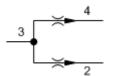


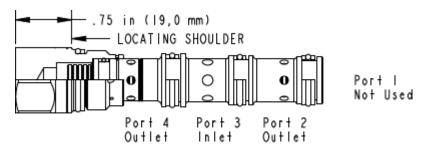
High accuracy flow divider valve

CAPACITY: .6 - 3 gpm / CAVITY: T-31A



sunhydraulics.com/model/FSBD





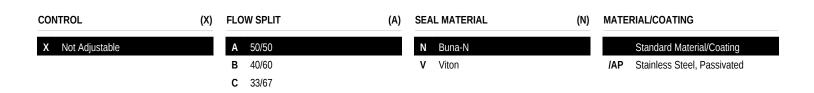
Flow dividers are sliding-spool, pressure-compensated devices used to split oil flow to two different branches of a circuit in a designated ratio. These valves are suitable for applications that use the following: unidirectional hydraulic motors, hydraulic cylinders where flow division in one direction only is required, and multiple circuits that are serviced from one pump supply.

## **TECHNICAL DATA** NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

| Cavity                                    | T-31A                     |  |
|---|---------------------------|--|
| Series                                    | 1                         |  |
| Capacity                                  | .6 - 3 gpm                |  |
| Maximum Operating Pressure                | 5000 psi                  |  |
| Divisional Accuracy at Max Input Flow     | ±2.5%                     |  |
| Divisional Accuracy at Minimum Input Flow | ±4.5%                     |  |
| Pressure Drop at Maximum Rated Input Flow | 250 psi                   |  |
| Pressure Drop at Minimum Rated Input Flow | 30 psi                    |  |
| Rated Input Flow with 33/67 Split         | .45 - 2.2 gpm             |  |
| Rated Input Flow with 40/60 Split         | .5 - 2.5 gpm              |  |
| Rated Input Flow with 50/50 Split         | .6 - 3 gpm                |  |
| Valve Hex Size                            | 7/8 in.                   |  |
| Valve Installation Torque                 | 30 - 35 lbf ft            |  |
| Model Weight                              | 0.34 lb.                  |  |
| Seal kit - Cartridge                      | Buna: 990-031-007         |  |
| Seal kit - Cartridge                      | Polyurethane: 990-031-002 |  |
| Seal kit - Cartridge                      | Viton: 990-031-006        |  |

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## **OPTION SELECTION EXAMPLE: FSBDXAN**



## **TECHNICAL FEATURES**

- All flow divider and divider/combiner cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Operating characteristics cause the leg of the circuit with the greatest load to receive the higher percentage of flow in dividing mode. If a rigid mechanism is used to tie actuators together, the lead actuator may pull the lagging actuator and cause it to cavitate.
- In applications involving rigid mechanisms between multiple actuators, operating inaccuracy will cause the eventual lock-up of the system. If the mechanical structure is not designed to allow for the operating inaccuracy inherent in the valve, damage may occur.
- In motor circuits, rigid frames or mechanisms that tie motors together, and/or complete mechanical synchronized motion of the output shaft of the motors, either by wheels to the pavement or sprockets to conveyors, will contribute to cavitation, lock-up and/or pressure intensification.
- Variations in speed and lock-up can be attributed to differences in motor displacement, motor leakage, wheel diameter variance and friction of wheels on the driving surface.
- This valve is a divider only; any attempt to flow backwards through the valve is not advised.
- Dividers with unequal ratios have the higher flow at port 4.
- Below the minimum flow rating there is not enough flow for the valve to modulate. It is effectively a tee. If flow starts at zero and rises, there will be no dividing control until the flow reaches the minimum rating.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

## PERFORMANCE CURVES

| Split | Input Flow   | Rated<br>Accuracy | Maximum Possible Flow Variations |                   |                   |
|-------|--------------|-------------------|----------------------------------|-------------------|-------------------|
|       | ·            |                   | High Flow Leg                    | Low Flow Leg      |                   |
| 50:50 | Max<br>Rated | 3 gpm             | ±2.5%                            | 1.42 - 1.58 gpm   |                   |
|       |              | 11 L/min          |                                  | 5,2 - 5,8 L/min   |                   |
|       | Min          | .6 gpm            | ±4.5%                            | .2733 gpm         |                   |
|       | rated        | 2,5 L/min         | 14.570                           | 1,1 - 1,4 L/min   |                   |
| 40:60 | Max<br>Rated | 2.5 gpm           | ±2.5%                            | 1.44 - 1.56 gpm   | .94 - 1.06 gpm    |
|       |              | 9,5 L/min         |                                  | 5,4 - 5,9 L/min   | 3,6 - 4,0 L/min   |
|       | Min<br>rated | .5 gpm            | ±4.5%                            | .2832 gpm         | .1822 gpm         |
|       |              | 2,8 L/min         |                                  | 1,6 - 1,8 L/min   | 1,0 - 1,2 L/min   |
| 33:67 | Max<br>Rated | 2.2 gpm           | ±2.5%                            | 1.42 - 1.53 gpm   | .6778 gpm         |
|       |              | 8,5 L/min         |                                  | 5,5 - 5,9 L/min   | 2,6 - 3,0 L/min   |
|       | Min<br>rated | .45 gpm           | ±4.5%                            | .2832 gpm         | .1317 gpm         |
|       |              | 1,7 L/min         |                                  | 1,06 - 1,22 L/min | 0,48 - 0,64 L/min |

The maximum variation is at 5000 psi (350 bar) differential between legs with the high pressure leg being the higher flow.

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