

Flow Control, Throttle Cartridges

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Cavity Information

Series	Ports	Cavities
Series Z Cartridges	3-Port	T-382A
3/8-24 UNF Cartridge Thread		
5 mm Valve Hex Size		
1 - 14 Nm Valve Installation Torque		
Series P Cartridges	2-Port	T-8A
M16 Cartridge Thread	2-Port (Deep)	T-8DP
22.2 mm Valve Hex Size	3-Port	T-9A
27 - 33 Nm Valve Installation Torque		
Series 0 Cartridges	2-Port	T-162A
	2-Port (Deep)	T-162DP
M16 Cartridge Thread 19,1 mm Valve Hex Size	3-Port	T-150A
25,4 mm Valve Hex Size	3-Port	T-163A
27 - 33 Nm Valve Installation Torque	4-Port	T-30A
Series 1 Cartridges	2-Port	T-10A
M20 Cartridge Thread	2-Port	T-13A
vi20 Carmage Thread 22.2 mm Valve Hex Size	3-Port	T-11A
11 - 47 Nm Valve Installation Torque	4-Port	T-21A
The state installation forque	4-Port	T-31A
	6-Port	T-61A
Series 2 Cartridges	2-Port	T-3A
I"-14 UNS Cartridge Thread	2-Port	T-5A
28,6 mm Valve Hex Size	3-Port	T-2A
1 - 68 Nm Valve Installation Torque	4-Port 4-Port	T-22A
	4-Port (Dual path)	T-32A T-52AD
	6-Port	T-52AD T-52A
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Series 3 Cartridges	2-Port	T-16A
•	3-Port	T-17A
M36 Cartridge Thread 31,8 mm Valve Hex Size	4-Port	T-23A
203 - 217 Nm Valve Installation Torque	4-Port	T-33A
2	4-Port (Dual path)	T-53AD
	6-Port	T-53A
	6-Port	T-63A
Series 4 Cartridges	2-Port	T-18A
M48 Cartridge Thread	2-Port (Undercut)	T-18AU
11,3 mm Valve Hex Size	3-Port	T-19A T-19AU
174 - 508 Nm Valve Installation Torque	3-Port (Undercut) 4-Port	T-19AU T-24A
	4-Port (Undercut)	T-24A T-24AU
	4-Port	T-34A
	4-Port (Dual path)	T-54AD
	6-Port	T-54A
	6-Port	T-64A

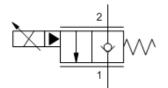


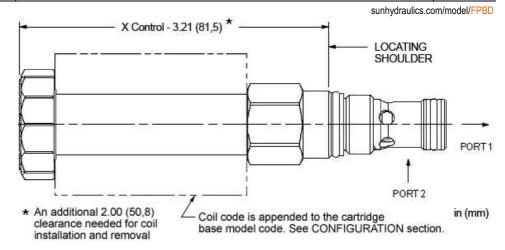
MODEL FPBD

FLeX Series pilot-operated, normally closed, electro-proportional throttle - flow 2-1 - 3000 psi (210 bar)

CAPACITY: 20 L/min. / CAVITY: T-162A







This valve is a pilot-operated, normally closed, electro-proportional throttle with reverse free-flow check. Energizing the coil generates an opening force on the pilot stage which vents the main stage poppet to open proportionally, allowing flow from port 2 to 1. In the open condition, flow from 1 to 2 will cause the valve to auto-close and only pilot flow will pass from 1 to 2.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Repeatability (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	210 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@210 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBDXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL *

X No Manual Override D Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) V Viton * Additional coil options are available

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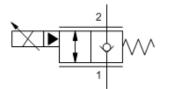


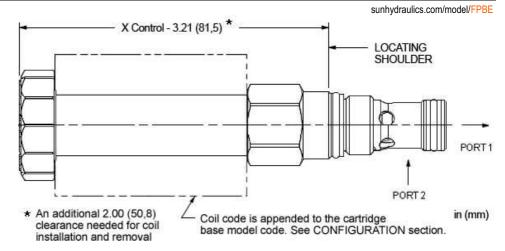
MODEL FPBE

FLeX Series pilot-operated, normally closed, electro-proportional throttle with reverse flow check - flow 2-1 - 3000 psi (210 bar)

CAPACITY: 20 L/min. / CAVITY: T-162A







This valve is a pilot-operated, normally closed, electro-proportional throttle with reverse free-flow check. Energizing the coil generates an opening force on the pilot stage which vents the main stage poppet to open proportionally, allowing flow from port 2 to 1. The check will allow flow from 1 to 2 in either the open or closed condition.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	210 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@210 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBEXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL*

X No Manual Override D Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) V Viton *Additional coil options are available*

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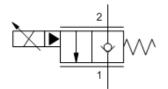


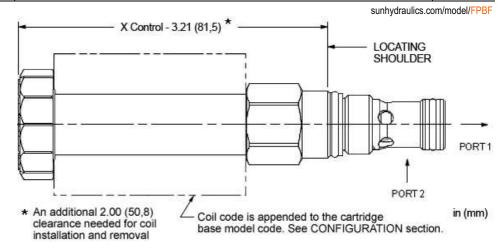


FLeX Series pilot-operated, normally closed, electro-proportional throttle - flow 2-1

CAPACITY: 20 L/min. / CAVITY: T-162A







This valve is a pilot-operated, normally closed, electro-proportional throttle with reverse free-flow check. Energizing the coil generates an opening force on the pilot stage which vents the main stage poppet to open proportionally, allowing flow from port 2 to 1. In the open condition, flow from 1 to 2 will cause the valve to auto-close and only pilot flow will pass from 1 to 2.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Repeatability (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	350 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBFXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL *

X No Manual Override D Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) V Viton * Additional coil options are available

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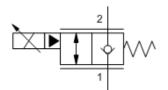


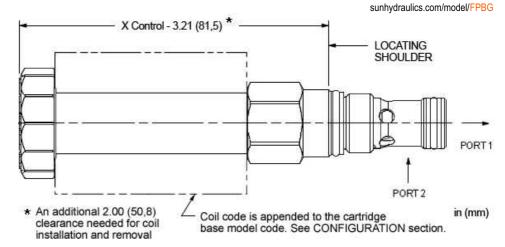
MODEL FPBG

FLeX Series pilot-operated, normally closed, electro-proportional throttle with reverse flow check - flow 2-1

CAPACITY: 20 L/min. / CAVITY: T-162A







This valve is a pilot-operated, normally closed, electro-proportional throttle with reverse free-flow check. Energizing the coil generates an opening force on the pilot stage which vents the main stage poppet to open proportionally, allowing flow from port 2 to 1. The check will allow flow from 1 to 2 in either the open or closed condition.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Repeatability (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@350 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBGXDN

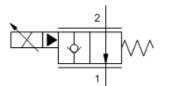
 CONTROL
 (X)
 FLOW RATE
 (D)
 SEAL MATERIAL
 (N)
 COIL *

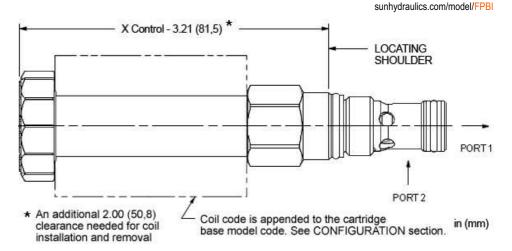
 X
 No Manual Override
 D
 No minal 5 gpm @ 200 psi (14 bar) differential (20 L/min.)
 N
 Buna-N
 No coil

 V
 V Viton
 * Additional coil options are available

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FLeX Series pilot-operated, normally open, electro-proportional throttle - flow 2-1 CAPACITY: 20 L/min. / CAVITY: T-162A





This valve is a pilot-operated, normally open, electro-proportional throttle with reverse free-flow check. Energizing the coil generates a closing force on the pilot stage which pushes the main stage poppet against the seat, proportionally blocking flow from port 2 to 1. In the open condition, flow from 1 to 2 will cause the valve to autoclose and only pilot flow will pass from 1 to 2.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Repeatability (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@350 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBIXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL*

X No Manual Override D Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) V Viton *Additional coil options are available

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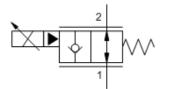


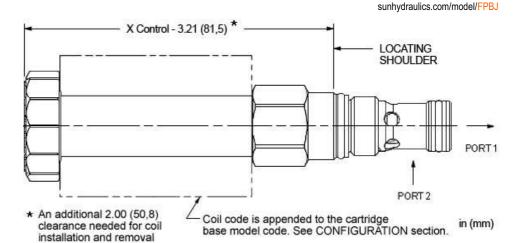
MODEL FPBJ

FLeX Series pilot-operated, normally open, electro-proportional throttle with reverse flow check - flow 2-1

CAPACITY: 20 L/min. / CAVITY: T-162A







This valve is a pilot-operated, normally open, electro-proportional throttle with reverse free-flow check. Energizing the coil generates a closing force on the pilot stage which pushes the main stage poppet against the seat, proportionally blocking flow from port 2 to 1. The check will allow flow from 1 to 2 in either the open or closed condition.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Repeatability (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@350 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBJXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL*

X No Manual Override D Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) V Viton *Additional coil options are available

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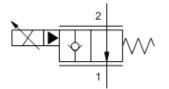


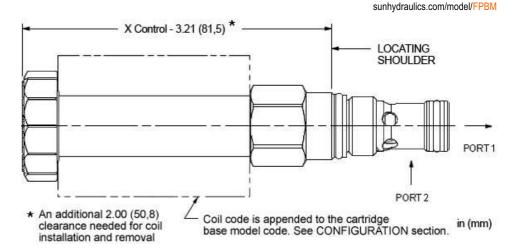
MODEL FPBM

FLeX Series pilot-operated, normally open, electro-proportional throttle - flow 2-1 - 3000 psi (210 bar)

CAPACITY: 20 L/min. / CAVITY: T-162A







This valve is a pilot-operated, normally open, electro-proportional throttle with reverse free-flow check. Energizing the coil generates a closing force on the pilot stage which pushes the main stage poppet against the seat, proportionally blocking flow from port 2 to 1. In the open condition, flow from 1 to 2 will cause the valve to autoclose and only pilot flow will pass from 1 to 2.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Repeatability (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	210 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@210 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBMXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL*

X No Manual Override

D Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.)

N Buna-N No coil
V Viton *Additional coil options are available

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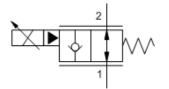


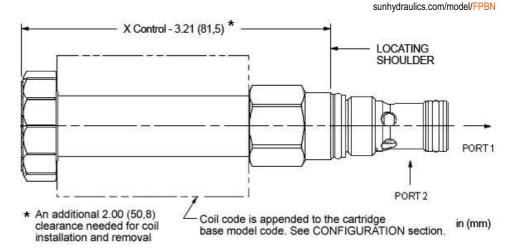
MODEL FPBN

FLeX Series pilot-operated, normally open, electro-proportional throttle with reverse flow check - flow 2-1 - 3000 psi (210 bar)

CAPACITY: 20 L/min. / CAVITY: T-162A







This valve is a pilot-operated, normally open, electro-proportional throttle with reverse free-flow check. Energizing the coil generates a closing force on the pilot stage which pushes the main stage poppet against the seat, proportionally blocking flow from port 2 to 1. The check will allow flow from 1 to 2 in either the open or closed condition.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Hysteresis (with dither)	15%
Linearity (with dither)	3%
Repeatability (with dither)	3%
Recommended dither frequency	140 Hz
Maximum Operating Pressure	210 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@210 bar
Check Cracking Pressure	7 bar
Viscosity Range	2,8 - 380 cSt
Deadband, nominal (as a percentage of input)	48%
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBNXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL *

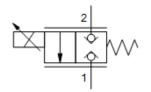
X No Manual Override D Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) V Viton * Additional coil options are available

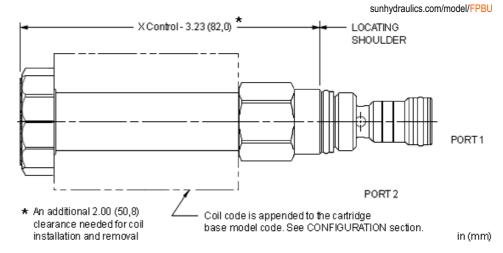
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FLeX Series electro-proportional, blocking poppet throttle - normally closed CAPACITY: 9,8 L/min. / CAVITY: T-162A







This valve is a normally closed, electro-proportional, blocking poppet throttle that is spring-biased closed. Energizing the coil generates an opening force on the poppet proportional to the command current, and this force is countered by the spring and flow forces. This force balance creates a metering orifice whose effective size is proportional to the current. The valve exhibits a large degree of self-compensation in the 2-to-1 direction and will provide proportional flow control in the 1-to-2 direction with the addition of an external compensator. Full reverse flow (1-to-2) with 100% command in the 1-to-2 direction is possible without a compensator under all conditions.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	0,07 cc/min.@350 bar
Viscosity Range	2,8 - 380 cSt
Response Time - Typical	50 ms
Switching Frequency	15,000 max. cycles/hr
U.S. Patent #	10,302,201
Seal kit - Cartridge	Buna: 990162007
Seal kit - Cartridge	Viton: 990162006

NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

CONFIGURATION OPTIONS

Model Code Example: FPBUXCN

CONTROL (X) FLOW RATE (C) SEAL MATERIAL (N) COIL*

X No Manual Override
M Manual Override

C Nominal 2.6 gpm @ 200 psi (14 bar differential (9.8 L/min.)

N Buna-N
V Viton

No coil

* Additional coil options are available

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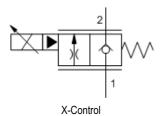


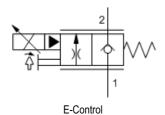
Pilot-operated, normally closed, electro-proportional throttle with reverse flow check

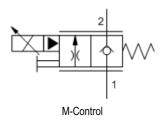
SERIES 2 / CAPACITY: 80 L/min. / CAVITY: T-5A

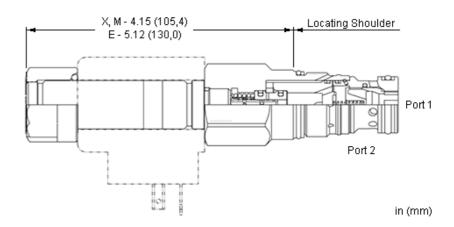


sunhydraulics.com/model/FPFK









This valve is a pilot-operated, normally closed, electro-proportional throttle with reverse free-flow check. Energizing the coil generates an opening force on the pilot stage which vents the main stage poppet to open proportionally. Metered flow is from port 1 to port 2 with reverse free flow from port 2 to port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Recommended dither frequency	100 Hz
Maximum Valve Leakage at 110 SUS (24 cSt)	20 drops/min.@5000 psi
Manual Override Force Requirement	33 N/100 bar @ Port 1
Deadband, nominal (as a percentage of input)	25%
Manual Override Stroke	1,50 mm
Seal kit - Cartridge	Buna: 990203007
Seal kit - Cartridge	EPDM: 990203014
Seal kit - Cartridge	Viton: 990203006

CONFIGURATION OPTIONS

Model Code Example: FPFKXDN

CONTROL (X) FLOW RATE (D) SEAL MATERIAL (N) COIL *

X No Manual Override

- E Twist (Extended) Manual Override
- M Manual Override
- Nominal 20 gpm @ 200 psi (14 bar) differential (80 L/min.)
- B Nominal 10 gpm @ 200 psi (14 bar) differential (40 L/min.)

N Buna-NE EPDMV Viton

No coil 212 DIN 43650-Form A, 12 VDC 224 DIN 43650-Form A, 24 VDC 912 Deutsch DT04-2P, 12 VDC 924 Deutsch DT04-2P, 24 VDC

* Additional coil options are available

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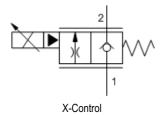
Pilot-operated, normally closed, electro-proportional throttle with reverse flow check

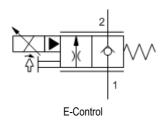
SERIES 3 / CAPACITY: 240 L/min. / CAVITY: T-16A

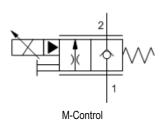


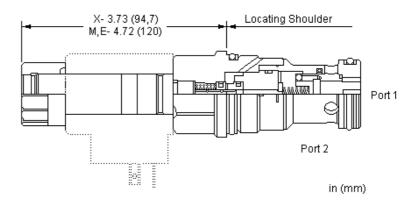


sunhydraulics.com/model/FPHK









This valve is a pilot-operated, normally closed, electro-proportional throttle with reverse free-flow check. Energizing the coil generates an opening force on the pilot stage which vents the main stage poppet to open proportionally. Metered flow is from port 1 to port 2 with reverse free flow from port 2 to port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Recommended dither frequency	100 Hz
Maximum Valve Leakage at 110 SUS (24 cSt)	20 drops/min.@5000 psi
Manual Override Force Requirement	33 N/100 bar @ Port 1
Deadband, nominal (as a percentage of input)	25%
Manual Override Stroke	1,50 mm
Seal kit - Cartridge	Buna: 990016007
Seal kit - Cartridge	EPDM: 990016014
Seal kit - Cartridge	Polyurethane: 990016002
Seal kit - Cartridge	Viton: 990016006

CONFIGURATION OPTIONS

Model Code Example: FPHKXCN

(C) SEAL MATERIAL CONTROL (X) FLOW RATE (N) COIL *

X No Manual Override

- E Twist (Extended) Manual Override
- M Manual Override
- Nominal 40 gpm @ 200 psi (14 bar) differential (160 L/min.)
- A Nominal 20 gpm @ 200 psi (14 bar) differential (80 L/min.)
- E Nominal 60 gpm @ 200 psi (14 bar) differential (240 L/min.)

N Buna-N **E** EPDM V Viton

212 DIN 43650-Form A, 12 VDC 224 DIN 43650-Form A, 24 VDC 912 Deutsch DT04-2P, 12 VDC 924 Deutsch DT04-2P, 24 VDC

* Additional coil options are available

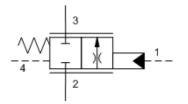
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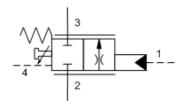


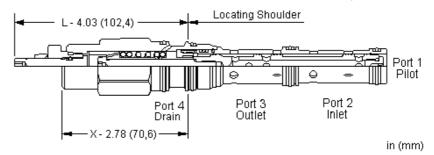
2-way, pilot-shifted, dual path, proportional throttle SERIES 2 / CAPACITY: 60 L/min. / CAVITY: T-52AD



sunhydraulics.com/model/FTCA







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 opposes the spring and creates a variable metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

The valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	80 cc/min.@70 bar
Pilot Volume Displacement	0,82 cc
Adjustment - No. of CCW Turns from Fully Closed to Fully Open	5
Hysteresis	35 %
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990152007
Seal kit - Cartridge	Viton: 990152006

NOTES

When installed in Sun's standard T-52A line mount manifold, plug unused ports and expect higher pressure drops.

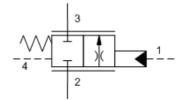
CONFIGURATION OPTIONS

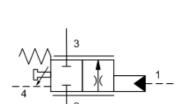
Model Code Example: FTCAXCN

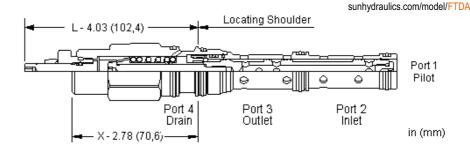
CONTROL	(X) SPOOL CONFIGURATION	(C)	SEAL MATERIAL (N)	MATERIAL/COATING
X Not Adjustable	C Normally Closed		N Buna-N	Standard Material/Coating
L Stroke Adjustment			V Viton	/LH Mild Steel, Zinc-Nickel

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This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 opposes the spring and creates a variable metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

The valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	80 cc/min.@70 bar
Pilot Volume Displacement	0,82 cc
Hysteresis	35 %
Seal kit - Cartridge	Buna: 990152007
Seal kit - Cartridge	Viton: 990152006

NOTES

When installed in Sun's standard T-52A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTDAXCN

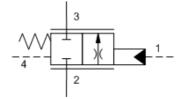
CONTROL	(X)	SPOOL CONFIGURATION	(C)	SEAL MATERIAL	(N)
X Not Adjustable		C Normally Closed		N Buna-N	
L Stroke Adjustment				V Viton	

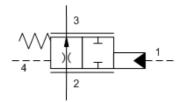
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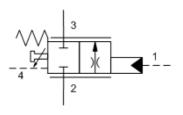
2-way, pilot-shifted, dual path, proportional throttle

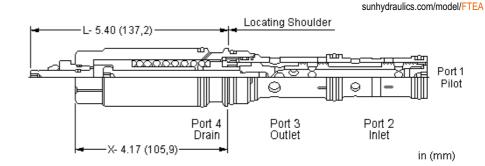
SERIES 3 / CAPACITY: 95 L/min. / CAVITY: T-53AD











This valve is a 2-way, 2-position proportional throttle. Pilot pressure at port 1 opposes the spring and creates a variable metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

The valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	160 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Adjustment - No. of CCW Turns from Fully Closed to Fully Open	5
Hysteresis	35 %
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990053007
Seal kit - Cartridge	Viton: 990053006

NOTES When installed in Sun's standard T-53A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTEAXCN

CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL (N)
X Not Adjustable	C Normally Closed	N Buna-N
L Stroke Adjustment	H Normally Open	V Viton

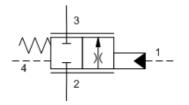
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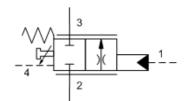


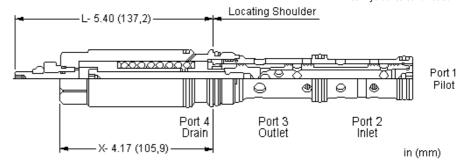
2-way, pilot-shifted, dual path, proportional throttle SERIES 3 / CAPACITY: 200 L/min. / CAVITY: T-53AD



sunhydraulics.com/model/FTFA







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 opposes the spring and creates a variable metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

The valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	160 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Adjustment - No. of CCW Turns from Fully Closed to Fully Open	5
Hysteresis	35 %
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990053007
Seal kit - Cartridge	Viton: 990053006

NOTES

When installed in Sun's standard T-53A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTFAXCN

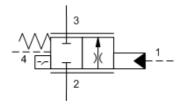
CONTROL (X) SPOOL CONFIGURATION (C) SEAL MATERIAL (N) MATERIAL/COATING

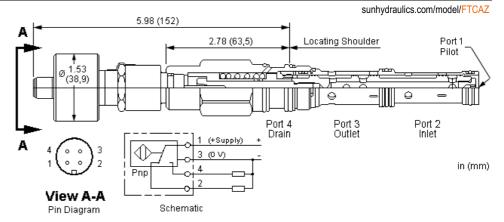
X Not Adjustable
C Normally Closed
N Buna-N
Standard Material/Coating
/AP Stainless Steel, Passivated
/LH Mild Steel, Zinc-Nickel

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SERIES 2 / CAPACITY: 60 L/min. / CAVITY: T-52AD







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	80 cc/min.@70 bar
Pilot Volume Displacement	0,82 cc
Seal kit - Cartridge	Buna: 990152007
Seal kit - Cartridge	Viton: 990152006

NOTES

When installed in Sun's standard T-52A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTCAZCN

SPOOL CONFIGURATION (C) SEAL MATERIAL (N)

C. Normally Closed N. Bura-N

C Normally Closed N

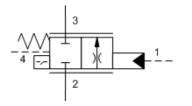
N Buna-V Viton

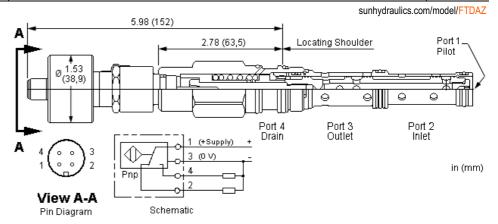
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2-way, pilot-shifted, dual path, proportional throttle with position switch

SERIES 2 / CAPACITY: 120 L/min. / CAVITY: T-52AD







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	80 cc/min.@70 bar
Pilot Volume Displacement	0,82 cc
Seal kit - Cartridge	Buna: 990152007
Seal kit - Cartridge	Viton: 990152006

NOTES

When installed in Sun's standard T-52A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTDAZCN

SPOOL CONFIGURATION

(C) SEAL MATERIAL

(N)

C Normally Closed

N Buna-N
V Viton

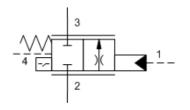
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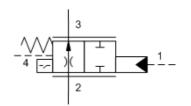


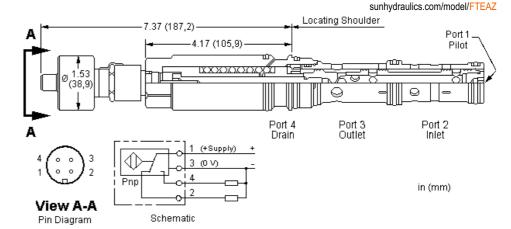


2-way, pilot-shifted, dual path, proportional throttle with position switch SERIES 3 / CAPACITY: 95 L/min. / CAVITY: T-53AD









This valve is a 2-way, 2-position proportional throttle. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design, Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide position confirmation.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	160 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Seal kit - Cartridge	Buna: 990053007
Seal kit - Cartridge	Viton: 990053006

NOTES

When installed in Sun's standard T-53A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTEAZCN

SPOOL CONFIGURATION

(C) SEAL MATERIAI

(N)

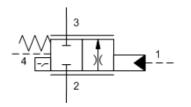
C Normally Closed
H Normally Open

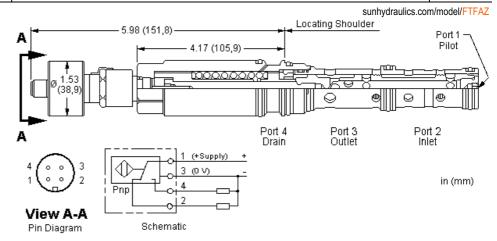
N Buna-N V Viton

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2-way, pilot-shifted, dual path, proportional throttle with position switch SERIES 3 / CAPACITY: 200 L/min. / CAVITY: T-53AD







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The metering passage is self-compensating.

This valve uses a dual-path design. Ports 2 and 3 incorporate a double-port area.

This valve incorporates a position switch to provide confirmation that the valve is closed.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Pilot Pressure Required for Full Shift at Rated Flow	20 - 23 bar
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	160 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Seal kit - Cartridge	Buna: 990053007
Seal kit - Cartridge	Viton: 990053006

NOTES

When installed in Sun's standard T-53A line mount manifold, plug unused ports and expect higher pressure drops.

CONFIGURATION OPTIONS

Model Code Example: FTFAZCN

SPOOL CONFIGURATION (C) SEAL MATERIAL (N

C Normally Closed N Buna-N
V Viton

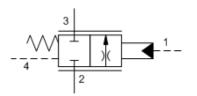
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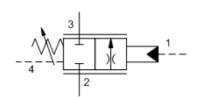
2-way, pilot-shifted, proportional throttle

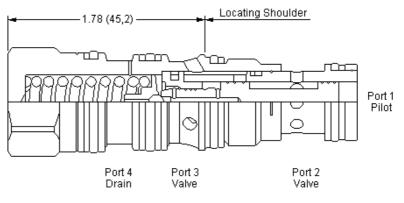
SERIES 1 / CAPACITY: 20 L/min. / CAVITY: T-21A



sunhydraulics.com/model/FKBA







in (mm)

This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	0,33 cc
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	EPDM: 990021014
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: FKBAXCN

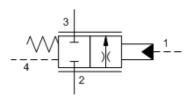
CONTROL	(X)	SPOOL CONFIGURATION	(C)	SEAL MATERIAL	(N)	MATERIAL/COATING	
X Not Adjustable		C Normally Closed		N Buna-N		Standard Material/Coating	
L Tuning Adjustment				E EPDM		/AP Stainless Steel, Passivated	
				V Viton			

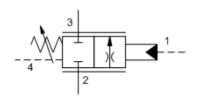
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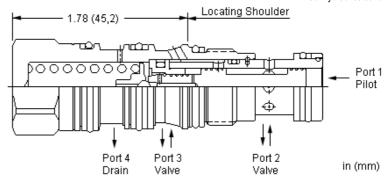
2-way, pilot-shifted, proportional throttle, high capacity SERIES 1 / CAPACITY: 34 L/min. / CAVITY: T-21A



sunhydraulics.com/model/FKCA







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	0,33 cc
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: FKCAXCN

CONTROL	(X)	SPOOL CONFIGURATION	(C)	SEAL MATERIAL	(N)
X Not Adjustable		C Normally Closed		N Buna-N	
L Tuning Adjustment				V Viton	

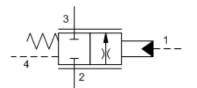
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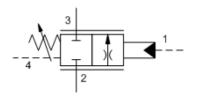


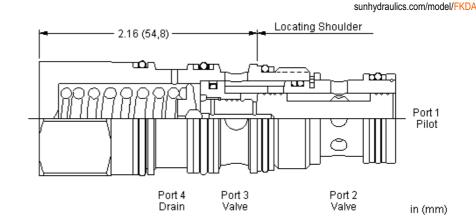
2-way, pilot-shifted, proportional throttle

SERIES 2 / CAPACITY: 40 L/min. / CAVITY: T-22A









This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	.03 in ³
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022002
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: FKDAXCN

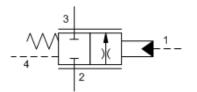
CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL	(N)
X Not Adjustable	C Normally Closed	N Buna-N	
I Tuning Adjustment		V Viton	

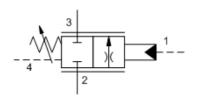
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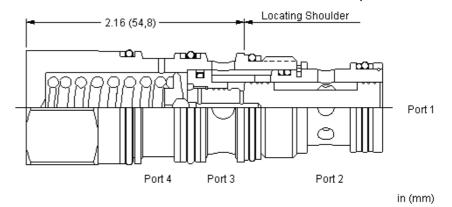
2-way, pilot-shifted, proportional throttle, high capacity SERIES 2 / CAPACITY: 80 L/min. / CAVITY: T-22A



sunhydraulics.com/model/FKEA







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	4,9 cc
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	±2%
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022002
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: FKEAXCN

CONTROL	(X)	SPOOL CONFIGURATION	(C)	SEAL MATERIAL	(N)
X Not Adjustable		C Normally Closed		N Buna-N	
L Tuning Adjustment				V Viton	

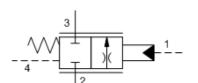
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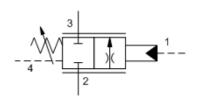


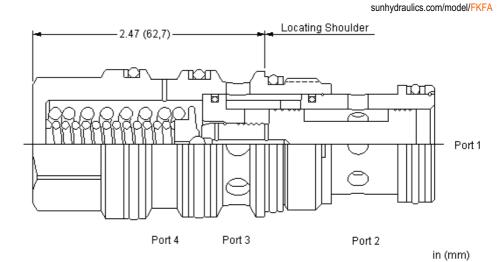
2-way, pilot-shifted, proportional throttle

SERIES 3 / CAPACITY: 80 L/min. / CAVITY: T-23A









This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	65 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	±2%
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

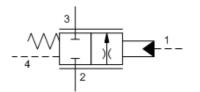
Model Code Example: FKFAXCN

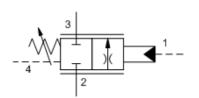
CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL	(N)
X Not Adjustable	C Normally Closed	N Buna-N	
L Tuning Adjustment		V Viton	

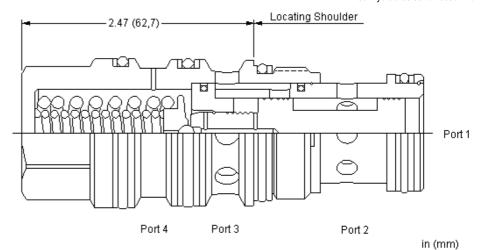
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sunhydraulics.com/model/FKGA







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	65 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	±2%
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	EPDM: 990023014
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: FKGAXCN

CONTROL (X) SPOOL CONFIGURATION (C) SEAL MATERIAL (N

X Not Adjustable C Normally Closed N Buna-N

L Tuning Adjustment E EPDM
V Viton

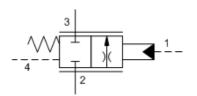
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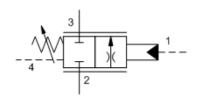


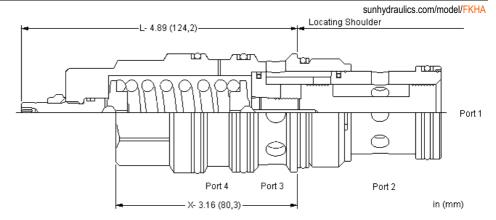
2-way, pilot-shifted, proportional throttle

SERIES 4 / CAPACITY: 160 L/min. / CAVITY: T-24A









This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	98 cc/min.@70 bar
Pilot Volume Displacement	3,3 cc
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: FKHAXCN

CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	C Normally Closed	N Buna-N	Standard Material/Coating
L Tuning Adjustment	· ·	V Viton	/AP Stainless Steel, Passivated

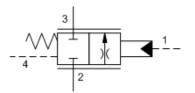
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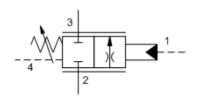


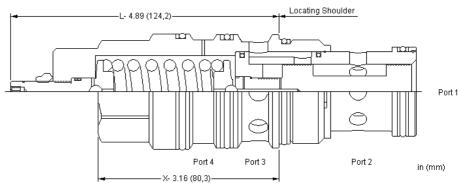
2-way, pilot-shifted, proportional throttle, high capacity SERIES 4 / CAPACITY: 240 L/min. / CAVITY: T-24A



sunhydraulics.com/model/FKIA







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	98 cc/min.@70 bar
Pilot Volume Displacement	3,3 cc
Minimum Pilot Pressure to Operate	7 bar
Hysteresis	±2%
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: FKIAXCN

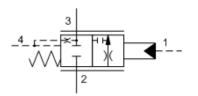
CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL	(N) MATERIAL/COATING
X Not Adjustable	C Normally Closed	N Buna-N	Standard Material/Coating
I Tuning Adjustment		V Viton	/AP Stainless Steel Passivated

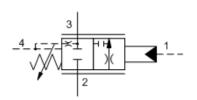
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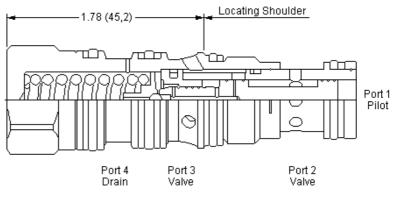
2-way, pilot-shifted, proportional throttle with bleed down SERIES 1 / CAPACITY: 20 L/min. / CAVITY: T-21A



sunhydraulics.com/model/FKBB







in (mm)

This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port 1.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	0,33 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	±2%
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: FKBBXCN

CONTROL (X) SPOOL CONFIGURATION (C) SEAL MATERIAL (N) MATERIAL/COATING

X Not AdjustableL Tuning Adjustment

C Normally Closed

N Buna-N
V Viton

/AP Stainless Steel, Passivated /LH Mild Steel, Zinc-Nickel

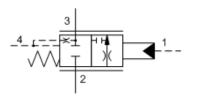
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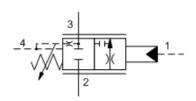
2-way, pilot-shifted, proportional throttle with bleed down, high capacity

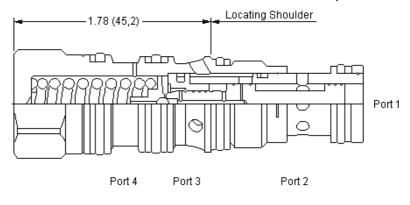
SERIES 1 / CAPACITY: 34 L/min. / CAVITY: T-21A



sunhydraulics.com/model/FKCB







in (mm)

This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port 1.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	0,33 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	±2%
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990021007
Seal kit - Cartridge	Polyurethane: 990021002
Seal kit - Cartridge	Viton: 990021006

CONFIGURATION OPTIONS

Model Code Example: FKCBXCN

CONTROL (X) SPOOL CONFIGURATION (C) SEAL MATERIAL (N

X Not Adjustable C Normally Closed N Buna-N

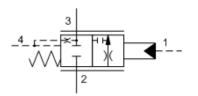
L Standard Screw Adjustment V V Viton

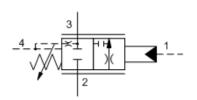
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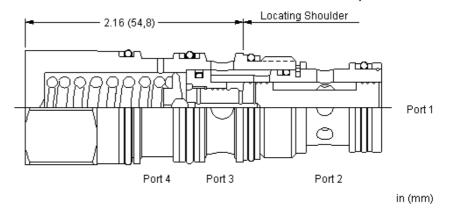
2-way, pilot-shifted, proportional throttle with bleed down SERIES 2 / CAPACITY: 40 L/min. / CAVITY: T-22A



sunhydraulics.com/model/FKDB







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port 1.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	4,9 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022002
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: FKDBXCN

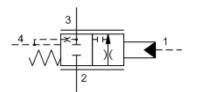
CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL	(N)
X Not Adjustable	C Normally Closed	N Buna-N	
L Tuning Adjustment	<u> </u>	V Viton	

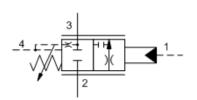
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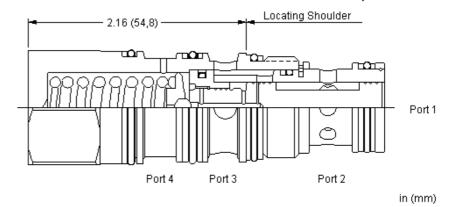
2-way, pilot-shifted, proportional throttle with bleed down, high capacity SERIES 2 / CAPACITY: 80 L/min. / CAVITY: T-22A



sunhydraulics.com/model/FKEB







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port 1.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	30 cc/min.@70 bar
Pilot Volume Displacement	4,9 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990022002
Seal kit - Cartridge	Polyurethane: 990022002
Seal kit - Cartridge	Viton: 990022006

CONFIGURATION OPTIONS

Model Code Example: FKEBXCN

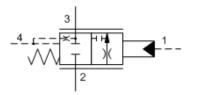
CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL	(N)
X Not Adjustable	C Normally Closed	N Buna-N	
L Tuning Adjustment		V Viton	<u> </u>

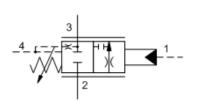
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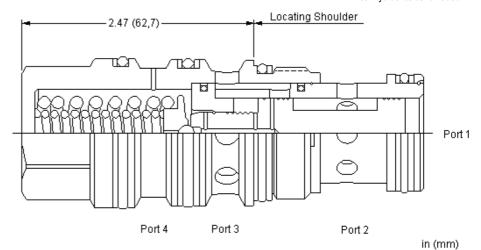
2-way, pilot-shifted, proportional throttle with bleed down SERIES 3 / CAPACITY: 80 L/min. / CAVITY: T-23A



sunhydraulics.com/model/FKFB







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	65 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	EPDM: 990023014
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: FKFBXCN

CONTROL (X) SPOOL CONFIGURATION (C) SEAL MATERIAL X Not Adjustable N Buna-N **E** EPDM

L Tuning Adjustment

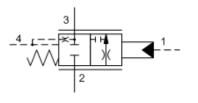
V Viton

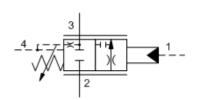
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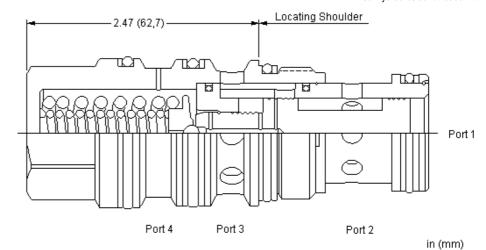
2-way, pilot-shifted, proportional throttle with bleed down, high capacity SERIES 3 / CAPACITY: 120 L/min. / CAVITY: T-23A



sunhydraulics.com/model/FKGB







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	65 cc/min.@70 bar
Pilot Volume Displacement	1,6 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990023007
Seal kit - Cartridge	Polyurethane: 990023002
Seal kit - Cartridge	Viton: 990023006

CONFIGURATION OPTIONS

Model Code Example: FKGBXCN

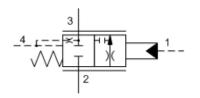
CONTROL SPOOL CONFIGURATION (C) SEAL MATERIAL (N) X Not Adjustable N Buna-N L Tuning Adjustment V Viton

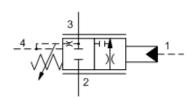
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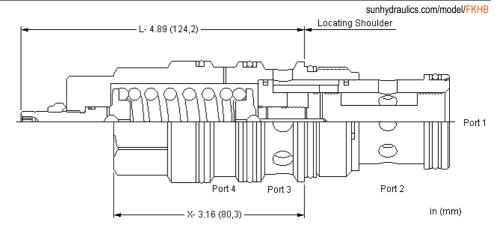


2-way, pilot-shifted, proportional throttle with bleed down SERIES 4 / CAPACITY: 160 L/min. / CAVITY: T-24A









This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port 1.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	98 cc/min.@70 bar
Pilot Volume Displacement	3,3 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: FKHBXCN

V Viton

 CONTROL
 (X)
 SPOOL CONFIGURATION
 (C)
 SEAL MATERIAL
 (N)

 X
 Not Adjustable
 C
 Normally Closed
 N
 Buna-N

 L
 Tuning Adjustment
 E
 EPDM

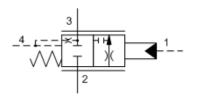
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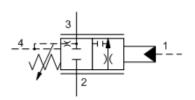


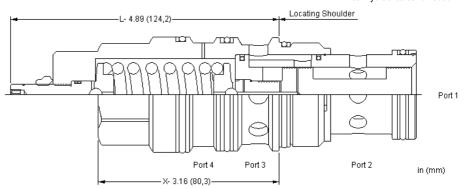
2-way, pilot-shifted, proportional throttle with bleed down, high capacity SERIES 4 / CAPACITY: 240 L/min. / CAVITY: T-24A



sunhydraulics.com/model/FKIB







This valve is a 2-way, 2-position proportional throttle. Ports 2 and 3 are normally closed. Pilot pressure at port 1 creates a metering orifice between port 2 and 3 that is proportional to the pressure at 1. The force balance of the flow forces, spring and pilot pressure results in a degree of partial self-compensation as the load pressure changes.

This valve includes a bleed-down feature which connects ports 3 to 4 in the spring-biased position. The bleed-down feature is useful when the valve is used as a meter-in flow control in circuits which include counterbalance valves downstream of port 3. The bleed-down connection is closed as the valve is piloted with increasing pressure at port 1.

Pressure at port 4 directly opposes pressure at port 1.

TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	98 cc/min.@70 bar
Pilot Volume Displacement	3,3 cc
Minimum Pilot Pressure to Operate	7 bar
Bypass orifice	0,8 mm
Hysteresis	± 2 %
Adjustment - No. of CW Turns from Min. to Max. setting	5
Locknut Hex Size	15 mm
Locknut Torque	9 - 10 Nm
Seal kit - Cartridge	Buna: 990024007
Seal kit - Cartridge	EPDM: 990024014
Seal kit - Cartridge	Polyurethane: 990024002
Seal kit - Cartridge	Viton: 990024006

CONFIGURATION OPTIONS

Model Code Example: FKIBXCN

CONTROL	(X) SPOOL CONFIGURATION	(C) SEAL MATERIAL	(N)
X Not Adjustable	C Normally Closed	N Buna-N	
L Tuning Adjustment		E EPDM	
		V Viton	

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smart SOLUTIONS for DEMANDING applications



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