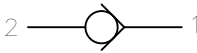
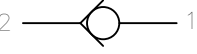
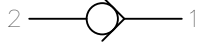
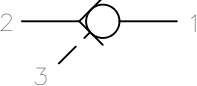
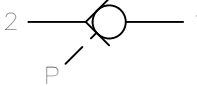
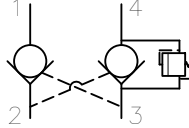
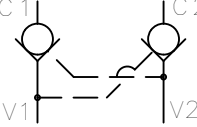
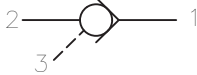
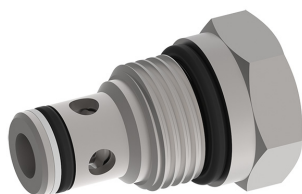


# Check Valves

	MODEL	DESCRIPTION	FLOW	CAVITY	PAGE NO.	
	<del>CVFP-08</del>	FORWARD GUIDED POPPET TYPE		replaced by CVPF-08		
	CVPF-08		10 GPM	C0820	1-041.0	
	CVFP-10		18 GPM	C1020	1-012.0	
	CVFP-12		36 GPM	C1220	1-013.0	
	CVFP-16		60 GPM	C1620	1-014.0	
	CVRP-08	REVERSE GUIDED POPPET TYPE	10 GPM	C0820	1-021.0	
	CVRP-10		18 GPM	C1020	1-022.0	
	CVRP-12		36 GPM	C1220	1-023.0	
	CVRP-16		50 GPM	C1620	1-024.0	
			CVFB-04	FORWARD GUIDED BALL TYPE	2.5 GPM	C0420
CVFB-08		10 GPM	C0820		1-031.0	
CVFB-10		18 GPM	C1020		1-032.0	
		POCI-08	PILOT OPERATED CHECK, INTERNAL PILOT		10 GPM	C0825
	POCI-10	18 GPM		C1025	1-102.0	
	POCI-12	35 GPM		C1225	1-103.0	
		POCX-08		PILOT OPERATED CHECK, EXTERNAL PILOT	10 GPM	C0820
POCX-10		18 GPM	C1020		1-112.0	
POCX-12		35 GPM	C1220		1-113.0	
		PDCV-08	PILOT OPERATED DUAL CHECK		5 GPM	C0840
	<del>POCD-08</del>	replaced by PDCV-08				
	POCD-10	10 GPM		C1040	1-132.0	
	DPOC-08	DUAL PILOT OPERATED CHECK	10 GPM	C0825	1-141.0	
	DPOC-10		18 GPM	C1025	1-142.0	
	DPOC-12		36 GPM	C1225	1-143.0	
			PTCC-10	PILOT OPERATED CHECK, CLOSEPILOT	10 GPM	C1025

# Cartridge Check Valve, Size SAE 08 / NG 5

$Q_{\max} = 10.0 \text{ gpm [38 l/min]}$ ,  $p_{\max} = 5000 \text{ psi [350 bar]}$   
 seat design, poppet style forward guided  
 Series CVPF-08...



- Compact construction for cavity type C0820
- Wide selection of bias springs allows flexibility for back-pressure applications
- 100% performance-tested
- All exposed parts with zinc plating
- Can be fitted in a line-mounting body
- Replaces CVFP-08...

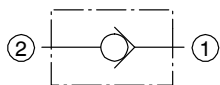
## 1 Description

This valve is a screw in cartridge type, guided poppet, hydraulic check valve. Use as a blocking or load holding device for 5000 psi (350 bar) applications. All external parts of the cartridge are zinc plated to DIN 50 979 and are thus sui-

table for use in the harshest operating environments. If you intend to manufacture your own cavities or are designing a line-mounting installation, please refer to the section "Related data sheets".

## 2 Symbol

USASI:



ISO:



## 3 Technical data

General characteristics	Description, value, unit	
Designation	cartridge check valve	
Design	seat design, poppet style forward guided	
Mounting method	screw-in cartridge 3/4-16 UNF-2B	
Size	SAE 08 / NG 5, for cavity type C0820	
Weight	0.15 lbs	[0.07 kg]
Mounting attitude	unrestricted	
Ambient temperature range	-40 °F ... +248 °F	[-40 °C ... +120 °C]

Hydraulic characteristics	Description, value, unit	
Maximum operating pressure	5000 psi	[350 bar]
Maximum flow rate	10.0 gpm	[38 l/min]
Flow direction	shut-off direction 2 → 1	
Opening pressure 1 → 2	5 / 15 / 30 / 60 psi	[.35 / 1 / 2 / 4 bar]
Leakage flow rate	5 drops @ 5000 psi	[5 drops @ 350 bar]
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER	
Hydraulic fluid temperature range	-13 °F ... +176 °F	[-25 °C ... +80 °C]

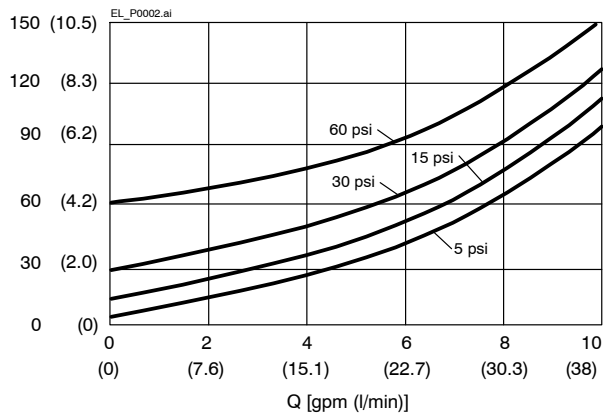
Hydraulic characteristics	Description, value, unit
Viscosity range	10...500 mm <sup>2</sup> /s (cSt), recommended 15...250 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 20/18/15

## 4 Performance graphs

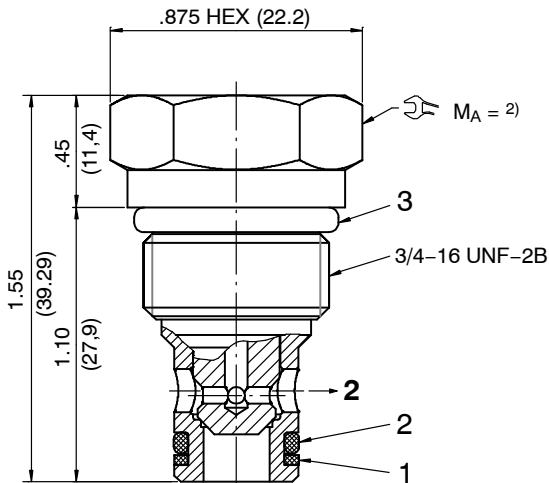
[measured with oil viscosity 33 mm<sup>2</sup>/s (cSt)]

$\Delta p = f(Q)$  Pressure drop - Flow rate characteristic

$\Delta p$  [psi (bar)]



## 5 Dimensions & sectional view



Tightening torque  $M_A$  <sup>2)</sup>

Cavity type	C0820
When fitted in aluminium	25...30 ft-lbs (34 - 42 [Nm])
When fitted in steel	35...40 ft-lbs (47 - 54 [Nm])

## 6 Installation information



### IMPORTANT!

When fitting the cartridges, use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



### ATTENTION!

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

### Seal kit

Item	Qty.	Description
1	1	Backup ring $\varnothing 9.5 \times 1.5$
2	1	O-ring no. 908 $\varnothing 0.644 \times 0.087$
3	1	O-ring $\varnothing 9.5 \times 1.5$



### IMPORTANT!

Item no. 5207300004 = Seal kit NBR (Buna)  
Item no. 5207300055 = Seal kit FKM (Viton)

## 7 Ordering code

CVPF - 08 - N - 0 - 005

CVPF	=	Check Valve Poppet-style Forward-guided
08	=	size SAE 08 / NG 5
N	=	NBR (Nitrile) seals (standard)
V	=	FKM (Viton) seals (special seals - please consult BUCHER)
0	=	cartridge only (standard)
02BA	=	line-mounting body G ¼ BSPP aluminum (on request)
02BS	=	line-mounting body G ¼ BSPP steel (on request)
06TA	=	line-mounting body SAE-#6 aluminum
06TS	=	line-mounting body SAE-#6 steel
		opening (crack) pressure
005	=	5 psi [.35 bar]
015	=	15 psi [1 bar]
030	=	30 psi [2 bar]
060	=	60 psi [4 bar]
120	=	120 psi [8 bar] (on request)

## 8 Related data sheets

Reference	(Old no.)	Description
520-P-000050		Form tools
520-P-000110	(0-011.0)	Cavity type C0820
520-P-000111	(0-011.1)	Line-mounting body, 8 Series – 2 way

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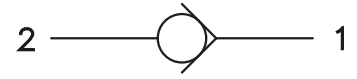
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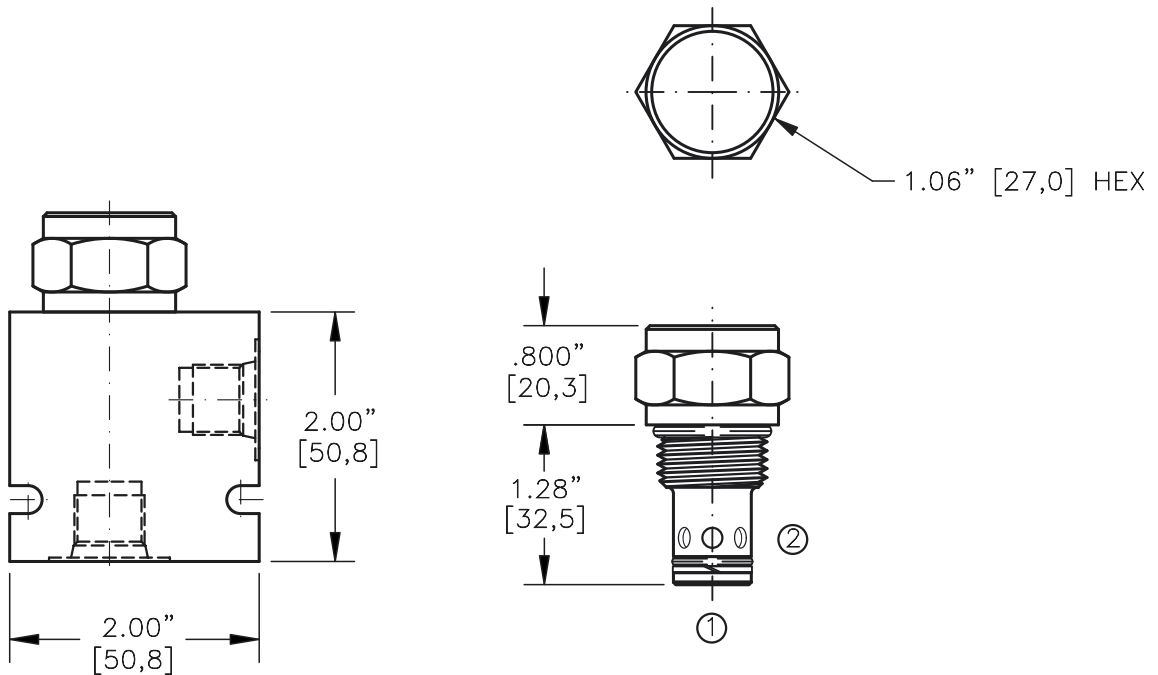
Classification: 430.315.340.305.310.330

CHECK VALVE FORWARD GUIDED POPPET



TORQUE:

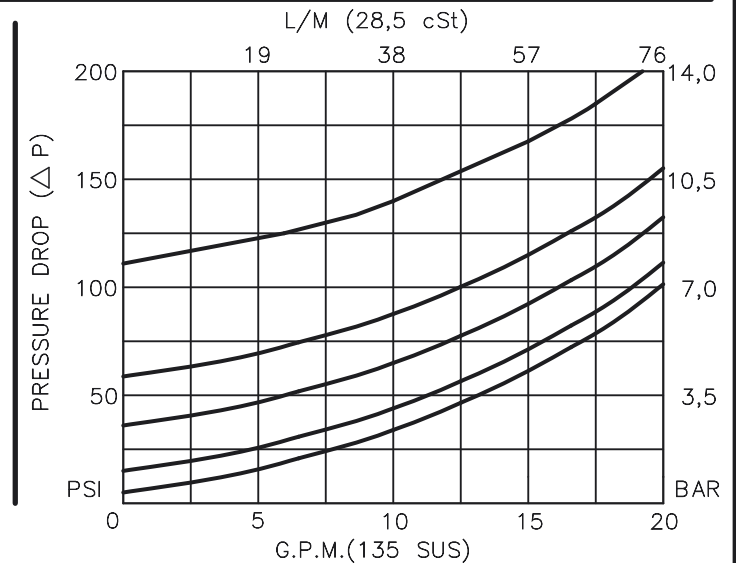
Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

**CVFP-10-X-X-XXX**

- BASIC
- SIZE  
10 = 7/8"-14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
005 = 5 PSI  
015 = 15 PSI  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI



## CHECK VALVE FORWARD GUIDED POPPET

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1 or holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 18.0 GPM [68 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1021 Buna "N"

SKV-1021 Viton

WEIGHT: .25 lb [.12 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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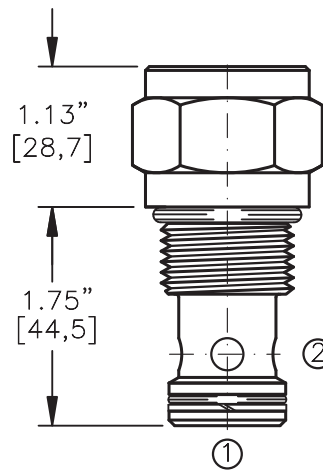
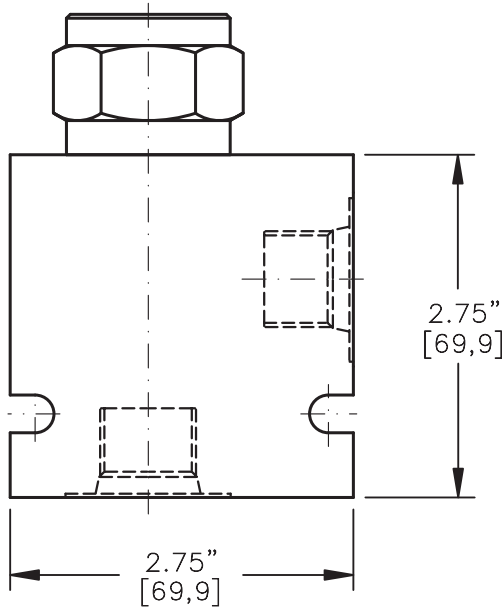
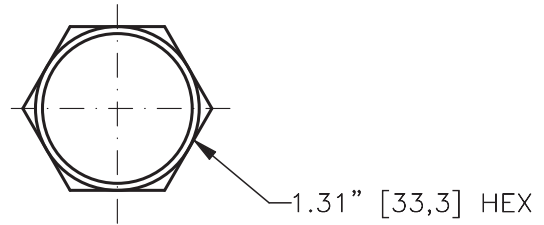
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CHECK VALVE FORWARD GUIDED POPPET



TORQUE:

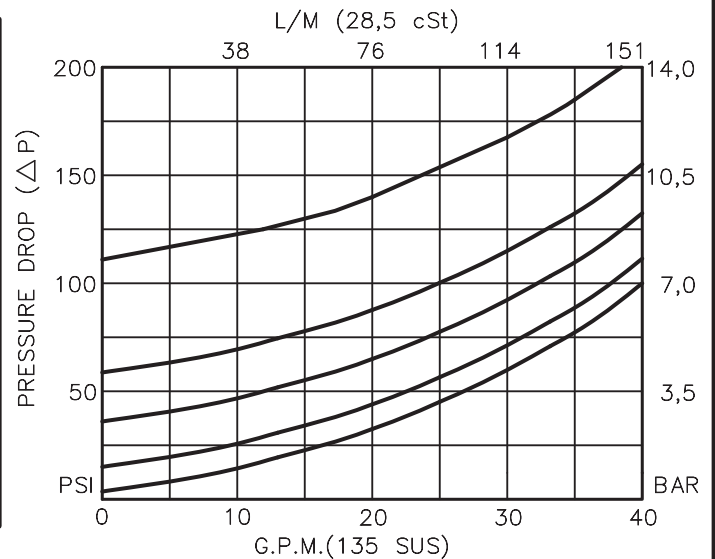
Steel = 70/75 Ft-Lb. [95/102 Nm]  
Aluminum = 55/60 Ft-Lb. [74/81 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-013.1

**CVFP-12-X-X-XXX**

- BASIC
- SIZE  
12 = 1.062"-12 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
005 = 5 PSI  
015 = 15 PSI  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI



## CHECK VALVE FORWARD GUIDED POPPET

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1 or holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 36.0 GPM [136 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1231 Buna "N"

SKV-1231 Viton

WEIGHT: 0.50 lb [0.22 kg] cartridge only.

VALVE CAVITY: #C1220, See Page 0-013.0.

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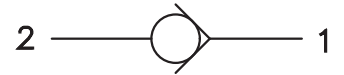
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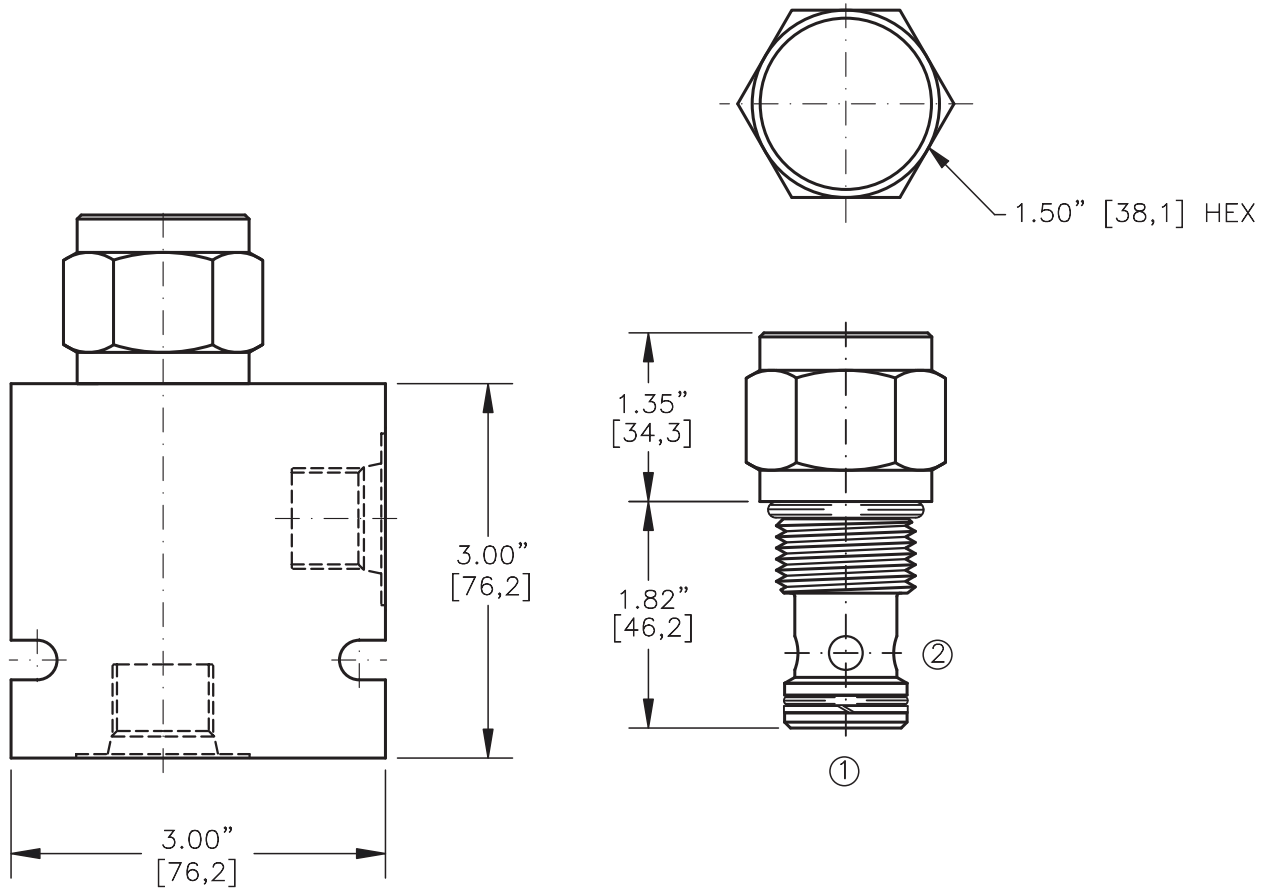


CHECK VALVE FORWARD GUIDED POPPET

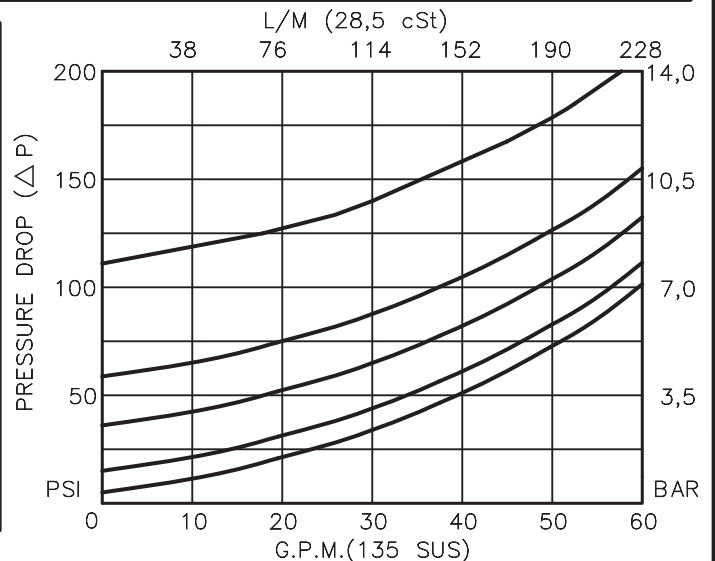
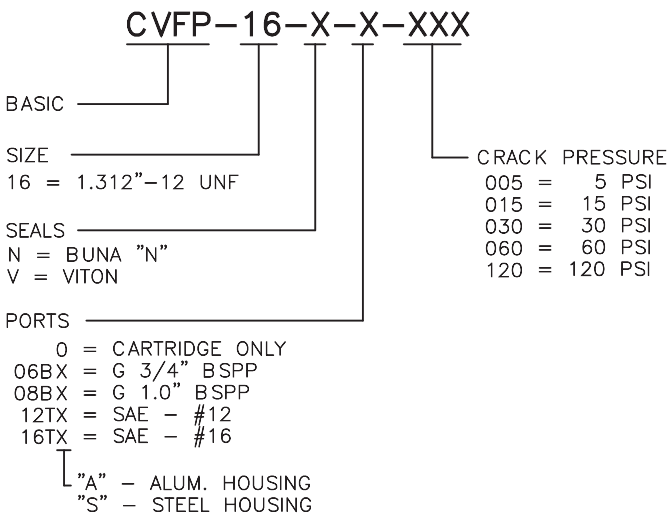


TORQUE:

Steel = 95/100 Ft-Lb. [129/136 Nm]  
Aluminum = 70/75 Ft-Lb. [95/102 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-014.1



## CHECK VALVE FORWARD GUIDED POPPET

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1 or holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 60.0 GPM [228 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1621 Buna "N"

SKV-1621 Viton

WEIGHT: 0.86 lb [0.39 kg] cartridge only.

VALVE CAVITY: #C1620, See Page 0-014.0.

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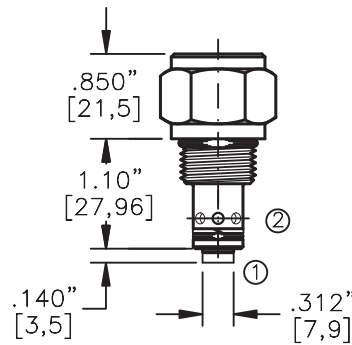
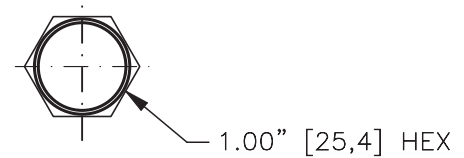
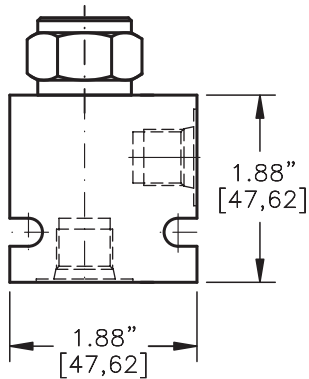
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CHECK VALVE REVERSE GUIDED POPPET

TORQUE:

Steel = 35/40 Ft-Lb. [47/54 Nm]  
Aluminum = 25/30 Ft-Lb. [34/41 Nm]

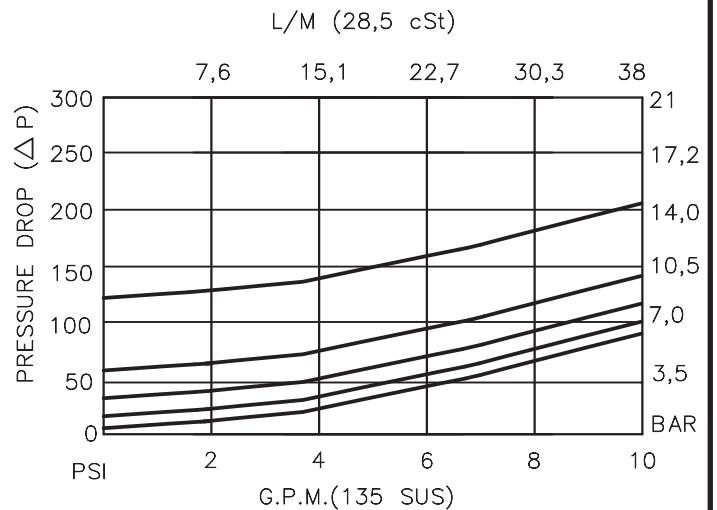


NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.438 DIA.)

FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-011.1

**CVRP-08-X-X-XXX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
06TX = SAE - #6
  - "A" - ALUM. HOUSING
  - "S" - STEEL HOUSING
- CRACK PRESSURE
  - 005 = 5 PSI
  - 015 = 15 PSI
  - 030 = 30 PSI
  - 060 = 60 PSI
  - 120 = 120 PSI



## CHECK VALVE REVERSE GUIDED POPPET

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external carbon steel parts are plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [38 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-0821 Buna "N"

SKV-0821 Viton

WEIGHT: .20 lb [.12 kg] cartridge only.

VALVE CAVITY: #C0820, See Page 0-011.0.

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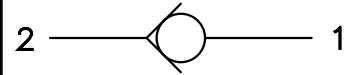
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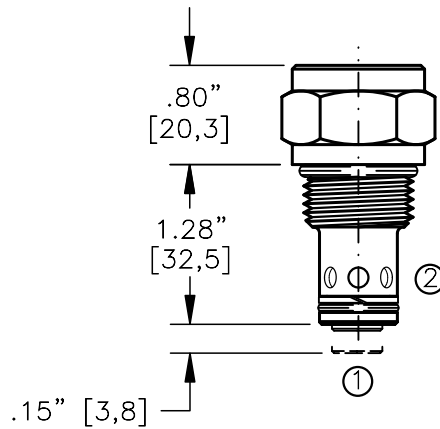
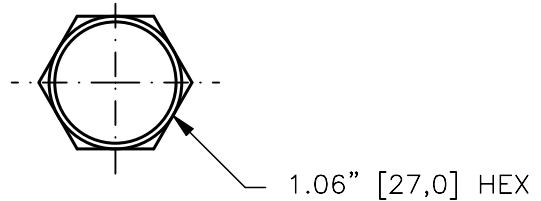
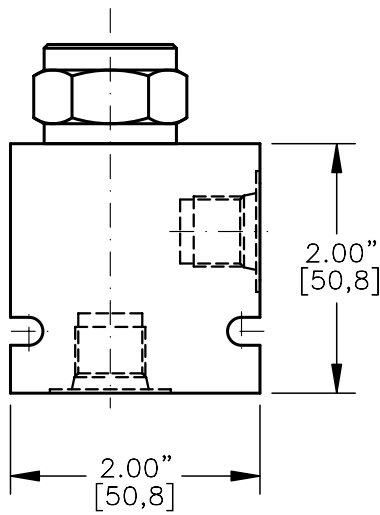
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CHECK VALVE REVERSE GUIDED POPPET



TORQUE:

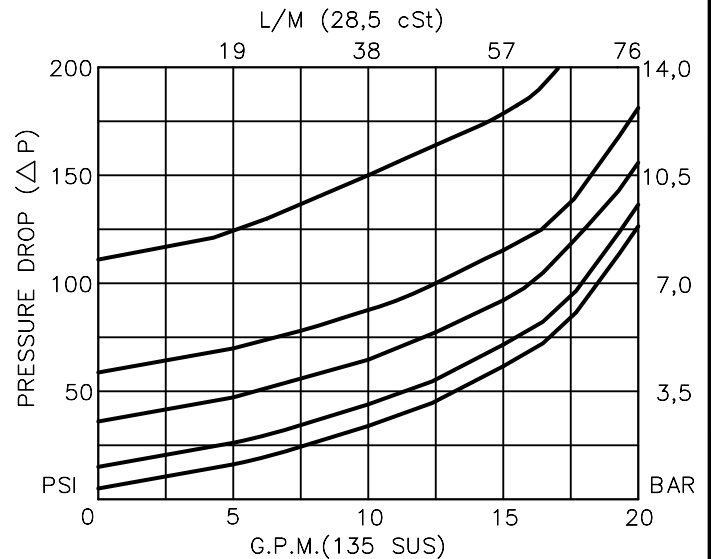
Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.570" DIA.)  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

**CVRP-10-X-X-XXX**

- BASIC
- SIZE  
10 = 7/8" - 14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/4" BSPP  
06TX = SAE - #10  
08TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
005 = 5 PSI  
015 = 15 PSI  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI



## CHECK VALVE REVERSE GUIDED POPPET

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic check valve, used as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 18.0 GPM [68 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1021 Buna "N"

SKV-1021 Viton

WEIGHT: .25 lb [.12 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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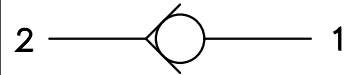
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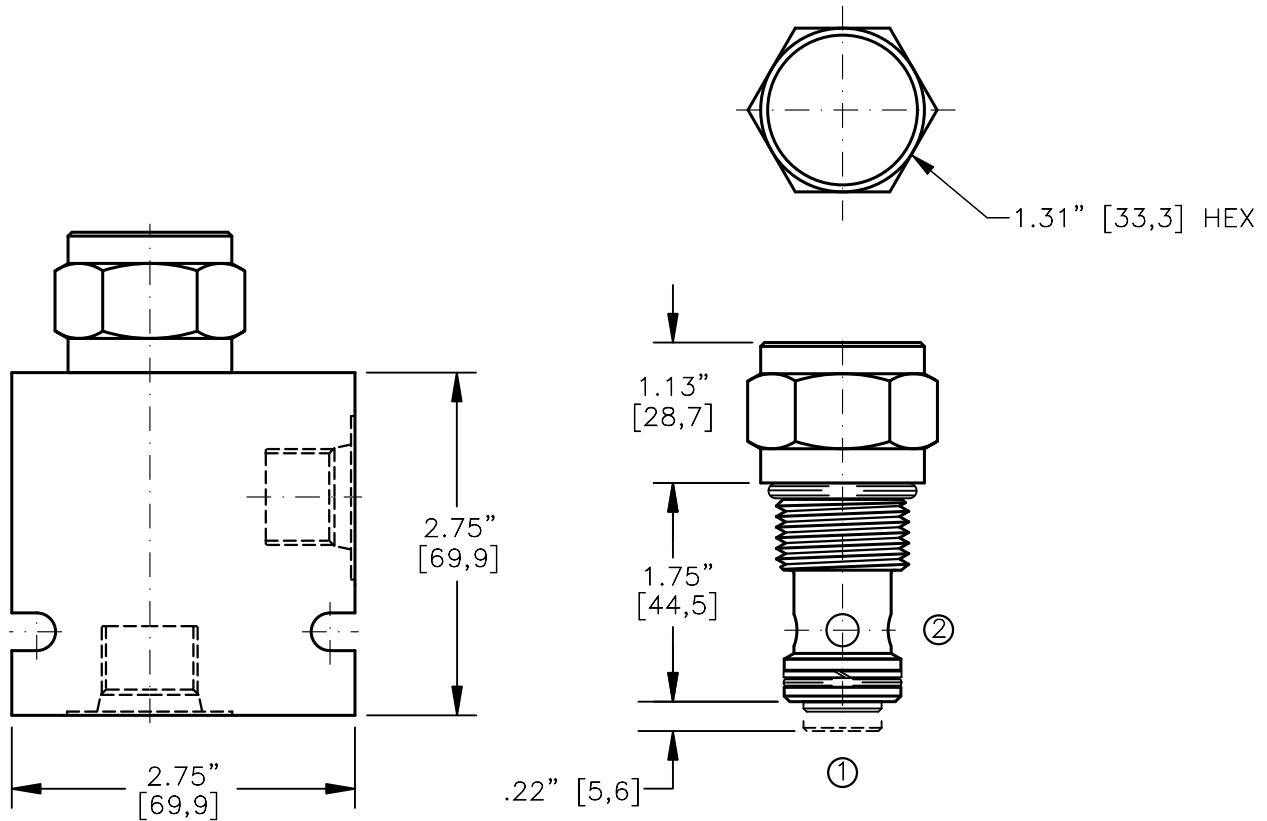
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CHECK VALVE REVERSE GUIDED POPPET



TORQUE:

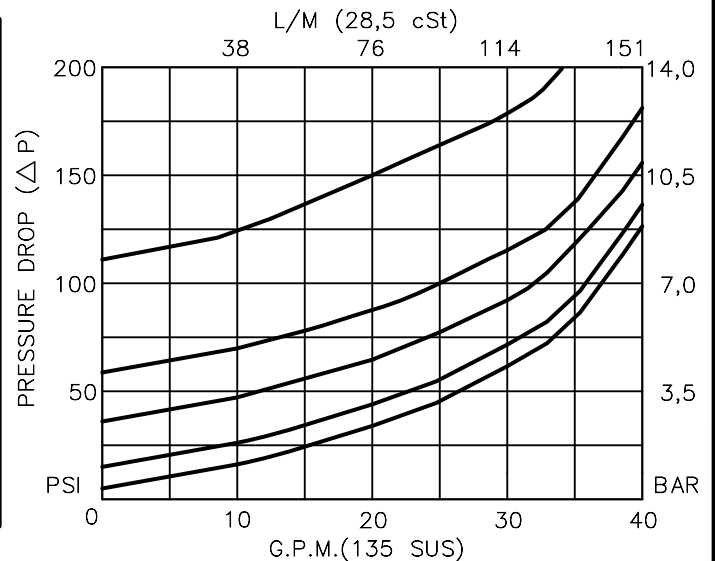
Steel = 70/75 Ft-Lb. [95/102 Nm]  
Aluminum = 55/60 Ft-Lb. [74/81 Nm]



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.750" DIA.)  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-013.1

**CVRP-12-X-X-XXX**

- BASIC
- SIZE  
12 = 1.062"-12 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
005 = 5 PSI  
015 = 15 PSI  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI



## CHECK VALVE REVERSE GUIDED POPPET

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic check valve, used as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external carbon steel parts are plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 36.0 GPM [136 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1221 Buna "N"

SKV-1221 Viton

WEIGHT: 0.50 lb [0.22 kg] cartridge only.

VALVE CAVITY: #C1220, See Page 0-013.0.

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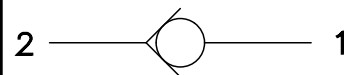
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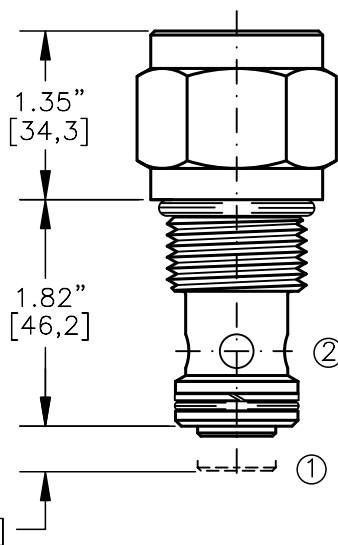
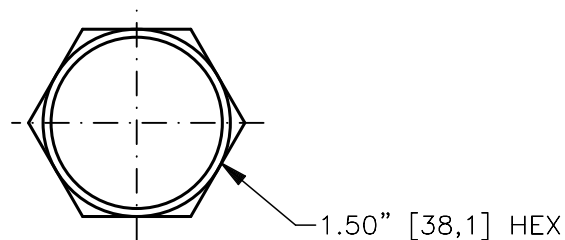
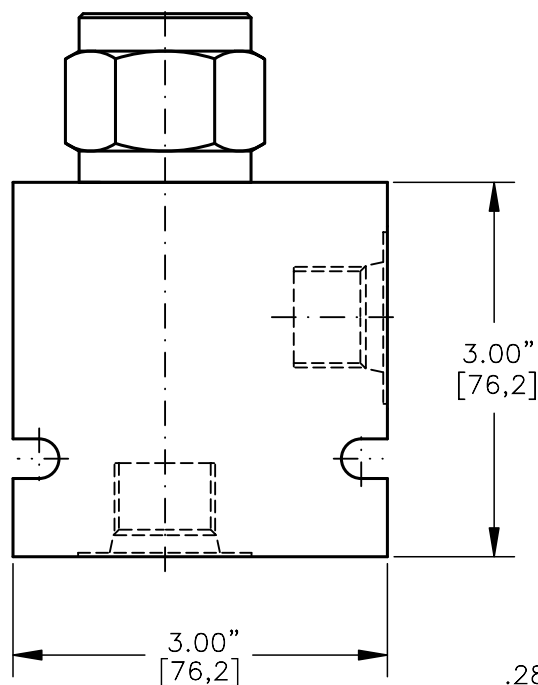


CHECK VALVE REVERSE GUIDED POPPET



TORQUE:

Steel = 95/100 Ft-Lb. [129/136 Nm]  
Aluminum = 70/75 Ft-Lb. [95/102 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-014.1

**CVRP-16-X-X-XXX**

BASIC

SIZE

16 = 1.312"-12 UNF

SEALS

N = BUNA "N"  
V = VITON

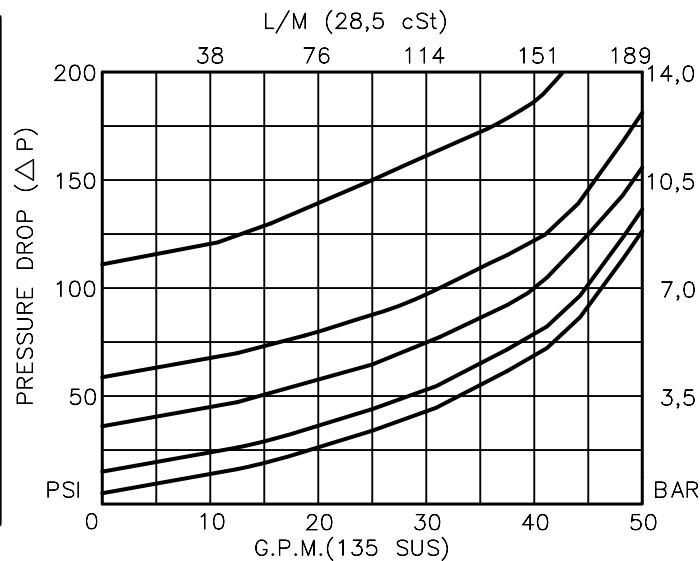
PORTS

0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12

"A" - ALUM. HOUSING  
"S" - STEEL HOUSING

CRACK PRESSURE

005 = 5 PSI  
015 = 15 PSI  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI



## CHECK VALVE REVERSE GUIDED POPPET

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic check valve, used as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external carbon steel parts are plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 50.0 GPM [190 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1621 Buna "N"

SKV-1621 Viton

WEIGHT: 0.82 lb [0.37 kg] cartridge only.

VALVE CAVITY: #C1620, See Page 0-014.0.

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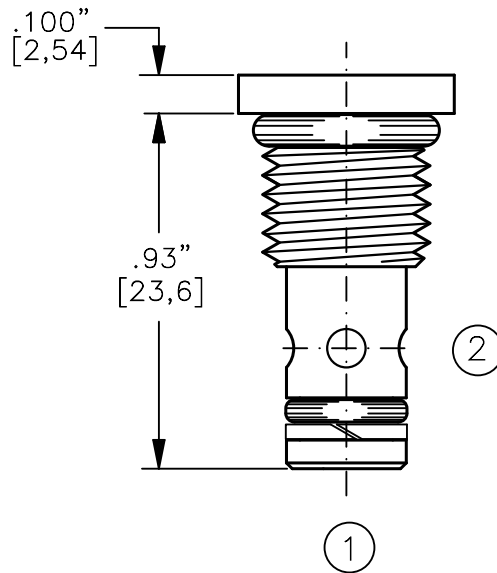
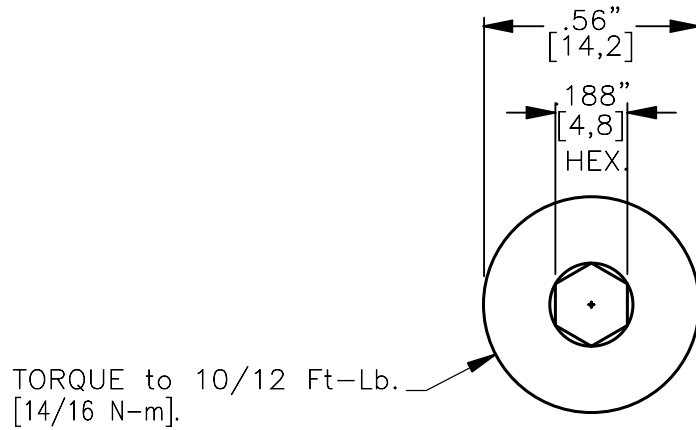
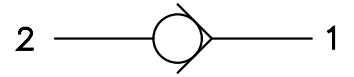
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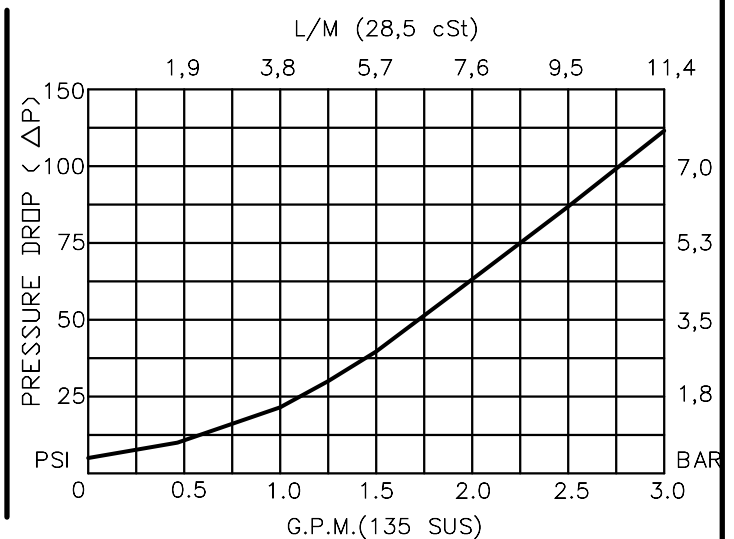
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CHECK VALVE FORWARD GUIDED BALL



CVFB-04-X-0-XXX

- BASIC
- SIZE  
04 = 7/16"-20 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
(NO HOUSING OFFERED)
- CRACK PRESSURE  
005 = 5 PSI  
020 = 20 PSI



## CHECK VALVE FORWARD GUIDED BALL

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided ball, hydraulic check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1 or holding a load.

### FEATURES AND BENEFITS

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 2.5 GPM [9,5 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as  
MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-0421 Buna "N"

SKV-0421 Viton

WEIGHT: .08 lb [.04 kg] cartridge only.

VALVE CAVITY: #C0420.

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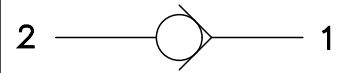
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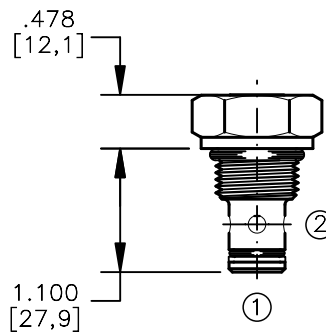
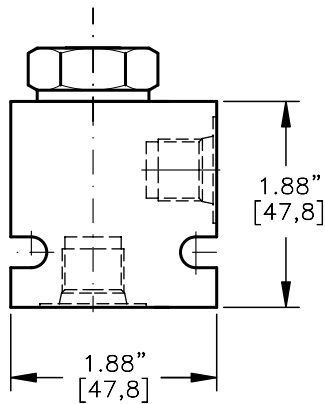
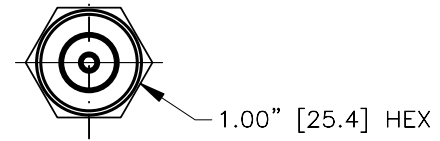
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CHECK VALVE FORWARD GUIDED BALL



TORQUE:

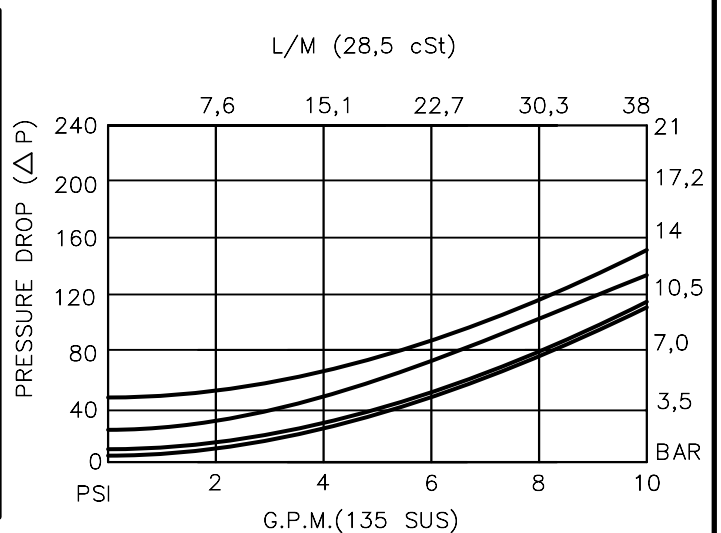
Steel = 35/40 Ft-Lb. [47/54 Nm]  
Aluminum = 25/30 Ft-Lb. [34/41 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-011.1

**CVFB-08-X-X-XXX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
06TX = SAE - #6
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
005 = 5 PSI  
010 = 10 PSI  
025 = 25 PSI  
050 = 50 PSI



## CHECK VALVE FORWARD GUIDED BALL

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided ball, hydraulic check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1 or holding a load.

### FEATURES AND BENEFITS

All external carbon steel parts are plated for longer life against the elements.  
All cartridge valves are 100% functionally tested.  
Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [38 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as  
MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-0821 Buna "N"

SKV-0821 Viton

WEIGHT: .20 lb [.12 kg] cartridge only.

VALVE CAVITY: #C0820, See Page 0-011.0.

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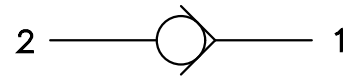
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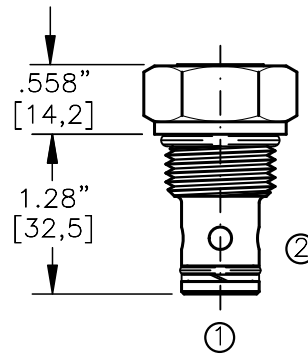
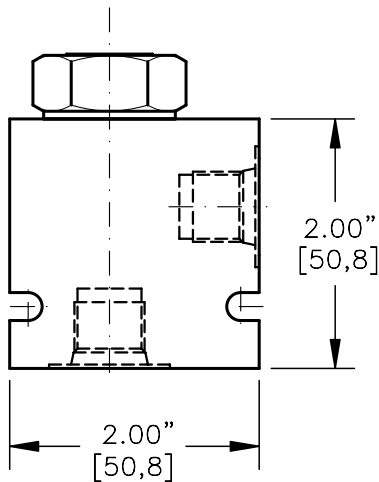
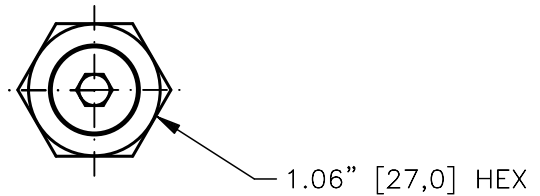
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CHECK VALVE FORWARD GUIDED BALL



TORQUE:

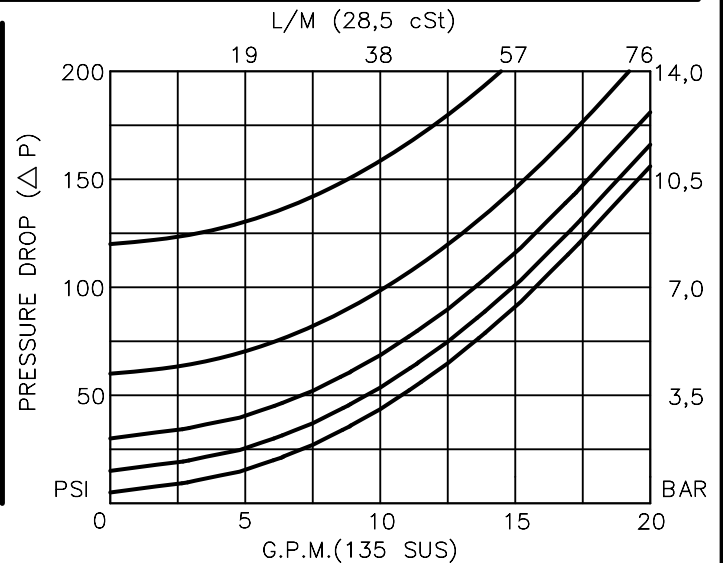
Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

CVFB-10-X-X-XXX

- BASIC
- SIZE  
10 = 7/8" - 14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/4" BSPP  
06TX = SAE - #10  
08TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
005 = 5 PSI  
015 = 15 PSI  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI



## CHECK VALVE FORWARD GUIDED BALL

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided ball, hydraulic check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1 for holding a load.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

All external parts are zinc plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 18.0 GPM [68 l/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1021 Buna "N"

SKV-1021 Viton

WEIGHT: .25 lb [.12 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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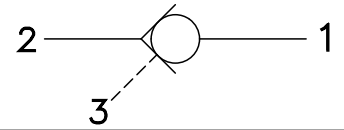
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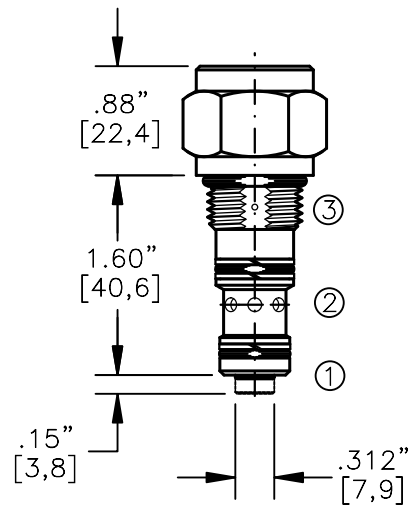
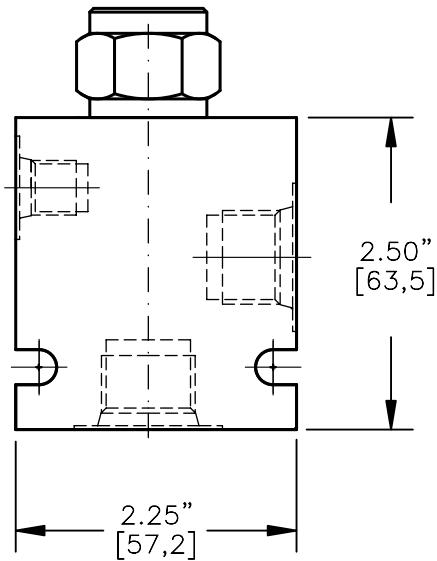
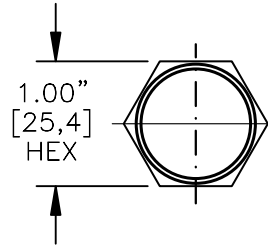


PILOT OPERATED CHECK VALVE POPPET TYPE,  
PILOT TO OPEN, 3 TO 1 PILOT RATIO



TORQUE:

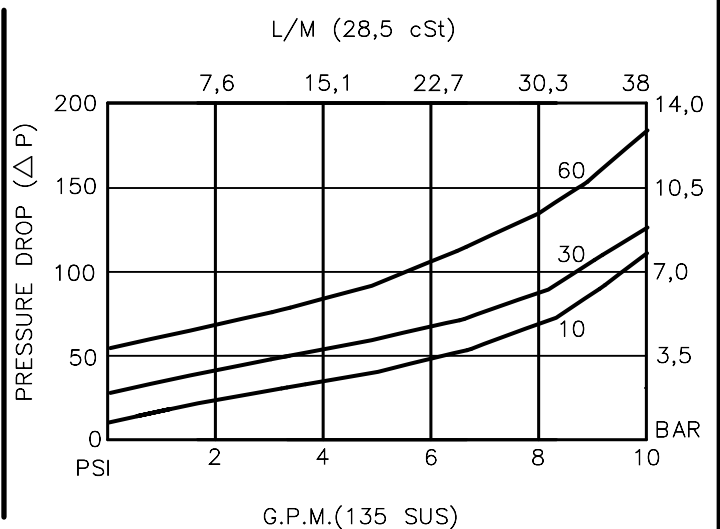
Steel = 35/40 Ft-Lb. [47/54 Nm]  
Aluminum = 25/30 Ft-Lb. [34/41 Nm]



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.500 DIA.).  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-021-1.

**POCI-08-X-F-X-XXX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
F = FIXED
- CRACK PRESSURE  
010 = 10 PSI  
030 = 30 PSI  
060 = 60 PSI
- PORTS  
0 = CARTRIDGE ONLY  
03BX = G 3/8" BSPP  
08TX = SAE - #8  
"A" - ALUM. HOUSING  
"S" - STEEL HOUSING



## PILOT OPERATED CHECK VALVE POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load. Flow will be allowed from port 1 to port 2 when pressure is applied to port 3. This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at port 3 to open the valve.

### FEATURES AND BENEFITS

A low friction seal on pilot piston is standard.  
A separate heavy spring assures fast return of the pilot piston for a very quick, reliable and positive valve re-seat.  
All external carbon steel parts are plated for longer life against the elements.  
All cartridge valves are 100% functionally tested.  
Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]  
PROOF PRESSURE: 10,000 PSI [700 Bar]  
FLOW: 10.0 GPM [38 l/m] nominal. See performance chart.  
PILOT RATIO: 3 TO 1  
INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]  
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.  
5000 PSI [350 Bar] = Steel – Unplated.  
OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]  
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.  
INSTALLATION: No restrictions.  
SEAL KIT: SKN-0828 Buna "N"  
SKV-0828 Viton  
WEIGHT: .26 lb [.12 kg] cartridge only.  
VALVE CAVITY: #C0825, See Page 0-021.0.

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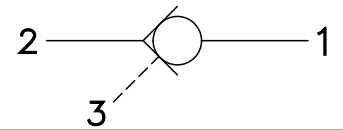
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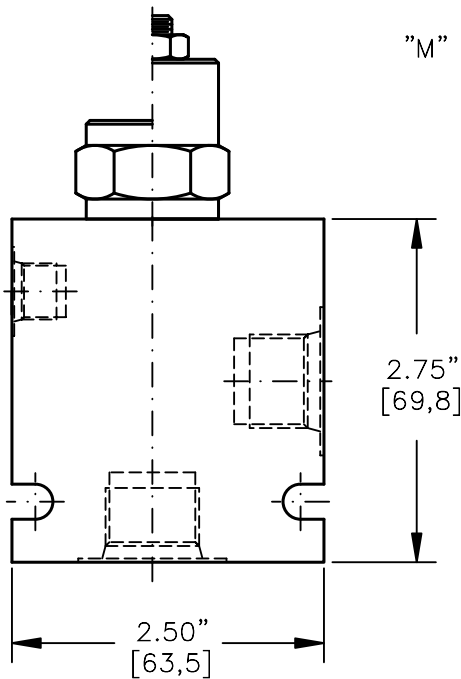
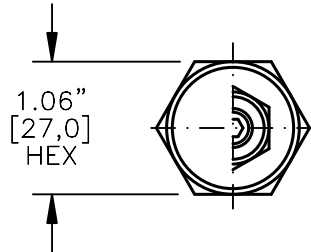
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PILOT OPERATED CHECK VALVE POPPET TYPE,  
PILOT TO OPEN, 3 TO 1 PILOT RATIO.



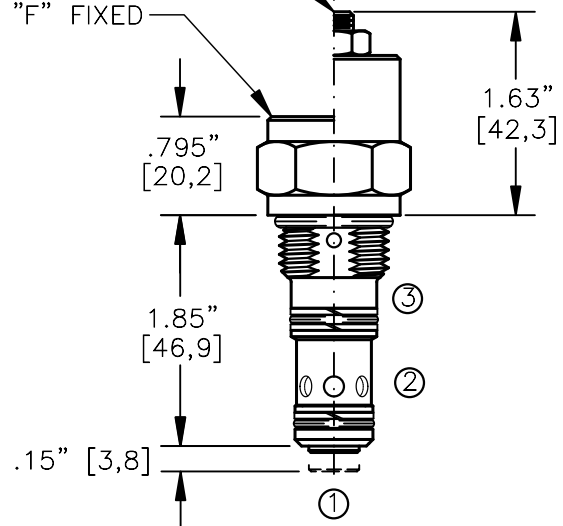
TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



"M" MANUAL LOAD RELEASE  
1/2" [12,7] HEX

"F" FIXED



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSIONS (.563 DIA.)  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-022-1.

**POCI-10-X-X-X-XXX**

BASIC

SIZE

10 = 7/8"-14 UNF

SEALS

N = BUNA "N"  
V = VITON

ADJUSTMENT

F = FIXED  
M = MANUAL RELEASE

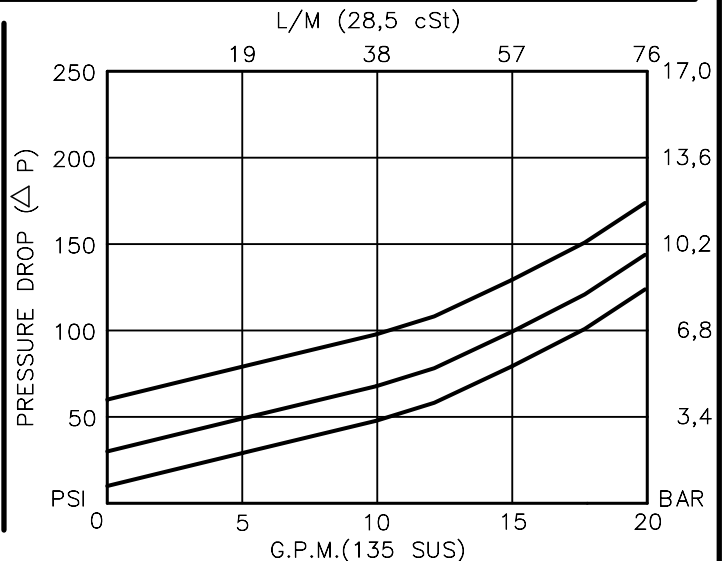
CRACK PRESSURE

010 = 10 PSI  
030 = 30 PSI  
060 = 60 PSI

PORTS

0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8

"A" - ALUM. HOUSING  
"S" - STEEL HOUSING



**PILOT OPERATED CHECK VALVE****POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.****DESCRIPTION**

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

**OPERATIONS**

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load. Flow will be allowed from port 1 to port 2 when pressure is applied to port 3. This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at port 3 to open the valve.

**FEATURES AND BENEFITS**

A low friction seal on pilot piston is standard.  
 A separate heavy spring assures fast return of the pilot piston for a very quick, reliable and positive valve re-seat.  
 Optional screw type manual load release is available.  
 All external carbon steel parts are plated for longer life against the elements.  
 All cartridge valves are 100% functionally tested.  
 Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 18.0 GPM [70 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1028 Buna "N"

SKV-1028 Viton

WEIGHT: .39 lb [.18 kg] cartridge only.

VALVE CAVITY: #C1025, See Page 0-022.0.

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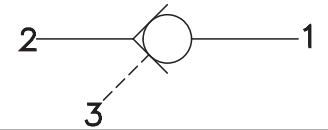
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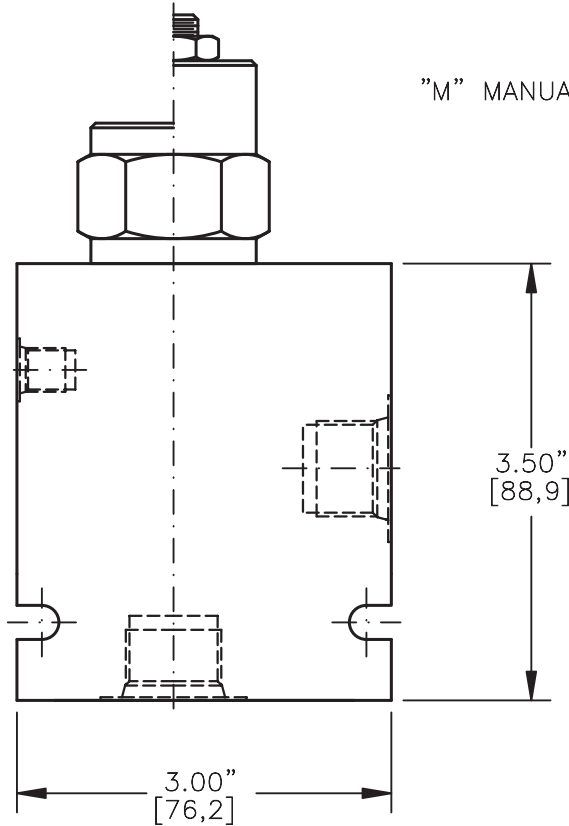
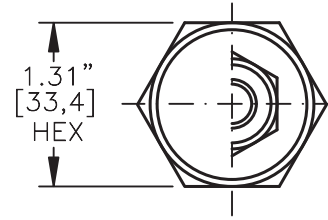
PILOT OPERATED CHECK VALVE POPPET TYPE,  
PILOT TO OPEN, 3 TO 1 PILOT RATIO.



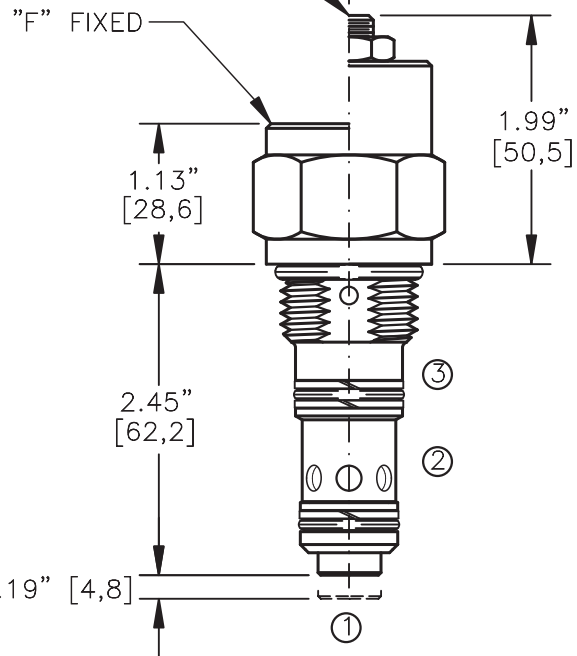
TORQUE:

Steel = 70/75 Ft-Lb. [95/102 Nm]

Aluminum = 55/60 Ft-Lb. [74/81 Nm]



"M" MANUAL LOAD RELEASE  
1/2" [12,7] HEX



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.750 DIA.).  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-023-1.

**POCI-12-X-X-X-XXX**

BASIC

SIZE  
12 = 1.062"-12 UNF

SEALS  
N = BUNA "N"  
V = VITON

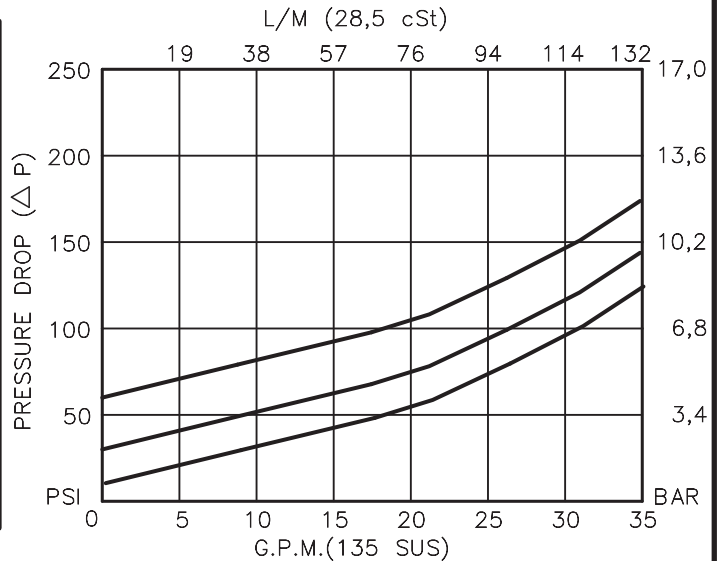
ADJUSTMENT  
F = FIXED  
M = MANUAL RELEASE

CRACK PRESSURE  
010 = 10 PSI  
030 = 30 PSI  
060 = 60 PSI

PORTS

0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12

"A" - ALUM. HOUSING  
"S" - STEEL HOUSING



## PILOT OPERATED CHECK VALVE

### POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.

#### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

#### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load. Flow will be allowed from port 1 to port 2 when sufficient pilot pressure is applied to port 3. This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at port 3 to open the valve.

#### FEATURES AND BENEFITS

A low friction seal on pilot piston is standard.  
 A separate heavy spring assures fast return of the pilot piston for a very quick, reliable and positive valve re-seat.  
 Optional screw type manual load release is available.  
 All external carbon steel parts are plated for longer life against the elements.  
 All cartridge valves are 100% functionally tested.

#### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]  
 PROOF PRESSURE: 10,000 PSI [700 Bar]  
 FLOW: 35.0 GPM [132.4 l/m] nominal. See performance chart.  
 PILOT RATIO: 3 TO 1  
 INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]  
 VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.  
                           5000 PSI [350 Bar] = Steel – Unplated.  
 OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]  
 OPERATING MEDIA: All general purpose hydraulic fluids such as  
                           MIL-H-5606, SAE-#10, SAE-#20, etc.  
 INSTALLATION: No restrictions.  
 SEAL KIT: SKN-1228 Buna "N"  
                   SKV-1228 Viton  
 WEIGHT: 0.63 lb [0,25 kg] cartridge only.  
 VALVE CAVITY: #C1225, See Page 0-023.0.

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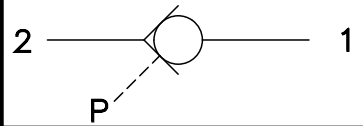
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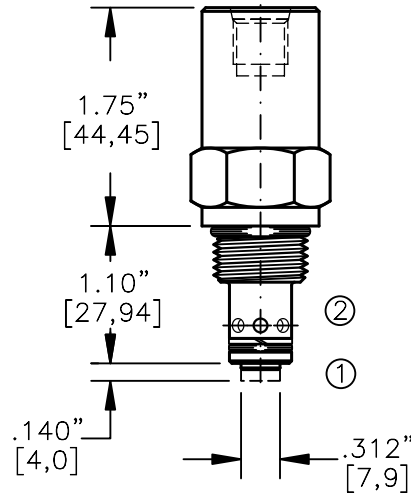
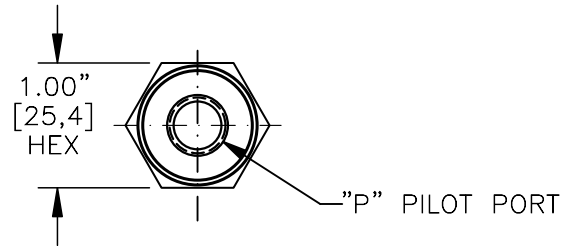
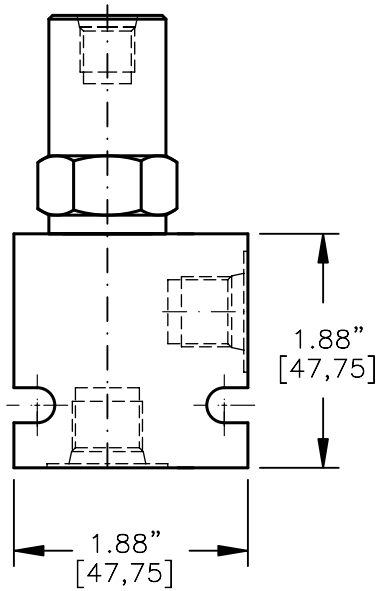
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PILOT OPERATED CHECK VALVE POPPET TYPE,  
PILOT TO OPEN, 3 TO 1 PILOT RATIO.



TORQUE:

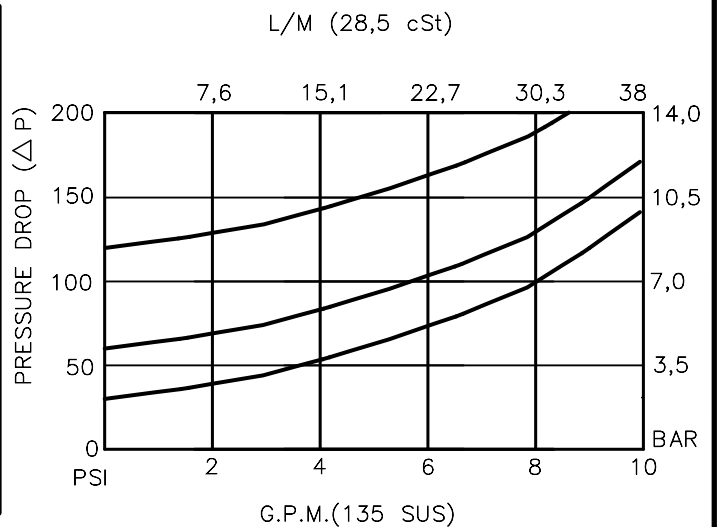
Steel = 35/40 Ft-Lb. [47/54 Nm]  
Aluminum = 25/30 Ft-Lb. [34/41 Nm]



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.500 DIA.).  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-011.1

**POCX-08-X-X-4T-XXX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPB  
06TX = SAE - #6
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI
- "P" PILOT PORT  
4T = SAE - #4



## PILOT OPERATED CHECK VALVE POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load. Flow will be allowed from port 1 to port 2 when pressure is applied to pilot port "P".

This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at pilot port "P" to open the valve.

We recommend to use an orifice to dampen the pilot signal (X) when used with an on/off (hard shifting) valve.

### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

A low friction seal on pilot piston is standard.

All external carbon steel parts are plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [38,0 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-0821 Buna "N"

SKV-0821 Viton

WEIGHT: .34 lb [.15 kg] cartridge only.

VALVE CAVITY: #C0820, See Page 0-011.0.

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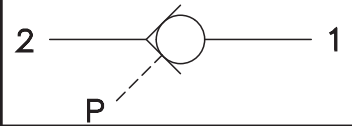
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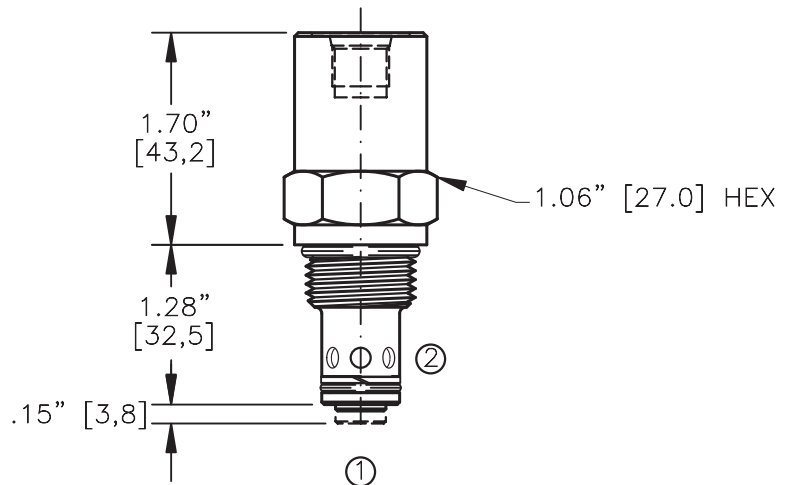
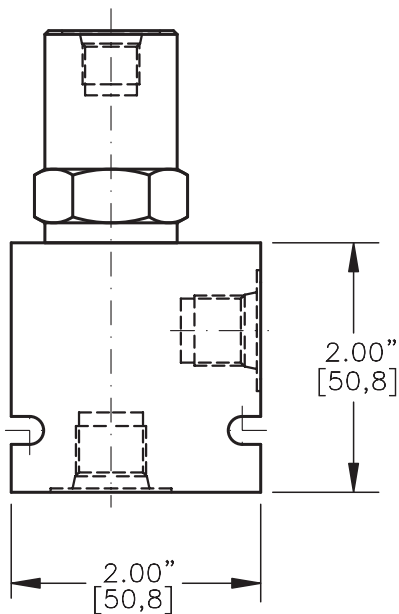
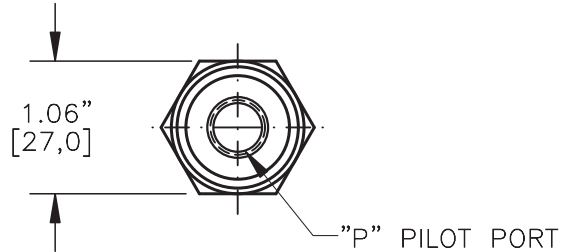


PILOT OPERATED CHECK VALVE POPPET TYPE,  
PILOT TO OPEN, 3 TO 1 PILOT RATIO.



TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.563 DIA.).  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

**POCX-10-X-X-XX-XXX**

BASIC

SIZE

10 = 7/8"-14 UNF

SEALS

N = BUNA "N"  
V = VITON

PORTS

0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8

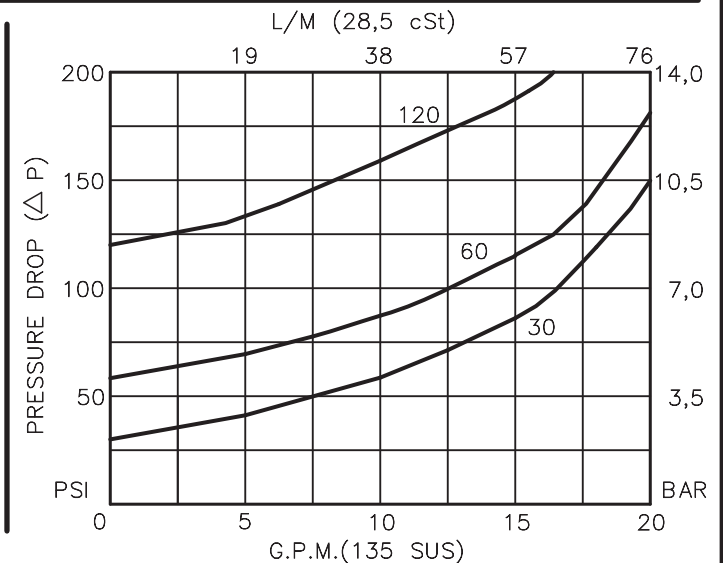
"A" - ALUM. HOUSING  
"S" - STEEL HOUSING

CRACK PRESSURE

030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI

"P" PILOT PORT

2B = G 1/4" BSPP  
4T = SAE - #4



## PILOT OPERATED CHECK VALVE

### POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.

#### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

#### OPERATIONS

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load. Flow will be allowed from port 1 to port 2 when pressure is applied to pilot port "P".

This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at pilot port "P" to open the valve.

We recommend to use an orifice to dampen the pilot signal (X) when used with an on/off (hard shifting) valve.

#### FEATURES AND BENEFITS

Wide selection of bias springs allows flexibility for back-pressure application.

A low friction seal on pilot piston is standard.

All external carbon steel parts are plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

#### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 18.0 GPM [70 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1021 Buna "N"

SKV-1021 Viton

WEIGHT: .31 lb [.14 kg] cartridge only.

VALVE CAVITY: #C 1020, See Page 0-012.0.

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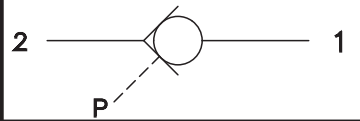
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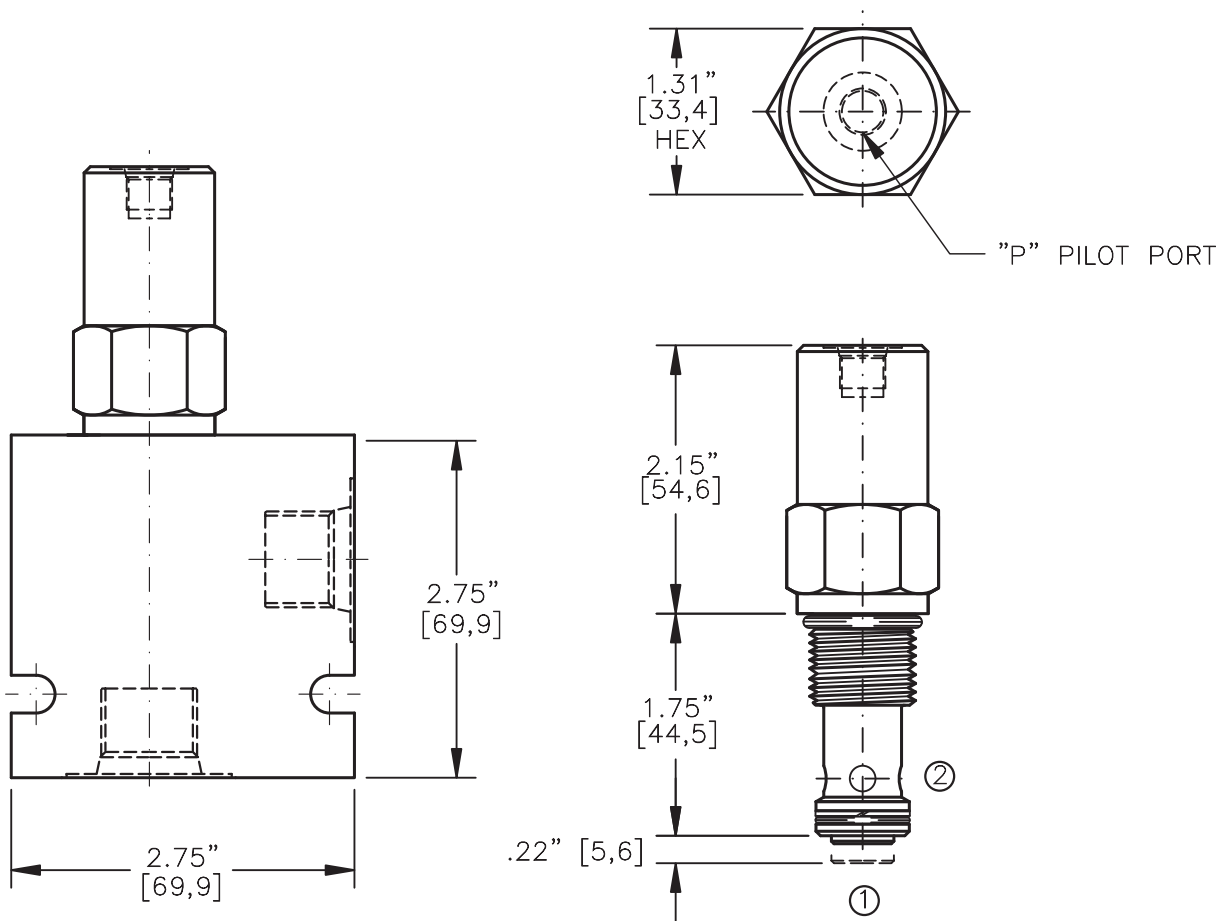
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PILOT OPERATED CHECK VALVE POPPET TYPE,  
PILOT TO OPEN, 3 TO 1 PILOT RATIO.



TORQUE:

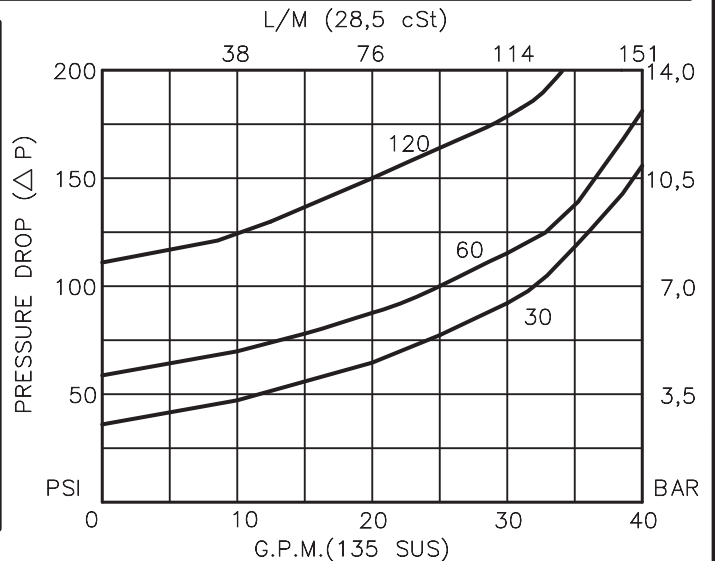
Steel = 70/75 Ft-Lb. [95/102 Nm]  
Aluminum = 55/60 Ft-Lb. [74/81 Nm]



NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.630 DIA.).  
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-013.1

**POCX-12-X-X-XX-XXX**

- BASIC
- SIZE  
12 = 1.062"-12 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- PORTS  
0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING
- CRACK PRESSURE  
030 = 30 PSI  
060 = 60 PSI  
120 = 120 PSI
- "P" PILOT PORT  
2B = G 1/4" BSPP  
4T = SAE - #4



**PILOT OPERATED CHECK VALVE****POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.****DESCRIPTION**

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

**OPERATIONS**

This valve allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2 or holding a load. Flow will be allowed from port 1 to port 2 when sufficient pilot pressure is applied to port "P". This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at pilot port "P" to open the valve.

We recommend to use an orifice to dampen the pilot signal (X) when used with an on/off (hard shifting) valve.

**FEATURES AND BENEFITS**

Wide selection of bias springs allows flexibility for back-pressure application.

A low friction seal on pilot piston is standard.

All external carbon steel parts are plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 35.0 GPM [132,5 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1221 Buna "N"

SKV-1221 Viton

WEIGHT: 0.31 lb [0,14 kg] cartridge only.

VALVE CAVITY: #C1220, See Page 0-013.0.

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# Dual P.O. Check Valve Cartridge, SAE 08 / NG 5

$Q_{\max} = 5 \text{ gpm (19 l/min)}$ ,  $p_{\max} = 3600 \text{ psi (250 bar)}$

Pilot operated

Series PDCV-08...



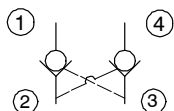
- A low friction pilot piston is standard
- Compact construction for cavity types: C0840 and AN/C0840 – 3/4-16 UNF
- Separate springs assure fast return to neutral position
- Reliable and high positive re-seat duration
- All exposed parts with zinc-nickel plating
- Can be fitted in a line-mounting body
- Replaces POCD-08...

## 1 Description

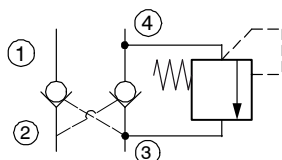
The PDCV-08... series dual pilot operated check valve cartridges are size SAE 08 / NG 5, high performance screw-in valves with a 3/4-16 UNF mounting thread. This unit is a cartridge type, high strength steel guided poppet for realizable low leakage performance, dual hydraulic pilot operated check valve, for use as a blocking or load holding device at high pressure applications. This valve allows free flow from port 2 to port 1 and from port 3 to port 4 and it blocks flow from port 1 to port 2 and from port 4 to port 3. Flow is allowed from port 1 to port 2 when pilot pressure is

sensed at port 3 or flow is allowed from port 4 to port 3 when pilot pressure is sensed at port 2. In order to pilot the valve opens, the pressure at port 2 or port 3 needs to exceed one-third of the load pressure from port 1 or port 4. All external parts of the cartridge are zinc-nickel plated to DIN 50 979 and are thus suitable for use in the harshest operating environments. If you intend to manufacture your own cavities or are designing a line-mounting installation, please refer to the section "Related data sheets".

## 2 Symbol



PDCV-08-...-C...



PDCV-08-...-3...

## 3 Technical data

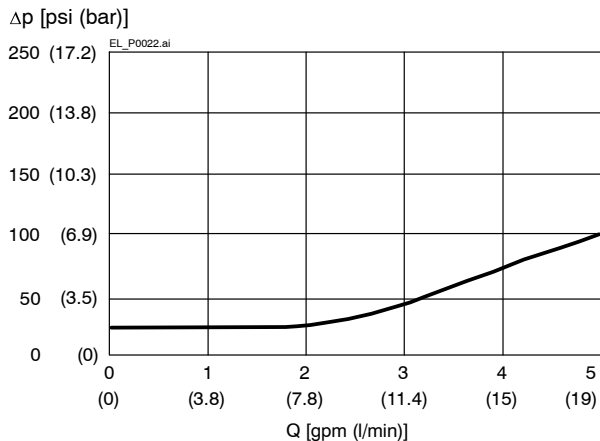
General characteristics	Description, value, unit
Designation	dual p.o. check valve cartridges
Design	pilot operated
Mounting method	screw-in cartridge 3/4-16 UNF
Size	SAE 08 / NG 5 for cavity type C0840 and AN/C0840
Weight	0.26 lbs (0.12 kg)
Mounting attitude	unrestricted
Ambient temperature range	-40 °F...+250 °F (-40 °C...+120 °C)
Optional internal thermal relief valve	from port 4 to port 3 3000 psi (210 bar), not adjustable

Hydraulic characteristics	Description, value, unit
Maximum operating pressure	3600 psi (250 bar)
Maximum flow rate	5 gpm (19 l/min)
Pilot Ratio	3.0 to 1
Leakage flow rate	5 drops/min @ 3500 psi (5 drops/min @ 240 bar)
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range	-40 °F...+250 °F (-40 °C...+120 °C)
Viscosity range	15...380 mm <sup>2</sup> /s (cSt), recommended 20...130 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 18/16/13

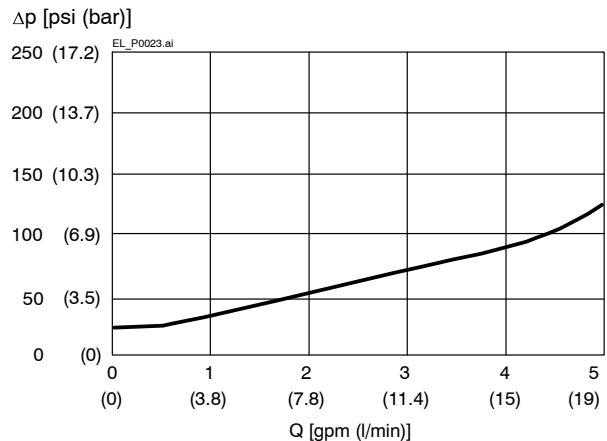
## 4 Performance graphs

measured with oil viscosity 33 mm<sup>2</sup>/s (cSt)

$\Delta p = f(Q)$  Pressure drop - Flow rate characteristic  
"free flow 2 → 1"



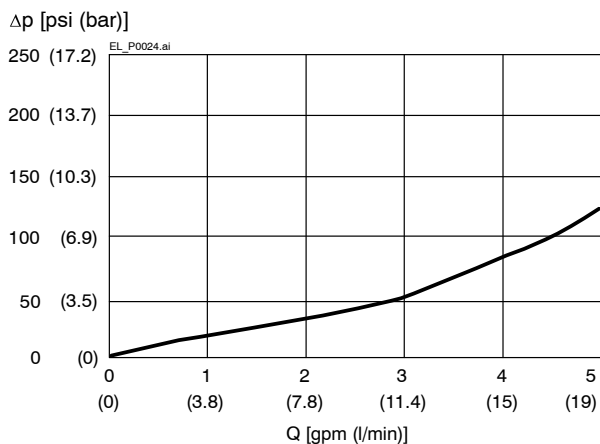
$\Delta p = f(Q)$  Pressure drop - Flow rate characteristic  
"free flow 3 → 4"



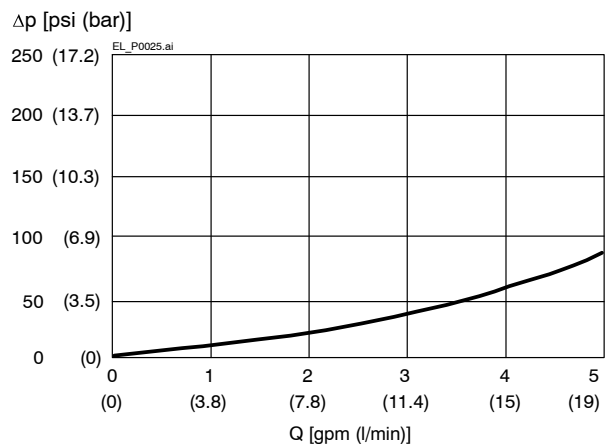
**Attention:**

When flow passes through the check valve and there is a large pressure difference, the poppet in the main stage can be damaged.

$Q = f(\Delta p; I)$  Flow rate adjustment characteristic  
"pilot 3 flow 1 → 2"

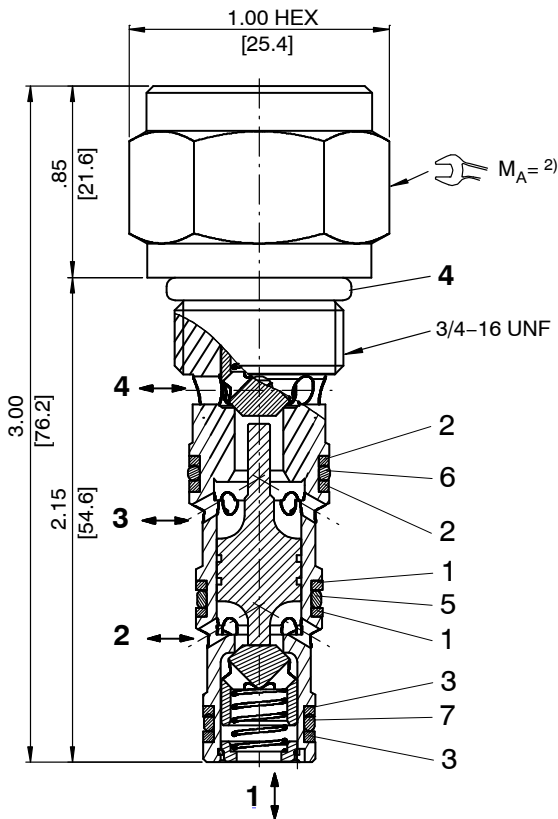


$Q = f(I; \Delta p)$  Flow rate adjustment characteristic  
"pilot 2 flow 4 → 3"



## 5 Dimensions & sectional view

Dimensions in inches (millimeters)



Tightening torque  $M_A^{2)} \pm 10\%$

Cavity type	C0840, AN/C0840
When fitted in steel	37 ft-lbs (50 [Nm])
When fitted in aluminium	27 ft-lbs (37 [Nm])

## 6 Installation information



**Important:**

When fitting the cartridges, use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



**ATTENTION!**

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Seal kit NBR no. SKN-0828 <sup>1)</sup>

Item	Qty.	Description	
4	1	O-ring no. 908 $\varnothing$ 0.644 x 0.087 N90	Inch
6	2	O-ring $\varnothing$ 13.00 x 1.50 FKM	mm
5	2	O-ring $\varnothing$ 11.00 x 1.50 FKM	mm
7	2	O-ring $\varnothing$ 9.50 x 1.50 FKM	mm
2	2	Backup ring $\varnothing$ 13.00 x 1.50 x 1.00 FI0751	mm
1	2	Backup ring $\varnothing$ 11.30 x 1.50 x 1.00 FI0751	mm
3	2	Backup ring $\varnothing$ 9.50 x 1.50 x 1.00 FI0751	mm



**IMPORTANT!**

<sup>1)</sup> Seal kit with FKM (Viton) seals, no. SKV-0828

### 7 Ordering code

PDCV - 08 - N - C - O

- PDCV = pilot operated dual check valve
- 08 = size SAE 08 / NG 5
- N = NBR (Nitrile) seals (standard)
- V = FKM (Viton) seals  
(special seals - please consult BUCHER)
- C = no thermal relief
- 3 = 3000 psi (210 bar) internal thermal relief from port 4 to port 3, not adjustable
- 0 = cartridge only
- 02BA = line-mounting body G1/4 BSPP aluminum
- 02BS = line-mounting body G1/4 BSPP steel
- 06TA = line-mounting body SAE-#6 aluminum
- 06TS = line-mounting body SAE-#6 steel

### 8 Related data sheets

Reference	(Old no.)	Description
520-P-000050		Form tools
520-P-000410		Cavity type C0840
...		Cavity type AN/C0840
520-P-000411		Line-mounting body, 08 Series – 4-way

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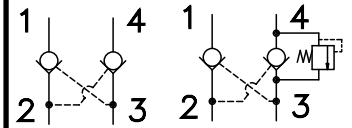
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Classification: 430.315.345.305.305

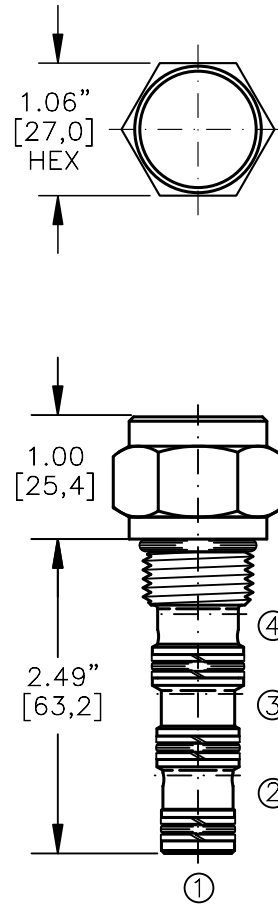
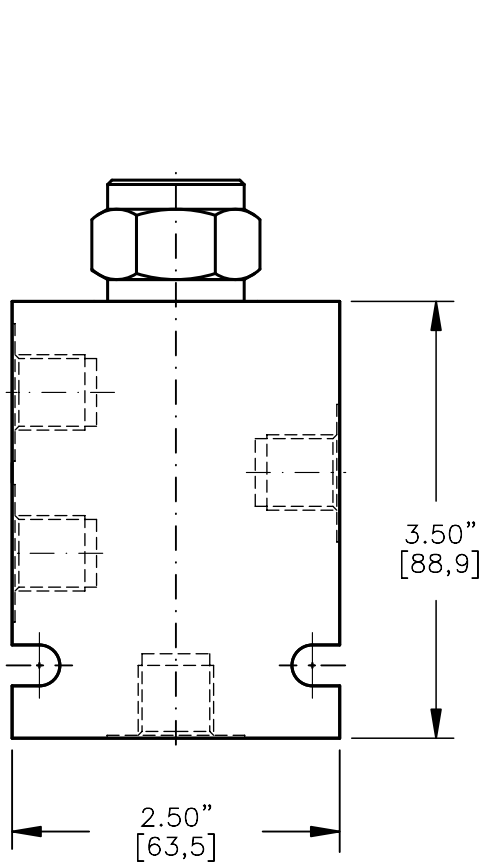


PILOT OPERATED DUAL CHECK VALVE  
WITH OPTIONAL THERMAL RELIEF

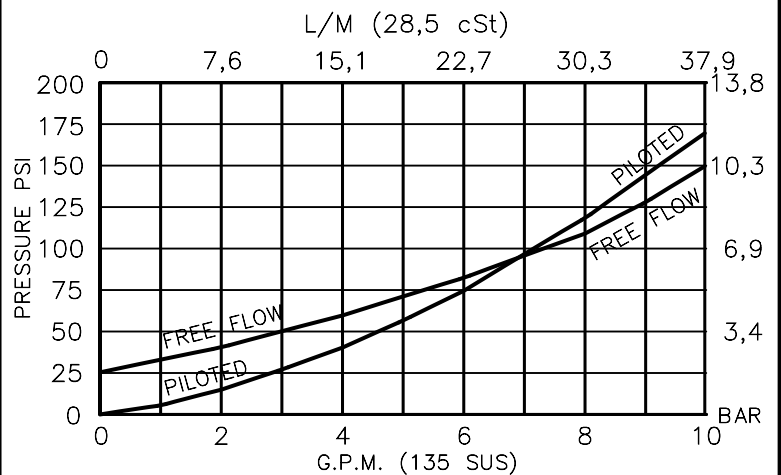
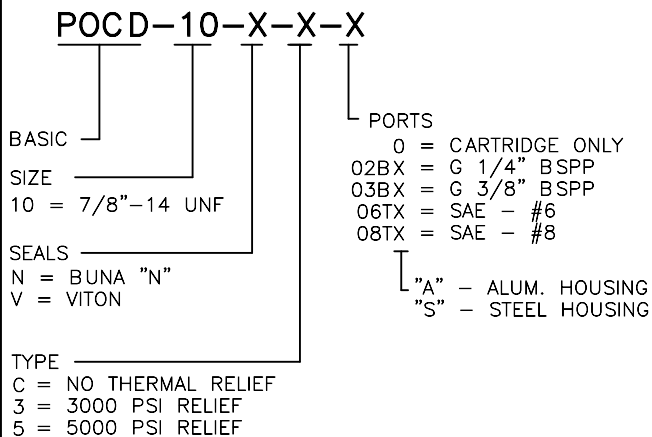


TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-042.1



## PILOT OPERATED DUAL CHECK VALVE WITH OPTIONAL THERMAL RELIEF

### DESCRIPTION

This unit is a SCREW IN, cartridge type, guided poppet, hydraulic pilot operated dual check valve, for use as a blocking or load holding device for high pressure applications. Thermal relief option available in one direction.

### OPERATIONS

This check valve allows free flow from port 2 to port 1 and from port 3 to port 4. It blocks flow from port 1 to port 2 and from port 4 to port 3 or holds a load. Flow will be allowed from port 1 to port 2 when pilot pressure is applied to port 3 that is higher than one-third of the load pressure at port 1. Flow will be allowed from port 4 to port 3 when pilot pressure is applied to port 2 that is higher than one-third of the load pressure at port 4.

This pilot operated check valve has a 3 to 1 pilot ratio. Port 4 can be equipped with a thermal relief. The relief is set to open when the pressure in port 4 exceeds the relief setting.

### FEATURES AND BENEFITS

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [37.9 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1042 Buna "N"

SKV-1042 Viton

WEIGHT: .40 lb. [.19 kg] cartridge only.

VALVE CAVITY: #C1040, See Page 0-042.0.

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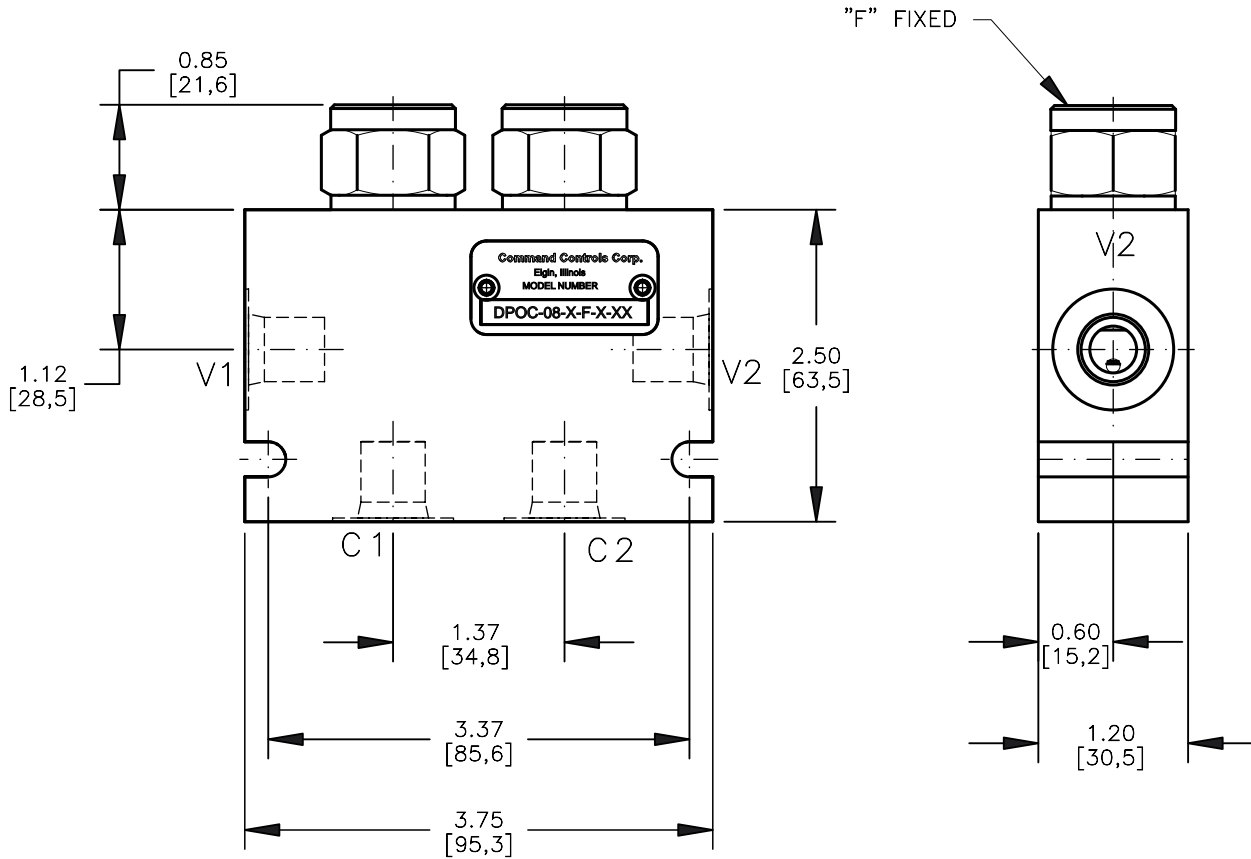
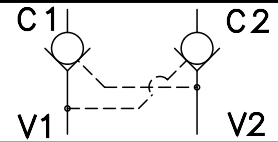
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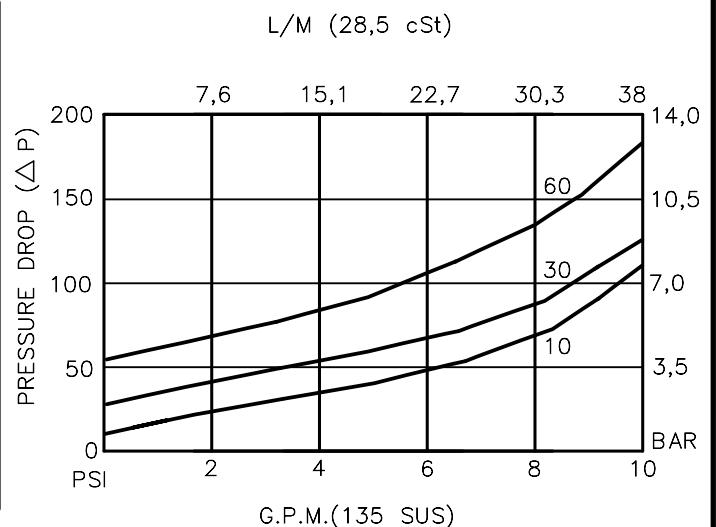
DUAL PILOT OPERATED CHECK VALVE POPPET  
TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-026.0

**DPOC-08-X-X-X-XXX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
F = FIXED
- CRACK PRESSURE  
010 = 10 PSI  
030 = 30 PSI  
060 = 60 PSI
- PORTS  
03BX = G 3/8" BSPP  
04BX = G 1/2" BSPP  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING



## DUAL PILOT OPERATED CHECK VALVE POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.

### DESCRIPTION

This unit is a cartridge type, guided poppet, with cross line pilot, dual hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

### OPERATIONS

This valve allows free flow from port V1 to port C1 and V2 to C2 then blocks reverse flow until a pilot pressure is sensed at pilot ports which are connected to ports V1 and V2 therefore opening flow from port C1 or port C2.

This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at port 3 to open the valve.

### FEATURES AND BENEFITS

A low friction seal on pilot piston is standard.

A separate heavy spring assures fast return of the pilot piston for a very quick, reliable and positive valve re-seat.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [38 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-0828 Buna "N"

SKV-0828 Viton

WEIGHT: 1.70 lb [.77 kg].

VALVE CAVITIES: #C0825, See Page 0-021.0.

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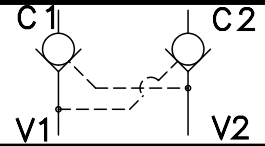
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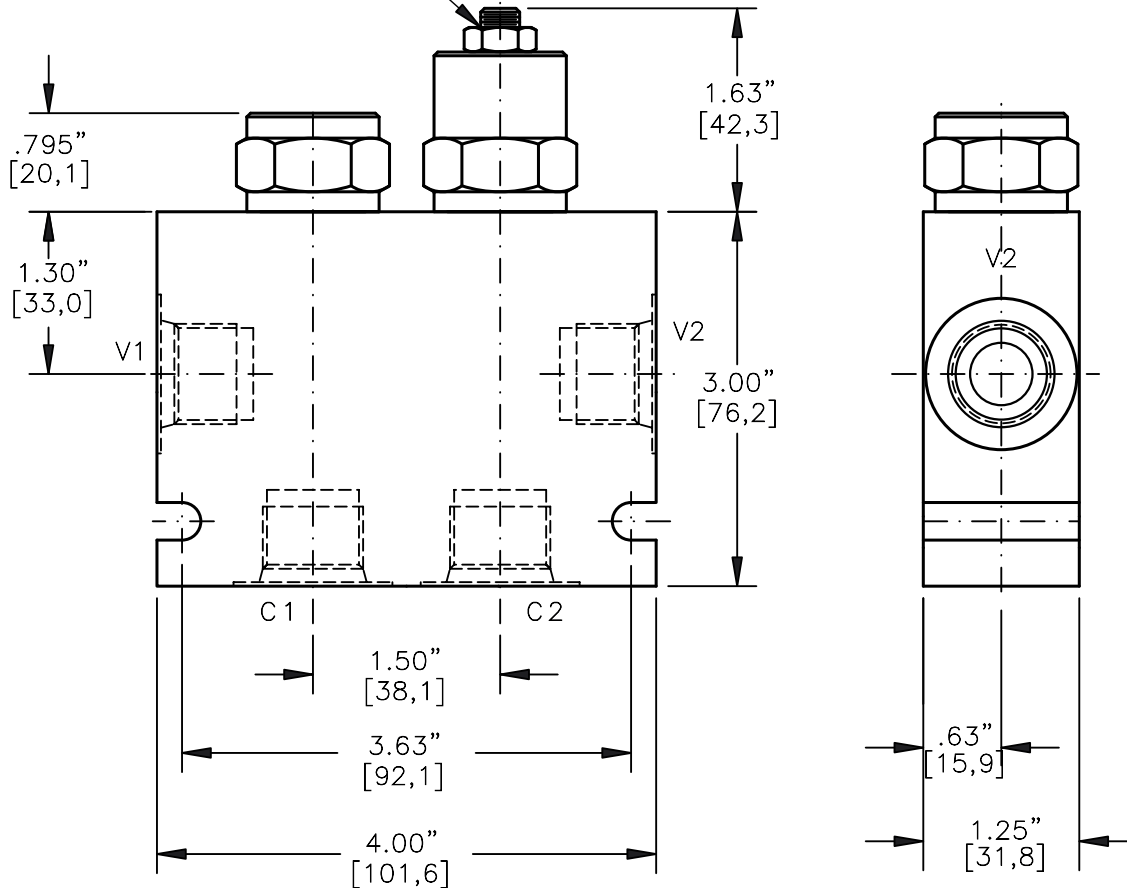
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DUAL PILOT OPERATED CHECK VALVE POPPET  
TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.



"M" MANUAL LOAD RELEASE



DPOC-10-X-X-X-XXX

BASIC

SIZE

10 = 7/8"-14 UNF

SEALS

N = BUNA "N"

V = VITON

ADJUSTMENT

F = FIXED

M = MANUAL RELEASE

CRACK PRESSURE

010 = 10 PSI

030 = 30 PSI

060 = 60 PSI

PORTS

03BX = G 3/8" BSPP

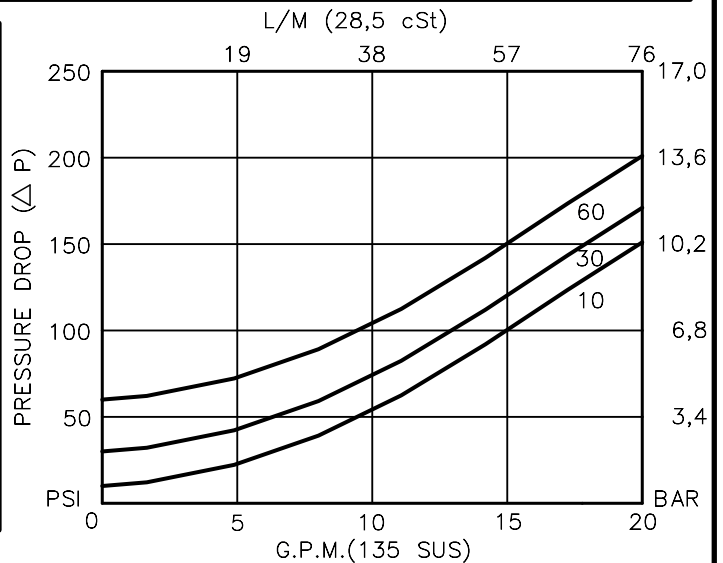
04BX = G 1/2" BSPP

08TX = SAE - #8

10TX = SAE - #10

"A" - ALUM. HOUSING

"S" - STEEL HOUSING



## DUAL PILOT OPERATED CHECK VALVE

### POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.

#### DESCRIPTION

This unit is a cartridge type, guided poppet, with cross line pilot, dual hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

#### OPERATIONS

This valve allows free flow from port V1 to port C1 and V2 to C2 then blocks reverse flow until a pilot pressure is sensed at pilot ports which are connected to ports V1 and V2 therefore opening flow from port C1 or port C2.

This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at port 3 to open the valve.

#### FEATURES AND BENEFITS

A low friction seal on pilot piston is standard.  
 A separate heavy spring assures fast return of the pilot piston for a very quick, reliable and positive valve re-seat.  
 Optional screw type manual load release is available.  
 All external carbon steel parts are plated for longer life against the elements.  
 All cartridge valves are 100% functionally tested.  
 Industry common cavity.

#### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 18.0 GPM [70 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1028 Buna "N"

SKV-1028 Viton

WEIGHT: 1.85 lb [.92 kg].

VALVE CAVITIES: #C1025, See Page 0-022.0.

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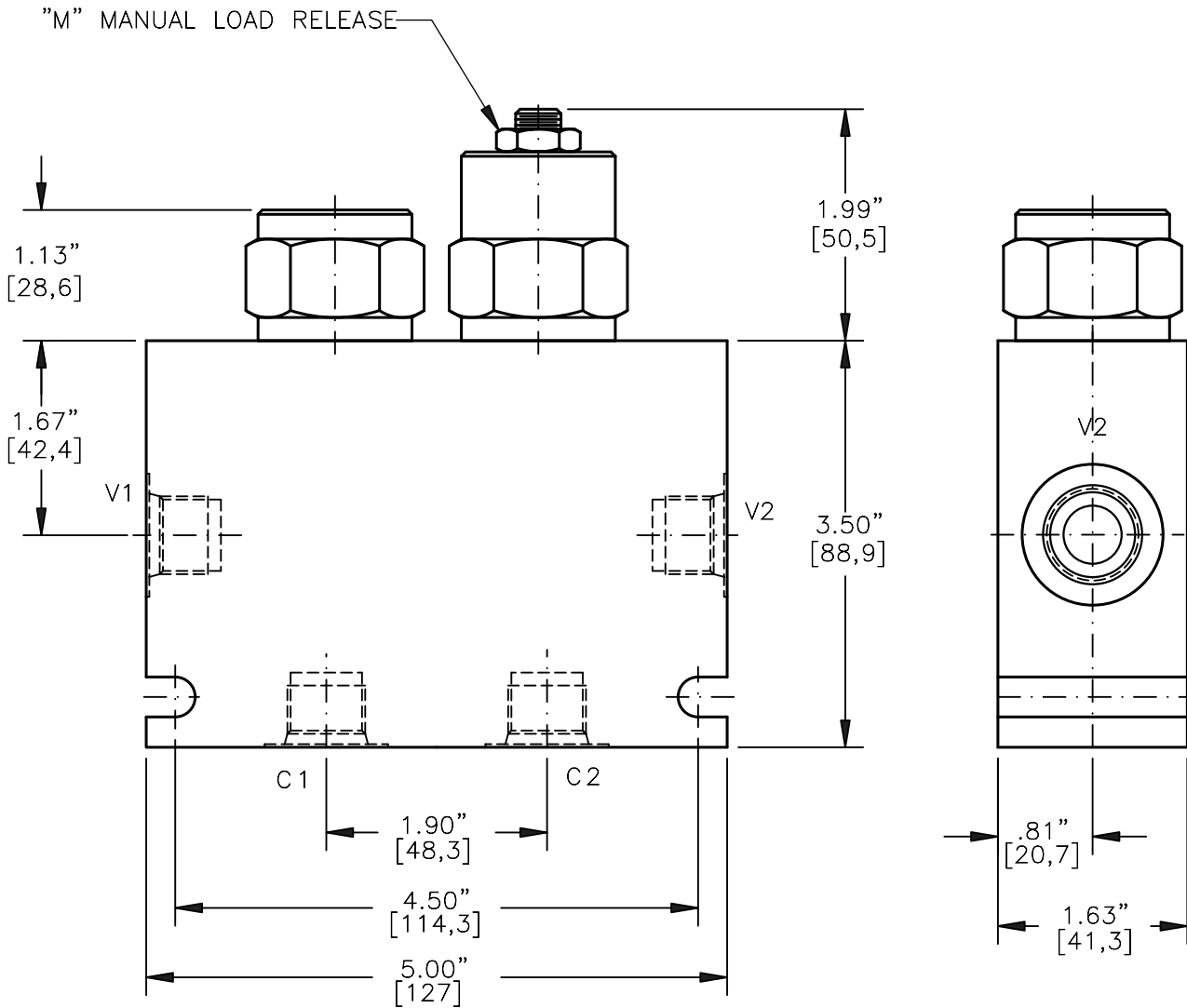
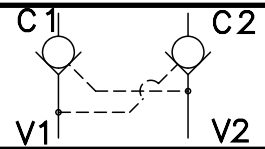
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DUAL PILOT OPERATED CHECK VALVE POPPET  
TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.



**DPOC-12-X-X-X-XXX**

BASIC

SIZE

12 = 1.062"-12 UNF

SEALS

N = BUNA "N"

V = VITON

ADJUSTMENT

F = FIXED

M = MANUAL RELEASE

CRACK PRESSURE

010 = 10 PSI

030 = 30 PSI

060 = 60 PSI

PORTS

04BX = G 1/2" BSPP

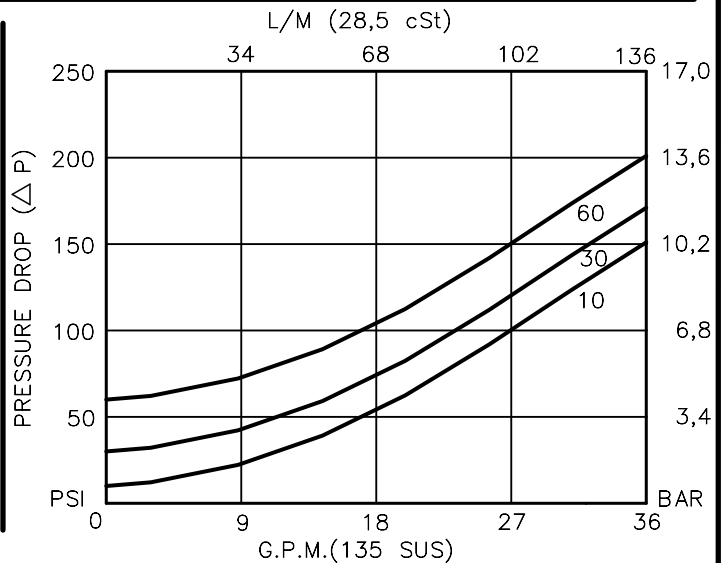
06BX = G 3/4" BSPP

10TX = SAE - #10

12TX = SAE - #12

"A" - ALUM. HOUSING

"S" - STEEL HOUSING



## DUAL PILOT OPERATED CHECK VALVE

### POPPET TYPE, PILOT TO OPEN, 3 TO 1 PILOT RATIO.

#### DESCRIPTION

This unit is a cartridge type, guided poppet, with cross line pilot, dual hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

#### OPERATIONS

This valve allows free flow from port V1 to port C1 and V2 to C2 then blocks reverse flow until a pilot pressure is sensed at pilot ports which are connected to ports V1 and V2 therefore opening flow from port C1 or port C2.

This pilot operated check valve has a 3 to 1 pilot ratio, meaning that it takes at least one-third of the load pressure held at port 1 that is required at port 3 to open the valve.

#### FEATURES AND BENEFITS

A low friction seal on pilot piston is standard.  
 A separate heavy spring assures fast return of the pilot piston for a very quick, reliable and positive valve re-seat.  
 Optional screw type manual load release is available.  
 All external carbon steel parts are plated for longer life against the elements.  
 All cartridge valves are 100% functionally tested.

#### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 36.0 GPM [136.3 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

FILTRATION: 25 microns or better.

SEAL KIT: SKN-1228 Buna "N"

SKV-1228 Viton

WEIGHT: 2.65 lb [1.21 kg] Aluminium. 5.25 lbs [2.38] Steel.

VALVE CAVITIES: #C1225

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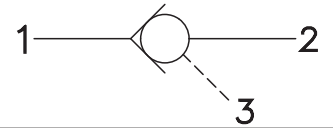
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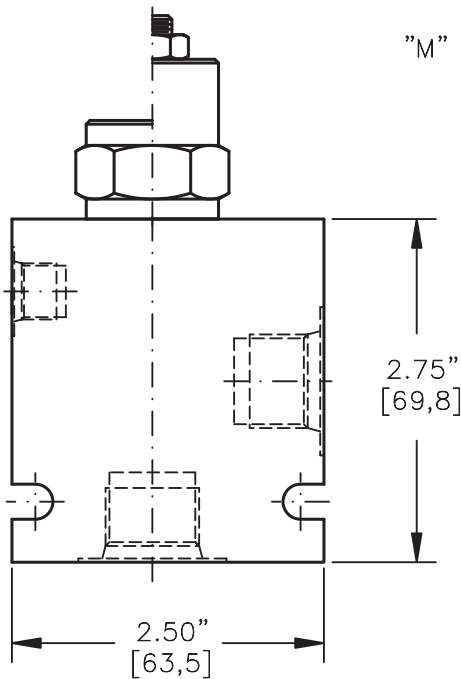
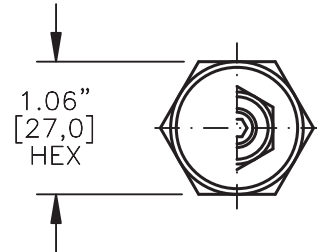


PILOT OPERATED CHECK VALVE POPPET TYPE,  
PILOT TO CLOSE, PILOT RATIO.



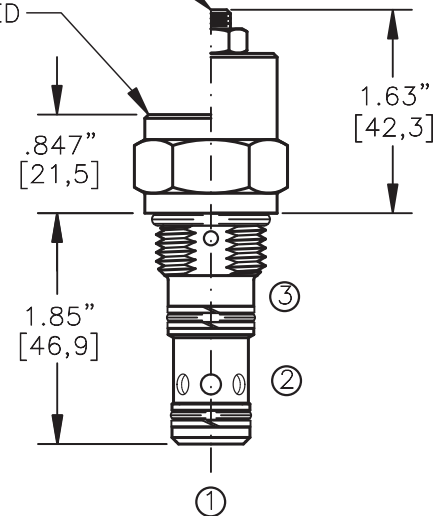
TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



"M" MANUAL LOAD RELEASE  
1/2" [12,7] HEX

"F" FIXED



NOTE: FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-022.1.

**PTCC-10-X-X-X-X**

BASIC

SIZE

10 = 7/8"-14 UNF

SEALS

N = BUNA "N"

V = VITON

ADJUSTMENT

F = FIXED

M = MANUAL RELEASE

PILOT RATIO

2 = 2 TO 1

3 = 3 TO 1

PORTS

0 = CARTRIDGE ONLY

06TX = SAE - #6

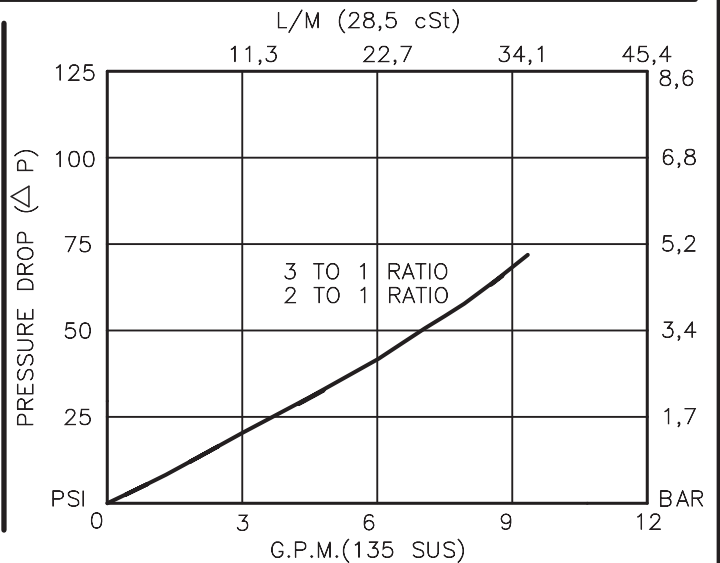
08TX = SAE - #8

02BX = 1/4" BSPP

03BX = 3/8" BSPP

"A" - ALUM. HOUSING

"S" - STEEL HOUSING



**PILOT OPERATED CHECK VALVE****POPPET TYPE, PILOT TO CLOSE, PILOT RATIO.****DESCRIPTION**

This unit is a SCREW-IN cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device for high pressure applications.

**OPERATIONS**

This valve allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1 for holding a load. Flow will not be allowed from port 2 to port 1 when pressure is applied to port 3. This pilot operated check valve has a 3 to 1 or 2 to 1 pilot ratio, meaning that port 3 requires at least one-third or half of the load pressure held at port 2 to close the valve.

**FEATURES AND BENEFITS**

A low friction seal on pilot piston is standard.  
 A separate heavy spring assures fast return of the pilot piston for a very quick, reliable and positive valve re-open.  
 Optional screw type manual load release is available.  
 All external carbon steel parts are plated for longer life against the elements.  
 All cartridge valves are 100% functionally tested.  
 Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [38 l/m] nominal. See performance chart.

PILOT RATIO: 3 TO 1 OR 2 TO 1

INTERNAL LEAKAGE: 5 drops per minute maximum @ 5,000 PSI [350 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restrictions.

SEAL KIT: SKN-1028 Buna "N"  
 SKV-1028 Viton

WEIGHT: .32 lb [.15 kg] cartridge only.

VALVE CAVITY: #C1025, See Page 0-022.0.

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