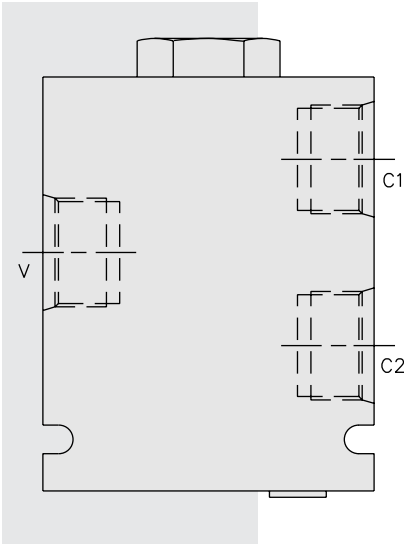


# FDC16 Flow Divider/Combiner



## DESCRIPTION

A specialized flow divider/combiner valve manifold, commonly applied in hydraulic motor drive applications with uneven pressure loads caused by steering or ground conditions. This valve/manifold assembly uses the FD16-40 cartridge valve; see page 5.604.1.

## OPERATION

In the dividing mode, the **FDC16** will divert input flow from valve port ③ (V) to ports ② (C2) and ④ (C1) based on the ratio specified, while pressure at ② and ④ remains relatively equal. If a pressure differential develops, fluid will be transferred to the lower pressure port from the higher pressure port via an internal body orifice: ④ to ② or ② to ④.

In the combining mode, the internal orifice will serve to equalize load pressures, preventing combiner spool lock-up.

## FEATURES

- Hardened parts for long life.
- Quiet, modulated response.

## RATINGS

**Operating Pressure:** 207 bar (3000 psi) with aluminum body;  
345 bar (5000 psi) with ductile iron body and polyurethane seals.

**Flow:** See Performance Chart

### Flow Options:

- Code **44**: 50:50 rated @ 25 to 98.4 lpm (6.5 to 26 gpm) input
  - Code **66**: 50:50 rated @ 32 to 128 lpm (8.5 to 34 gpm) input
  - Code **88**: 50:50 rated @ 57 to 167 lpm (15 to 44 gpm) input
  - Code **99**: 50:50 rated @ 68 to 197 lpm (18 to 52 gpm) input
- Other ratio options available; consult factory.

**Balancing Orifice:** 1.52 mm (0.06 in.) standard.

**Standard Compensator Bias Spring:** 2.07 bar (30 psid)

**Flow Accuracy:** 10% from 33-100% of rated flow  
with approx. equal ② and ④ port loads.

**Temperature:** -40 to 120°C

**Filtration:** See page 9.010.1

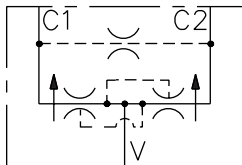
**Fluids:** Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

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

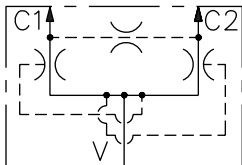
**Seal Kit:** for FD16-40 cartridge: SK16-4X-MMM; See page 8.650.1

## SYMBOLS

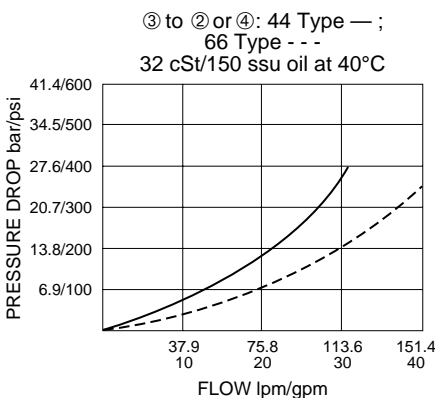
### USASI:



### ISO:

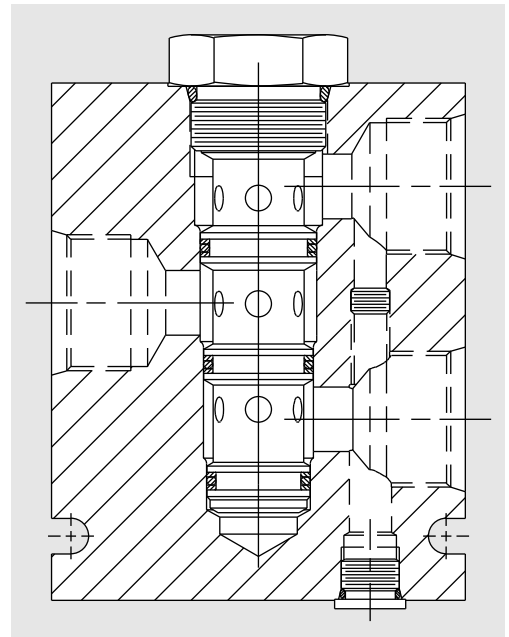
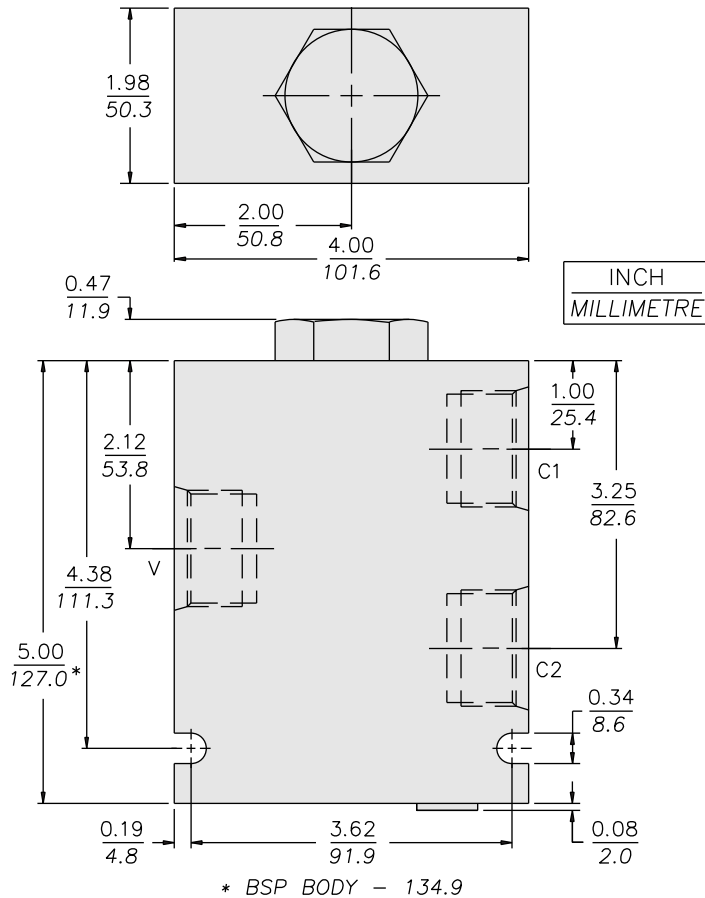


## PERFORMANCE (Cartridge Only)



**FDC16**

**DIMENSIONS**



**MATERIALS**

**Cartridge:** Weight: 0.38 kg. (0.83 lbs.) Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-ups standard.

**Special FDC Ported Bodies:**

**Aluminum:** Weight: 1.32 kg. (2.93 lbs.) Anodized high-strength 6061 T6 aluminum alloy, rated up to 207 bar (3000 psi).

**Ductile Iron:** Weight: 3.77 kg. (8.32 lbs.) Rated up to 345 bar (5000 psi).

**TO ORDER**

**FDC16 - - - - 60**

**Special Alum. Ported Bodies**

All Ports: SAE 12 **12T**  
 All Ports: SAE 16 **16T**  
 V: SAE 16; C1 & C2: SAE 12 **16D**

**Seals**

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

**Balancing Orifice**

**60** 1.52 mm (0.06 in.) (Std.) non-removable

**Dividing/Combining Ratio**

**44** 50:50 rated @ 25 to 98.4 lpm (6.5 to 26 gpm) input  
**66** 50:50 rated @ 32 to 128 lpm (8.5 to 34 gpm) input  
**88** 50:50 rated @ 57 to 167 lpm (15 to 44 gpm) input  
**99** 50:50 rated @ 68 to 197 lpm (18 to 52 gpm) input

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

NOTE: Additional ratios, input flow ranges, and balance orifices available for OEM applications. Consult factory.