

MECHANICAL PRESSURE COMPENSATORS



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2 WAY COMPENSATING/REDUCING VALVES

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	8	3500	30	241	7/8-14	DF-CP2	MC4
	19	3500	70	241	Special	QC-CP2	MC6

TYPICAL SCHEMATIC

Typical application for the CP2 is in a proportional circuit to achieve pressure compensated flow control. The pressure compensator is located upstream of the orifice and is spring biased to an open position.

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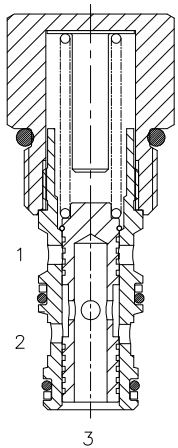


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DF-CP2 PRESSURE COMPENSATING/REDUCING VALVE



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, 2 ways pressure compensating/reducing valve.

OPERATION

The DF-CP2 allows pressure compensated flow from (2) to (3) regulated by the pressure present at (1). Pressure differential between (3) and (1) is fixed at 8/14/18 bar (according to the pressure settings). These are minimum values, increasing with the flow because of the pressure drop through the valve (see graph). When used with (1) connected to a drain line, it works as pressure reducing valve.

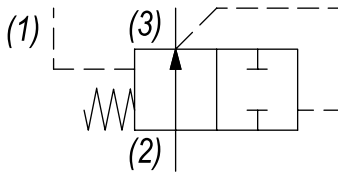
FEATURES

- Hardened parts for long life.
- Industry common cavity.
- Spring range 8 to 18 bar.



Pressure compensator for 2 way flow control, typically used with an external orifice inline with port (3). Port (1) should sense upstream pressure of orifice.

HYDRAULIC SYMBOL



PERFORMANCE

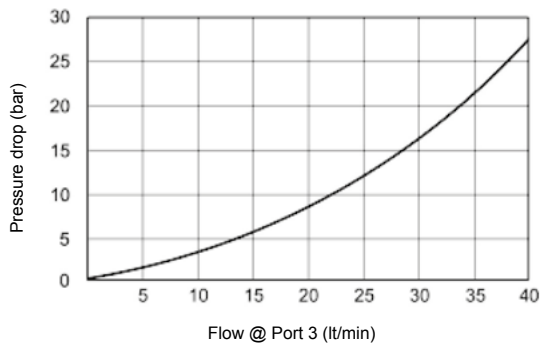
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-25° to +95°C
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	33 ft-lbs (45 Nm)
Cavity	DELTA 3W
Cavity Tools Kit (form tool, reamer, tap)	40500001
Seal Kit	210902025

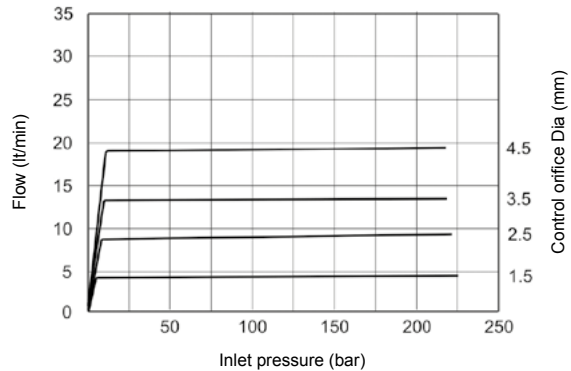
Pressure Drop (bar) vs. Flow (lt/min)

For various pressure compensator settings (bar)



DF-CP2 008 - Flow (lt/min) vs. inlet pressure (bar)

For various orifice diameters (mm)



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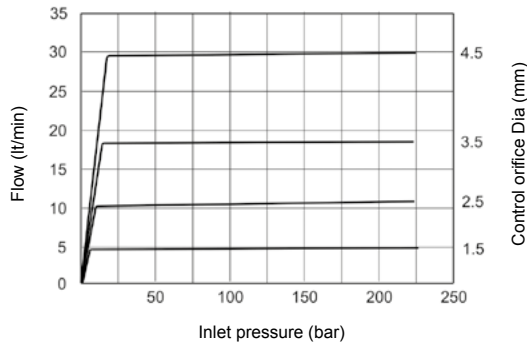
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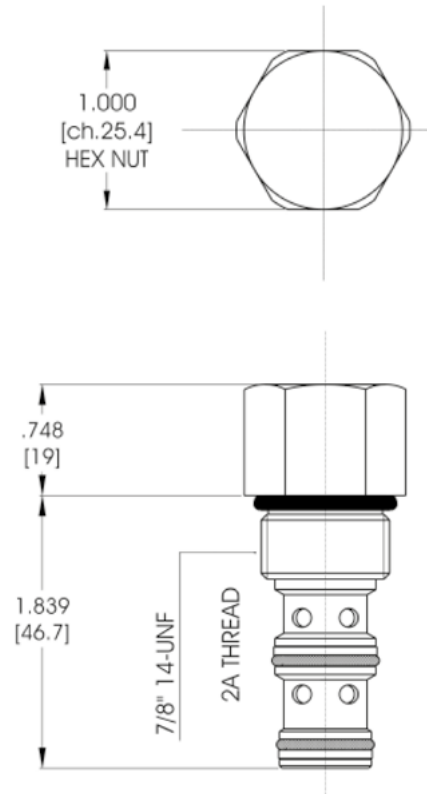
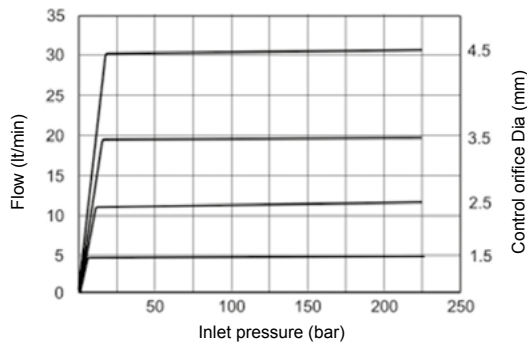
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DIMENSIONS

DF-CP2 014 - Flow (lt/min) vs. inlet pressure (bar)
For various orifice diameters (mm)



DF-CP2 018 - Flow (lt/min) vs. inlet pressure (bar)
For various orifice diameters (mm)



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

ORDERING INFORMATION

<p>DF-CP2 -</p> <p>OPTIONS</p> <p>Buna Standard 00</p> <p>Viton Standard V0</p>	<p>-</p> <p>-</p> <p>-</p>	<p>BODIES</p> <p>Blank Without Body</p> <p>N 3/8" BSP Ports</p> <p>S #6 SAE Ports</p>
<p>PRESSURE SETTINGS</p> <p>008 8 bar (115 PSI)</p> <p>014 14 bar (200 PSI)</p> <p>018 18 bar (260 PSI)</p>		

Differential Pressure Across
External Controlling Orifice

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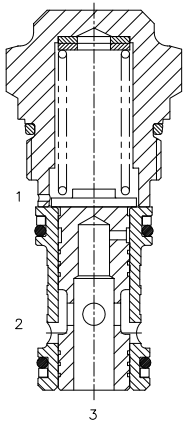


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QC-CP2 PRESSURE COMPENSATING/REDUCING VALVE



DESCRIPTION

Special cavity, 2 ways pressure compensating/reducing valve.

OPERATION

The QC-CP2 allows pressure compensated flow from (2) to (3) regulated by the pressure present at (1). Pressure differential between (3) and (1) is fixed at 8/14/18/24 bar (according to the pressure settings). These are minimum values, increasing with the flow because of the pressure drop through the valve (see graph). When used with (1) connected to a drain line, it works as a fix setting pressure reducing valve.

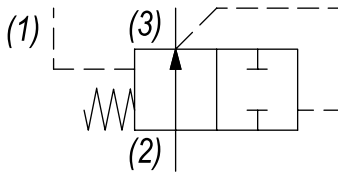
FEATURES

- Hardened parts for long life.
- Spring range 8 to 24 bar.



Pressure compensator for 2 way flow control, typically used with an external orifice inline with port (3). Port (1) should sense upstream pressure of orifice.

HYDRAULIC SYMBOL



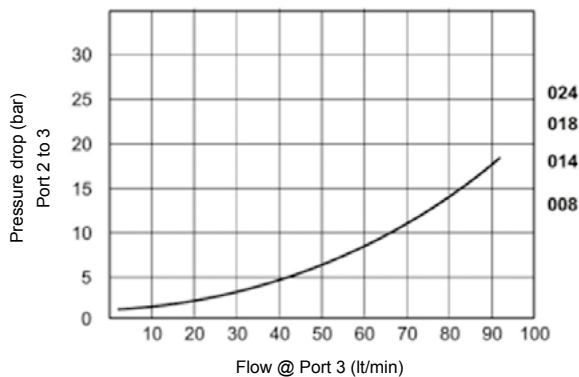
PERFORMANCE

Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS

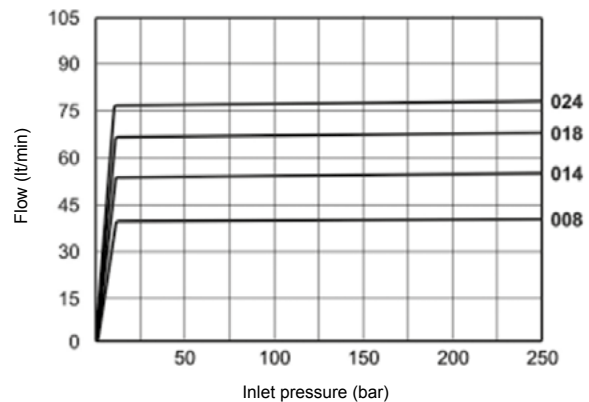
Nominal Flow	19 GPM (70 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	52 ft-lbs (70 Nm)
Cavity	T031 (Special)
Cavity Tools Kit (form tool, reamer, tap)	K-T031
Seal Kit	210902012

Pressure drop (bar) vs. flow (lt/min)



Flow (lt/min) vs. inlet pressure (bar)

For various press. compensator valve settings - Re: control orifice diameter: 5.5 mm



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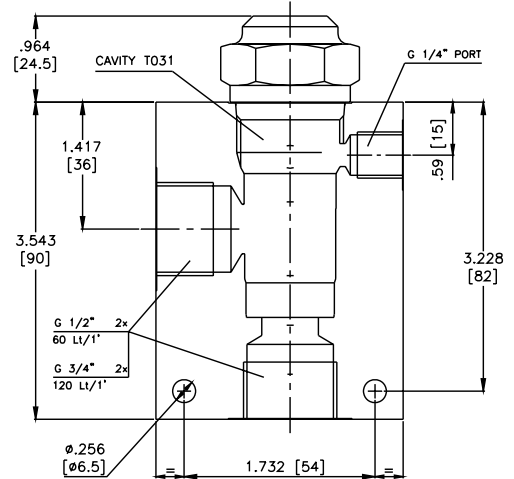
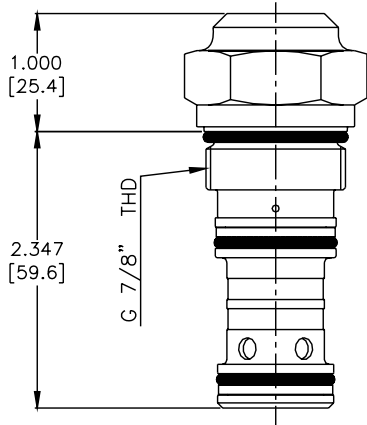
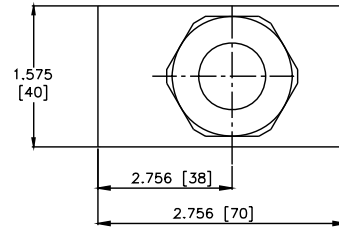
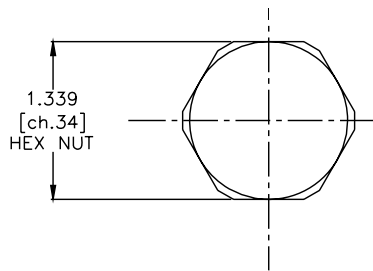


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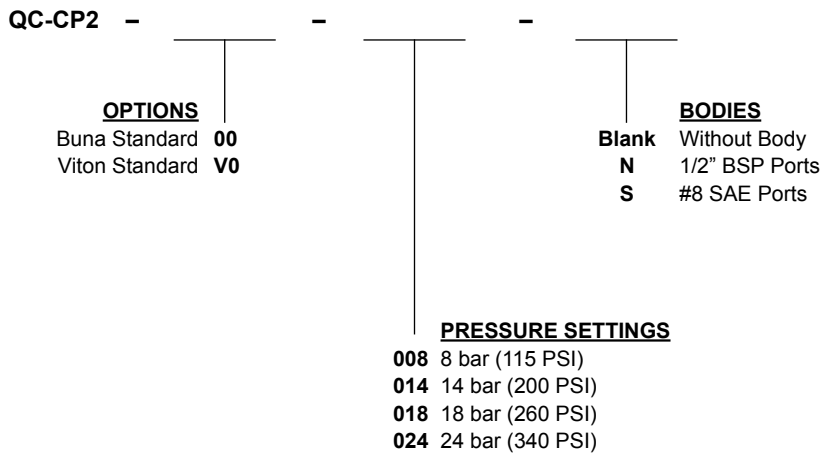
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DIMENSIONS



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

ORDERING INFORMATION



Differential Pressure Across
External Controlling Orifice

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2 WAY RESTRICTIVE TYPE COMPENSATORS

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3500	38	241	7/8-14	DF-TCS	MC10

TYPICAL SCHEMATIC

Typical application for the TCS is in a proportional circuit to achieve pressure compensated flow control. The pressure compensator is located downstream of the proportional valve and is spring biased to an open position.

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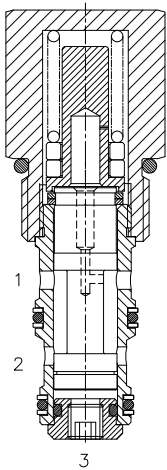


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DF-TCS PRESSURE COMPENSATING VALVE, RESTRICTIVE TYPE



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, pressure compensating valve, restrictive type.

OPERATION

The DF-TCS allows pressure compensated flow from (1) to (2) regulated the pressure present at (3). Pressure differential between (1) and (3) is fixed at 8/24 bar (according to the pressure settings). These are minimum values increasing with the flow because of the pressure drop through the valve (see graph).

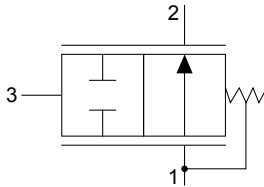
FEATURES

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



Pressure compensator for 2 way flow control, typically used with an external orifice inline with port (3). Port (1) should sense upstream pressure of orifice.

HYDRAULIC SYMBOL



PERFORMANCE

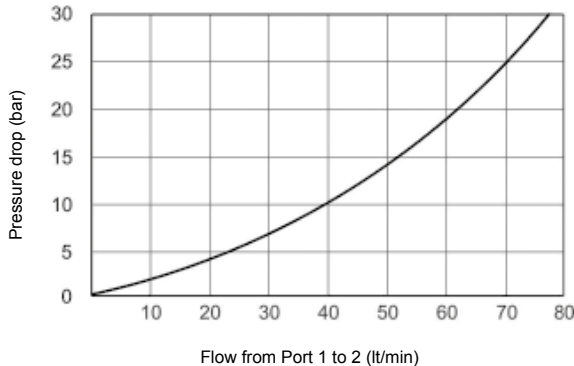
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	33 ft-lbs (45 Nm)
Cavity	DELTA 3W
Cavity Tools Kit (form tool, reamer, tap)	40500001
Seal Kit	210902026

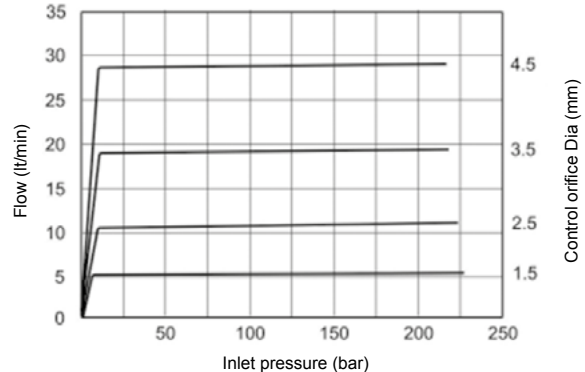
Pressure Drop (bar) vs. Flow (lt/min)

For various pressure compensator settings (bar)



DF-TCS 008 - Flow (lt/min) vs. inlet pressure (bar)

For various orifice diameters (mm)



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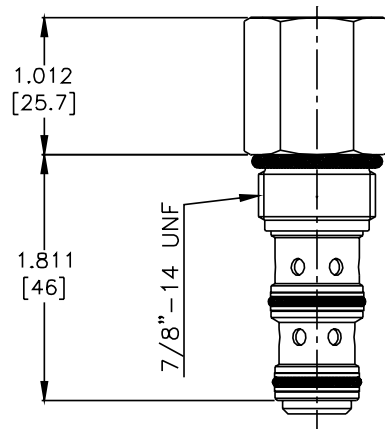
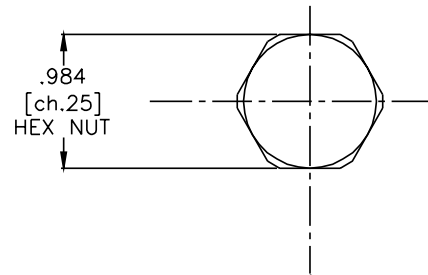
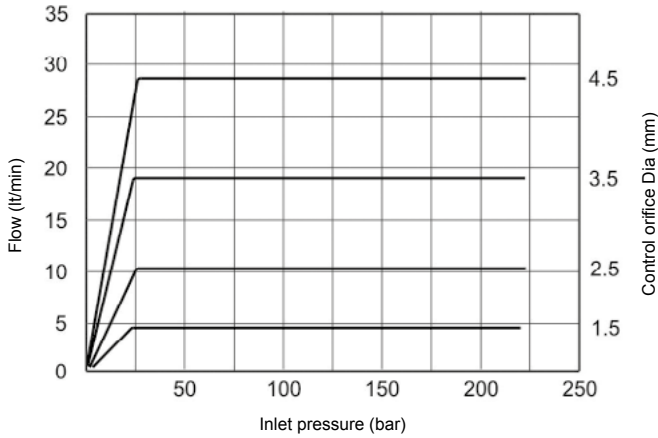
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DIMENSIONS

DF-TCS 024 - Flow (lt/min) vs. inlet pressure (bar)
For various orifice diameters (mm)



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

ORDERING INFORMATION

<p>DF-TCS - - -</p> <p>OPTIONS</p> <p>Buna Standard 00</p> <p>Viton Standard V0</p>	<p>BODIES</p> <p>Blank Without Body</p> <p>N 3/8" BSP Ports</p> <p>S #6 SAE Ports</p>
<p>PRESSURE SETTINGS</p> <p>008 8 bar (115 PSI)</p> <p>024 24 bar (340 PSI)</p>	

Differential Pressure Across
External Controlling Orifice

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2 WAY BYPASS TYPE FOR 3 WAY FLOW CONTROL

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3500	38	241	7/8-14	DF-PCR	MC14
	40	3500	151	241	1 1/16-12	TR-PCA	MC16
	40	3500	151	241	1 5/16-12	SL-PCA	MC18
	33	3500	120	241	Special	QC-CP3	MC20

TYPICAL SCHEMATIC

Typical application for the PCR, PCA and CP3 is in a proportional circuit to achieve pressure compensated flow control or as main stage of a ventable relief valve. The pressure compensator is bypass located and is spring biased to a closed position. The PCA-0V version is commonly used as main stage of a ventable relief valve.

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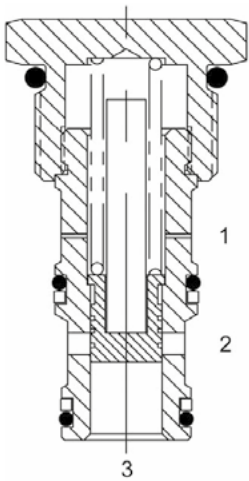


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DF-PCR PRESSURE COMPENSATING VALVE, BYPASS TYPE FOR 3 WAY FLOW CONTROL



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, pressure compensating regulator valve.

OPERATION

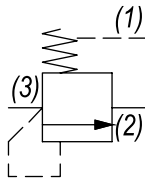
The DF-PCR-0P with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate from (3) to (2), (see options table for pressure ranges).

When used with an orifice as described above, as a priority type regulator, delivering pump flow first to (3), then bypassing excess to (2). All ports may be fully pressurized.

FEATURES

- Hardened parts for long life.
- Industry common cavity.
- Spring range from 3 to 21 bar.

HYDRAULIC SYMBOL



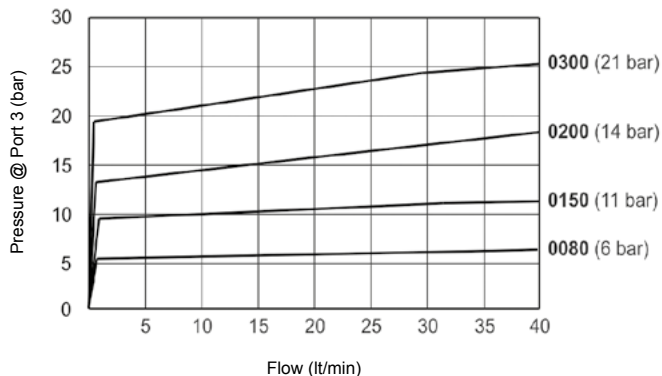
Pressure compensator for 3 way flow control, typically used with an external orifice between ports (3) and (1). Port (1) should sense upstream pressure of orifice. Can be used as a logic element.

PERFORMANCE

Actual Test Data (Cartridge Only)

Pressure (bar) vs. flow (lt/min)

For various pressure settings



VALVE SPECIFICATIONS

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.19 lbs (.08 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	45 ft-lbs (33 Nm)
Cavity	DELTA 3W
Cavity Tools Kit (form tool, reamer, tap)	40500001
Seal Kit	21191206

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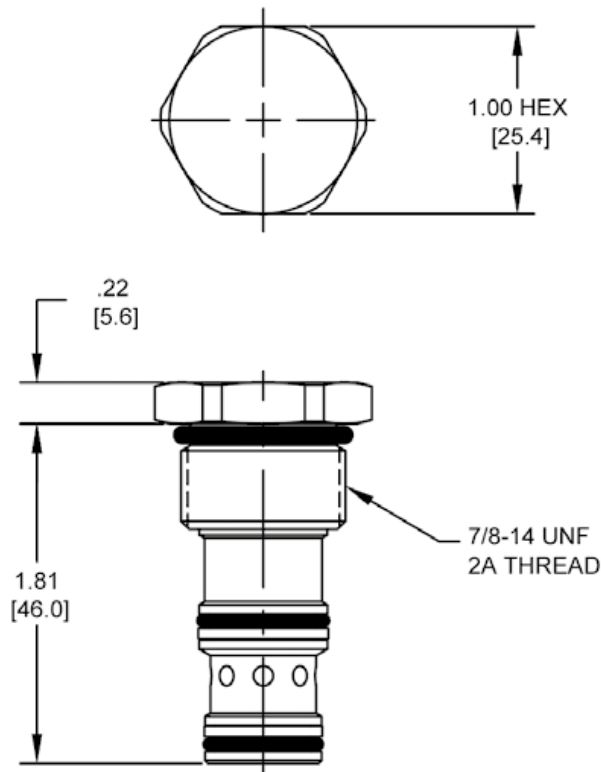


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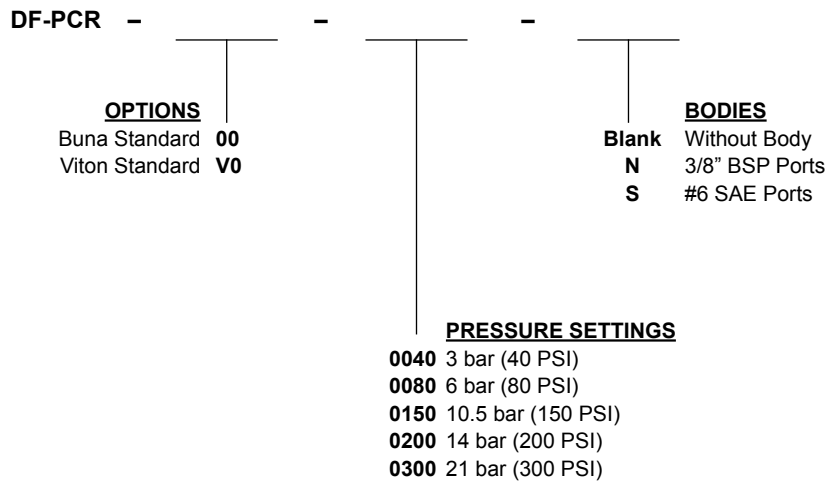
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DIMENSIONS



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

ORDERING INFORMATION



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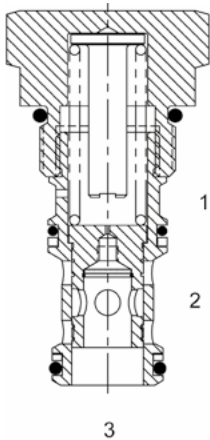


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TR-PCA PRESSURE COMPENSATING VALVE, BYPASS TYPE FOR 3 WAY FLOW CONTROL



DESCRIPTION

12 size, 1 1/16-12 thread, "Tecnom" series, pressure compensating regulator valve.

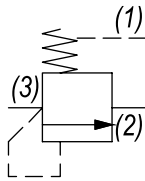
OPERATION

The TR-PCA-0P with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate across this external orifice (see options table for pressure ranges). When used with an orifice as described above, it functions as a priority type regulator, delivering pump flow first to the external orifice, then bypassing excess to (2). All ports may be fully pressurized. The TR-PCA-0V with a dump valve and a pilot relief valve at (1) acts as main stage of a ventable relief valve.

FEATURES

- Hardened parts for long life.
- Industry common cavity.
- Spring range from 20 to 230 PSI.

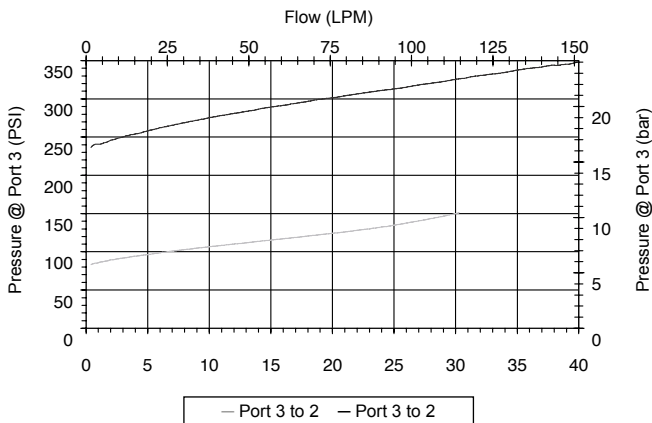
HYDRAULIC SYMBOL



Can be used as a logic element. TR-PCA-0P is commonly used as a bypass flow regulator (90 and 150 PSI recommended). TR-PCA-0V is commonly used as the main stage of a ventable relief valve (50 and 90 PSI recommended).

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.54 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 3W
Cavity Tools Kit (form tool, reamer, tap)	40500034
Seal Kit	21191306

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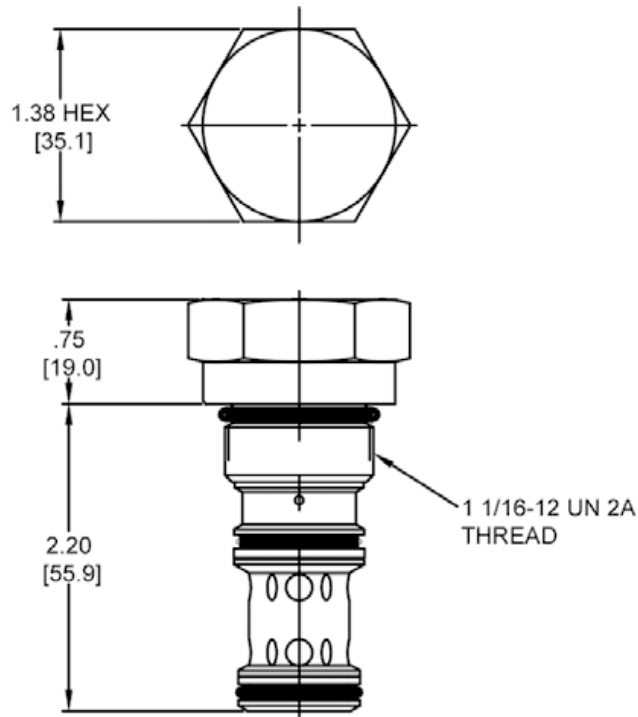


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DIMENSIONS



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

ORDERING INFORMATION

<p>TR-PCA -</p> <p>OPTIONS</p> <p>Buna, Pilot to Close OP</p> <p>Viton, Pilot to Close VP</p> <p>Buna, Vent to Open OV</p> <p>Viton, Vent to Open VV</p>	<p>-</p> <p>-</p> <p>-</p>	<p>BODIES</p> <p>Blank Without Body</p> <p>N 3/4" BSP Ports</p> <p>S #12 SAE Ports</p> <p>Δ P SETTINGS @ 1 GPM with Pilot Ventd</p> <p>0020 1.4 bar (20 PSI)</p> <p>0050 3.5 bar (50 PSI)</p> <p>0090 6.3 bar (90 PSI)</p> <p>0150 10.5 bar (150 PSI)</p> <p>0230 16.1 bar (230 PSI)</p> <p>±10%</p>
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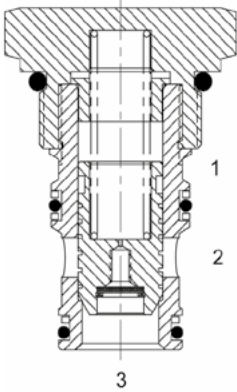


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SL-PCA PRESSURE COMPENSATING VALVE, BYPASS TYPE FOR 3 WAY FLOW CONTROL



DESCRIPTION

12 size, 1 5/16-12 thread, "Super" series, pressure compensating regulator valve.

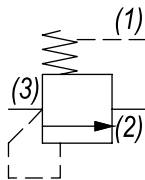
OPERATION

The SL-PCA-0P with an external orifice between ports (3) and (1) maintains a constant flow rate across the external orifice, regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across the external orifice, thereby regulating the hydraulic flow rate across the external orifice (see options table for pressure ranges). When used with an orifice as described above, it functions as a priority type regulator, delivering pump flow first to the external orifice, then bypassing excess to (2). All ports may be fully pressurized. The SL-PCA-0V with a dump valve and a pilot relief valve at (1) acts as main stage of a ventable relief valve.

FEATURES

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

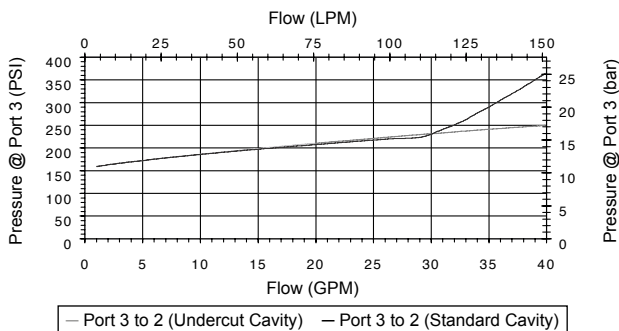
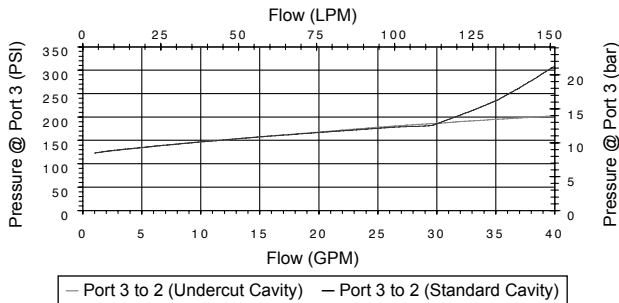
HYDRAULIC SYMBOL



Can be used as a logic element. SL-PCA-0P is commonly used as a bypass flow regulator (100 PSI recommended). SL-PCA-0V is commonly used as the main stage of a ventable relief valve (50 and 100 PSI recommended).

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Initially area of Pilot is 1.2 times the area at Port (3), then 1:1
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.70 lbs (.32 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3W SHORT
Cavity Tools Kit	
(form tool, reamer, tap)	40500021
Seal Kit	21191406

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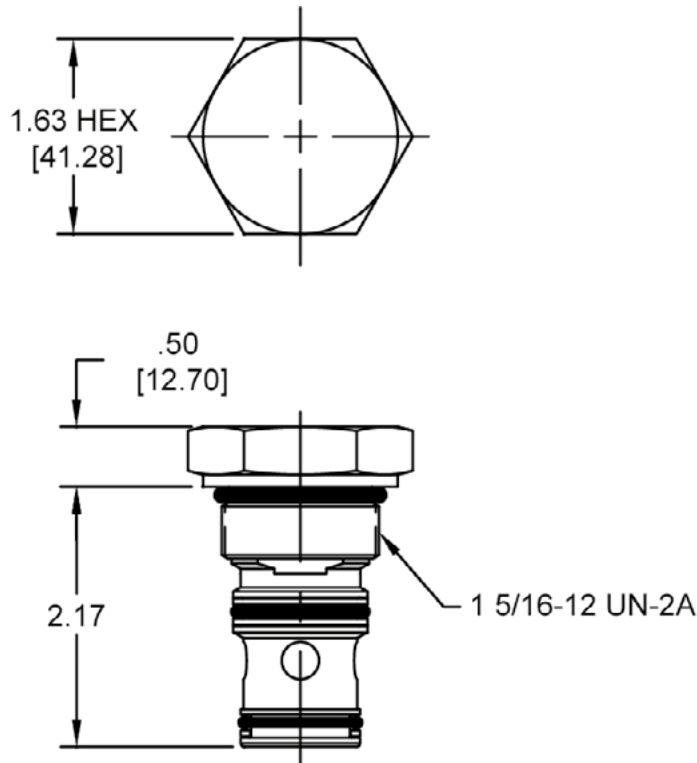


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DIMENSIONS



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

ORDERING INFORMATION

<p>SL-PCA - - -</p> <p>OPTIONS</p> <p>Buna, Pilot to Close OP</p> <p>Viton, Pilot to Close VP</p> <p>Buna, Vent to Open OV</p> <p>Viton, Vent to Open VV</p> <p>Buna, Pilot to Close with Seals OB</p> <p>Viton, Pilot to Close with Seals VB</p> <p>Buna, Vent to Open with Seals OC</p> <p>Viton, Vent to Open with Seals VC</p>	<p>BODIES</p> <p>Blank Without Body</p> <p>N 3/4" BSP Ports</p> <p>S #12 SAE Ports</p>
<p>Δ P SETTINGS @ 1 GPM with Pilot Vented</p> <p>0020 1.4 bar (20 PSI)</p> <p>0050 3.5 bar (50 PSI)</p> <p>0100 7 bar (100 PSI)</p> <p>0150 10.5 bar (150 PSI)</p> <p>±20%</p>	

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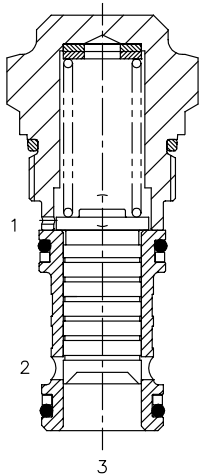


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QC-CP3 PRESSURE COMPENSATING VALVE, BYPASS TYPE FOR 3 WAY FLOW CONTROL



DESCRIPTION

Special cavity, pressure compensating valve, bypass type, for 3 way flow control, normally closed.

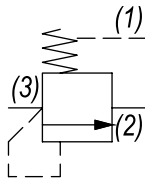
OPERATION

The QC-CP3 with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate from (3) to (2), (see options table for pressure ranges). When used with an orifice as described above, as a priority type regulator, delivering pump flow first to (3), then bypassing excess to (2). All ports may be fully pressurized.

FEATURES

- Hardened parts for long life.
- Spring range from 8 to 24 bar.

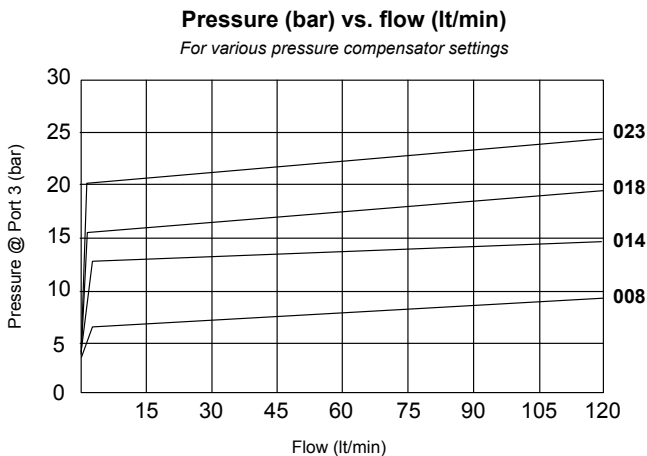
HYDRAULIC SYMBOL



Pressure compensator for 3 way flow control, typically used with an external orifice between ports (3) and (1). Port (1) should sense upstream pressure of orifice.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	33 GPM (120 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	52 ft-lbs (70 Nm)
Cavity	T031 (Special)
Cavity Tools Kit (form tool, reamer, tap)	K-T031
Seal Kit	210902321

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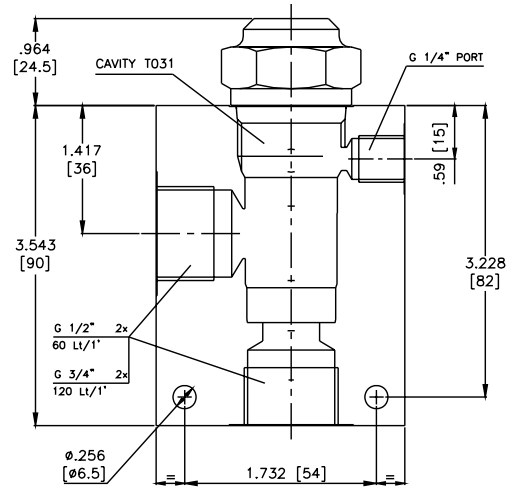
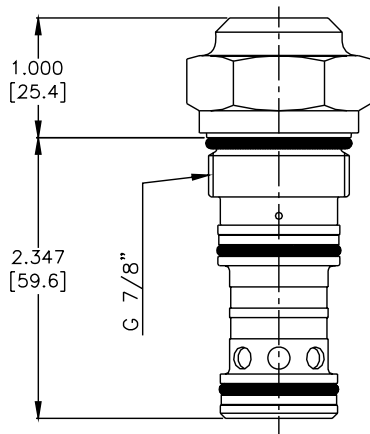
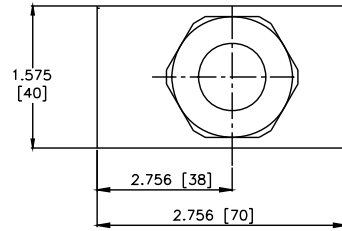
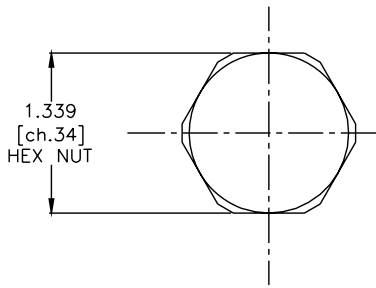


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DIMENSIONS



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

ORDERING INFORMATION

QC-CP3 - - -

OPTIONS

Buna Standard **00**
Viton Standard **V0**

BODIES

Blank Without Body
N 1/2" BSP Ports
S #8 SAE Ports

PRESSURE SETTINGS

008 8 bar (115 PSI) @ 60 l/min
014 14 bar (200 PSI) @ 60 l/min
018 18 bar (260 PSI) @ 60 l/min
023 23 bar (330 PSI) @ 60 l/min

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4 WAY PRIORITY TYPE COMPENSATOR WITH BYPASS LINE

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3500	38	241	7/8-14	DG-TCB	MC24

TYPICAL SCHEMATIC

Typical application for the TCB is in a proportional circuit to achieve pressure compensated flow control. The pressure compensator is located downstream of the proportional valve to achieve a pressure compensated flow control on the priority line, opening a secondary bypass line, when the differential pressure becomes too high, for all flow in excess of that demanded the control orifice.

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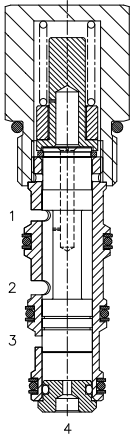


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DG-TCB PRESSURE COMPENSATING VALVE, RESTRICTIVE TYPE WITH BYPASS



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, pressure compensating valve, restrictive type with bypass.

OPERATION

The DG-TCB allows pressure compensated or proportional flow from (1) to (2) regulated by the pressure differential across (1) and (4) with a bypass of (4) to (3). The spring chamber is constantly connected at (1).

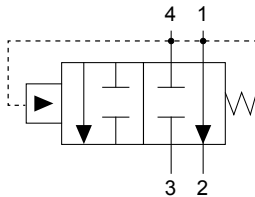
FEATURES

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



Bypass line (3) can be pressurized.

HYDRAULIC SYMBOL



PERFORMANCE

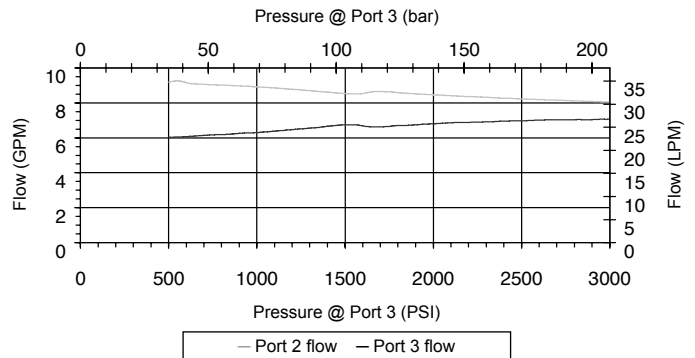
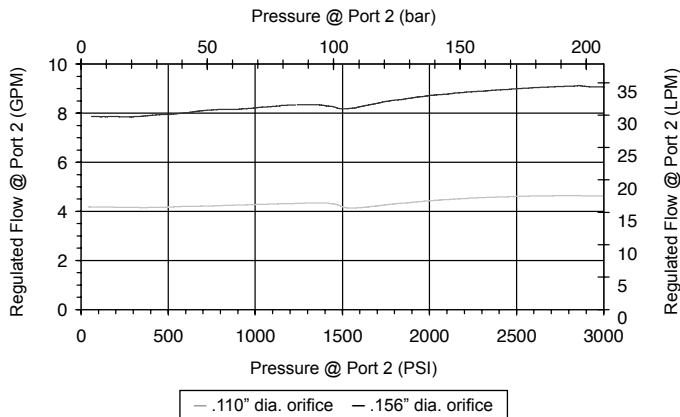
Actual Test Data (Cartridge Only)

VALVE SPECIFICATIONS

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.38 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Tools Kit (form tool, reamer, tap)	40500002
Seal Kit	21191214

10 GPM supply flow, .110" orifice, 150 PSI spring - 15 GPM supply flow, .156" orifice, 150 PSI spring - 1500 PSI load on port 3

Priority port 2 load: 1500 - 1700 PSI, .156" dia orifice, 15 GPM supply not intended for differential pressure > 1500 PSI port 4 to port 3



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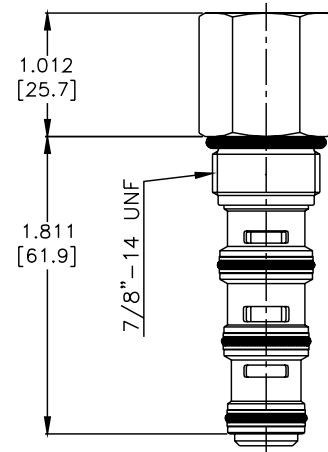
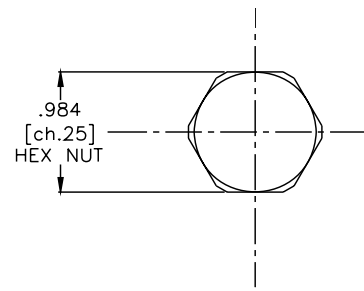
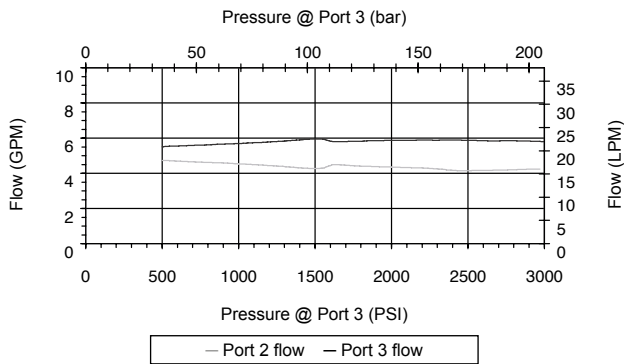
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DIMENSIONS

Priority port 2 load: 1500 - 1700 PSI, .110" dia orifice, 10 GPM supply
not intended for differential pressure > 1500 PSI port 4 to port 3



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

ORDERING INFORMATION

DG-TCB - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**

BODIES

- Blank** Without Body
- N** 3/8" BSP Ports
- S** #6 SAE Ports

PRESSURE SETTINGS

- 014** 14 bar (200 PSI)
- 020** 20 bar (285 PSI)
- 032** 32 bar (460 PSI)

Differential Pressure Across
External Controlling Orifice

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