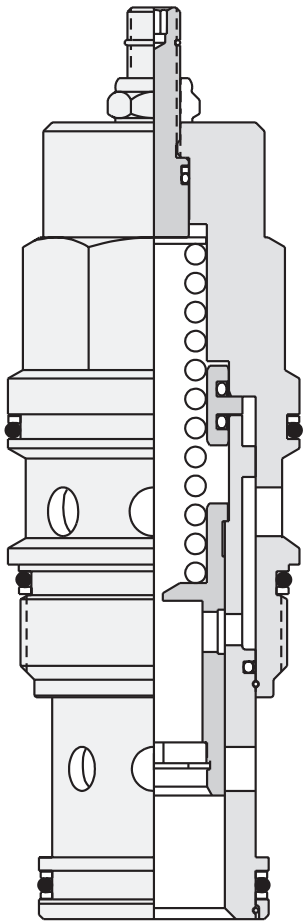
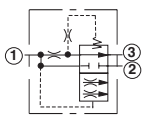
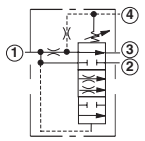
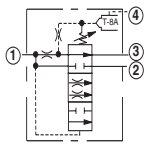
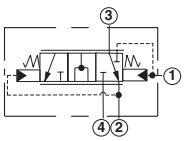
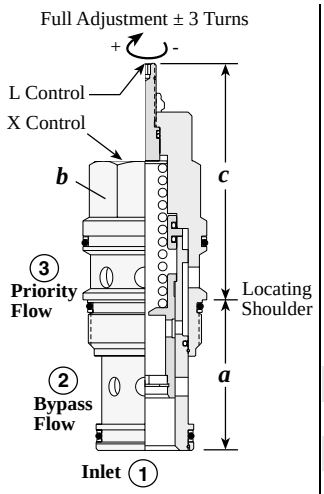
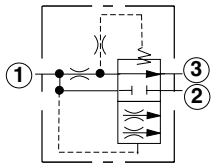
Priority Flow Control Cartridge Valves



	Cartridge Type	*Page*
	Bypass / Restrictive, Fixed Orifice	76
	Ventable, Bypass / Restrictive, Fixed Orifice	77
	Ventable, Bypass / Restrictive, Fixed Orifice with Integral Pilot Control Cavity	78
	Bypass / Restrictive Modulating Element	79

BYPASS / RESTRICTIVE, FIXED ORIFICE



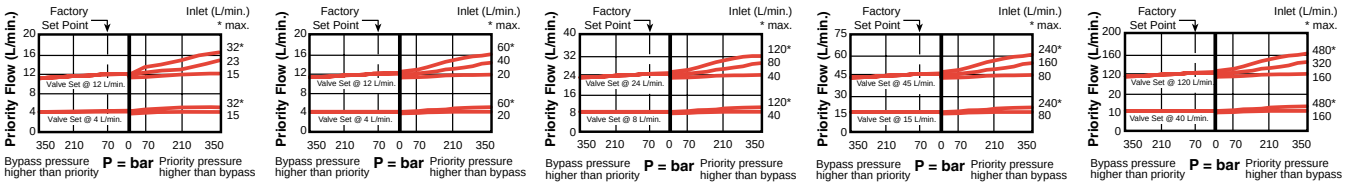


Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions a	b	c X	c L	c K	Installation Torque (Nm)
0,4-12 L/min.	**FRBA – XAN**	T - 163A	31	19,1	32	43	47	35/40
0,4-25 L/min.	**FRCA – XAN**	T - 11A	34,9	22,2	31	64	71	40/50
0,4-50 L/min.	**FRDA – XAN**	T - 2A	34,9	28,6	35	72	78	60/70
0,8-100 L/min.	**FREA – XAN**	T - 17A	46	31,8	46	84	91	200/215
0,8-200 L/min.	**FRFA – XAN**	T - 19A	63,5	41,3	60	100	107	465/500

Performance Curves

FRBA **FRCA** **FRDA** **FREA** **FRFA**

Typical Performance



- Maximum operating pressure = 350 bar
- Customer must specify a flow rating. Factory set flow ratings are within +/- 10% of the requested setting.
- Pressure at the bypass port (port 2) may exceed pressure at the priority port (port 3).
- Maximum pressure at port 3 should be limited to 210 bar.
- Both priority and bypass flow are usable up to the system operating pressure.
- Bypass flow is not available until priority flow requirements are satisfied.
- Blocking priority flow will also block bypass flow.

OPTION ORDERING INFORMATION **Model Codes printed in Red are Preferred Versions and most readily available**

FR ✶ A – ✶ A ✶

Nominal Capacity	*Control***	*Adjustment Range*	*Seal*
B 0,4-12 L/min.	**X** Non-adjustable Factory set at customer specified flow	**A** Fixed Orifice	**N** Buna-N
C 0,4-25 L/min.		**Customer must specify flow**	**V** Viton
D 0,4-50 L/min.	**L** Tuning Adjustment ±25% of customer specified flow		
E 0,8-100 L/min.			
F 0,8-200 L/min.	**K** Handknob for **L** control		

Maximum Inlet Flow:
FRBA: 30 L/min.
FRCA: 60 L/min.
FRDA: 120 L/min.
FREA: 240 L/min.
FRFA: 480 L/min.

** *See page 162 for information on Control Options*

Priority Flow ranges:
FRBA: 0,4 - 12 L/min.
FRCA:0,4 - 25 L/min.
FRDA:0,4 - 50 L/min.
FREA: 0,8 - 100 L/min.
FRFA: 0,8 - 200 L/min.

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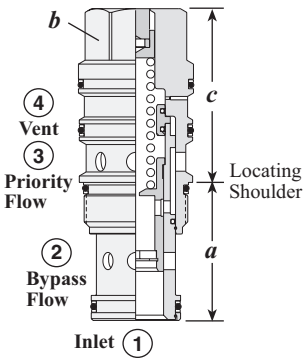
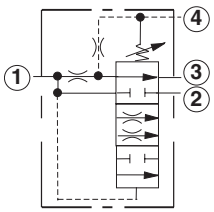
VENTABLE, BYPASS / RESTRICTIVE, FIXED ORIFICE



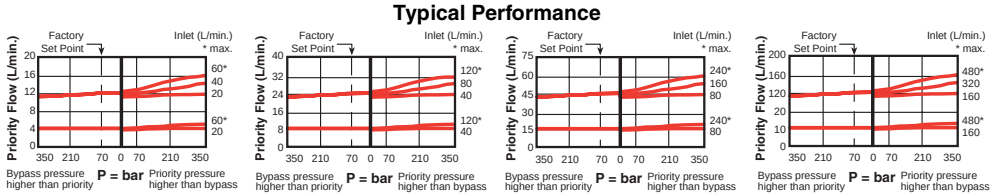


Capacity	*Typical Cartridge Model Code*	*Cavity*	*Cartridge Dimensions* *a*	*b*	*c* X	*c* L	*c* K	*Installation Torque (Nm)*
0,4-25 L/min.	**FVCA – XAN**	T - 21A	34,9	22,2	46	79	86	40/50
0,4-50 L/min.	**FVDA – XAN**	T - 22A	34,9	28,6	51	88	94	60/70
0,8-100 L/min.	**FVEA – XAN**	T - 23A	46	31,8	66	100	107	200/215
0,8-200 L/min.	**FVFA – XAN**	T - 24A	63,5	41,3	81	121	128	465/500

Performance Curves

FVCA **FVDA** **FVEA** **FVFA**

Typical Performance



- Maximum operating pressure = 350 bar
- Nominal vent flow = 0,75 L/min.
- Pressure at the bypass port (port 2) may exceed pressure at the priority port (port 3).
- Maximum pressure at port 3 should be limited to 210 bar.
- Both priority and bypass flow are usable up to the system operating pressure.
- Bypass flow is not available until priority flow requirements are satisfied, except when the valve is vented. When port 4 (vent) is open, all flow diverts to port 2 if pressure at port 1 (inlet) is 10,5 bar or higher.
- Using a pressure control on port 4 will limit the pressure at the priority port (port 3). If pressure on the bypass port (port 2) exceeds the setting of the pressure control, priority flow will be shut off an all the flow will go out the bypass port.
- Blocking priority flow will also block bypass flow.

OPTION ORDERING INFORMATION

Model Codes printed in Red are Preferred Versions and most readily available

FV ✶ A – ✶ A ✶

Nominal Capacity		*Control***		*Adjustment Range*		*Seal*	
C	0,4-25 L/min.	**X**	Non-adjustable factory set at customer specified flow	**A**	Fixed Orifice	**N**	Buna-N
D	0,4-50 L/min.	**L**	Tuning Adjustment ±25% of customer specified flow		**Customer must specify flow**	**V**	Viton
E	0,8-100 L/min.						
F	0,8-200 L/min.	**K**	Handknob (includes L controls)				

Maximum Inlet Flow:
FVCA: 60 L/min.
FVDA: 120 L/min.
FVEA: 240 L/min.
FVFA: 480 L/min.

***See page 162 for information on Control Options*

Priority Flow ranges:
FVCA: 0,4 - 25 L/min.
FVDA: 0,4 - 50 L/min.
FVEA: 0,8 - 100 L/min.
FVFA: 0,8 - 200 L/min.

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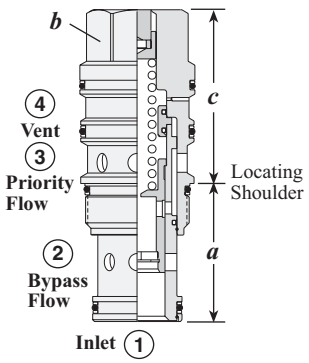
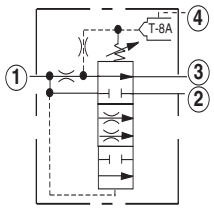
VENTABLE, BYPASS / RESTRICTIVE, FIXED ORIFICE WITH INTEGRAL PILOT CONTROL CAVITY





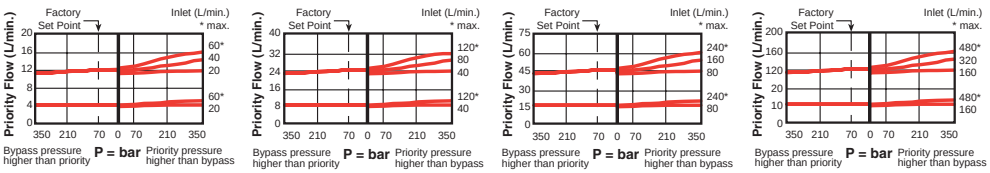
The -8 control option allows the pilot control valve to be incorporated directly into the end of the priority flow control cartridge via the T-8A cavity. These pilot control cartridges are sold separately and include electro-proportional, solenoid, air pilot, and hydraulic pilot operation. See Pilot Control Cartridges on page 121.

Capacity	*Typical Cartridge Model Code*	*Cavity*	*Cartridge Dimensions*			*Installation Torque (Nm)*
			a	*b*	*c* **8**	
0,4-25 L/min.	**FVCA – 8AN**	T - 21A	34,9	22,2	46	40/50
0,4-50 L/min.	**FVDA – 8AN**	T - 22A	34,9	28,6	46	40/50
0,8-100 L/min.	**FVEA – 8AN**	T - 23A	46	31,8	46	40/50
0,8-200 L/min.	**FVFA – 8AN**	T - 24A	63.5	41,3	46	40/50

Performance Curves

FVCA-8 **FVDA-8** **FVEA-8** **FVFA-8**

Typical Performance



- Maximum operating pressure = 350 bar
- Nominal vent flow = 0,75 L/min.
- Pressure at the bypass port (port 2) may exceed pressure at the priority port (port 3).
- Maximum pressure at port 3 should be limited to 210 bar.
- Both priority and bypass flow are usable up to the system operating pressure.
- Bypass flow is not available until priority flow requirements are satisfied, except when the valve is vented. When port 4 (vent) is open, all flow diverts to port 2 if pressure at port 1 (inlet) is 10,5 bar or higher.
- Using a pressure control on port 4 will limit the pressure at the priority port (port 3). If pressure on the bypass port (port 2) exceeds the setting of the pressure control, priority flow will be shut off and all the flow will go out the bypass port.
- Blocking priority flow will also block bypass flow.
- The main stage valve should first be installed to the correct torque value followed by the T-8A pilot control section into the main stage valve to its required torque value.

OPTION ORDERING INFORMATION **Model Codes printed in Red are Preferred Versions and most readily available**

FV ✶ A – 8 A ✶

Nominal Capacity	*Control***	*Adjustment Range*	*Seal*
C 0,4-25 L/min.	**8** T-8A cavity in hex body for pilot operation (Pilot valve to be ordered separately)	**A** Fixed Orifice	**N** Buna-N
D 0,4-50 L/min.		**Customer must specify flow**	**V** Viton
E 0,8-100 L/min.			
F 0,8-200 L/min.			

Maximum Inlet Flow:
FVCA: 60 L/min.
FVDA: 120 L/min.
FVEA: 240 L/min.
FVFA: 480 L/min.

Priority Flow ranges:
FVCA: 0,4 - 25 L/min.
FVDA: 0,4 - 50 L/min.
FVEA: 0,8 - 100 L/min.
FVFA: 0,8 - 200 L/min.

***See page 162 for information on Control Options*

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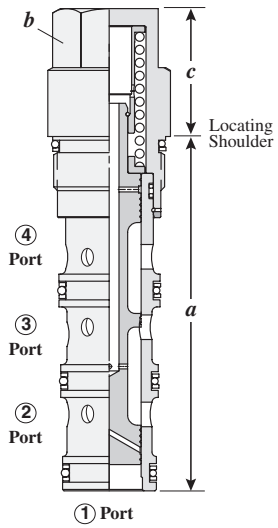
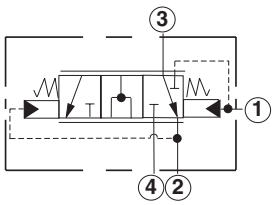
BYPASS / RESTRICTIVE MODULATING ELEMENT





Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions a	b	c X	Installation Torque (Nm)
60 L/min.	**LHDA – XFN**	T - 31A	84,8	22,2	30	40/50
120 L/min.	**LHFA – XFN**	T - 32A	92,2	28,6	34	60/70
240 L/min.	**LHHA – XFN**	T - 33A	114,4	31,8	42	200/215
480 L/min.	**LHJA – XFN**	T - 34A	139,7	41,3	51	465/500

- Maximum operating pressure = 350 bar
- Bypass flow is not available until priority flow requirements are satisfied.
- Bypass pressure at port 4 can be higher than pressure at control port 2.
- Priority flow can be turned on or off with a pilot sized solenoid valve on port 1.

OPTION ORDERING INFORMATION

Model Codes printed in Red are Preferred Versions and most readily available

LH ✶ A – X ✶ ✶

Maximum Inlet Flow	*Control***	*Adjustment Range*	*Seal*
D 60 L/min.	**X** Non-adjustable	**E** 5 - 7 bar	**N** Buna-N
F 120 L/min.		**F** 7 - 9,5 bar	**V** Viton
H 240 L/min.			
J 480 L/min.			

*** See page 162 for information on Control Options*

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NOTES