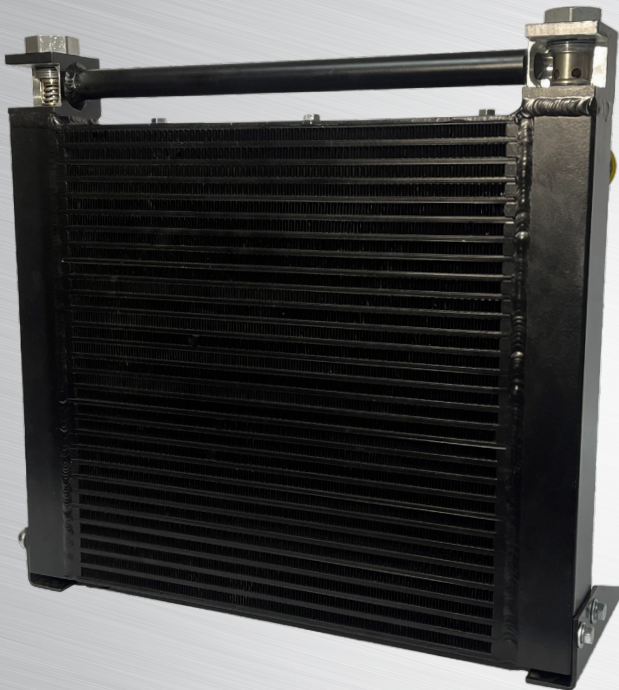


# BYPASS VALVES

MAR / BOLR SERIES



We **COOL**  
what you  
**POWER**

# BYPASS VALVES

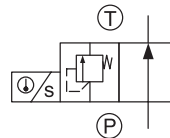
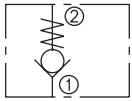
## TTP now offers two bypass valve options on the BOL and MA Series

- Factory installed pressure relief valve
- Temperature controlled bypass valve with integrated pressure relief (available on aluminum MAR and BOLR coolers)



### Pressure Relief Bypass Valve

### Thermal Bypass Valve with Integrated Pressure Relief



An optional feature for the MAR and BOLR Series core—a factory installed partial flow pressure bypass valve by the cooler inlet connection (available in 25 or 60 psi).

Elevated backpressure through the cooler is possible in cold start conditions (when the oil is very viscous) and in applications where flow surges occur in the return-line. A partial flow bypass helps protect the cooler from damage under these conditions.

The bypass relief valve limits the negative effects of higher backpressures at start-up and occasional flow surges within a normal range. However, this valve is NOT designed for conditions with frequent high-pressure spikes.

#### Function

In most systems, a partial flow pressure bypass is a highly recommended option. When this bypass is internal, it consists of a simple cartridge check valve installed near the inlet connection of the oil cooler. This bypass feature should always be considered on systems utilizing cylinders that cause flow peaks in the return-line.

**NOTE:** An internal bypass is ideal for applications where the return-line flow will never exceed the maximum flow capacity of the heat exchanger and partial flow bypass is acceptable. An external bypass should be used for applications where the return-line flow could exceed the heat exchanger's flow capacity or where full flow bypass is desired.

An optional feature for the MAR and BOLR Series – thermal bypass and pressure relief features combined in one valve. Temperature bypass is activated (closes) when oil reaches a defined set point of 110° F and allows full oil flow through the heat exchanger. When the oil is cool, the valve is open to allow a partial flow bypass.

#### Function

Thermostatically activated, these valves route partial, cold oil flow around the heat exchanger to limit backpressure and unwanted cooling of oil during cold start-up situations. When the oil is cold (<110°F, 43°C), the internal valve connection P-T is open directing flow around the cooler with minimum pressure loss and enabling the oil temperature to increase to operating temperature. Once this temperature is reached (>110°F, 43°C), the thermal wax element closes the P-T connection and full flow is directed through the heat exchanger. The integrated pressure relief valve, set at 60 PSI, also helps safeguard the cooler from occasional return-line flow surges.

#### Features and Benefits

- Temperature bypass of oil
- Allows faster oil temperature rise during cold start
- Pressure relief protects against flow surges
- External parts zinc plated and chromite free
- Eliminates the need to install external components saving time and money