FD56-45 Flow Divider/Combiner . . . Heavy Duty,

**DESCRIPTION**

A heavy duty, multifunction, screw-in, cartridge-style, spool-type flow divider/combiner. It provides pressure-compensated proportional division of inlet flow or combining of two return flows regardless of system operating pressure.

**OPERATION**

In the dividing mode, the FD56-45 will divert input flow from 3 to 2 and 4, based on the ratio specified, regardless of operating pressure. When the flow direction is reversed the valve will combine flows from 2 and 4 to port 3. Synchronizing flow is provided in both the dividing and combining modes at “bottomed” conditions in cylinder applications and at stalled conditions in motor applications.

**FEATURES**

- Hardened parts for long life.
- Quiet, modulated response.
- Wide operating flow range.
- Industry common cavity.
- Synchronizing in dividing and combining modes.
- Floating cage — High installation torque.

**RATINGS**

**Operating Pressure:** 345 bar (5000 psi) 420 bar (6090 psi) (10% duty cycle)

**Pressure Drop:** 24 bar (350 psi) at max inlet flow

**Flow Options, Dividing/Combing (Ratio: 50:50)**

- Input Flow: 25-98 lpm (6.5-26 gpm) Model Code: 44
- Input Flow: 32-128 lpm (8.5-34 gpm) Model Code: 66

**Flow Accuracy:** 10% of maximum rated flow for Models 44 & 66; 15% for 88 & 99

**Synchronizing Flow:** Approximately 10% of maximum inlet flow

**Temperature:** -40 to 100°C (-40 to 212°F) with Buna N seals; -26 to 204°C (-15 to 400°F) with fluorocarbon seals; -54 to 107°C (-65 to 224°F) with polyurethane or urethane seals.

**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

Note: Standard 16 size 4-way bodies can be used with this product with Port 1 plugged. See page 9.016.1 for special flow divider bodies.

**Cavity:** V16-4; See page 9.116.1 HVC16-4 for applications with pressure excursions up to 420 bar (6090 psi)

**Cavity Tool:** CT16-4X; See page 8.600.1

**Seal Kit:** SK16-4X-MMM (X= seal option for Buna N, fluorocarbon and polyurethane; See page 8.650.1 SK16-4U-000 for urethane seals.

**Flow vs. Differential Pressure (P4-P2)**

- FD56-45 Model 44 Dividing Mode

**ISO SYMBOL**

**PERFORMANCE** (Cartridge Only)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Flow Rate lpm/gpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>50°C (122°F)</td>
<td>22.7/6</td>
</tr>
<tr>
<td>100°C (212°F)</td>
<td>15.1/4</td>
</tr>
<tr>
<td>150°C (302°F)</td>
<td>10.3/2</td>
</tr>
<tr>
<td>200°C (392°F)</td>
<td>6.9/1</td>
</tr>
<tr>
<td>250°C (482°F)</td>
<td>4.8/1</td>
</tr>
<tr>
<td>300°C (572°F)</td>
<td>3.3/1</td>
</tr>
</tbody>
</table>

**Note:** This new FD56-45 flow divider incorporates the features of the older FDxx-40, FDxx-41 and FDxx-42 flow dividers in one product. It is designed to supersede the older models. OEMs are encouraged to consider this newer, more robust and versatile model for new applications.
**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.

**Ported Body:** Ductile iron body required for operation over 207 bar (3000 psi).
Aluminum bodies are available for lower pressure operation. FD-type bodies recommended but a standard 4-way body may also be used with Port 1 plugged. See page 8.016.1.

**To Order**

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FD56-45 - - - -

Ported Bodies
Cartridge Only 0
SAE 12 (all ports) 12T
SAE 16 (all ports) 16T
1 in. BSP* (all ports) 8B

*BSP Body; U.K. Mfr. Only
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**Dividing/Combining Ratio**

44 50:50 rated @ 25-98 lpm (6.5-26 gpm) input
66 50:50 rated @ 32-128 lpm (8.5-34 gpm) input
88 50:50 rated @ 57-167 lpm (15-44 gpm) input
99 50:50 rated @ 68-197 lpm (18-52 gpm) input

**Seals**

N Buna N (Std.)
V Fluorocarbon
P Polyurethane (Required for operation over 240 bar/3500 psi)
U Urethane (Required for applications with pressure excursions up to 420 bar/6090 psi)