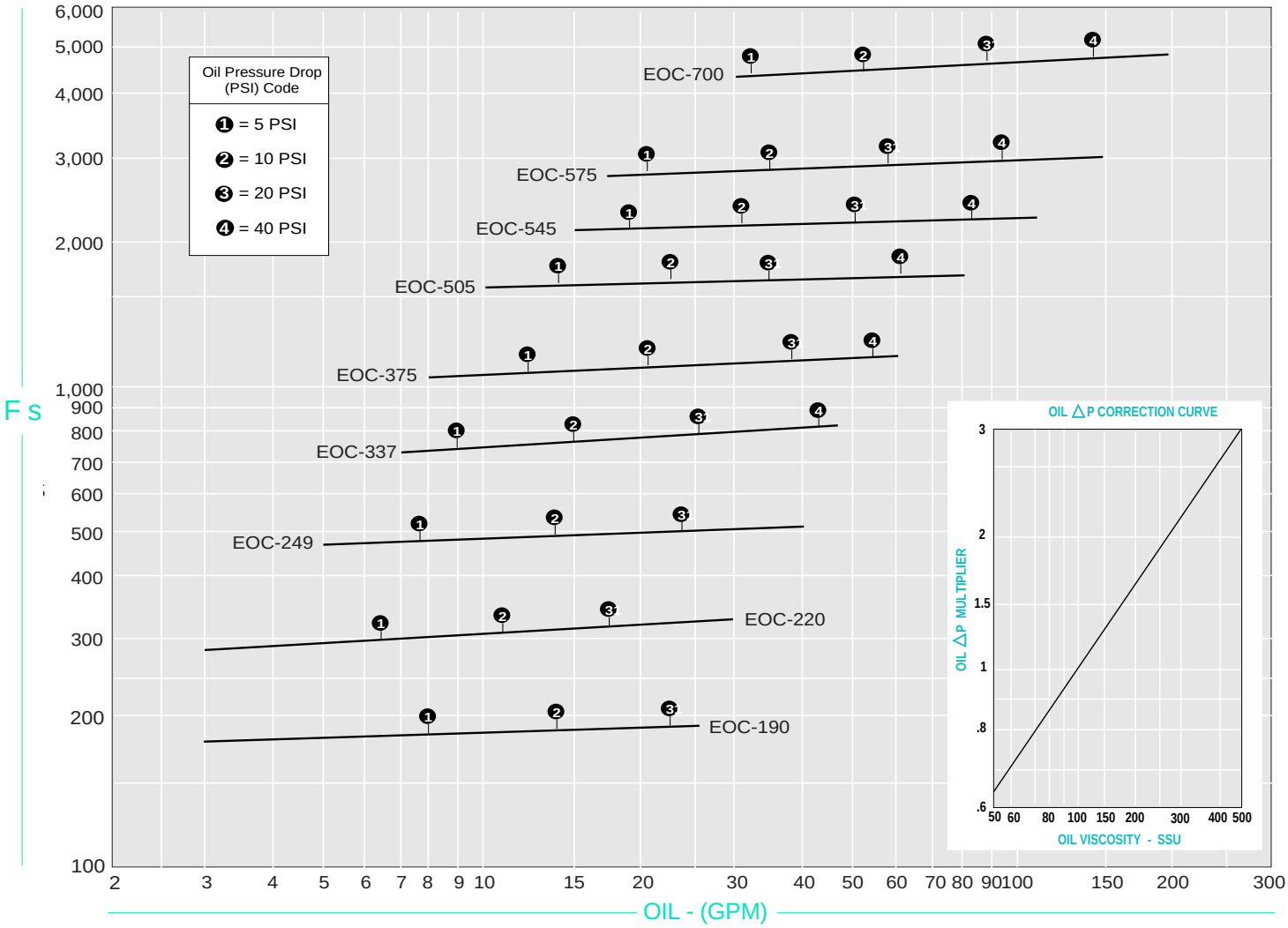
PERFORMANCE



SIZING

The performance curves provided are for petroleum oil at 100 ssu viscosity. However, fluids with characteristics other than the above mentioned may be used by applying a correction factor.

Heat Load

If the heat load is unknown, a horsepower value can be calculated by first determining the systems total potential. For a basic hydraulic system, it is helpful to know whether the system is open loop (with a large reservoir) or closed loop (normally on mobile equipment, with a very small reservoir). System potentials may be calculated quickly by using one of the two methods below.

Method 1.

Normally used for open loop circuits. Multiply the main hydraulic systems Electric Motor Name plate Horsepower by a heat removal factor (normally 30-50%).

Example: 50 HP motor x 0.3 = 15 HP heat load

Method 2.

Normally used when the HP input potential is unknown or for mobile applications where diesel engines operate the entire system. Multiply system pressure by the flow rate of the main system divided by 1714 equals system potential (HP). Multiply the system HP by a heat removal factor (Normally 25-35%). Note: In some closed loop systems only a portion of the total system flow is directed through the heat exchanger, this may affect the cooler selection process substantially. You may contact our factory for additional technical assistance.

Example: $\frac{(2000 \text{ psi} \times 30 \text{ gpm})}{1714} = [35 \text{ HP} \times .25] = 8.75 \text{ HP heat load}$

Determining Fs value.

To determine the proper size heat exchanger for your application, use the following equation to first determine the (Fs) factor.

$$Fs = \frac{\{\text{heat load (HP)} \times 2545 \times Cv\}}{\{\text{F (oil leaving - air entering)}\}}$$

Example:
Heat load = 8.75 HP
Cv = 1.1 (150 ssu) determined from chart. [Located on page 4.]
Desired operating temperature = 140 °F
Ambient air temp. = 100 °F

$$Fs = \frac{\{8.75 \times 2545 \times 1.1\}}{\{140\ ^{o}F - 100\ ^{o}F\}} = 618$$

Selection

To select a model, locate the flow rate (GPM) at the bottom of the flow vs Fs graph. Proceed upward until the GPM flow rate intersects with the calculated Fs. The curve closest above the intersection point will meet these conditions.

Example: Fs = 618 = Model = EOC-337
GPM = 30

Pressure differentials

Determine the oil pressure drop from the curves as indicated. For viscosities other than 150 ssu, multiply the actual indicated pressure drop for your GPM flow by the value shown in the pressure differential curve for your viscosity value.

Example: EOC - 337 @ 30 gpm & 250 ssu.
Indicated pressure drop 23 psi (Approx).
{ 23 psi x 1.8 } = 41.4 psi