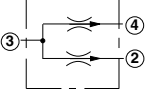
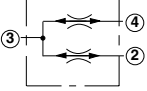
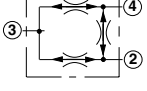
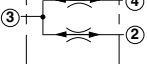
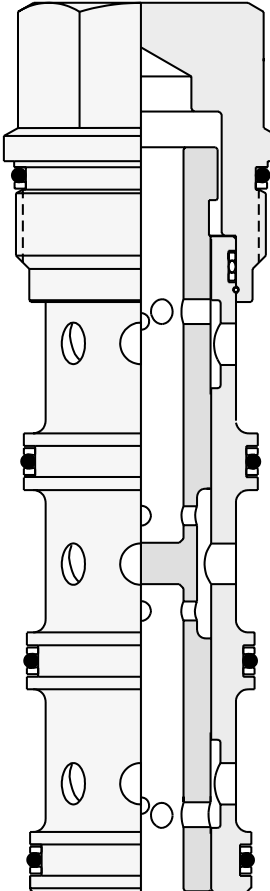


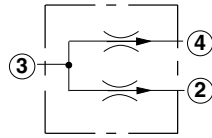
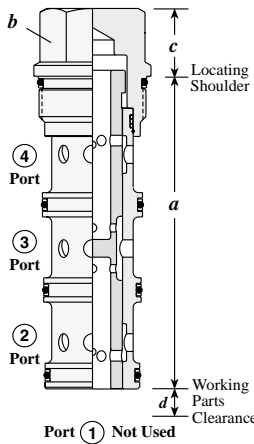
Flow Divider / Combiner Cartridge Valves

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

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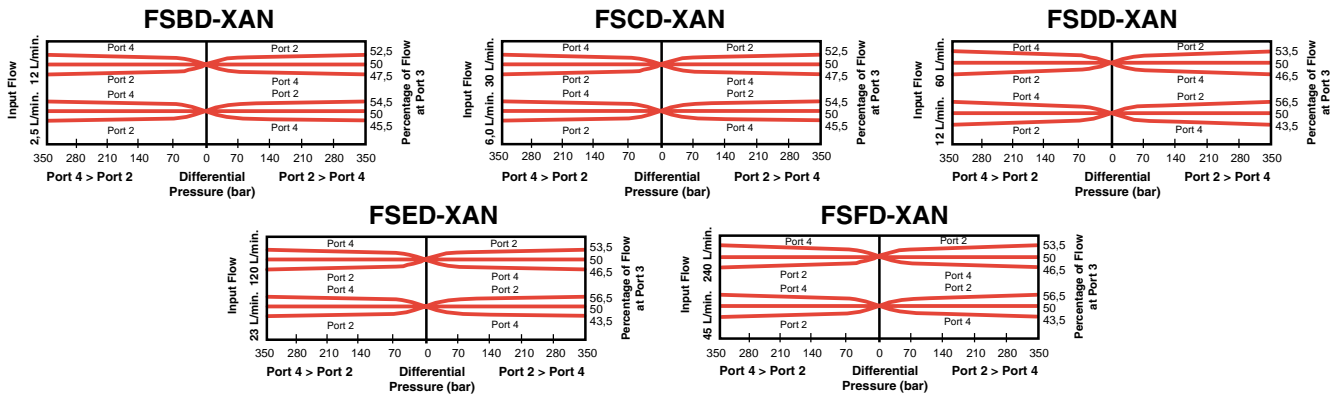
DIVIDER



Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	c	d	
2,5-12 L/min.	FSBD – XAN	T - 31A	84,8	22,2	19	17	40/50
6-30 L/min.	FSCD – XAN	T - 31A	84,8	22,2	19	17	40/50
12-60 L/min.	FSDD – XAN	T - 32A	92,2	28,6	18	20	60/70
23-120 L/min.	FSED – XAN	T - 33A	114,4	31,8	25	26	200/215
45-240 L/min.	FSFD – XAN	T - 34A	139,7	41,3	31	30	465/500

Performance Curves

Operating Characteristics



- Maximum operating pressure = 350 bar
- 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 = 18 bar
- Pressure drop at minimum input flow = 0,7 bar
- 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 ★ ★

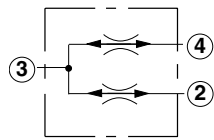
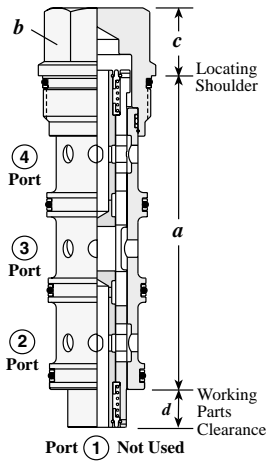
Nominal Capacity	Control	Flow Proportion	Seal
B 2,5-12 L/min.	X Non-adjustable	A 50/50 Flow Split	N Buna-N
C 6-30 L/min.		B *40/60 Flow Split	V Viton
D 12-60 L/min.		C *33/67 Flow Split	
E 23-120 L/min.			
F 45-240 L/min.			

* 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

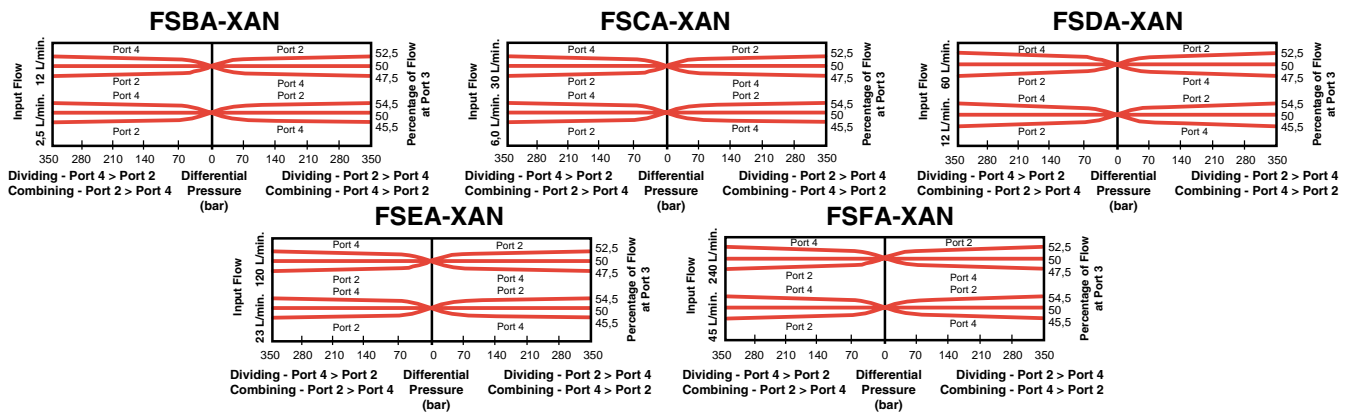


Note: Closed center valves have spring centered internal spools that provide blocked flow paths when centered. Centering occurs when the Port 3 flow is also blocked. This internal blocking isolates Port 2 and 4 from cross flow.

Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	c	d	
2,5-12 L/min.	FSBA - XAN	T - 31A	84,8	22,2	19	17	40/50
6-30 L/min.	FSCA - XAN	T - 31A	84,8	22,2	19	17	40/50
12-60 L/min.	FSDA - XAN	T - 32A	92,2	28,6	18	20	60/70
23-120 L/min.	FSEA - XAN	T - 33A	114,4	31,8	25	26	200/215
45-240 L/min.	FSFA - XAN	T - 34A	139,7	41,3	31	30	465/500

Performance Curves

Operating Characteristics



- Maximum operating pressure = 350 bar
- 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 = 24 bar
- Pressure drop at minimum input flow = 1,7 bar
- 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.

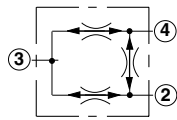
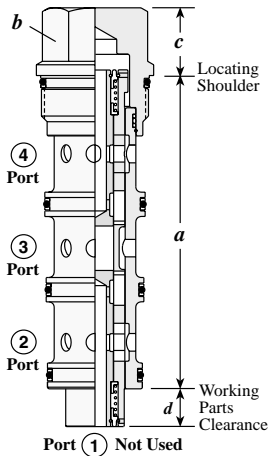
FS * A - X A *

Nominal Capacity	Control	Flow Proportion	Seal
B 2,5-12 L/min.	X Non-adjustable	A 50/50 Flow Split	N Buna-N
C 6-30 L/min.			V Viton
D 12-60 L/min.			
E 23-120 L/min.			
F 45-240 L/min.			

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

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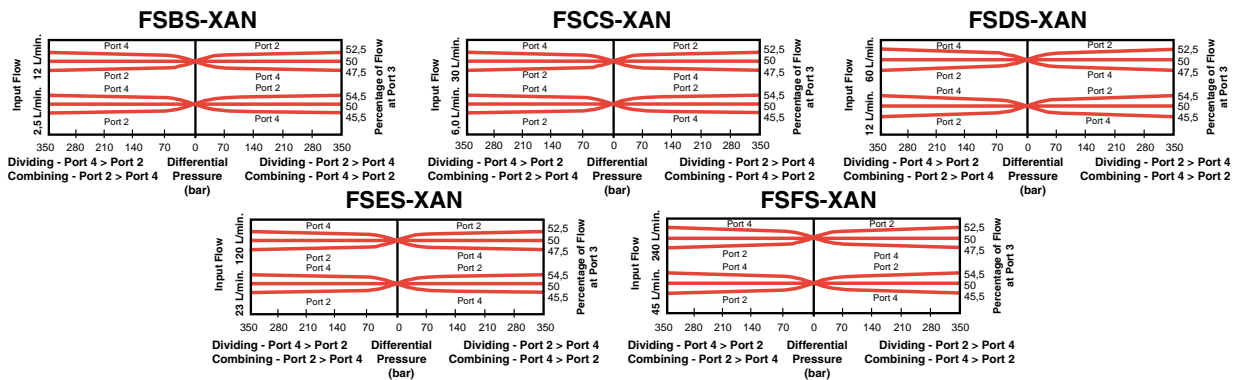
SYNCHRONIZING DIVIDER / COMBINER



Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	c	d	
2,5-12 L/min.	FSBS – XAN	T - 31A	84,8	22,2	19	17	40/50
6-30 L/min.	FSCS – XAN	T - 31A	84,8	22,2	19	17	40/50
12-60 L/min.	FSDS – XAN	T - 32A	92,2	28,6	18	20	60/70
23-120 L/min.	FSES – XAN	T - 33A	114,4	31,8	25	26	200/215
45-240 L/min.	FSFS – XAN	T - 34A	139,7	41,3	31	30	465/500

Performance Curves

Operating Characteristics



- Maximum operating pressure = 350 bar
- 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 = 24 bar
- Pressure drop at minimum input flow = 1,7 bar
- 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.

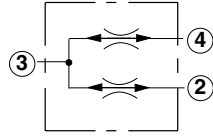
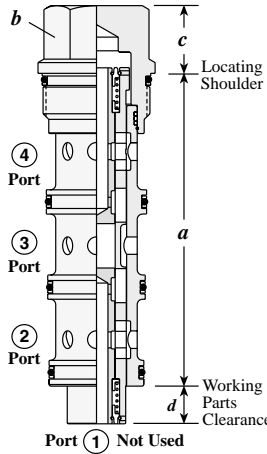
FS * S - X A *

Nominal Capacity	Control	Flow Proportion	Seal
B 2,5-12 L/min.	X Non-adjustable	A 50/50 Flow Split	N Buna-N
C 6-30 L/min.			V Viton
D 12-60 L/min.			
E 23-120 L/min.			
F 45-240 L/min.			

Divisional Accuracy (Combining and Dividing) =
 ± 4.5 % at minimum input flow
 ± 2.5 % at maximum input flow
 Synchronizing Flow per Leg:
 FSBS: 0,6 - 1 L/min.
 FSCS: 0,75 - 2 L/min.
 FSDS: 1,2 - 2,5 L/min.
 FSES: 3 - 6 L/min.
 FSFS: 9 - 13 L/min.

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HIGH CAPACITY DIVIDER / COMBINER, CLOSED CENTER

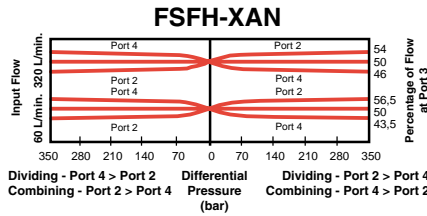
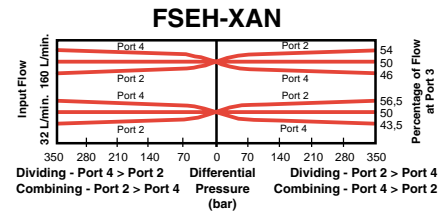
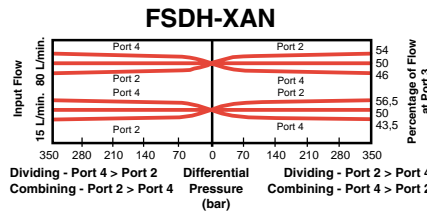
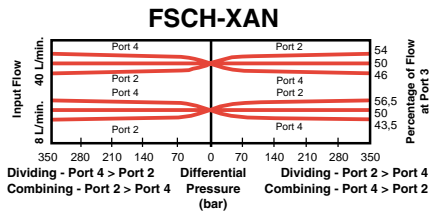


Note: Closed center valves have spring centered internal spools that provide blocked flow paths when centered. Centering occurs when the Port 3 flow is also blocked. This internal blocking isolates Port 2 and 4 from cross flow.

Capacity Min/Max	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	c	d	
8-40 L/min.	FSCH - XAN	T - 31A	84,8	22,2	19	17	40/50
15-80 L/min.	FSDH - XAN	T - 32A	92,2	28,6	18	20	60/70
32-160 L/min.	FSEH - XAN	T - 33A	114,4	31,8	25	26	200/215
60-320 L/min.	FSFH - XAN	T - 34A	139,7	41,3	31	30	465/500

Performance Curves

Constant Command - Varying Flow



- Maximum operating pressure = 350 bar
- 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 = 24 bar
- Pressure drop at minimum input flow = 1,7 bar
- 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	Seal
Nominal Capacity					
C	8-40 L/min.	X Non-adjustable		A 50/50 Flow Split	N Buna-N
D	15-80 L/min.				V Viton
E	32-160 L/min.				
F	60-320 L/min.				

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

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NOTES