 9.1  | 8.6  | 8.1  | 7.7  | 7.3                                |     |
|                       | 65                          | 10.3 | 9.8  | 9.4  | 9.1  | 8.8  | 8.6                                |     |
|                       | 100                         | 10.6 | 10.2 | 9.9  | 9.6  | 9.4  | 9.1                                |     |
|                       | 150                         | 10.8 | 10.4 | 10.2 | 10.0 | 9.8  | 9.6                                |     |
|                       | 650                         | 11.2 | 11.0 | 10.9 | 10.8 | 10.7 | 10.6                               |     |
|                       | 1000                        | 11.3 | 11.1 | 11.0 | 11.0 | 10.9 | 10.8                               |     |
|                       | 5000                        | 11.4 | 11.4 | 11.3 | 11.3 | 11.3 | 11.2                               |     |
|                       | 10000                       | 11.5 | 11.4 | 11.4 | 11.4 | 11.4 | 11.3                               |     |
| BHP                   | 150                         | 0.4  | 0.6  | 0.8  | 1.0  | 1.1  | 1.3                                | 4.8 |
|                       | 650                         | 0.8  | 1.0  | 1.2  | 1.4  | 1.5  | 1.7                                | 5.0 |
|                       | 1000                        | 1.1  | 1.2  | 1.4  | 1.6  | 1.7  | 1.9                                | 5.2 |
|                       | 5000                        | 2.6  | 2.7  | 2.9  | 3.1  | 3.2  | 3.4                                | 6.8 |
|                       | 10000                       | 3.9  | 4.0  | 4.2  | 4.4  | 4.5  | 4.7                                | 8.8 |

| <b>Speed 1750 RPM</b> |                             |     |     |     |     |     |                                    |     |
|-----------------------|-----------------------------|-----|-----|-----|-----|-----|------------------------------------|-----|
| Viscosity SSU         | Differential Pressure — PSI |     |     |     |     |     | Net Inlet Pressure Required (PSIA) |     |
|                       | 25                          | 50  | 75  | 100 | 125 | 150 |                                    |     |
| GPM                   | 33                          | 4.1 | 3.3 | —   | —   | —   | —                                  |     |
|                       | 65                          | 4.6 | 4.0 | 3.7 | 3.3 | 3.0 | —                                  |     |
|                       | 100                         | 4.8 | 4.4 | 4.1 | 3.8 | 3.6 | 3.4                                |     |
|                       | 150                         | 5.0 | 4.6 | 4.4 | 4.2 | 4.0 | 3.8                                |     |
|                       | 650                         | 5.4 | 5.2 | 5.1 | 5.0 | 4.9 | 4.8                                |     |
|                       | 1000                        | 5.5 | 5.3 | 5.2 | 5.2 | 5.1 | 5.0                                |     |
|                       | 5000                        | 5.7 | 5.6 | 5.5 | 5.5 | 5.5 | 5.4                                |     |
|                       | 10000                       | 5.7 | 5.7 | 5.6 | 5.6 | 5.6 | 5.5                                |     |
| BHP                   | 150                         | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6                                | 4.0 |
|                       | 650                         | 0.3 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7                                | 4.1 |
|                       | 1000                        | 0.3 | 0.4 | 0.5 | 0.6 | 0.6 | 0.7                                | 4.1 |
|                       | 5000                        | 0.7 | 0.8 | 0.9 | 0.9 | 1.0 | 1.1                                | 4.4 |
|                       | 10000                       | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.4                                | 4.8 |

| <b>Speed 1150 RPM</b> |                             |     |     |     |     |     |                                    |     |
|-----------------------|-----------------------------|-----|-----|-----|-----|-----|------------------------------------|-----|
| Viscosity SSU         | Differential Pressure — PSI |     |     |     |     |     | Net Inlet Pressure Required (PSIA) |     |
|                       | 25                          | 50  | 75  | 100 | 125 | 150 |                                    |     |
| GPM                   | 33                          | 2.1 | —   | —   | —   | —   | —                                  |     |
|                       | 65                          | 2.6 | 2.1 | —   | —   | —   | —                                  |     |
|                       | 100                         | 2.8 | 2.4 | 2.1 | —   | —   | —                                  |     |
|                       | 150                         | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | —                                  |     |
|                       | 650                         | 3.4 | 3.3 | 3.1 | 3.0 | 2.9 | 2.8                                |     |
|                       | 1000                        | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 | 3.0                                |     |
|                       | 5000                        | 3.7 | 3.6 | 3.6 | 3.5 | 3.5 | 3.5                                |     |
|                       | 10000                       | 3.7 | 3.7 | 3.6 | 3.6 | 3.6 | 3.6                                |     |
| BHP                   | 150                         | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | —                                  | 3.7 |
|                       | 650                         | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4                                | 3.7 |
|                       | 1000                        | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4                                | 3.8 |
|                       | 5000                        | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6                                | 3.9 |
|                       | 10000                       | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7                                | 4.1 |

| <b>Rotor Size 118P</b> |                             |      |      |      |      |      |                                    |     |
|------------------------|-----------------------------|------|------|------|------|------|------------------------------------|-----|
| <b>Speed 3500 RPM</b>  |                             |      |      |      |      |      |                                    |     |
| Viscosity SSU          | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |     |
|                        | 25                          | 50   | 75   | 100  | 125  | 150  |                                    |     |
| GPM                    | 33                          | 15.4 | 14.3 | 13.4 | 12.7 | 12.0 | 11.5                               |     |
|                        | 65                          | 16.2 | 15.4 | 14.8 | 14.2 | 13.8 | 13.4                               |     |
|                        | 100                         | 16.5 | 15.9 | 15.4 | 15.0 | 14.6 | 14.3                               |     |
|                        | 150                         | 16.8 | 16.3 | 15.9 | 15.6 | 15.3 | 15.0                               |     |
|                        | 650                         | 17.5 | 17.2 | 17.0 | 16.9 | 16.7 | 16.6                               |     |
|                        | 1000                        | 17.6 | 17.4 | 17.2 | 17.1 | 17.0 | 16.9                               |     |
|                        | 5000                        | 17.9 | 17.8 | 17.7 | 17.7 | 17.6 | 17.6                               |     |
|                        | 10000                       | 17.9 | 17.9 | 17.8 | 17.8 | 17.8 | 17.7                               |     |
| BHP                    | 150                         | 0.8  | 1.1  | 1.3  | 1.6  | 1.9  | 2.1                                | 4.8 |
|                        | 650                         | 1.6  | 1.9  | 2.1  | 2.4  | 2.6  | 2.9                                | 5.0 |
|                        | 1000                        | 2.0  | 2.3  | 2.5  | 2.8  | 3.1  | 3.3                                | 5.2 |
|                        | 5000                        | 5.0  | 5.2  | 5.5  | 5.7  | 6.0  | 6.3                                | 6.8 |
|                        | 10000                       | 7.5  | 7.7  | 8.0  | 8.3  | 8.5  | 8.8                                | 8.8 |

| <b>Speed 1750 RPM</b> |                             |     |     |     |     |     |                                    |     |
|-----------------------|-----------------------------|-----|-----|-----|-----|-----|------------------------------------|-----|
| Viscosity SSU         | Differential Pressure — PSI |     |     |     |     |     | Net Inlet Pressure Required (PSIA) |     |
|                       | 25                          | 50  | 75  | 100 | 125 | 150 |                                    |     |
| GPM                   | 33                          | 6.3 | 5.2 | —   | —   | —   | —                                  |     |
|                       | 65                          | 7.1 | 6.3 | 5.7 | 5.2 | 4.7 | —                                  |     |
|                       | 100                         | 7.5 | 6.8 | 6.4 | 5.9 | 5.6 | 5.2                                |     |
|                       | 150                         | 7.8 | 7.3 | 6.8 | 6.5 | 6.2 | 5.9                                |     |
|                       | 650                         | 8.4 | 8.2 | 8.0 | 7.8 | 7.7 | 7.6                                |     |
|                       | 1000                        | 8.6 | 8.4 | 8.2 | 8.1 | 7.9 | 7.8                                |     |
|                       | 5000                        | 8.8 | 8.7 | 8.7 | 8.6 | 8.6 | 8.5                                |     |
|                       | 10000                       | 8.9 | 8.8 | 8.8 | 8.7 | 8.7 | 8.7                                |     |
| BHP                   | 150                         | 0.3 | 0.4 | 0.5 | 0.7 | 0.8 | 0.9                                | 4.0 |
|                       | 650                         | 0.5 | 0.6 | 0.7 | 0.9 | 1.0 | 1.1                                | 4.1 |
|                       | 1000                        | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.2                                | 4.1 |
|                       | 5000                        | 1.3 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0                                | 4.4 |
|                       | 10000                       | 2.0 | 2.1 | 2.2 | 2.4 | 2.5 | 2.6                                | 4.8 |

| <b>Speed 1150 RPM</b> |                             |     |     |     |     |     |                                    |     |
|-----------------------|-----------------------------|-----|-----|-----|-----|-----|------------------------------------|-----|
| Viscosity SSU         | Differential Pressure — PSI |     |     |     |     |     | Net Inlet Pressure Required (PSIA) |     |
|                       | 25                          | 50  | 75  | 100 | 125 | 150 |                                    |     |
| GPM                   | 33                          | 3.2 | —   | —   | —   | —   | —                                  |     |
|                       | 65                          | 4.0 | 3.2 | —   | —   | —   | —                                  |     |
|                       | 100                         | 4.4 | 3.7 | 3.3 | —   | —   | —                                  |     |
|                       | 150                         | 4.7 | 4.2 | 3.7 | 3.4 | 3.1 | —                                  |     |
|                       | 650                         | 5.3 | 5.1 | 4.9 | 4.7 | 4.6 | 4.5                                |     |
|                       | 1000                        | 5.5 | 5.3 | 5.1 | 5.0 | 4.8 | 4.7                                |     |
|                       | 5000                        | 5.7 | 5.6 | 5.6 | 5.5 | 5.5 | 5.4                                |     |
|                       | 10000                       | 5.8 | 5.7 | 5.7 | 5.6 | 5.6 | 5.6                                |     |
| BHP                   | 150                         | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | —                                  | 3.7 |
|                       | 650                         | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7                                | 3.7 |
|                       | 1000                        | 0.3 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7                                | 3.8 |
|                       | 5000                        | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.0                                | 3.9 |
|                       | 10000                       | 0.9 | 1.0 | 1.1 | 1.1 | 1.2 | 1.3                                | 4.1 |

1. For conditions between listed values, interpolate between those values. For conditions not listed or off tables, Contact IMO.
2. Net Inlet Pressure Required is minimum pressure above vapor pressure at pump inlet to prevent cavitation. This assumes that the fluid is air and gas free.
3. For BHP values at viscosities below 150 SSU, use values listed for 150 SSU.

# Model 3E Performance Data

| Rotor Size 118 |                             |      |      |      |      |      |      |                                    |
|----------------|-----------------------------|------|------|------|------|------|------|------------------------------------|
| Speed 3500 RPM |                             |      |      |      |      |      |      |                                    |
| Viscosity SSU  | Differential Pressure — PSI |      |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |
|                | 25                          | 50   | 75   | 100  | 125  | 150  |      |                                    |
| GPM            | 33                          | 19.9 | 18.8 | 17.9 | 17.2 | 16.6 | 16.0 |                                    |
|                | 65                          | 20.7 | 19.9 | 19.3 | 18.8 | 18.3 | 17.9 |                                    |
|                | 100                         | 21.1 | 20.4 | 19.9 | 19.5 | 19.1 | 18.8 |                                    |
|                | 150                         | 21.4 | 20.8 | 20.4 | 20.1 | 19.8 | 19.5 |                                    |
|                | 650                         | 22.0 | 21.8 | 21.6 | 21.4 | 21.3 | 21.1 |                                    |
|                | 1000                        | 22.1 | 21.9 | 21.8 | 21.6 | 21.5 | 21.4 |                                    |
|                | 5000                        | 22.4 | 22.3 | 22.2 | 22.2 | 22.1 | 22.1 |                                    |
|                | 10000                       | 22.5 | 22.4 | 22.4 | 22.3 | 22.3 | 22.2 |                                    |
| BHP            | 150                         | 0.9  | 1.2  | 1.5  | 1.9  | 2.2  | 2.5  | 5.4                                |
|                | 650                         | 1.7  | 2.0  | 2.3  | 2.6  | 3.0  | 3.3  | 5.8                                |
|                | 1000                        | 2.1  | 2.4  | 2.7  | 3.1  | 3.4  | 3.7  | 6.0                                |
|                | 5000                        | 5.0  | 5.3  | 5.7  | 6.0  | 6.3  | 6.7  | 8.8                                |
|                | 10000                       | 7.5  | 7.9  | 8.2  | 8.5  | 8.8  | 9.2  | 14.7                               |
| Speed 1750 RPM |                             |      |      |      |      |      |      |                                    |
| Viscosity SSU  | Differential Pressure — PSI |      |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |
|                | 25                          | 50   | 75   | 100  | 125  | 150  |      |                                    |
| GPM            | 33                          | 8.6  | 7.5  | 6.6  | 5.9  | —    | —    |                                    |
|                | 65                          | 9.4  | 8.6  | 8.0  | 7.5  | 7.0  | 6.6  |                                    |
|                | 100                         | 9.8  | 9.1  | 8.6  | 8.2  | 7.8  | 7.5  |                                    |
|                | 150                         | 10.0 | 9.5  | 9.1  | 8.8  | 8.5  | 8.2  |                                    |
|                | 650                         | 10.7 | 10.4 | 10.3 | 10.1 | 9.9  | 9.8  |                                    |
|                | 1000                        | 10.8 | 10.6 | 10.5 | 10.3 | 10.2 | 10.1 |                                    |
|                | 5000                        | 11.1 | 11.0 | 10.9 | 10.9 | 10.8 | 10.8 |                                    |
|                | 10000                       | 11.2 | 11.1 | 11.0 | 11.0 | 11.0 | 10.9 |                                    |
| BHP            | 150                         | 0.3  | 0.5  | 0.6  | 0.8  | 1.0  | 1.1  | 4.1                                |
|                | 650                         | 0.5  | 0.7  | 0.8  | 1.0  | 1.2  | 1.3  | 4.3                                |
|                | 1000                        | 0.6  | 0.8  | 0.9  | 1.1  | 1.3  | 1.4  | 4.3                                |
|                | 5000                        | 1.4  | 1.5  | 1.7  | 1.9  | 2.0  | 2.2  | 4.9                                |
|                | 10000                       | 2.0  | 2.2  | 2.3  | 2.5  | 2.7  | 2.8  | 5.6                                |
| Speed 1150 RPM |                             |      |      |      |      |      |      |                                    |
| Viscosity SSU  | Differential Pressure — PSI |      |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |
|                | 25                          | 50   | 75   | 100  | 125  | 150  |      |                                    |
| GPM            | 33                          | 4.7  | —    | —    | —    | —    | —    |                                    |
|                | 65                          | 5.5  | 4.7  | 4.1  | —    | —    | —    |                                    |
|                | 100                         | 5.9  | 5.2  | 4.7  | 4.3  | 4.0  | —    |                                    |
|                | 150                         | 6.2  | 5.6  | 5.2  | 4.9  | 4.6  | 4.3  |                                    |
|                | 650                         | 6.8  | 6.6  | 6.4  | 6.2  | 6.1  | 5.9  |                                    |
|                | 1000                        | 6.9  | 6.7  | 6.6  | 6.4  | 6.3  | 6.2  |                                    |
|                | 5000                        | 7.2  | 7.1  | 7.1  | 7.0  | 6.9  | 6.9  |                                    |
|                | 10000                       | 7.3  | 7.2  | 7.2  | 7.1  | 7.1  | 7.1  |                                    |
| BHP            | 150                         | 0.2  | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  | 3.8                                |
|                | 650                         | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  | 0.8  | 3.8                                |
|                | 1000                        | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  | 0.8  | 3.9                                |
|                | 5000                        | 0.6  | 0.7  | 0.8  | 1.0  | 1.1  | 1.2  | 4.1                                |
|                | 10000                       | 0.9  | 1.0  | 1.1  | 1.2  | 1.3  | 1.5  | 4.3                                |

| Rotor Size 143J |                             |      |      |      |      |      |      |                                    |
|-----------------|-----------------------------|------|------|------|------|------|------|------------------------------------|
| Speed 3500 RPM  |                             |      |      |      |      |      |      |                                    |
| Viscosity SSU   | Differential Pressure — PSI |      |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |
|                 | 25                          | 50   | 75   | 100  | 125  | 150  |      |                                    |
| GPM             | 33                          | 26.9 | 25.5 | 24.5 | 23.6 | 22.9 | 22.2 |                                    |
|                 | 65                          | 27.8 | 26.8 | 26.1 | 25.5 | 24.9 | 24.4 |                                    |
|                 | 100                         | 28.2 | 27.5 | 26.9 | 26.4 | 25.9 | 25.5 |                                    |
|                 | 150                         | 28.6 | 27.9 | 27.5 | 27.1 | 26.7 | 26.4 |                                    |
|                 | 650                         | 29.4 | 29.1 | 28.8 | 28.6 | 28.5 | 28.3 |                                    |
|                 | 1000                        | 29.5 | 29.3 | 29.1 | 28.9 | 28.8 | 28.7 |                                    |
|                 | 5000                        | 29.8 | 29.7 | 29.6 | 29.6 | 29.5 | 29.5 |                                    |
|                 | 10000                       | 29.9 | 29.8 | 29.8 | 29.7 | 29.7 | 29.6 |                                    |
| BHP             | 150                         | 1.4  | 1.8  | 2.3  | 2.7  | 3.1  | 3.6  | 5.2                                |
|                 | 650                         | 2.8  | 3.2  | 3.7  | 4.1  | 4.5  | 5.0  | 5.4                                |
|                 | 1000                        | 3.5  | 4.0  | 4.4  | 4.8  | 5.3  | 5.7  | 5.7                                |
|                 | 5000                        | 8.8  | 9.2  | 9.6  | 10.1 | 10.5 | 11.0 | 7.8                                |
|                 | 10000                       | 13.2 | 13.6 | 14.1 | 14.5 | 15.0 | 15.4 | 11.5                               |
| Speed 1750 RPM  |                             |      |      |      |      |      |      |                                    |
| Viscosity SSU   | Differential Pressure — PSI |      |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |
|                 | 25                          | 50   | 75   | 100  | 125  | 150  |      |                                    |
| GPM             | 33                          | 11.8 | 10.5 | 9.4  | 8.6  | 7.8  | —    |                                    |
|                 | 65                          | 12.7 | 11.8 | 11.1 | 10.4 | 9.9  | 9.4  |                                    |
|                 | 100                         | 13.2 | 12.4 | 11.8 | 11.3 | 10.9 | 10.5 |                                    |
|                 | 150                         | 13.5 | 12.9 | 12.4 | 12.0 | 11.7 | 11.3 |                                    |
|                 | 650                         | 14.3 | 14.0 | 13.8 | 13.6 | 13.4 | 13.3 |                                    |
|                 | 1000                        | 14.5 | 14.2 | 14.0 | 13.9 | 13.7 | 13.6 |                                    |
|                 | 5000                        | 14.8 | 14.7 | 14.6 | 14.5 | 14.5 | 14.4 |                                    |
|                 | 10000                       | 14.9 | 14.8 | 14.7 | 14.7 | 14.6 | 14.6 |                                    |
| BHP             | 150                         | 0.5  | 0.7  | 0.9  | 1.1  | 1.3  | 1.6  | 4.0                                |
|                 | 650                         | 0.8  | 1.0  | 1.3  | 1.5  | 1.7  | 1.9  | 4.1                                |
|                 | 1000                        | 1.0  | 1.2  | 1.4  | 1.7  | 1.9  | 2.1  | 4.2                                |
|                 | 5000                        | 2.3  | 2.6  | 2.8  | 3.0  | 3.2  | 3.4  | 4.6                                |
|                 | 10000                       | 3.5  | 3.7  | 3.9  | 4.1  | 4.3  | 4.6  | 5.2                                |
| Speed 1150 RPM  |                             |      |      |      |      |      |      |                                    |
| Viscosity SSU   | Differential Pressure — PSI |      |      |      |      |      |      | Net Inlet Pressure Required (PSIA) |
|                 | 25                          | 50   | 75   | 100  | 125  | 150  |      |                                    |
| GPM             | 33                          | 6.6  | 5.3  | —    | —    | —    | —    |                                    |
|                 | 65                          | 7.6  | 6.6  | 5.9  | 5.3  | —    | —    |                                    |
|                 | 100                         | 8.0  | 7.3  | 6.7  | 6.2  | 5.7  | 5.3  |                                    |
|                 | 150                         | 8.4  | 7.7  | 7.3  | 6.9  | 6.5  | 6.2  |                                    |
|                 | 650                         | 9.2  | 8.9  | 8.6  | 8.4  | 8.3  | 8.1  |                                    |
|                 | 1000                        | 9.3  | 9.1  | 8.9  | 8.7  | 8.6  | 8.4  |                                    |
|                 | 5000                        | 9.6  | 9.5  | 9.4  | 9.4  | 9.3  | 9.2  |                                    |
|                 | 10000                       | 9.7  | 9.6  | 9.6  | 9.5  | 9.5  | 9.4  |                                    |
| BHP             | 150                         | 0.2  | 0.4  | 0.5  | 0.7  | 0.8  | 1.0  | 3.7                                |
|                 | 650                         | 0.4  | 0.6  | 0.7  | 0.8  | 1.0  | 1.1  | 3.8                                |
|                 | 1000                        | 0.5  | 0.6  | 0.8  | 0.9  | 1.1  | 1.2  | 3.9                                |
|                 | 5000                        | 1.1  | 1.2  | 1.4  | 1.5  | 1.6  | 1.8  | 4.0                                |
|                 | 10000                       | 1.6  | 1.7  | 1.9  | 2.0  | 2.1  | 2.3  | 4.2                                |

| <b>Rotor Size 143</b> |                             |      |      |      |      |      |                                       |      |
|-----------------------|-----------------------------|------|------|------|------|------|---------------------------------------|------|
| <b>Speed 3500 RPM</b> |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU      | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                       | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM                   | 33                          | 36.2 | 34.5 | 33.3 | 32.2 | 31.3 | 30.4                                  |      |
|                       | 65                          | 37.3 | 36.1 | 35.2 | 34.5 | 33.8 | 33.2                                  |      |
|                       | 100                         | 37.9 | 36.9 | 36.2 | 35.6 | 35.0 | 34.5                                  |      |
|                       | 150                         | 38.3 | 37.5 | 36.9 | 36.4 | 36.0 | 35.6                                  |      |
|                       | 650                         | 39.2 | 38.9 | 38.6 | 38.3 | 38.1 | 37.9                                  |      |
|                       | 1000                        | 39.4 | 39.1 | 38.9 | 38.7 | 38.5 | 38.4                                  |      |
|                       | 5000                        | 39.8 | 39.7 | 39.6 | 39.5 | 39.4 | 39.3                                  |      |
| BHP                   | 150                         | 1.5  | 2.1  | 2.7  | 3.3  | 3.9  | 4.5                                   | 6.2  |
|                       | 650                         | 2.9  | 3.5  | 4.1  | 4.7  | 5.3  | 5.9                                   | 6.8  |
|                       | 1000                        | 3.7  | 4.2  | 4.8  | 5.4  | 6.0  | 6.6                                   | 7.2  |
|                       | 5000                        | 8.9  | 9.5  | 10.1 | 10.7 | 11.2 | 11.8                                  | 13.7 |
| <b>Speed 1750 RPM</b> |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU      | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                       | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM                   | 33                          | 16.1 | 14.5 | 13.2 | 12.1 | 11.2 | 10.3                                  |      |
|                       | 65                          | 17.2 | 16.1 | 15.2 | 14.4 | 13.7 | 13.1                                  |      |
|                       | 100                         | 17.8 | 16.8 | 16.1 | 15.5 | 15.0 | 14.5                                  |      |
|                       | 150                         | 18.2 | 17.4 | 16.8 | 16.3 | 15.9 | 15.5                                  |      |
|                       | 650                         | 19.2 | 18.8 | 18.5 | 18.3 | 18.1 | 17.9                                  |      |
|                       | 1000                        | 19.3 | 19.0 | 18.8 | 18.6 | 18.5 | 18.3                                  |      |
|                       | 5000                        | 19.7 | 19.6 | 19.5 | 19.4 | 19.3 | 19.3                                  |      |
|                       | 10000                       | 19.8 | 19.7 | 19.7 | 19.6 | 19.6 | 19.5                                  |      |
| BHP                   | 150                         | 0.5  | 0.8  | 1.1  | 1.4  | 1.7  | 2.0                                   | 4.3  |
|                       | 650                         | 0.9  | 1.2  | 1.5  | 1.8  | 2.1  | 2.4                                   | 4.4  |
|                       | 1000                        | 1.1  | 1.4  | 1.7  | 2.0  | 2.2  | 2.5                                   | 4.5  |
|                       | 5000                        | 2.4  | 2.7  | 3.0  | 3.3  | 3.6  | 3.9                                   | 5.3  |
|                       | 10000                       | 3.5  | 3.8  | 4.1  | 4.4  | 4.7  | 5.0                                   | 6.1  |
| <b>Speed 1150 RPM</b> |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU      | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                       | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM                   | 33                          | 9.2  | 7.6  | —    | —    | —    | —                                     |      |
|                       | 65                          | 10.4 | 9.2  | 8.3  | 7.5  | 6.9  | —                                     |      |
|                       | 100                         | 10.9 | 10.0 | 9.2  | 8.6  | 8.1  | 7.6                                   |      |
|                       | 150                         | 11.3 | 10.6 | 10.0 | 9.5  | 9.0  | 8.6                                   |      |
|                       | 650                         | 12.3 | 11.9 | 11.6 | 11.4 | 11.2 | 11.0                                  |      |
|                       | 1000                        | 12.5 | 12.2 | 11.9 | 11.7 | 11.6 | 11.4                                  |      |
|                       | 5000                        | 12.9 | 12.7 | 12.6 | 12.5 | 12.5 | 12.4                                  |      |
|                       | 10000                       | 13.0 | 12.9 | 12.8 | 12.7 | 12.7 | 12.6                                  |      |
| BHP                   | 150                         | 0.3  | 0.5  | 0.7  | 0.9  | 1.1  | 1.3                                   | 4.0  |
|                       | 650                         | 0.5  | 0.6  | 0.8  | 1.0  | 1.2  | 1.4                                   | 4.1  |
|                       | 1000                        | 0.5  | 0.7  | 0.9  | 1.1  | 1.3  | 1.5                                   | 4.1  |
|                       | 5000                        | 1.1  | 1.3  | 1.5  | 1.7  | 1.9  | 2.1                                   | 4.4  |
|                       | 10000                       | 1.6  | 1.8  | 2.0  | 2.2  | 2.4  | 2.6                                   | 4.8  |

| <b>Rotor Size 162</b> |                             |      |      |      |      |      |                                       |      |
|-----------------------|-----------------------------|------|------|------|------|------|---------------------------------------|------|
| <b>Speed 3500 RPM</b> |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU      | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                       | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM                   | 33                          | 52.9 | 50.8 | 49.2 | 47.8 | 46.6 | 45.6                                  |      |
|                       | 65                          | 54.4 | 52.9 | 51.7 | 50.7 | 49.9 | 49.1                                  |      |
|                       | 100                         | 55.1 | 53.9 | 52.9 | 52.1 | 51.5 | 50.8                                  |      |
|                       | 150                         | 55.6 | 54.6 | 53.9 | 53.2 | 52.7 | 52.1                                  |      |
|                       | 650                         | 56.8 | 56.4 | 56.0 | 55.7 | 55.4 | 55.2                                  |      |
|                       | 1000                        | 57.1 | 56.7 | 56.4 | 56.1 | 55.9 | 55.7                                  |      |
|                       | 5000                        | 57.6 | 57.4 | 57.3 | 57.1 | 57.1 | 57.0                                  |      |
| BHP                   | 150                         | 2.2  | 3.1  | 3.9  | 4.8  | 5.6  | 6.4                                   | 7.0  |
|                       | 650                         | 4.2  | 5.1  | 5.9  | 6.8  | 7.6  | 8.5                                   | 7.9  |
|                       | 1000                        | 5.3  | 6.1  | 7.0  | 7.8  | 8.7  | 9.5                                   | 8.6  |
|                       | 2000                        | 7.7  | 8.5  | 9.4  | 10.2 | 11.1 | 11.9                                  | 10.9 |
|                       | 5000                        | 12.9 | 13.7 | 14.6 | 15.4 | 16.2 | 17.1                                  | 25.0 |
| <b>Speed 1750 RPM</b> |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU      | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                       | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM                   | 33                          | 23.9 | 21.8 | 20.2 | 18.8 | 17.6 | 16.6                                  |      |
|                       | 65                          | 25.4 | 23.9 | 22.7 | 21.8 | 20.9 | 20.1                                  |      |
|                       | 100                         | 26.1 | 24.9 | 23.9 | 23.2 | 22.5 | 21.9                                  |      |
|                       | 150                         | 26.6 | 25.6 | 24.9 | 24.2 | 23.7 | 23.2                                  |      |
|                       | 650                         | 27.8 | 27.4 | 27.0 | 26.7 | 26.4 | 26.2                                  |      |
|                       | 1000                        | 28.1 | 27.7 | 27.4 | 27.1 | 26.9 | 26.7                                  |      |
|                       | 5000                        | 28.6 | 28.4 | 28.3 | 28.2 | 28.1 | 28.0                                  |      |
|                       | 10000                       | 28.7 | 28.6 | 28.5 | 28.4 | 28.3 | 28.3                                  |      |
| BHP                   | 150                         | 0.8  | 1.2  | 1.6  | 2.0  | 2.5  | 2.9                                   | 4.4  |
|                       | 650                         | 1.3  | 1.7  | 2.1  | 2.6  | 3.0  | 3.4                                   | 4.6  |
|                       | 1000                        | 1.6  | 2.0  | 2.4  | 2.8  | 3.2  | 3.7                                   | 4.7  |
|                       | 5000                        | 3.5  | 3.9  | 4.3  | 4.7  | 5.2  | 5.6                                   | 5.7  |
|                       | 10000                       | 5.1  | 5.5  | 6.0  | 6.4  | 6.8  | 7.2                                   | 6.9  |
| <b>Speed 1150 RPM</b> |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU      | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                       | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM                   | 33                          | 14.0 | 11.9 | 10.3 | —    | —    | —                                     |      |
|                       | 65                          | 15.4 | 13.9 | 12.8 | 11.8 | 11.0 | 10.2                                  |      |
|                       | 100                         | 16.1 | 14.9 | 14.0 | 13.2 | 12.5 | 11.9                                  |      |
|                       | 150                         | 16.7 | 15.7 | 14.9 | 14.3 | 13.7 | 13.2                                  |      |
|                       | 650                         | 17.9 | 17.4 | 17.1 | 16.8 | 16.5 | 16.2                                  |      |
|                       | 1000                        | 18.1 | 17.7 | 17.5 | 17.2 | 17.0 | 16.8                                  |      |
|                       | 5000                        | 18.6 | 18.5 | 18.3 | 18.2 | 18.1 | 18.0                                  |      |
|                       | 10000                       | 18.8 | 18.6 | 18.5 | 18.5 | 18.4 | 18.3                                  |      |
| BHP                   | 150                         | 0.4  | 0.7  | 1.0  | 1.3  | 1.5  | 1.8                                   | 4.0  |
|                       | 650                         | 0.7  | 0.9  | 1.2  | 1.5  | 1.8  | 2.0                                   | 4.1  |
|                       | 1000                        | 0.8  | 1.0  | 1.3  | 1.6  | 1.9  | 2.2                                   | 4.2  |
|                       | 5000                        | 1.6  | 1.9  | 2.2  | 2.4  | 2.7  | 3.0                                   | 4.6  |
|                       | 10000                       | 2.3  | 2.6  | 2.9  | 3.2  | 3.4  | 3.7                                   | 5.2  |

1. For conditions between listed values, interpolate between those values. For conditions not listed or off tables, Contact IMO
2. Net Inlet Pressure Required is minimum pressure above vapor pressure at pump inlet to prevent cavitation. This assumes that the fluid is air and gas free
3. For BHP values at viscosities below 150 SSU, use values listed for 150 SSU.

# Model 3E Performance Data

| Rotor Size 187   |                             |      |      |      |      |      |                                       |      |
|------------------|-----------------------------|------|------|------|------|------|---------------------------------------|------|
| Speed 3500 RPM   |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                  | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM              | 33                          | 82.3 | 79.5 | 77.4 | 75.6 | 74.0 | 72.5                                  |      |
|                  | 65                          | 84.2 | 82.3 | 80.7 | 79.4 | 78.3 | 77.3                                  |      |
|                  | 100                         | 85.2 | 83.6 | 82.3 | 81.3 | 80.4 | 79.6                                  |      |
|                  | 150                         | 85.9 | 84.6 | 83.6 | 82.7 | 82.0 | 81.3                                  |      |
|                  | 650                         | 87.5 | 86.9 | 86.4 | 86.0 | 85.7 | 85.3                                  |      |
|                  | 1000                        | 87.8 | 87.3 | 86.9 | 86.6 | 86.3 | 86.1                                  |      |
|                  | 2500                        | 88.3 | 88.0 | 87.7 | 87.5 | 87.3 | 87.1                                  |      |
| BHP              | 150                         | 3.4  | 4.7  | 6.0  | 7.3  | 8.6  | 9.9                                   | 8.5  |
|                  | 650                         | 6.5  | 7.8  | 9.1  | 10.4 | 11.7 | 13.0                                  | 10.5 |
|                  | 1000                        | 8.1  | 9.4  | 10.7 | 12.0 | 13.3 | 14.6                                  | 11.8 |
|                  | 1500                        | 10.1 | 8.7  | 12.7 | 14.0 | 15.3 | 16.6                                  | 14.2 |
| 2500             | 13.3                        | 14.6 | 15.9 | 17.2 | 18.5 | 19.8 | 21.0                                  |      |
| Speed 1750 RPM   |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                  | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM              | 33                          | 37.8 | 35.0 | 32.8 | 31.0 | 29.4 | 28.0                                  |      |
|                  | 65                          | 39.7 | 37.7 | 36.2 | 34.9 | 33.8 | 32.7                                  |      |
|                  | 100                         | 40.6 | 39.0 | 37.8 | 36.8 | 35.9 | 35.0                                  |      |
|                  | 150                         | 41.4 | 40.0 | 39.0 | 38.2 | 37.4 | 36.8                                  |      |
|                  | 650                         | 43.0 | 42.4 | 41.9 | 41.5 | 41.1 | 40.8                                  |      |
|                  | 1000                        | 43.3 | 42.8 | 42.4 | 42.1 | 41.8 | 41.5                                  |      |
|                  | 5000                        | 44.0 | 43.8 | 43.6 | 43.4 | 43.3 | 43.2                                  |      |
|                  | 10000                       | 44.1 | 44.0 | 43.9 | 43.8 | 43.7 | 43.6                                  |      |
|                  | BHP                         | 150  | 1.2  | 1.8  | 2.5  | 3.1  | 3.8                                   |      |
| 650              |                             | 2.0  | 2.6  | 3.3  | 3.9  | 4.6  | 5.2                                   | 5.0  |
| 1000             |                             | 2.4  | 3.0  | 3.7  | 4.3  | 5.0  | 5.6                                   | 5.2  |
| 5000             |                             | 5.3  | 6.0  | 6.6  | 7.3  | 7.9  | 8.6                                   | 6.8  |
| 10000            |                             | 7.9  | 8.5  | 9.2  | 9.8  | 10.5 | 11.1                                  | 8.8  |
| Speed 1150 RPM   |                             |      |      |      |      |      |                                       |      |
| Viscosity<br>SSU | Differential Pressure — PSI |      |      |      |      |      | Net Inlet Pressure<br>Required (PSIA) |      |
|                  | 25                          | 50   | 75   | 100  | 125  | 150  |                                       |      |
| GPM              | 33                          | 22.5 | 19.7 | 17.6 | 15.8 | —    | —                                     |      |
|                  | 65                          | 24.5 | 22.5 | 20.9 | 19.6 | 18.5 | 17.5                                  |      |
|                  | 100                         | 25.4 | 23.8 | 22.5 | 21.5 | 20.6 | 19.8                                  |      |
|                  | 150                         | 26.1 | 24.8 | 23.8 | 22.9 | 22.2 | 21.5                                  |      |
|                  | 650                         | 27.7 | 27.1 | 26.6 | 26.2 | 25.9 | 25.5                                  |      |
|                  | 1000                        | 28.0 | 27.5 | 27.1 | 26.8 | 26.5 | 26.3                                  |      |
|                  | 5000                        | 28.7 | 28.5 | 28.3 | 28.2 | 28.0 | 27.9                                  |      |
|                  | 10000                       | 28.9 | 28.7 | 28.6 | 28.5 | 28.4 | 28.3                                  |      |
| BHP              | 150                         | 0.7  | 1.1  | 1.5  | 1.9  | 2.4  | 2.8                                   | 4.1  |
|                  | 650                         | 1.0  | 1.4  | 1.9  | 2.3  | 2.7  | 3.1                                   | 4.3  |
|                  | 1000                        | 1.2  | 1.6  | 2.0  | 2.5  | 2.9  | 3.3                                   | 4.3  |
|                  | 5000                        | 2.5  | 2.9  | 3.3  | 3.8  | 4.2  | 4.6                                   | 4.9  |
|                  | 10000                       | 3.6  | 4.0  | 4.4  | 4.9  | 5.3  | 5.7                                   | 5.6  |

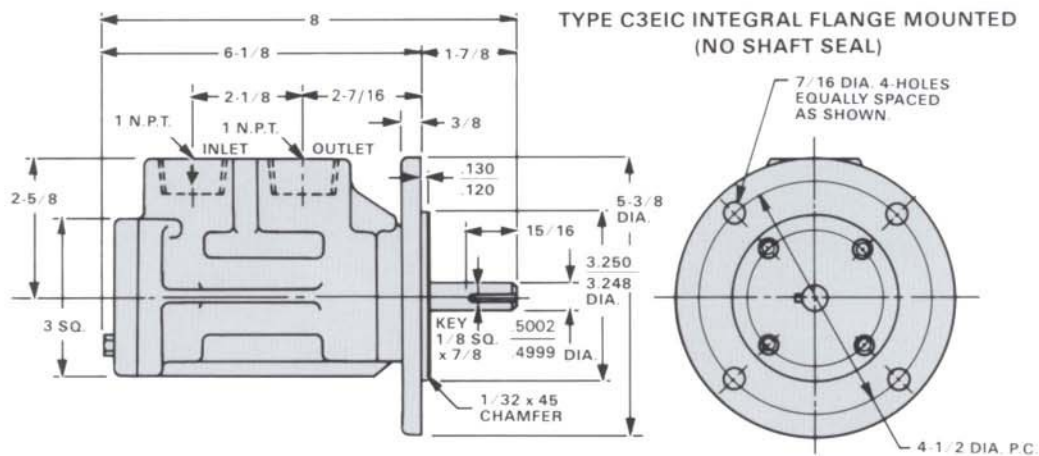
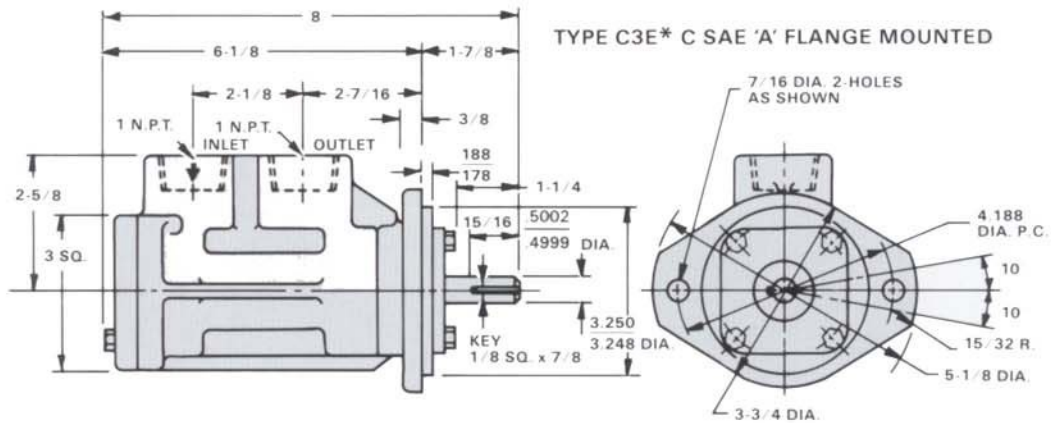
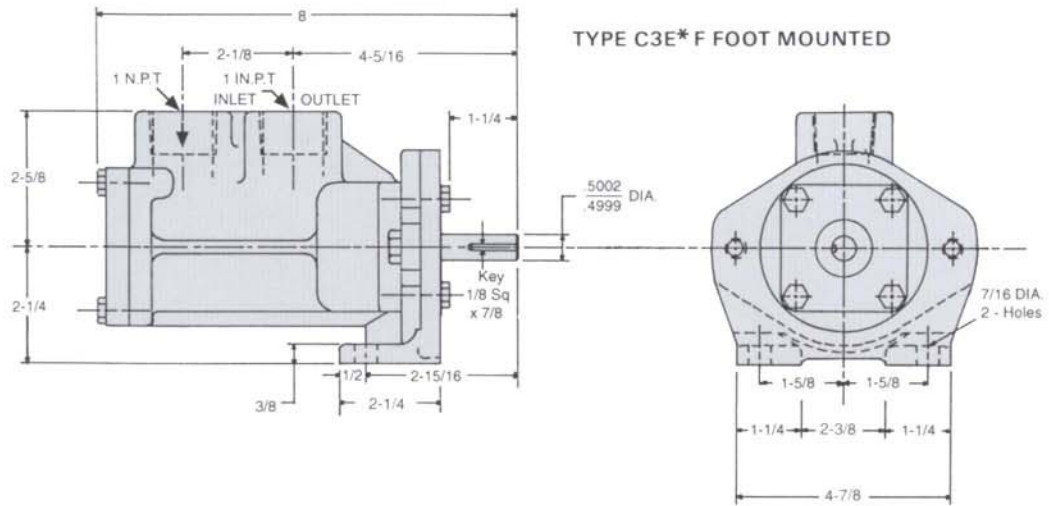
| Rotor Size 200   |                             |       |       |       |       |       |                                       |      |
|------------------|-----------------------------|-------|-------|-------|-------|-------|---------------------------------------|------|
| Speed 3500 RPM   |                             |       |       |       |       |       |                                       |      |
| Viscosity<br>SSU | Differential Pressure — PSI |       |       |       |       |       | Net Inlet Pressure<br>Required (PSIA) |      |
|                  | 25                          | 50    | 75    | 100   | 125   | 150   |                                       |      |
| GPM              | 33                          | 100.4 | 97.2  | 94.8  | 92.7  | 90.9  | 89.3                                  |      |
|                  | 65                          | 102.6 | 100.3 | 98.6  | 97.1  | 95.8  | 94.7                                  |      |
|                  | 100                         | 103.7 | 101.8 | 100.4 | 99.3  | 98.2  | 97.3                                  |      |
|                  | 150                         | 104.5 | 103.0 | 101.8 | 100.9 | 100.0 | 99.3                                  |      |
|                  | 650                         | 106.3 | 105.6 | 105.1 | 104.6 | 104.2 | 103.8                                 |      |
|                  | 1000                        | 106.7 | 106.1 | 105.7 | 105.3 | 105.0 | 104.7                                 |      |
|                  | 1500                        | 106.9 | 106.5 | 106.1 | 105.8 | 105.5 | 105.3                                 |      |
| BHP              | 150                         | 4.1   | 5.7   | 7.3   | 8.9   | 10.4  | 12.0                                  | 9.7  |
|                  | 650                         | 7.9   | 9.5   | 11.1  | 12.6  | 14.2  | 15.8                                  | 12.1 |
|                  | 1000                        | 9.9   | 11.4  | 13.0  | 14.6  | 16.2  | 17.7                                  | 14.0 |
|                  | 1500                        | 12.2  | 13.8  | 15.4  | 17.0  | 18.5  | 20.1                                  | 18.0 |
| Speed 1750 RPM   |                             |       |       |       |       |       |                                       |      |
| Viscosity<br>SSU | Differential Pressure — PSI |       |       |       |       |       | Net Inlet Pressure<br>Required (PSIA) |      |
|                  | 25                          | 50    | 75    | 100   | 125   | 150   |                                       |      |
| GPM              | 33                          | 46.4  | 43.2  | 40.7  | 38.7  | 36.9  | 35.2                                  |      |
|                  | 65                          | 48.6  | 46.3  | 44.6  | 43.1  | 41.8  | 40.6                                  |      |
|                  | 100                         | 49.6  | 47.8  | 46.4  | 45.2  | 44.2  | 43.2                                  |      |
|                  | 150                         | 50.4  | 48.9  | 47.8  | 46.8  | 46.0  | 45.2                                  |      |
|                  | 650                         | 52.3  | 51.6  | 51.0  | 50.6  | 50.2  | 49.8                                  |      |
|                  | 1000                        | 52.6  | 52.1  | 51.6  | 51.2  | 50.9  | 50.6                                  |      |
|                  | 5000                        | 53.4  | 53.2  | 53.0  | 52.8  | 52.6  | 52.5                                  |      |
|                  | 10000                       | 53.6  | 53.4  | 53.3  | 53.2  | 53.1  | 53.0                                  |      |
|                  | BHP                         | 150   | 1.4   | 2.2   | 3.0   | 3.8   | 4.6                                   |      |
| 650              |                             | 2.4   | 3.2   | 4.0   | 4.8   | 5.6   | 6.3                                   | 5.2  |
| 1000             |                             | 2.9   | 3.7   | 4.5   | 5.3   | 6.0   | 6.8                                   | 5.3  |
| 5000             |                             | 6.5   | 7.3   | 8.1   | 8.9   | 9.6   | 10.4                                  | 7.1  |
| 10000            |                             | 9.5   | 10.3  | 11.1  | 11.9  | 12.7  | 13.5                                  | 9.6  |
| Speed 1150 RPM   |                             |       |       |       |       |       |                                       |      |
| Viscosity<br>SSU | Differential Pressure — PSI |       |       |       |       |       | Net Inlet Pressure<br>Required (PSIA) |      |
|                  | 25                          | 50    | 75    | 100   | 125   | 150   |                                       |      |
| GPM              | 33                          | 27.8  | 24.6  | 22.2  | 20.2  | 18.3  | —                                     |      |
|                  | 65                          | 30.0  | 27.8  | 26.0  | 24.6  | 23.3  | 22.1                                  |      |
|                  | 100                         | 31.1  | 29.3  | 27.9  | 26.7  | 25.6  | 24.7                                  |      |
|                  | 150                         | 31.9  | 30.4  | 29.3  | 28.3  | 27.5  | 26.7                                  |      |
|                  | 650                         | 33.8  | 33.1  | 32.5  | 32.1  | 31.6  | 31.3                                  |      |
|                  | 1000                        | 34.1  | 33.5  | 33.1  | 32.7  | 32.4  | 32.1                                  |      |
|                  | 5000                        | 34.9  | 34.6  | 34.4  | 34.3  | 34.1  | 34.0                                  |      |
|                  | 10000                       | 35.1  | 34.9  | 34.7  | 34.6  | 34.5  | 34.4                                  |      |
| BHP              | 150                         | 0.8   | 1.3   | 1.8   | 2.4   | 2.9   | 3.4                                   | 4.2  |
|                  | 650                         | 1.2   | 1.7   | 2.3   | 2.8   | 3.3   | 3.8                                   | 4.4  |
|                  | 1000                        | 1.4   | 2.0   | 2.5   | 3.0   | 3.5   | 4.0                                   | 4.5  |
|                  | 5000                        | 3.0   | 3.5   | 4.0   | 4.6   | 5.1   | 5.6                                   | 5.2  |
|                  | 10000                       | 4.3   | 4.9   | 5.4   | 5.9   | 6.4   | 6.9                                   | 5.9  |

1. For conditions between listed values, interpolate between those values. For conditions not listed or off tables, Contact IMO.
2. Net Inlet Pressure Required is minimum pressure above vapor pressure at pump inlet to prevent cavitation. This assumes that the fluid is air and gas free.
3. For BHP values at viscosities below 150 SSU, use values listed for 150 SSU.



# Model 3E Dimensions

## Rotor Sizes 87P, 87 & 95



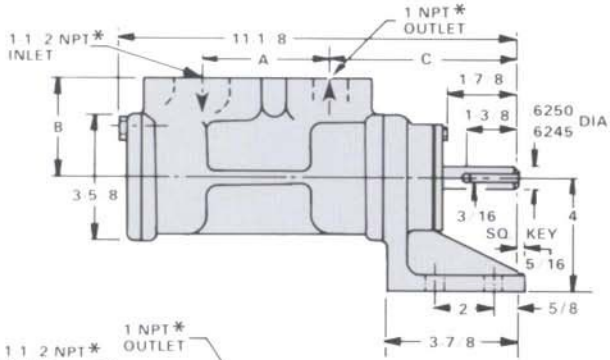
All dimensions to the nearest 1/16 inch - not to scale. Weight - 9 lbs.

|          |   |   |                |      |
|----------|---|---|----------------|------|
| OFFICE   | ROTATION<br><input type="checkbox"/> CW <input type="checkbox"/> CCW(D) | CASE MATERIAL<br><input type="checkbox"/> IRON <input type="checkbox"/> STEEL | CERTIFIED BY   | DATE |
| CUSTOMER |   |   | CUSTOMER ORDER |      |
| MODEL NO |   |   | IMO ORDER      |      |

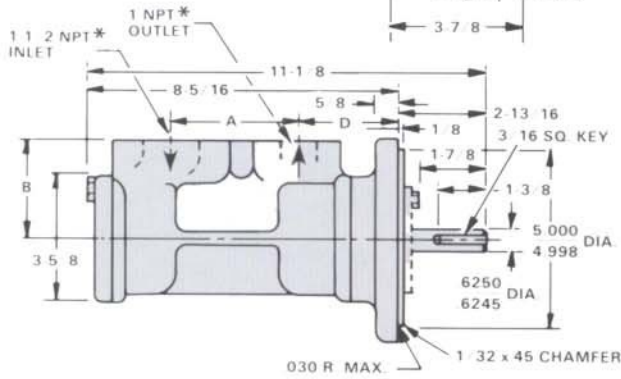
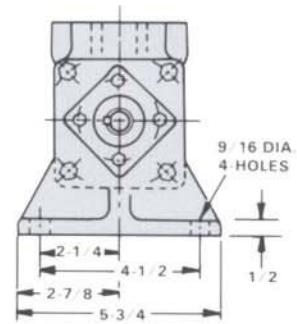
# Model 3E Dimensions

## Rotor Sizes 118P & 118

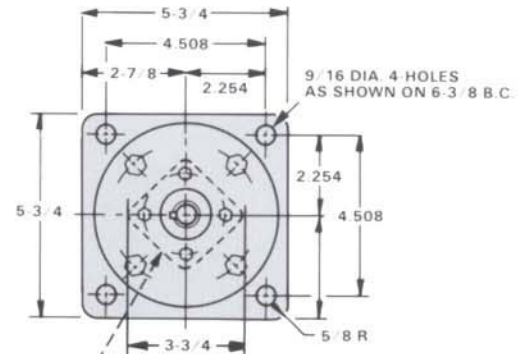
### TYPE C3E\* F FOOT MOUNTED



\*IRON CASED PUMPS HAVE NPT PORTS AS SHOWN  
\*STEEL CASED PUMPS HAVE SAE FLANGE PADS FOR USE WITH SAE 4 BOLT SOCKET WELD FLANGES (PROVIDED WITH PUMP) SEE PAGE 12 FOR DIMENSIONS.

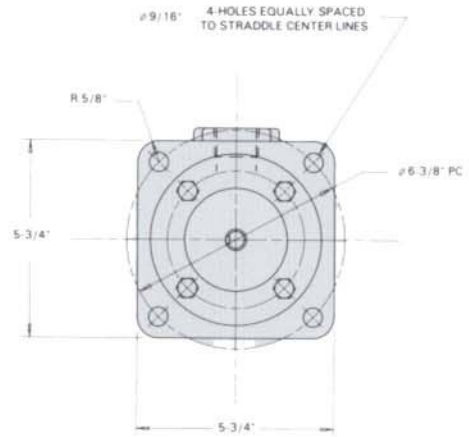
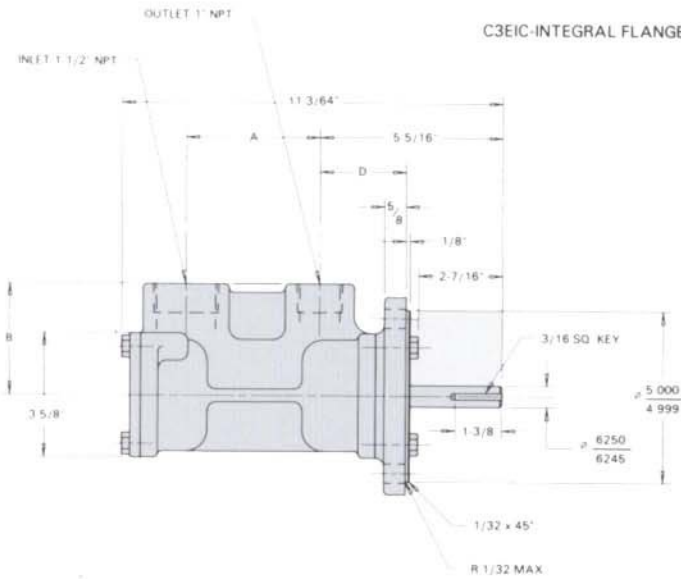


### TYPES C3E\* "C" FLANGE MOUNTED



2-7/8" SQ. x 1/4" THICK W/ 3/8" RADIUS CORNERS. FOR MECHANICAL SEAL MODEL (3E \* C) ONLY NOT PRESENT ON INTEGRAL FLANGE MOUNT (3EIC) MODELS.

### C3EIC-INTEGRAL FLANGE MOUNT-NO SEAL



| CASE MATERIAL | A     | B     | C     | D     |
|---------------|-------|-------|-------|-------|
| IRON          | 3-7/8 | 3-1/4 | 5-3/8 | 2-1/2 |
| STEEL         | 3-1/2 | 2-3/4 | 5-1/4 | 2-3/8 |

All dimensions to the nearest 1/16 inch - not to scale. Weight - 27 lbs.

|          |   |   |                |      |
|----------|---|---|----------------|------|
| OFFICE   | ROTATION<br><input type="checkbox"/> CW <input type="checkbox"/> CCW(D) | CASE MATERIAL<br><input type="checkbox"/> IRON <input type="checkbox"/> STEEL | CERTIFIED BY   | DATE |
| CUSTOMER |   |   | CUSTOMER ORDER |      |
| MODEL NO |   |   | IMO ORDER      |      |

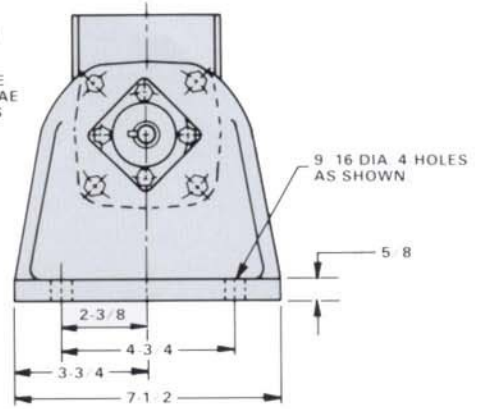
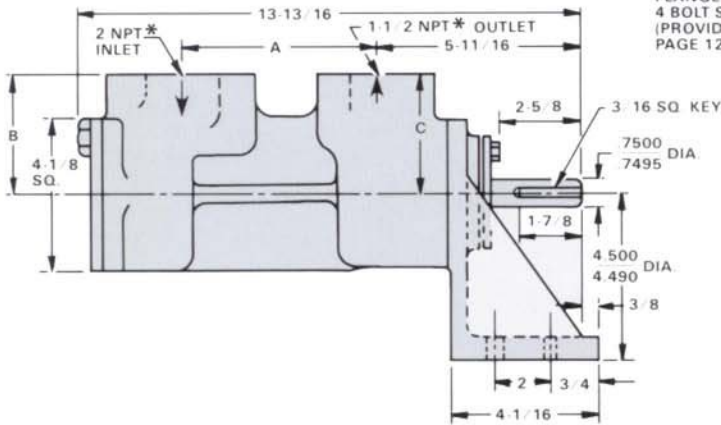
# Model 3E Dimensions

## Rotor Sizes 143J, 143 & 162

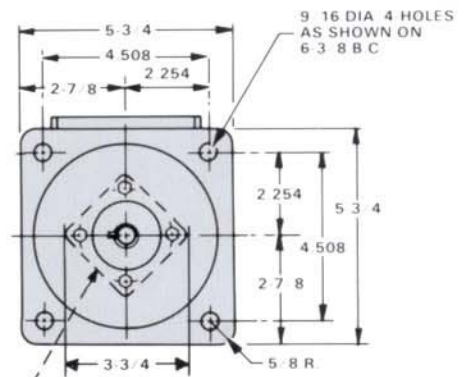
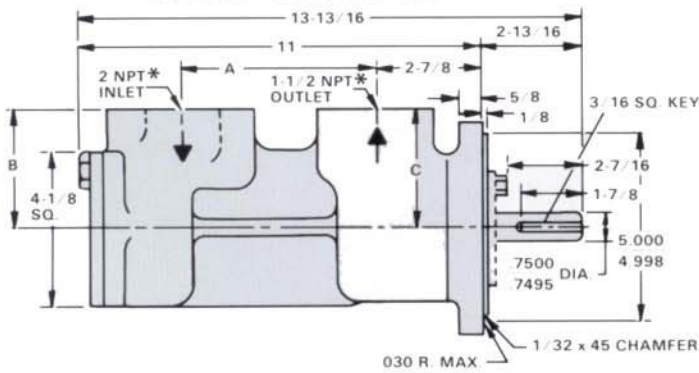
TYPE 3E \* F FOOT MOUNTED

\*IRON CASED PUMPS HAVE NPT PORTS AS SHOWN.

\*STEEL CASED PUMPS HAVE SAE FLANGE PADS FOR USE WITH SAE 4 BOLT SOCKET WELD FLANGES (PROVIDED WITH PUMP) SEE PAGE 12 FOR DIMENSIONS.

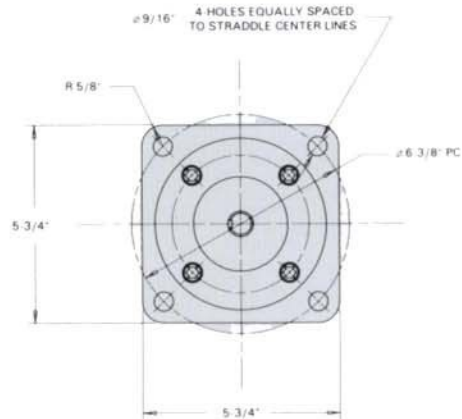
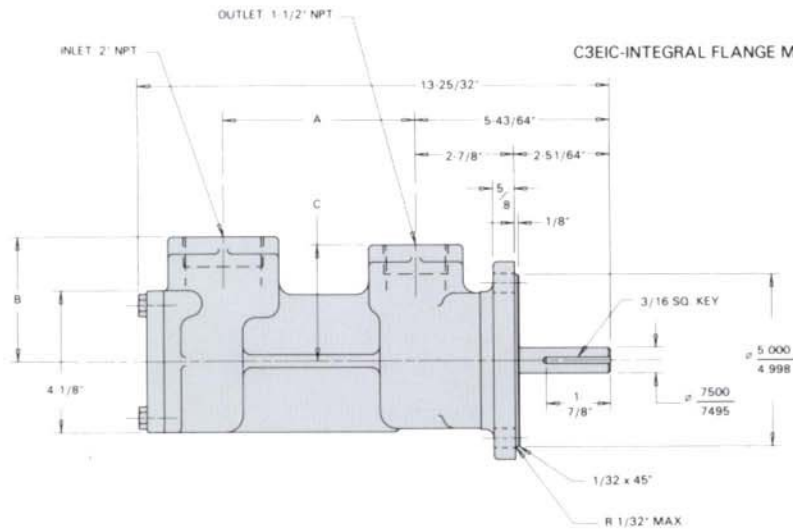


TYPES 3E \* C FLANGE MOUNTED



2-7/8" SQ. BY 1-4" THICK W/ 3-8" RADIUS CORNERS FOR MECHANICAL SEAL MODEL (3E \* C) ONLY NOT PRESENT ON INTEGRAL FLANGE MOUNT

C3EIC-INTEGRAL FLANGE MOUNT-NO SEAL



| CASE MATERIAL | A     | B     | C     |
|---------------|-------|-------|-------|
| IRON          | 5-5/8 | 3-5/8 | 3-3/8 |
| STEEL         | 5-1/4 | 3-1/4 | 3-1/4 |

All dimensions to the nearest 1/16 inch - not to scale. Weight - 38 lbs.

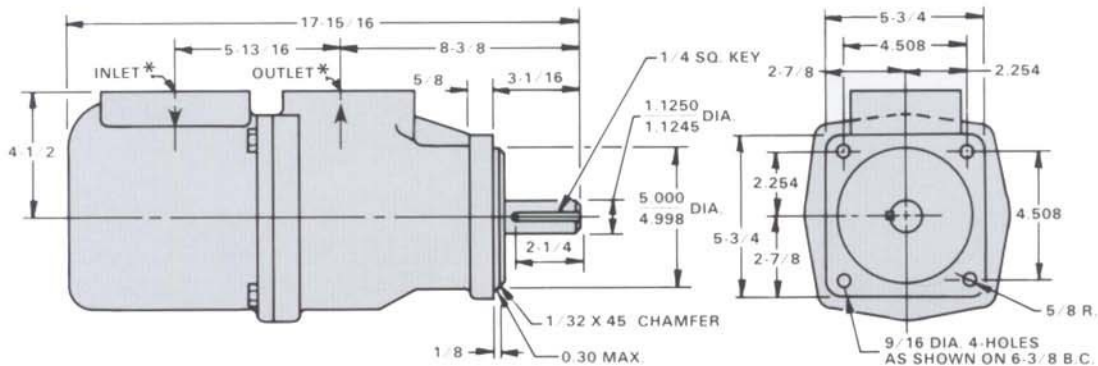
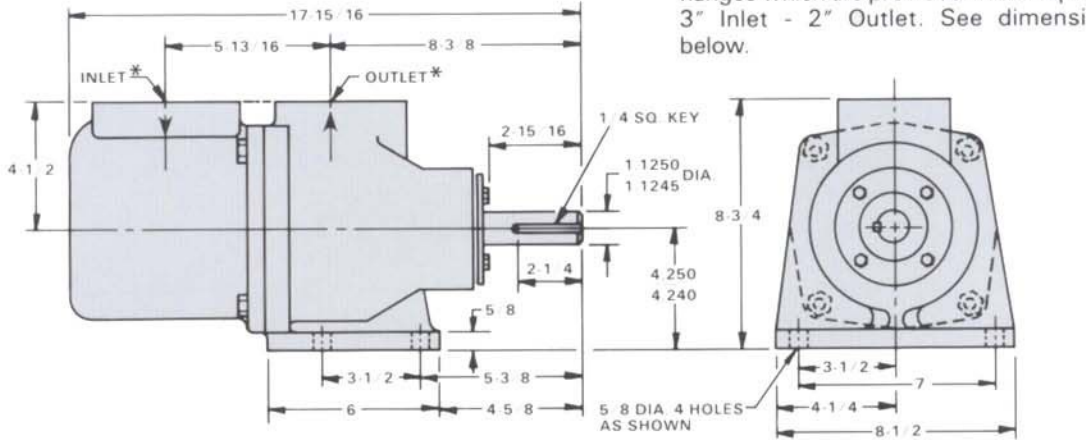
|          |   |   |                |      |
|----------|---|---|----------------|------|
| OFFICE   | ROTATION<br><input type="checkbox"/> CW <input type="checkbox"/> CCW(D) | CASE MATERIAL<br><input type="checkbox"/> IRON <input type="checkbox"/> STEEL | CERTIFIED BY   | DATE |
| CUSTOMER |   |   | CUSTOMER ORDER |      |
| MODEL NO |   |   | IMO ORDER      |      |

# Model 3E Dimensions

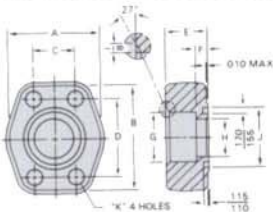
## Rotor Sizes 187 & 200

\*Iron Case Pumps have NPT ports.  
2-1/2" Inlet - 2" Outlet.

\*Steel Case Pumps have SAE flange pads for use with SAE 4-bolt socket-weld flanges which are provided with the pump.  
3" Inlet - 2" Outlet. See dimensions below.



### SAE 4-bolt socket-weld flanges (for steel case pumps 118 thru 200 sizes)



| Part Number | Pipe Size | Pad Size | A    | B    | C     | D     | E    | F   | G Dia. | H Dia. | J Dia. | K Dia. |
|-------------|-----------|----------|------|------|-------|-------|------|-----|--------|--------|--------|--------|
| W4-16-16    | 1.00      | 1.00     | 2.31 | 2.75 | 1.031 | 2.062 | .88  | .25 | 1.328  | 1.00   | 1.560  | .406   |
| W4-24-24    | 1.50      | 1.50     | 3.25 | 3.69 | 1.406 | 2.750 | 1.19 | .44 | 1.922  | 1.50   | 2.120  | .531   |
| W4-32-32    | 2.00      | 2.00     | 3.81 | 4.00 | 1.688 | 3.062 | 1.38 | .50 | 2.406  | 2.00   | 2.495  | .531   |
| W4-48-48    | 3.00      | 3.00     | 5.16 | 5.31 | 2.438 | 4.188 | 2.12 | .88 | 3.547  | 3.00   | 3.620  | .656   |

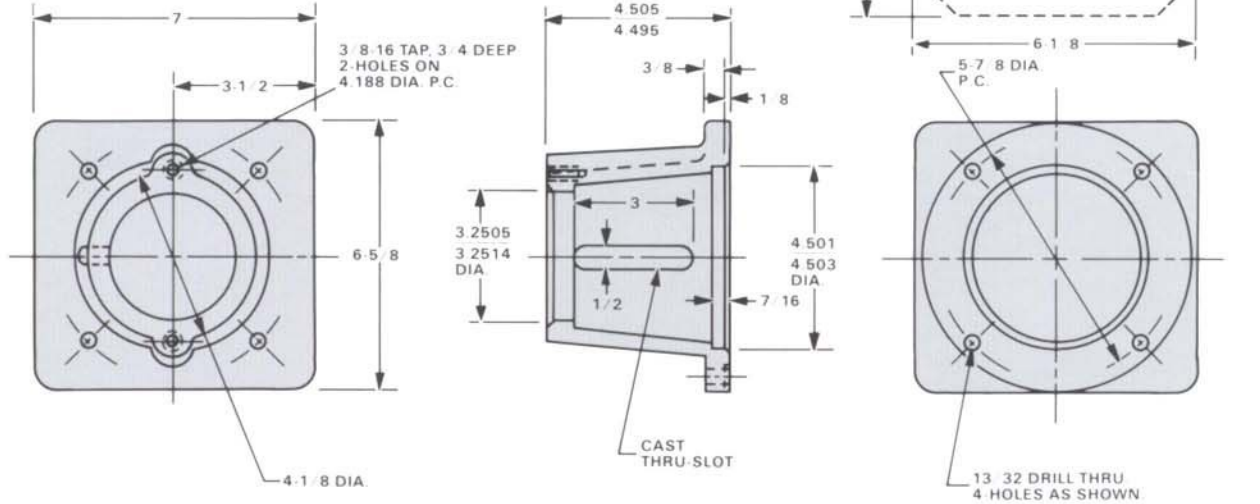
All dimensions to the nearest 1/16 inch - not to scale. Weight - 92 lbs.

|          |   |   |                |      |
|----------|---|---|----------------|------|
| OFFICE   | ROTATION<br><input type="checkbox"/> CW <input type="checkbox"/> CCW(D) | CASE MATERIAL<br><input type="checkbox"/> IRON <input type="checkbox"/> STEEL | CERTIFIED BY   | DATE |
| CUSTOMER |   |   | CUSTOMER ORDER |      |
| MODEL NO |   |   | IMO ORDER      |      |

# Series 3E PUMP TO 'C' FACE MOTOR BRACKETS

**BRACKET NO. S5333DH** (MAXIMUM COUPLING O.D. = 3") WEIGHT 12 LBS. MATES WITH MOTOR FRAMES 56C, 143TC, 145TC.

FOR USE WITH PUMP 3E-87P, 87, 95 WITH SAE BOLT FLANGE MOUNTING

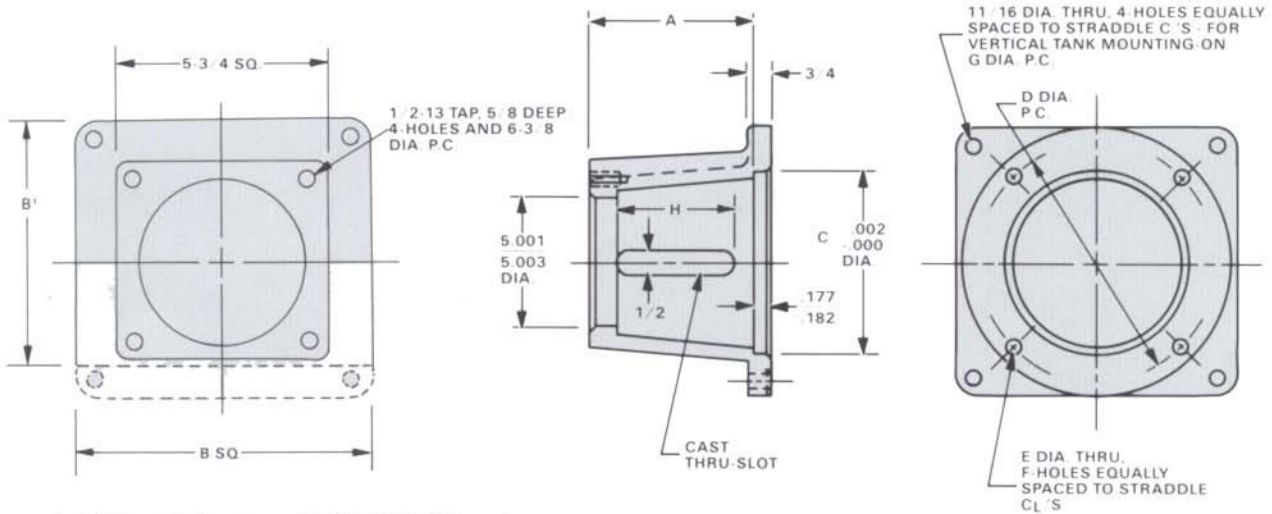


# This bracket is suitable for vertical tank mount arrangement. Drill 4 corner holes 7/16 dia. similar to brackets below. See inset of tank cover hole size.

FOR USE WITH PUMP 3E-118P, 118, 143J, 143, 162, 187, 200 WITH SAE 4 BOLT FLANGE MOUNTING

| MOTOR FRAMES  | PUMP ROTOR SIZES | BRACKET   | WHERE USED |          | A      | B       | B <sup>1</sup> | C      | D     | E     | F | G      | H     | J <sup>Δ</sup> | L <sub>6</sub> |
|---------------|------------------|-----------|------------|----------|--------|---------|----------------|--------|-------|-------|---|--------|-------|----------------|----------------|
|               |                  |           | HORIZONTAL | TANK TOP |        |         |                |        |       |       |   |        |       |                |                |
| 56C-145C      | 118 to 200       | S5333DL   | —          | X        | 6-3/16 | B       | —              | 4.501  | 5-7/8 | 7/16  | 4 | 11-1/4 | 3-1/2 | 8-1/4          | 23             |
|               | 118 to 200       | S5333DLX1 | X          | —        | 6-3/16 | B       | 7-15/16        | 4.501  | 5-7/8 | 7/16  | 4 | —      | 3-1/2 | —              | 22             |
| 182TC-184TC   | 118 to 162       | S5333DP   | X          | —        | 6      | 8-7/8** | —              | 8.501  | 7-1/4 | 9/16  | 4 | —      | 3-7/8 | —              | 19             |
| 182TC-256TC   | 118 to 200       | S5333DJ   | —          | X        | 7-7/16 | B       | —              | 8.501  | 7-1/4 | 9/16  | 4 | 11-1/4 | 4     | 8-3/8          | 22             |
| 213TC-256TC   | 187 to 200       | S5333DK   | X          | —        | 7-7/16 | B       | —              | 8.501  | 7-1/4 | 9/16  | 4 | 11-1/4 | 4     | —              | 22             |
| 284TSC-365TSC | 118 to 200       | S5333DK   | X          | X        | 7-5/16 | 14      | —              | 12.501 | 11    | 11/16 | 8 | 16     | 4     | 13             | 37             |

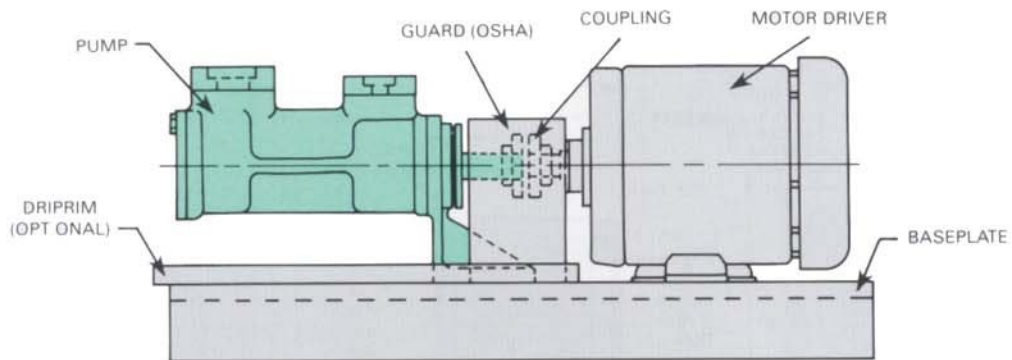
<sup>Δ</sup>284TSC and 286TSC motors must have large (12-1/2") "AK" diam  
 \*\*Supplied with a Round Flange



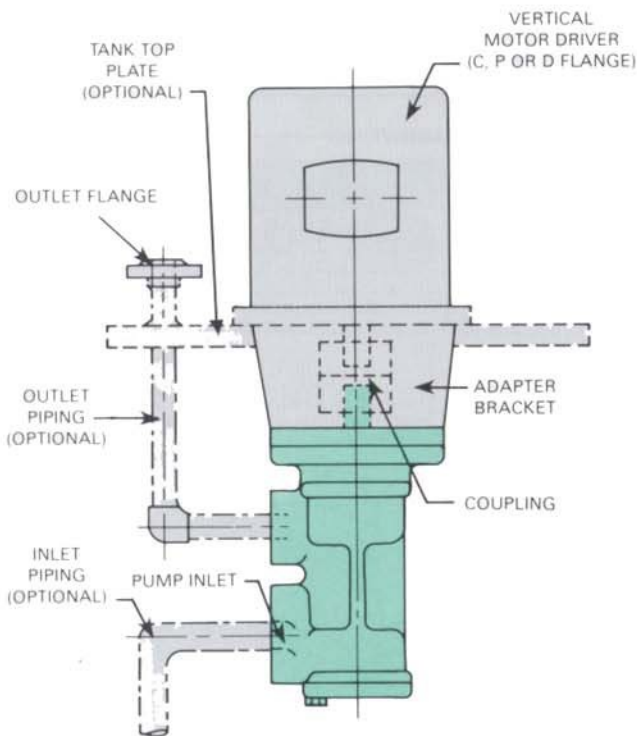
<sup>Δ</sup> All brackets except S5333DLX1 and S5333DP, are suitable for vertical tank mount arrangement. Hole diameter in tank cover to mount bracket should be "J".

MATERIAL: ASTM A48, CL 40B CAST IRON, DIMENSIONS IN INCHES NOT TO SCALE. MAXIMUM COUPLING O.D. 4-3/4". SELECT FLEXIBLE COUPLING TO ACCOMMODATE: MAXIMUM COUPLING O.D., MOTOR TORQUE, SHAFT TO SHAFT GAP AND PUMP AND MOTOR SHAFT DIAMETERS.

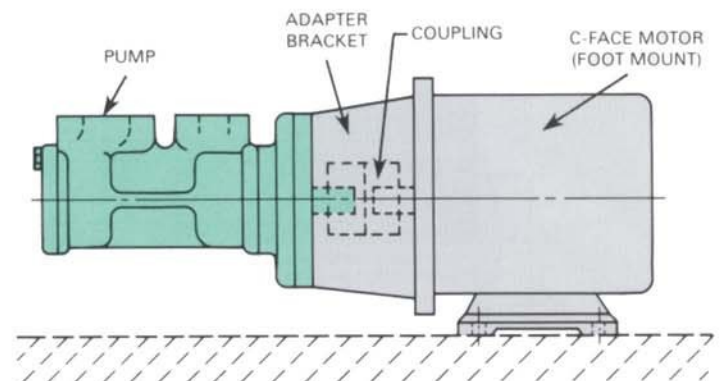
# Typical 3E Pump/Motor Arrangements



**HORIZONTAL FOOT MOUNTED**



**VERTICALLY IN-TANK MOUNTED WITH  
OPTIONAL DISCHARGE PIPING AND TANKPLATE**

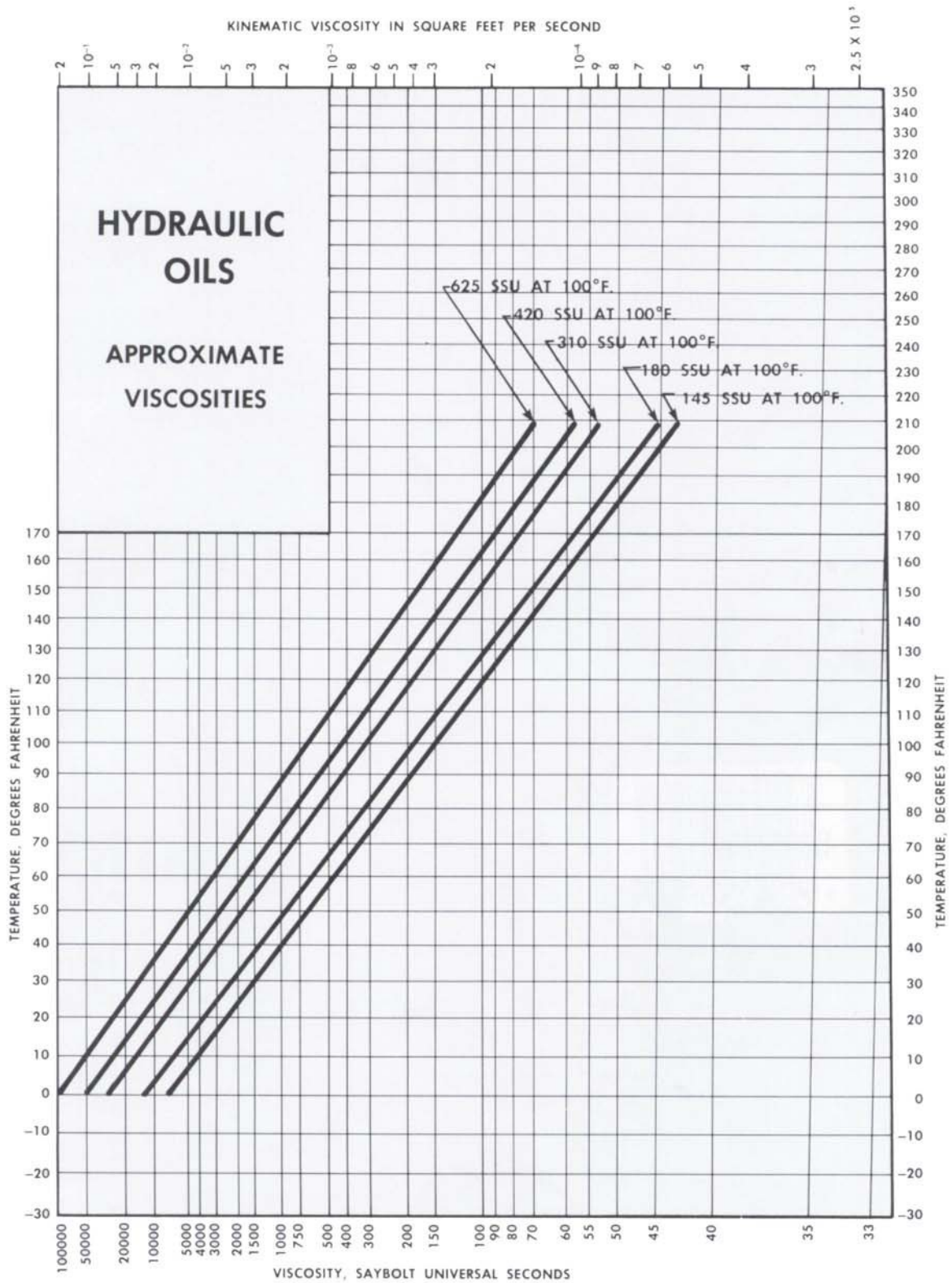


**FLANGED PUMP, MOUNTED TO  
C-FACE MOTOR WITH BRACKET**

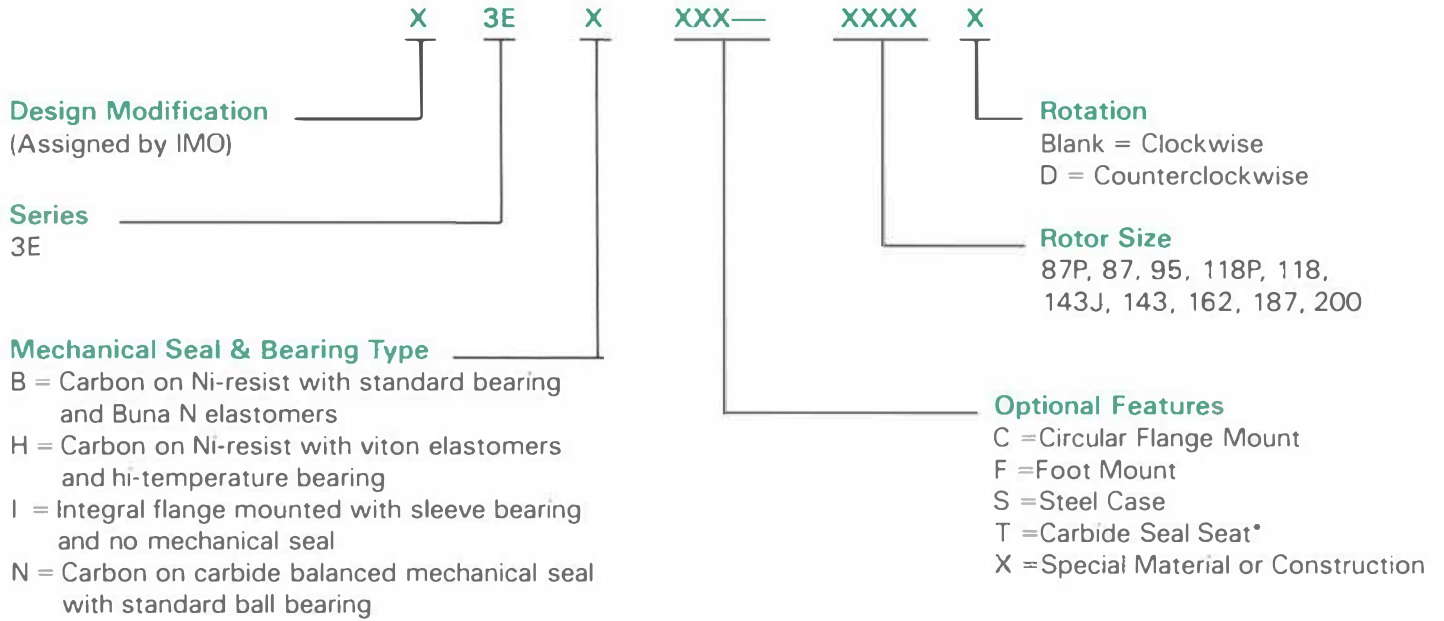
## NOTES:

1. Pump/motor assemblies with OSHA type coupling guard and shaft coupling, factory mounted on a steel baseplate (with or without driprim) are available upon request.
2. Factory mounted pump/motor assemblies, complete with bracket, shaft coupling plus optional mounting plate, inlet (suction) and outlet (discharge) piping are available upon request.
3. For arrangements or variations not shown, consult IMO.

# Effect of Temperature on Hydraulic Oil Viscosity



# Typical 3E Nomenclature



**Examples:**

C3EBC-187  
 C3EHFS-143

Model 3E with standard seal and bearing, flange mounted, cast iron casing with 187 rotor size.  
 Model 3E with positive drive mechanical seal (standard faces), high temperature bearing, foot mounted, steel casing with 143 rotor size.

\*Consult IMO for optional mechanical seal materials.



Quality Management System



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