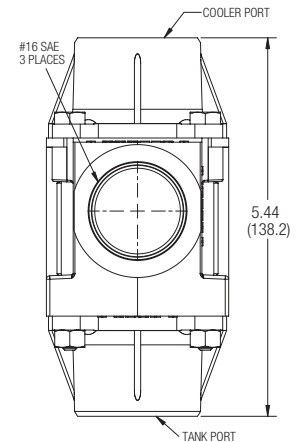


Thermal Bypass Assembly

This thermal bypass valve is ideally suited for hydrostatic drive circuits which require fast warm-up, controlled fluid temperature, and low return line back pressure. When installed in the return line of a hydraulic circuit that employs an oil cooler, this device will modulate fluid temperature by either shifting return line flow through the cooler, or bypassing directly to the reservoir. In addition, a built-in pressure relief function automatically relieves excess pressure to the reservoir should the cooler become restricted and resultant pressure drop become too high for the cooler circuit.



Standard Shift Temperatures

100°F (38°C) 120°F (49°C) 140°F (60°C) 160°F (71°C)

Full Shift (Cooler Port Open) Temperatures

Shift temperature plus 25°F (14°C)

Relief Valve Setting 65 PSI (4.5 BAR) *Consult factory for other pressure settings.*

Maximum Operating Pressure 250 PSI (17 BAR)

Proof Pressure 300 PSI (21 BAR)

Minimum Burst Pressure

Up to the full shift temperature: 325 PSI (22 BAR).

Above the full shift temperature: 600 PSI (41 BAR).

Minimum Operating Temperature -30°F (-34°C)

Maximum Operating Temperature Shift temperature plus 75°F (24°C)

Maximum Flow Rating 60 GPM (227 l/m)

Leakage @ 250 PSI (17 BAR) and 60 GPM (227 l/m) Inlet Flow

Cooler Port:

- 0.5 GPM (2 l/m) maximum up to 5°F (3°C) before shift temp.
- 1.0 GPM (4 l/m) maximum from 5°F (3°C) before shift to shift.

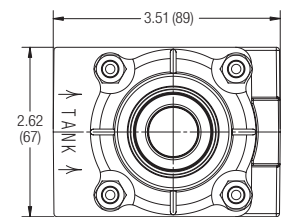
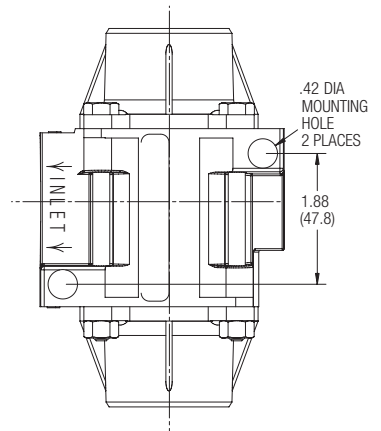
Tank Port: 0.10 GPM (0.4 l/m) maximum

Operating Fluid Mineral base hydraulic fluids

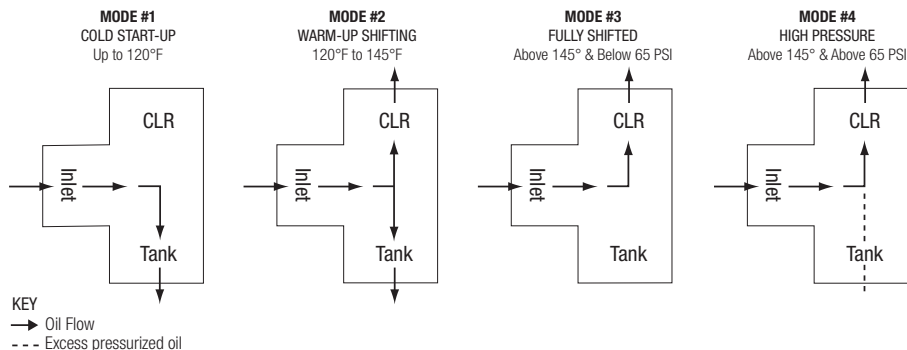
Construction Aluminum die-cast housing

Operating Characteristics

- Mode 1: At temperatures below the shift temperature oil flows from inlet to tank port.
- Mode 2: At temperatures between the start of shift and full shift the flow from the inlet port is divided between the cooler and tank ports.
- Mode 3: At temperatures above the full shift temperature inlet flow is through the cooler port.
- Mode 4: At temperatures above the full shift temperature the excess pressure is relieved through the tank port.

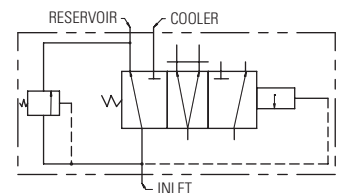


For 120°F Shift Temperature



NOTE: If the temperature drops below 145°F the valve will shift back to modes 2 or 1.

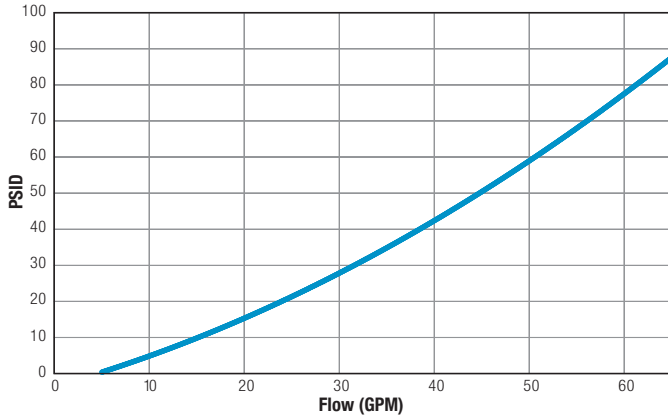
Graphic Symbol



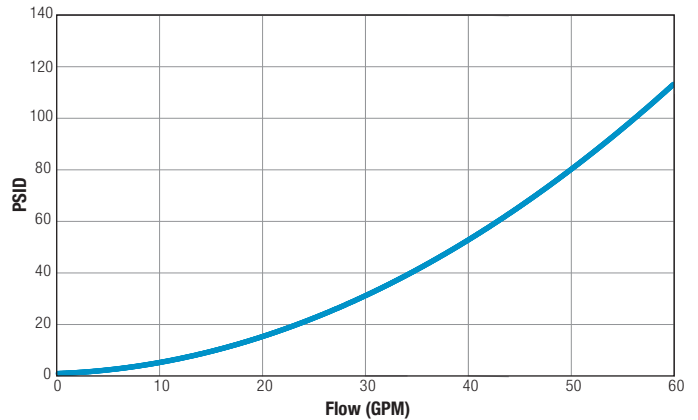
Thermal Bypass Assembly

Pressure Drop (Mobile DTE 26 OIL)

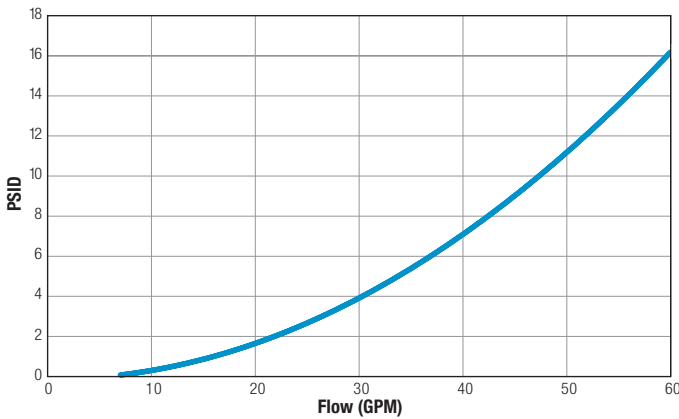
Inlet Port Thru Tank Port
@ 100°F (38°C) (300 SUS)



Inlet Port Over Integral Relief Valve
@ 170°F (77°C) (78 SUS)



Inlet Port Thru Cooler Port
@ 145°F (63°C) (110 SUS)



NOTE: Pressure drop shown is added to relief valve crack pressure for total pressure drop.

Part Number	Shift Temperature
65654	100°F (38°C)
65655	120°F (49°C)
65656	140°F (60°C)
65657	160°F (71°C)

How to Order Consult factory for pricing and lead time

- - Thermal Bypass Assembly

Part Number

Pressure Setting
65 = Standard, 65 PSI
Optional pressure settings available in 5 PSI increments, up to 85 PSI.