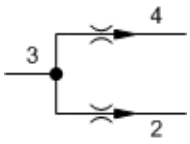
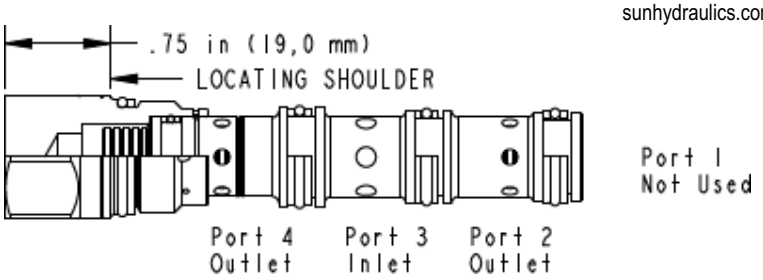
MODEL
FSBD

High accuracy flow divider valve
SERIES 1 / CAPACITY: 2,5 - 12 L/min. / CAVITY: T-31A

sunhydraulics.com/model/FSBD





CONFIGURATION

X	Control	Not Adjustable
A	Flow Split	50/50
N	Seal Material	Buna-N
(none)	Material/Coating	

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	2,5 - 12 L/min.
Maximum Operating Pressure	350 bar
Divisional Accuracy at Minimum Input Flow	±4.5%
Divisional Accuracy at Max Input Flow	±2.5%
Pressure Drop at Minimum Rated Input Flow	2 bar
Pressure Drop at Maximum Rated Input Flow	18 bar
Rated Input Flow with 50/50 Split	2,5 - 12 L/min.
Rated Input Flow with 40/60 Split	2,8 - 9,5 L/min.
Rated Input Flow with 33/67 Split	1,7 - 8,5 L/min.
Valve Hex Size	22,2 mm
Valve Installation Torque	41 - 47 Nm
Seal kit - Cartridge	Buna: 990031007
Seal kit - Cartridge	Polyurethane: 990031002
Seal kit - Cartridge	Viton: 990031006
Model Weight	0.15 kg.

CONFIGURATION OPTIONS

Model Code Example: FSBDXAN

CONTROL (X)	FLOW SPLIT (A)	SEAL MATERIAL (N)	MATERIAL/COATING
X Not Adjustable	**A** 50/50	**N** Buna-N	Standard Material/Coating
	B 40/60	**V** Viton	**/AP** Stainless Steel, Passivated
	C 33/67		

© 2025 Sun Hydraulics

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 Accuracy	Maximum Possible Flow Variations	
				High Flow Leg	Low Flow Leg
50:50	Max Rated	3 gpm	±2.5%	1.42 - 1.58 gpm	
		11 L/min		5,2 - 5,8 L/min	
	Min rated	.6 gpm	±4.5%	.27 - .33 gpm	
		2,5 L/min		1,1 - 1,4 L/min	
40:60	Max 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 rated	.5 gpm	±4.5%	.28 - .32 gpm	.18 - .22 gpm
		2,8 L/min		1,6 - 1,8 L/min	1,0 - 1,2 L/min
33:67	Max Rated	2.2 gpm	±2.5%	1.42 - 1.53 gpm	.67 - .78 gpm
		8,5 L/min		5,5 - 5,9 L/min	2,6 - 3,0 L/min
	Min rated	.45 gpm	±4.5%	.28 - .32 gpm	.13 - .17 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.

© 2025 Sun Hydraulics