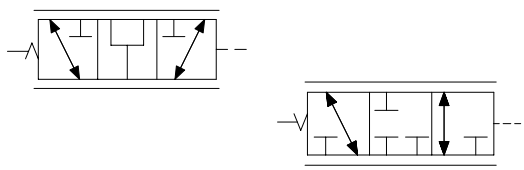
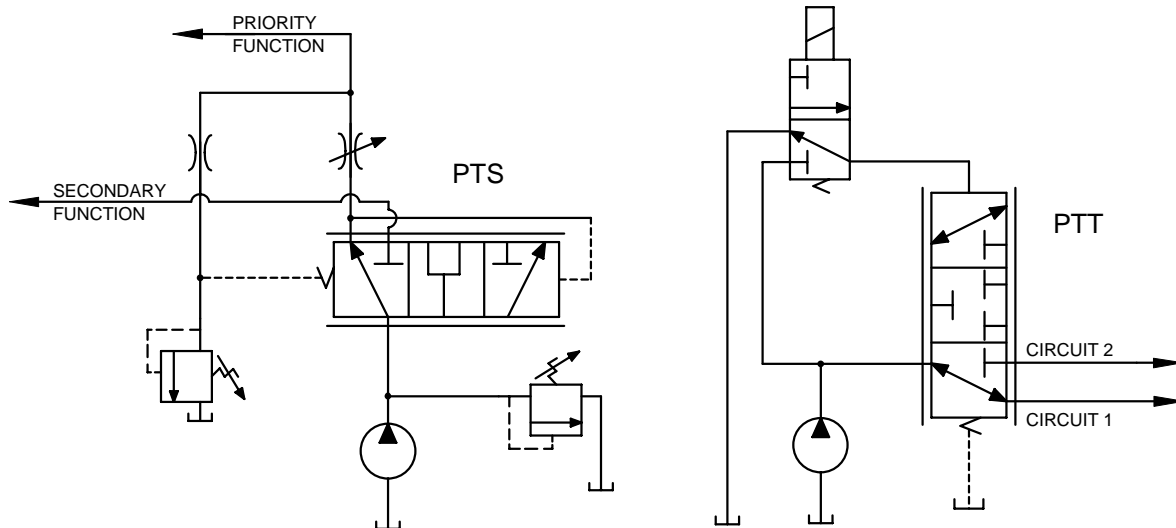


Pilot To Shift Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	40	3500	154	241	SO-PTS	
	40	3500	154	241	SO-PTT	

Typical Schematic

Typical application for a 3 way pilot to shift: PTS is used as a priority flow control valve and PTT is used as a selector valve.



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SO-PTS Pilot to Shift, 3 Way Valve, Open Transition

DESCRIPTION

16 size, 1 5/16 -12 thread, "Super" series, pilot to shift, 3 way valve, open transition.

OPERATION

In neutral the SO-PTS allows flow between ports (3) and (4), port (2) is blocked.

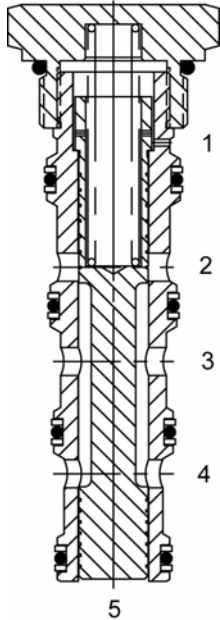
With application of a remote pilot signal at (5), the valve's spool shifts to allow flow between ports (2) and (3), while port (4) is blocked. During transition ports (2), (3), and (4) are open

The spring chamber is vented to the tank through port (1). The vented spring chamber allows the valve to be fully pressurized at ports (2), (3), and (4) without affecting required pilot pressure.

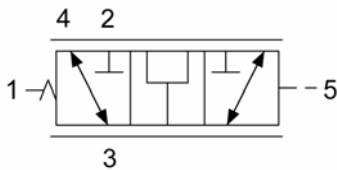
Pressure at (1) will affect required pilot pressure.

FEATURES

- Hardened parts for long life.
- Industry common cavity.



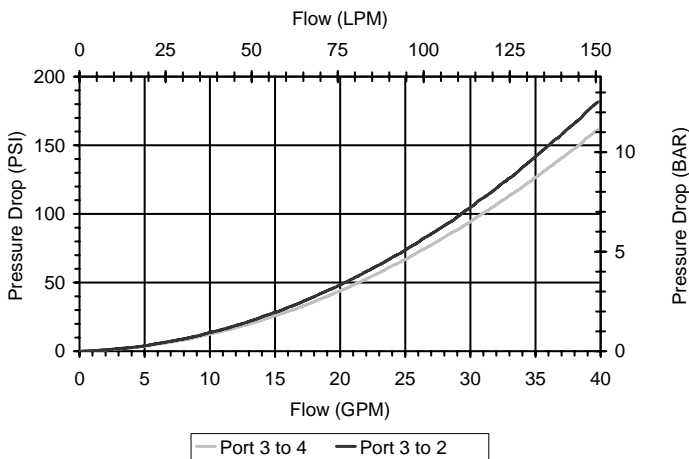
HYDRAULIC SYMBOL



A rate limiting orifice less than .060 diameter is recommended at port 5.

PERFORMANCE

Actual Test Data (Cartridge Only)

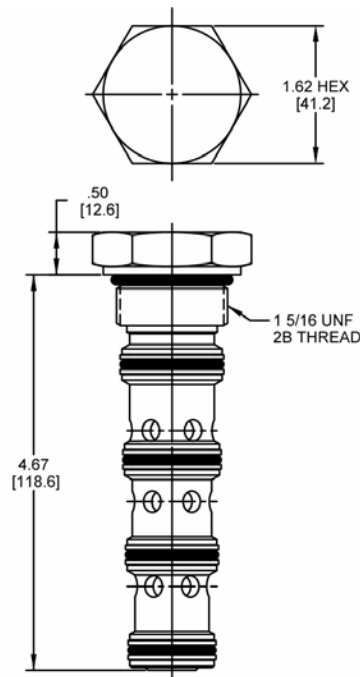


VALVE SPECIFICATIONS

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	1.11 lbs. (.50 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 5W
Cavity Tools kit (form tool, reamer, tap)	40500038
Seal Kit	21191410

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DIMENSIONS



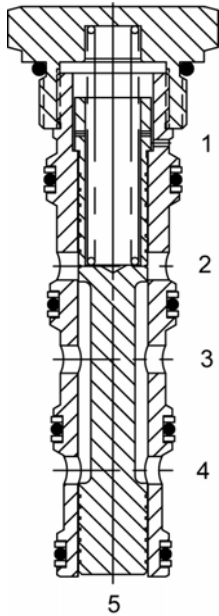
(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

SO-PTS		-	-	-	-
<u>OPTIONS</u>					<u>BODIES</u>
Buna Standard	00			Blank	Without Body
Viton Standard	V0			N	3/4" BSP Ports
				S	#12 SAE Ports
					<u>SPRING BIAS</u>
			0070		70 PSI
			0150		150 PSI
					+/- 10%

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SO-PTT Pilot to Shift, 3 Way Valve, Closed Transition



DESCRIPTION

16 size, 1 5/16 -12 thread, "Super" series, pilot to shift, 3 way valve, closed transition.

OPERATION

In neutral the SO-PTT allows flow between ports (3) and (4), port (2) is blocked.

With application of a remote pilot signal at (5), the valve's spool shifts to allow flow between ports (2) and (3), while port (4) is blocked. During transition all ports are closed.

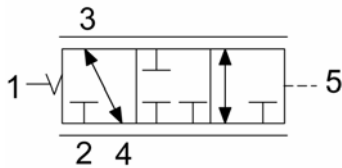
The spring chamber is vented to the tank through port (1). The vented spring chamber allows the valve to be fully pressurized at ports (2), (3), and (4) without affecting required pilot pressure.

Pressure at (1) will affect required pilot pressure.

FEATURES

- Hardened parts for long life.
- Industry common cavity.

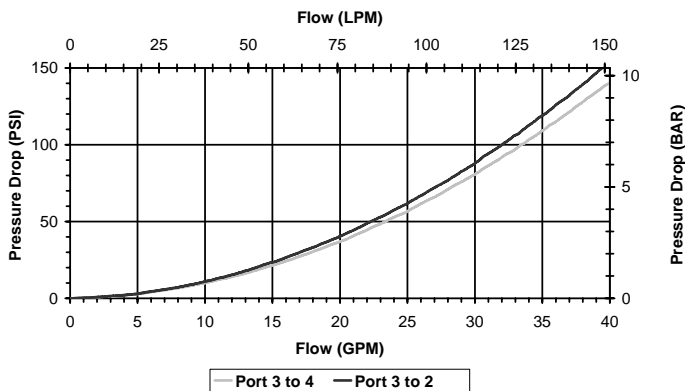
HYDRAULIC SYMBOL



A rate limiting orifice less than .060" diameter is recommended at port 5.

PERFORMANCE

Actual Test Data (Cartridge Only)

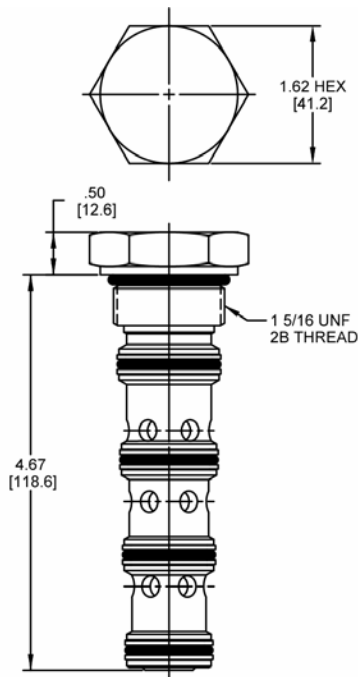


VALVE SPECIFICATIONS

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	1.08 lbs. (.49 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 5W
Cavity Tools kit (form tool, reamer, tap)	40500038
Seal Kit	21191410

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DIMENSIONS



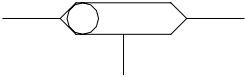
(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

SO-PTT		-	-	-	-
OPTIONS					BODIES
Buna Standard	00			Blank	Without Body
Viton Standard	V0			S	#12 SAE Ports
					SPRING BIAS
			0070		70 PSI
			0150		150 PSI
					±10%

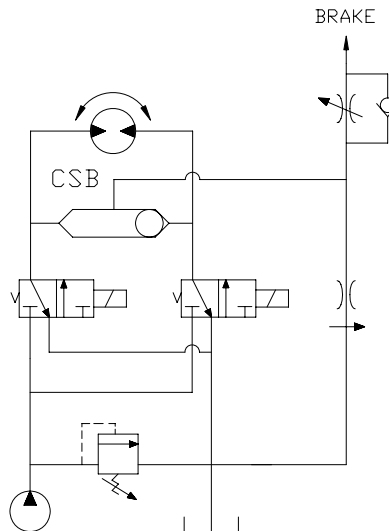
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Shuttle Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	6	3500	23	241	PP-CSB	96
	8	3500	30	241	DF-CSB	98
	1	5000	4	345	QS-CSB	100

Typical Schematic

Typical application for the CSB is load sense in a motor circuit with a spring loaded brake.



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PP-CSB Shuttle Valve

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, shuttle valve.

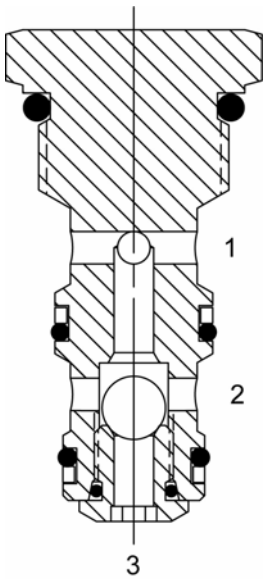
OPERATION

The PP-CSB allows flow from the higher pressure of (1) or (3) to (2).

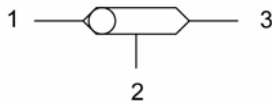
The valve is commonly used as a load sense to direct oil from the pressure side of a bidirectional hydraulic motor to a pressure released hydraulic brake.

FEATURES

- Hardened parts for long life.
- Industry common cavity.

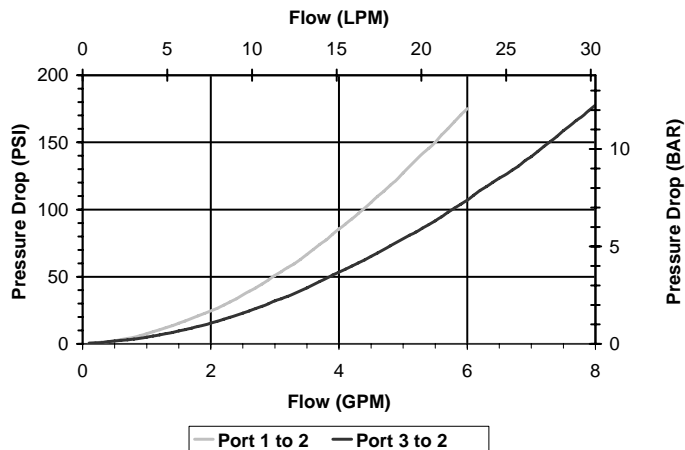


HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

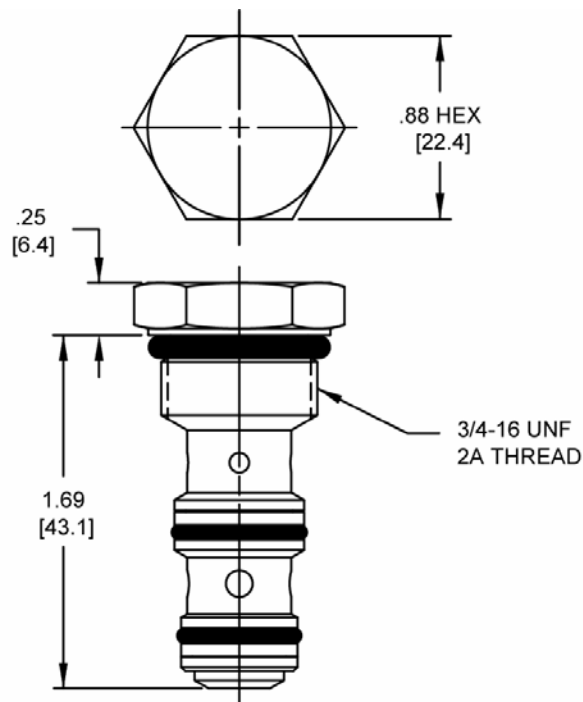


VALVE SPECIFICATIONS

Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.16 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER-3W
Cavity Tools kit (form tool, reamer,	40500024
Seal Kit	21191104

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DIMENSIONS



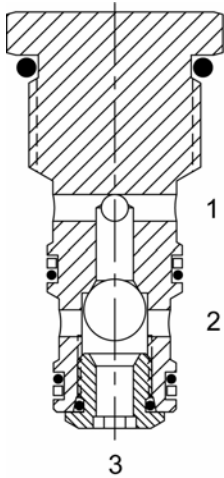
(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

PP-CSB - - -			
OPTIONS			BODIES
Buna Standard	00	Blank	Without Body
Viton Standard	V0	N	¼" BSP Ports
		S	#6 SAE Ports

WARNING: The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DF-CSB Shuttle Valve



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, shuttle valve.

OPERATION

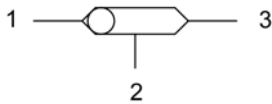
The DF-CSB allows flow from the higher pressure of (1) or (3) to (2).

The valve is commonly used as a load sense to direct oil from the pressure side of a bi directional hydraulic motor to a pressure released hydraulic brake.

FEATURES

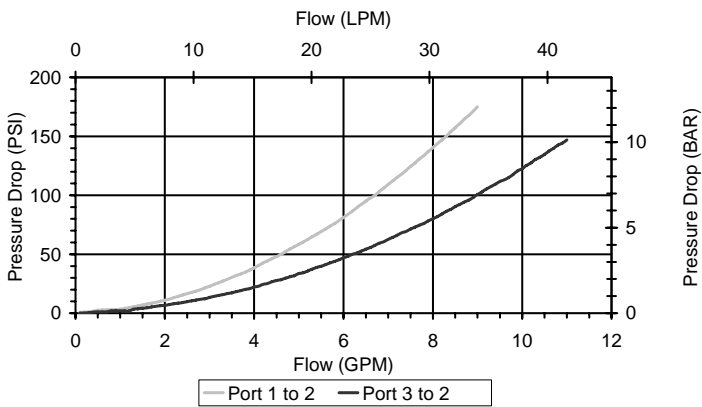
- Hardened parts for long life.
- Industry common cavity.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

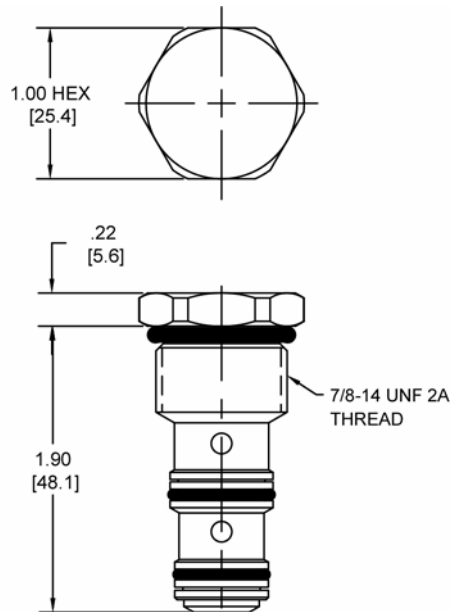


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30.3 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.22 lbs. (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Tools kit (form tool reamer, tap)	40500001
Seal Kit	21191206

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DIMENSIONS



(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

DF-CSB		-	-	
OPTIONS				BODIES
Buna Standard	00		Blank	Without Body
Viton Standard	V0		N	¼" BSP Ports
			S	#6 SAE Ports

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QS-CSB Shuttle Valve, Insert Type

DESCRIPTION

Special cavity, insert type, shuttle valve.

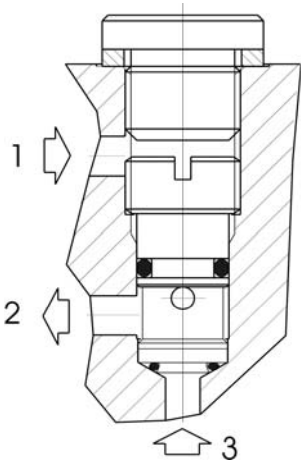
OPERATION

The QS-CSB allows flow from the higher pressure of (1) or (3) to (2). QS-CSB is an insert type valve, cavity must be plugged with a M10x1 plug.

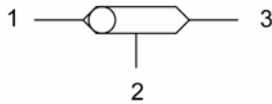
The valve is commonly used as a load sense to direct oil from the pressure side of a bidirectional hydraulic motor to a pressure released hydraulic brake.

FEATURES

- Hardened parts for long life.

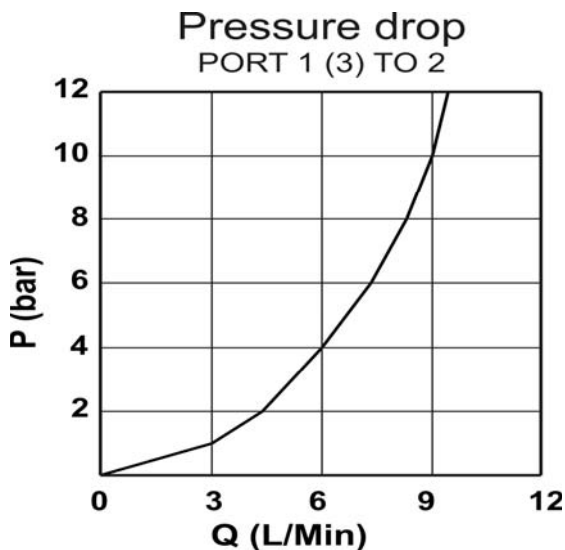


HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

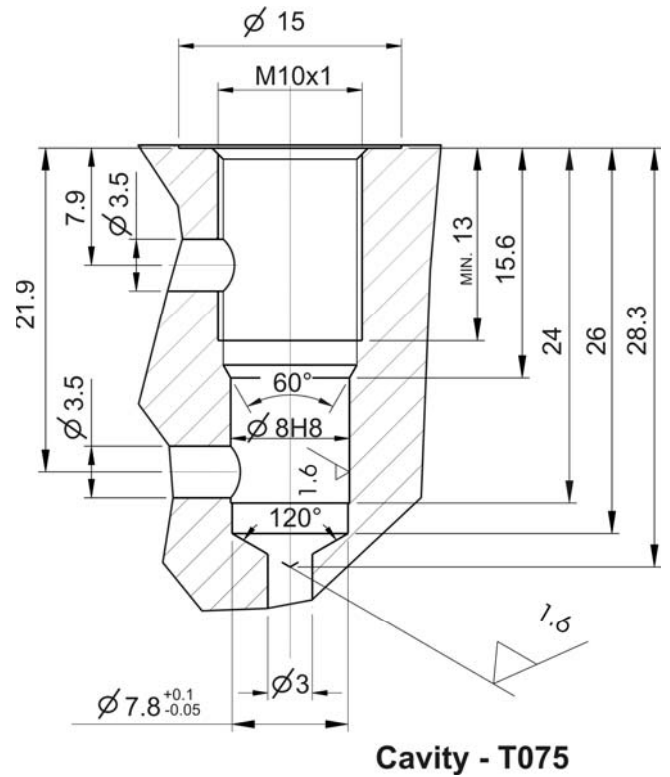
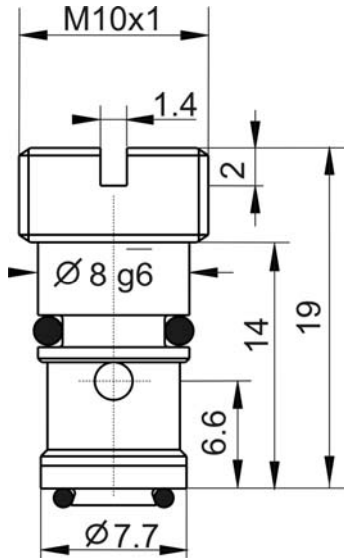


VALVE SPECIFICATIONS

Nominal Flow	1 GPM (4 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.16 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	10 – 12 Nm
Cavity	T075
Cavity Tools kit (form tool, reamer, tap)	K-T075

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DIMENSIONS



ORDERING INFORMATION

QS - CSB - - 00
OPTIONS
 Buna Standard 00
 Viton Standard V0

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