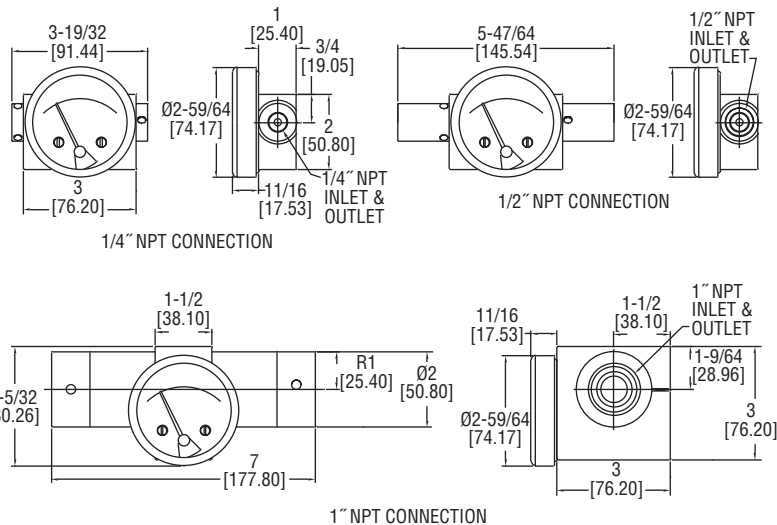




# Series DTFO Variable-Area Flowmeter for Oil

## Specifications - Installation and Operating Instructions



The Series DTFO Variable-Area Flowmeter for Oil measures oil rates with  $\pm 2\%$  of full-scale accuracy at an affordable price. Durable metal construction ensures great compatibility and the strength to withstand system pressures of up to 3000 psig (200 bar). With a wide variety of flow ranges available, the Series DTFO can be used with many different applications all at an economical price.

### Calibration

All Series DTFO Variable-Area Flowmeters for Oil are calibrated at the factory for mounting in the horizontal position and should be installed that way for maximum accuracy.

The unit will normally retain its accuracy tolerance for the useful life of the device. If you want to check the accuracy, do so only with instruments of certified accuracy. Do not attempt to check accuracy with other flowmeters piped in series. Even minor variations in piping and back pressure can cause significant differences in indication. If in doubt, return the flowmeter to the factory for a calibration check.

### SPECIFICATIONS

**Service:** Compatible oils.

#### Wetted Materials:

- Body: 316 SS or brass;
- Spring: 302 SS;
- Range spring: 302 SS;
- Magnet: PTFE-coated;
- Metering cone: Acetal or PTFE.
- Seals: Buna.

**Temperature Limits:** -40 to 200°F ( -40 to 93°C).

#### Pressure Limit:

- DTFO-1B and DTFO-2B: 3000 psig (200 bar);
- DTFO-3S: 1500 psig (100 bar).

**Accuracy:**  $\pm 2\%$  FS.

**Repeatability:**  $\pm 1\%$  FS.

**Size:** Diameter dial face 2.5" (63.5 mm).

**Process Connections:** See model chart.

#### Weight:

- DTFO-1B: 3 lb (1.36 kg);
- DTFO-2B: 5 lb (2.27 kg);
- DTFO-3S: 10 lb (4.54 kg).

Model	Range, GPM Oil	Connection	Body	Metering Cone
DTFO-1B-10	0 to 1	1/4" NPT	Brass	Acetal
DTFO-1B-20	0 to 2	1/4" NPT	Brass	Acetal
DTFO-1B-30	0 to 3	1/4" NPT	Brass	Acetal
DTFO-1B-40	0 to 4	1/4" NPT	Brass	Acetal
DTFO-1B-50	0 to 5	1/4" NPT	Brass	Acetal
DTFO-2B-10	0 to 1	1/2" NPT	Brass	Acetal
DTFO-2B-20	0 to 2	1/2" NPT	Brass	Acetal
DTFO-2B-40	0 to 4	1/2" NPT	Brass	Acetal
DTFO-2B-50	0 to 5	1/2" NPT	Brass	Acetal
DTFO-2B-80	0 to 8	1/2" NPT	Brass	Acetal
DTFO-2B-100	0 to 10	1/2" NPT	Brass	Acetal
DTFO-3S-100	0 to 10	1" NPT	SS	PTFE
DTFO-3S-150	0 to 15	1" NPT	SS	PTFE
DTFO-3S-200	0 to 20	1" NPT	SS	PTFE
DTFO-3S-250	0 to 25	1" NPT	SS	PTFE
DTFO-3S-300	0 to 30	1" NPT	SS	PTFE

**Location**

Select a location where the flowmeter can be easily read and where the temperature will not exceed 200°F (93°C). The mounting surface and piping to the flowmeter should be free from excessive vibration. If pulsing flow or vibration causes excessive pointer oscillation, contact factory for ways to provide additional dampening.

Because the device operates through a magnetic coupling system, magnetic material near the flow block can affect accuracy. To minimize the effect of outside interference, keep magnetic materials at least 3 inches (7.6 cm) away from the unit.

**Inlet Piping**

It is a good practice to have the inlet port of the flowmeter be as free of elbows, restrictions and size changes as possible. Inlet piping should be as close to the flowmeter connection size as possible to avoid possible turbulence, which can occur with drastic size changes. The length of the inlet piping has very little effect on normal pressure fed flowmeters.

For vacuum service, the inlet piping should be as short and open as possible to allow operation at or near atmospheric pressure, thus maintaining the accuracy of the device. Note that for vacuum service, any flow control valve must be installed on the discharge side of the flowmeter.

**Outlet Piping**

Piping on the outlet port should be at least as large as the flowmeter connection.

**Operation**

If the media is likely to be dirty, it is recommended that a 50-micron filter is placed upstream of the inlet port to assure a clean fluid medium flows through the flowmeter. After all connections are complete, introduce flow as slowly as possible to avoid damage. It may be necessary to purge air from the system before readings stabilize. No lubrication or periodic servicing is required. Keep case exterior, including front cover, clean for best visibility.

**MAINTENANCE/REPAIR**

Upon final installation of the Series DTFO, no routine maintenance is required. The Series DTFO is not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

**WARRANTY/RETURN**

Refer to "Terms and Conditions of Sales" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.