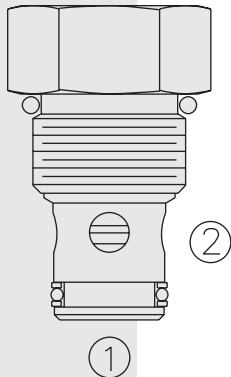


# FR50-20F Regulator, Pressure-Compensated,



## DESCRIPTION

A screw-in, cartridge-style, fixed orifice, pressure compensated, hydraulic flow regulating valve (restrictive type) for operation up to 345 bar (5000 psi).

## OPERATION

The **FR50-20F** maintains a constant flow rate from ① to ② regardless of load pressure changes in the circuit downstream of ②.

The fixed control orifice is factory preset to customer flow specification. The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice greater than 5.5 bar (80 psi), with accurate flow maintenance from 7.6 to 345 bar (110 to 5000 psi). Reverse flow (② to ①) returns through the control orifice and is non-compensated.

## FEATURES

- Hardened parts for long life.
- Quiet, modulated response.
- Industry common cavity.

## RATINGS

**Operating Pressure:** 345 bar (5000 psi)

**Flow Settings:** 0.8 lpm (0.2 gpm) minimum; 22.7 lpm (6.0 gpm) maximum

**Flow Maintenance:** 0.37 to 1.85 lpm (0.1 to 0.49 gpm) settings  $\pm 20\%$

1.89 to 5.63 lpm (0.5 to 1.49 gpm) settings  $\pm 15\%$

5.68 to 22.71 lpm (1.5 to 6.00 gpm) settings  $\pm 10\%$

**Temperature:** -40 to 120°C

**Filtration:** See page 9.010.1

**Fluids:** Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

**Installation:** No restrictions; See page 9.020.1

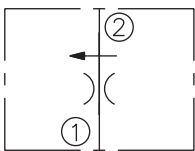
**Cavity:** VC10-2; See page 9.110.1

**Cavity Tool:** CT10-2XX; See page 8.600.1

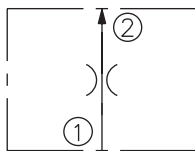
**Seal Kit:** SK10-2X-M; See page 8.650.1

## SYMBOLS

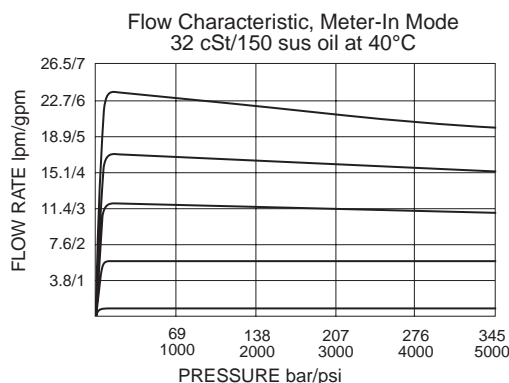
**USASI:**



**ISO:**



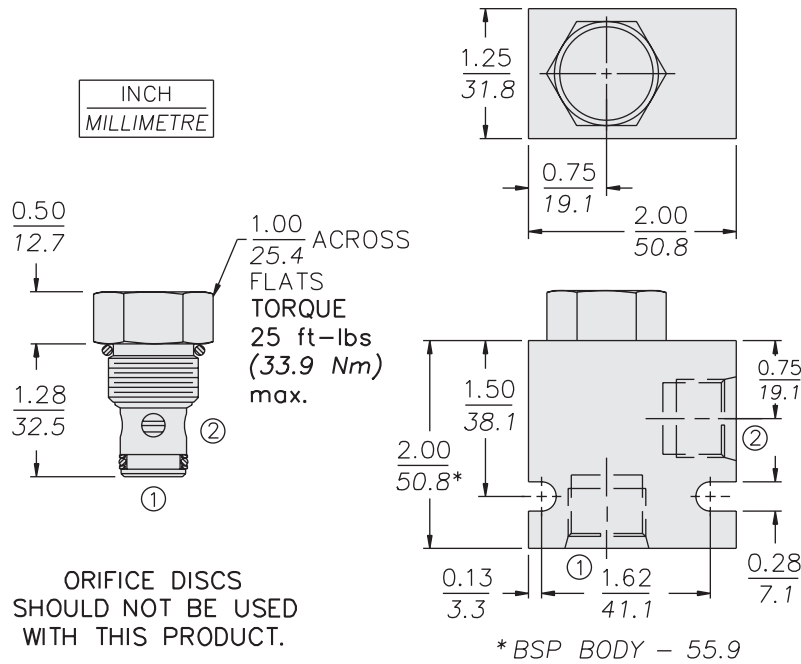
## PERFORMANCE (Cartridge Only)



# High Pressure

# FR50-20F

## DIMENSIONS



## MATERIALS

**Cartridge:** Weight: 0.1 kg. (0.21 lbs.)  
Steel with hardened work surfaces.  
Zinc-plated exposed surfaces.  
Buna N O-rings and polyester  
elastomer back-ups standard.

**Standard Ported Body:** Weight:  
0.16 kg. (0.35 lbs.) Anodized high-  
strength 6061 T6 aluminum alloy,  
rated to 207 bar (3000 psi) Ductile  
iron bodies available; dimensions  
may differ. See page 8.010.1.

## TO ORDER

FR50-20F - - /

### Porting

Cartridge Only **0**  
SAE 6 **6T**  
SAE 8 **8T**  
1/4 in. BSP\* **2B**  
3/8 in. BSP\* **3B**  
1/2 in. BSP\* **4B**

\*BSP Body; U.K. Mfr. Only

### Seals

Buna N (Std.) **N**  
Fluorocarbon **V**  
Polyurethane **P**

Polyurethane seals are required for  
operation over 241 bar (3500 psi)

### Setting in lpm

Range: 0.8 to 22.7 lpm  
Specify, for example:

**M1.8** 1.8 lpm  
**M5.0** 5.0 lpm  
etc.

### Setting in gpm

Range: 0.2 to 6.0 gpm  
Specify, for example:

**1.3** 1.3 gpm  
**5.0** 5.0 gpm  
etc.

### Drill Size Method

Dia. in thousandths of an inch.  
Range is 0.021 to 0.154 in.  
Specify, for example:

**D030** 0.030 in. control orifice hole  
etc.