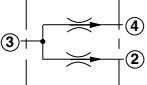
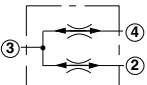
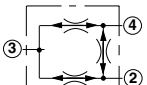
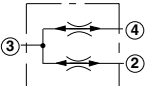
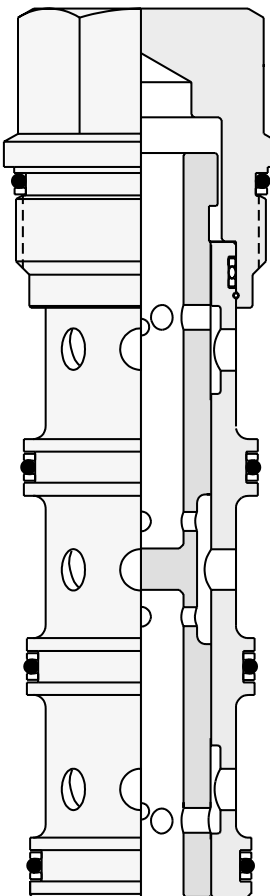


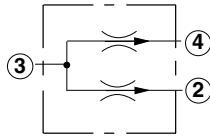
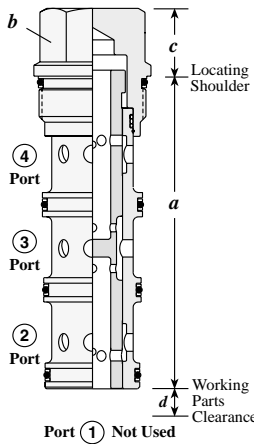
Flow Divider / Combiner Cartridge Valves

	<i>Cartridge Type</i>
	Divider
	Divider / Combiner, Closed Center
	Synchronizing Divider / Combiner
	High Capacity Divider / Combiner, Closed Center

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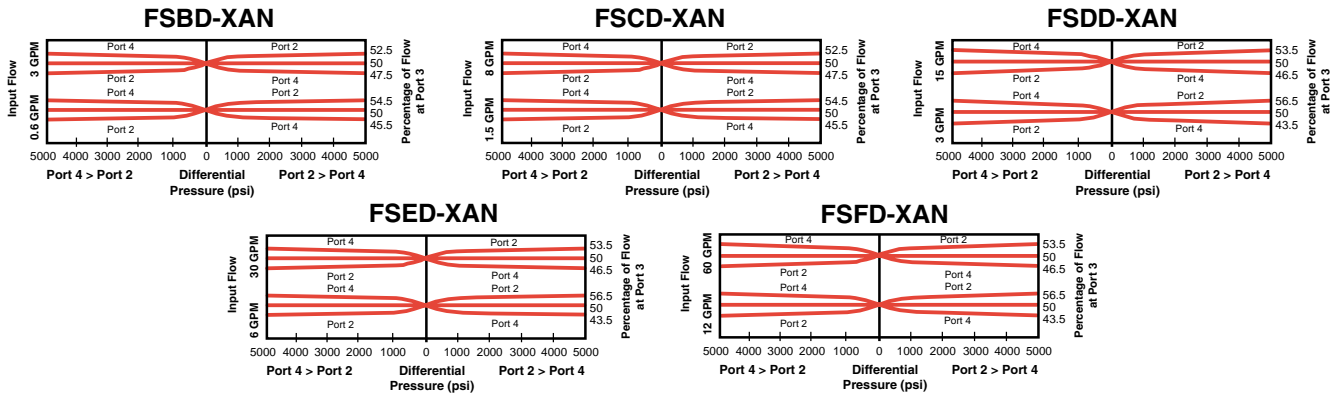
DIVIDER



Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
.6-3 GPM	FSBD - XAN	T - 31A	3.35	7/8"	.75	.14	30/35
1.5-8 GPM	FSCD - XAN	T - 31A	3.35	7/8"	.75	.14	30/35
3-15 GPM	FSDD - XAN	T - 32A	3.63	1 1/8"	.69	.15	45/50
6-30 GPM	FSED - XAN	T - 33A	4.50	1 1/4"	.97	.21	150/160
12-60 GPM	FSFD - XAN	T - 34A	5.50	1 5/8"	1.19	.27	350/375

Performance Curves

Operating Characteristics



- Maximum operating pressure = 5000 psi
- This valve is a divider only; any attempt to flow backwards through the valve is not advised.
- Divisional accuracy at maximum rated input flow = FSBD: $\pm 2.5\%$, FSCD, FSDD, FSED, FSFD: $\pm 3.5\%$
- Divisional accuracy at minimum rated input flow = FSBD: $\pm 4.5\%$, FSCD, FSDD, FSED, FSFD: $\pm 6.5\%$
- Pressure drop at maximum input flow = 250 psi
- Pressure drop at minimum input flow = 10 psi
- 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.

FS * D - X * *

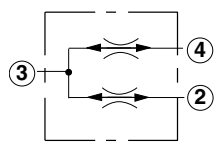
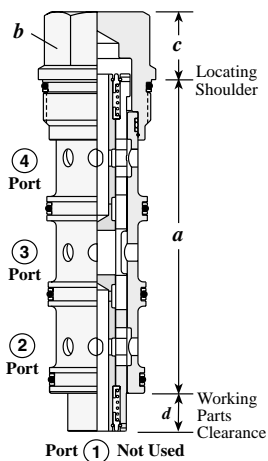
Nominal Capacity	Control	Flow Proportion	Seal
B .6-3 GPM	X Non-adjustable	A 50/50 Flow Split	N Buna-N
C 1.5-8 GPM		B *40/60 Flow Split	V Viton
D 3-15 GPM		C *33/67 Flow Split	
E 6-30 GPM			
F 12-60 GPM			

* Port 4 is always high percentage flow.

Reverse Flow Path is unpredictable
 Divisional Accuracy =
 FSCD, FSDD, FSED and FSFD:
 $\pm 6.5\%$ at minimum input flow
 $\pm 3.5\%$ at maximum input flow
 FSBD:
 $\pm 4.5\%$ at minimum input flow
 $\pm 2.5\%$ at maximum input flow

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DIVIDER / COMBINER, CLOSED CENTER

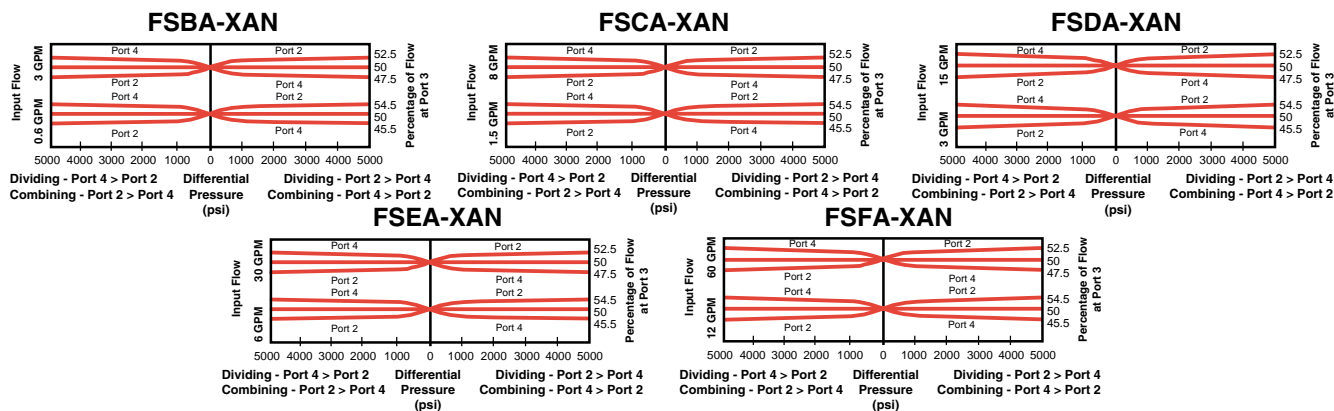


Note: Closed center valves have spring centered internal spools that provide blocked flow paths when centered. Centering occurs when the Port 3 flow is also blocked. This internal blocking isolates Port 2 and 4 from cross flow.

Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
.6-3 GPM	FSBA - XAN	T - 31A	3.35	7/8"	.75	.65	30/35
1.5-8 GPM	FSCA - XAN	T - 31A	3.35	7/8"	.75	.65	30/35
3-15 GPM	FSDA - XAN	T - 32A	3.63	1 1/8"	.69	.77	45/50
6-30 GPM	FSEA - XAN	T - 33A	4.50	1 1/4"	.97	.99	150/160
12-60 GPM	FSFA - XAN	T - 34A	5.50	1 5/8"	1.19	.91	350/375

Performance Curves

Operating Characteristics



- Maximum operating pressure = 5000 psi
- Divisional accuracy at rated maximum input flow = 50% ±2.5%
- Divisional accuracy at rated minimum input flow = 50% ±4.5%
- Pressure drop at maximum input flow = 350 psi
- Pressure drop at minimum input flow = 25 psi
- 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 or combining control until the flow reaches the minimum rating.
- Divisional and combining accuracy are equal.

FS * A - X A *

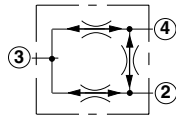
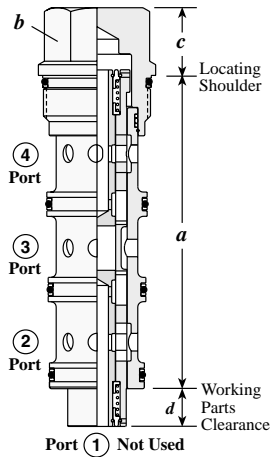
Nominal Capacity	Control	Flow Proportion	Seal
B .6-3 GPM	X Non-adjustable	A 50/50 Flow Split	N Buna-N
C 1.5-8 GPM			V Viton
D 3-15 GPM			
E 6-30 GPM			
F 12-60 GPM			

Divisional Accuracy (Combining and Dividing) =
 ± 4.5 % at minimum input flow
 ± 2.5 % at maximum input flow

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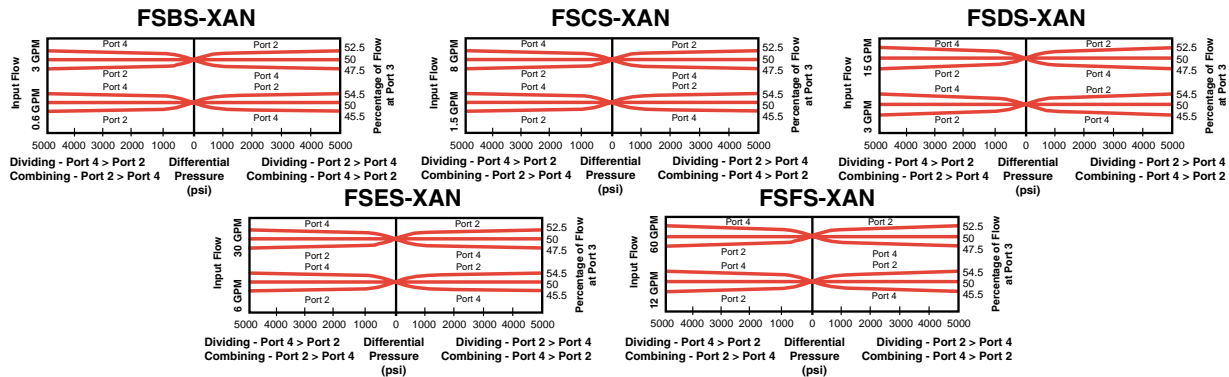
SYNCHRONIZING DIVIDER / COMBINER



Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
.6-3 GPM	FSBS – XAN	T - 31A	3.35	7/8"	.75	.65	30/35
1.5-8 GPM	FSCS – XAN	T - 31A	3.35	7/8"	.75	.65	30/35
3-15 GPM	FSDS – XAN	T - 32A	3.63	1 1/8"	.69	.77	45/50
6-30 GPM	FSES – XAN	T - 33A	4.50	1 1/4"	.97	.99	150/160
12-60 GPM	FSFS – XAN	T - 34A	5.50	1 5/8"	1.19	.91	350/375

Performance Curves

Operating Characteristics



- Maximum operating pressure = 5000 psi
- Divisional accuracy at rated maximum input flow = 50% ±2.5%
- Divisional accuracy at rated minimum input flow = 50% ±4.5%
- Pressure drop at maximum input flow = 350 psi
- Pressure drop at minimum input flow = 25 psi
- 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 or combining control until the flow reaches the minimum rating.
- The synchronization feature provides bi-directional static error correction.
- Divisional and combining accuracy are equal.

FS * S - X A *

Nominal Capacity	Control	Flow Proportion	Seal
B .6-3 GPM	X Non-adjustable	A 50/50 Flow Split	N Buna-N
C 1.5-8 GPM			V Viton
D 3-15 GPM			
E 6-30 GPM			
F 12-60 GPM			

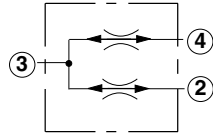
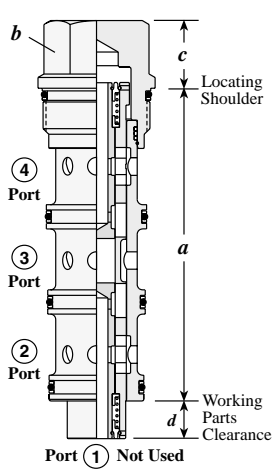
Divisional Accuracy (Combining and Dividing) =
 ± 4.5 % at minimum input flow
 ± 2.5 % at maximum input flow

Synchronizing Flow per Leg:

- FSBS: .16 - .25 GPM
- FSCS: .2 - .5 GPM
- FSDS: .3 - .6 GPM
- FSES: .8 - 1.5 GPM
- FSFS: 2.4 - 3.5 GPM

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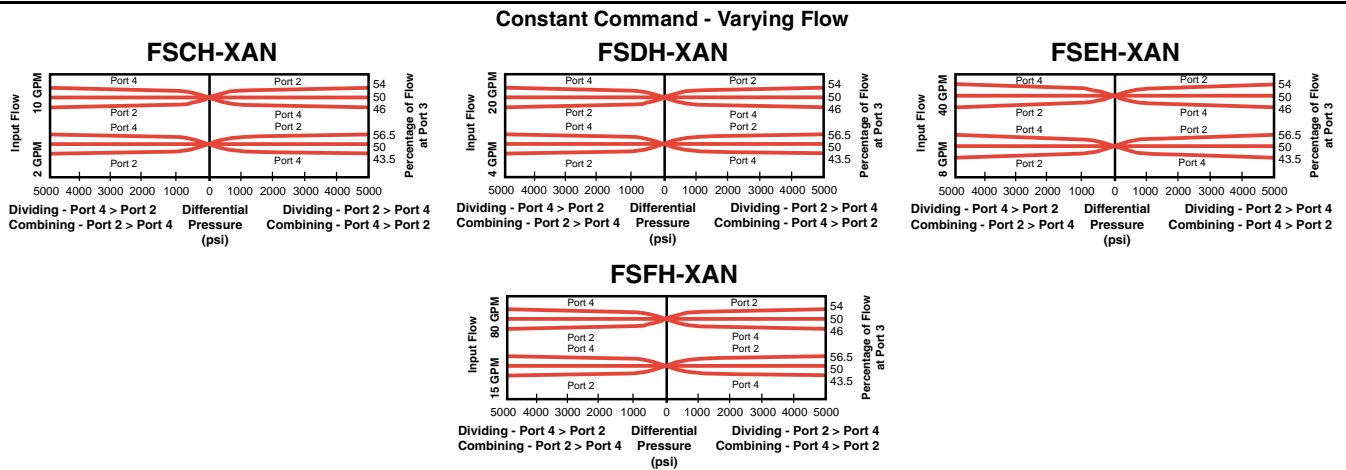
HIGH CAPACITY DIVIDER / COMBINER, CLOSED CENTER



Note: Closed center valves have spring centered internal spools that provide blocked flow paths when centered. Centering occurs when the Port 3 flow is also blocked. This internal blocking isolates Port 2 and 4 from cross flow.

Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (lb. ft.)
			a	b	c	d	
2-10 GPM	FSCH - XAN	T - 31A	3.35	7/8"	.75	.65	30/35
4-20 GPM	FSDH - XAN	T - 32A	3.63	1 1/8"	.69	.77	45/50
8-40 GPM	FSEH - XAN	T - 33A	4.50	1 1/4"	.97	.99	150/160
15-80 GPM	FSFH - XAN	T - 34A	5.50	1 5/8"	1.19	.91	350/375

Performance Curves



- Maximum operating pressure = 5000 psi
- Divisional accuracy at rated maximum input flow = 50% ±4%
- Divisional accuracy at rated minimum input flow = 50% ±6.5%
- Pressure drop at maximum input flow = 350 psi
- Pressure drop at minimum input flow = 25 psi
- 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 or combining control until the flow reaches the minimum rating.
- Divisional and combining accuracy are equal.

FS ★ H - X A ★

Nominal Capacity	Control	Flow Proportion	Seal
C 2-10 GPM	X Non-adjustable	A 50/50 Flow Split	N Buna-N
D 4-20 GPM			V Viton
E 8-40 GPM			
F 15-80 GPM			

Divisional Accuracy (Combining and Dividing) =
 ± 6.5 % at minimum input flow
 ± 4.0 % at maximum input flow

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NOTES