



Cartridge Valves Accessories Technical Information

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Cartridge Valves Accessories Technical Information

CPF20-3 Cavity Filter

OPERATION

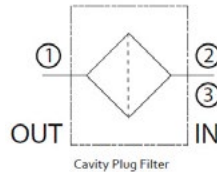
This is a filter that fits into a standard cartridge cavity (SDC20-3)

Not recommended as a substitute for hydraulic system filters.

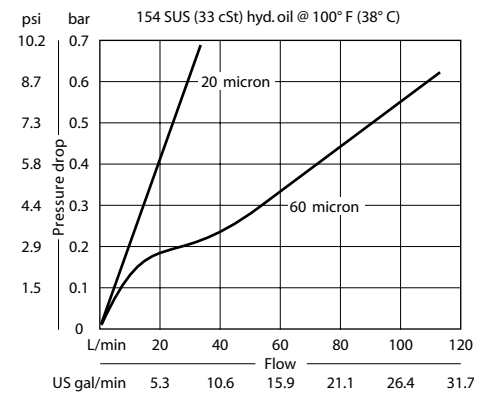
SPECIFICATIONS

Pressure rating	207 bar [3000 psi]
Nominal flow: 20 micron	38 L/min [10 gpm]
Nominal flow: 60 micron	114 L/min [30 gpm]
Weight	0.47 kg [1.04 lbs]
Cavity	SDC20-3

Schematic



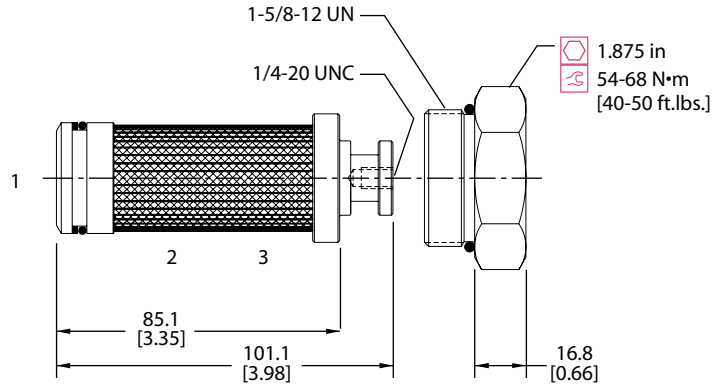
Performance Curve



DIMENSIONS

mm [in]

Cross section



ORDERING INFORMATION

CPF20 - 3 - B - 20S - P - 020			
Seals	Seal kit	Filter mesh	Plug option
B = Buna-N V = Viton	120608 120609	10 = 10 micron 20 = 20 micron 30 = 30 micron 60 = 60 micron	P = Filter w/ #20 SAE hex plug Omit = Filter only
Housing and ports	Housing P/N		
0 = No Housing 6B=AL, 3/4 BSP 8B=AL, 1 BSP 12S=AL, #12 SAE 16S=AL, #16 SAE Other housings available	No Housing CP20-3-6B CP20-3-8B CP20-3-12S CP20-3-16S		



Cartridge Valves Accessories Technical Information

CP600-5 Hand Pump

OPERATION

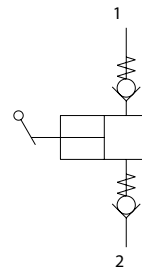
This is a manually operated uni-directional pump.

These small displacement hand pumps are used typically for piloting the operation of small hydraulic cylinders or valves. These pumps can be mounted inline using the standard housing or in custom HICs. For smooth operation, inlet lines should not be excessively long, and the vertical distance between pump and tank level no more than 300 mm (12 inch).

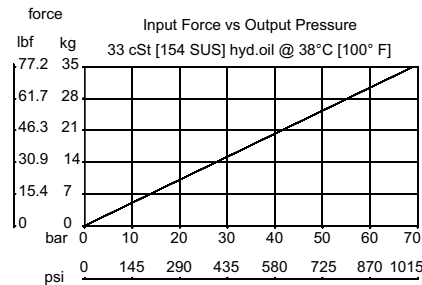
SPECIFICATIONS

Pressure rating	207 bar [3000 psi]
Displacement	1.2 cu. cm [0.07 cu. in.]/stroke
Leakage	6 drops/min @ Rated pressure
Weight	0.24 kg [0.52 lbs]
Cavity	SDC10-2
Pump force	34N [7.7lbs]

SCHEMATIC



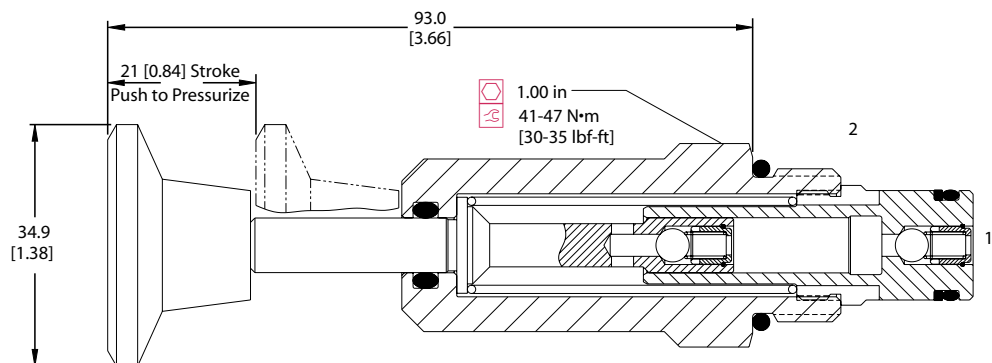
PERFORMANCE CURVE



DIMENSIONS

mm [in]

Cross section



ORDERING INFORMATION

CP600-5-B-6S			
Seals		Housing & Ports	Housing P/N
B = Buna-N	Seal kit 120015	0 = Cartridge only	No Housing
V = Viton	120016	6S = AL, #6 SAE	CP10-2-6S
		8S = AL, #8 SAE	CP10-2-8S
		DG3B = AL, 3/8 BSPP	SDC10-2-DG-3B
		DG4B = AL, 1/2 BSPP	SDC10-2-DG-4B
		Other housings available	



Cartridge Valves Accessories Technical Information

CP602-5 Hand Pump

OPERATION

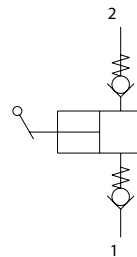
This is a manually operated uni-directional pump.

These small displacement hand pumps are used typically for piloting the operation of small hydraulic cylinders or valves. These pumps can be mounted inline using the standard housing or in custom HICs. For smooth operation, inlet lines should not be excessively long, and the vertical distance between pump and tank level no more than 300 mm (12 inch).

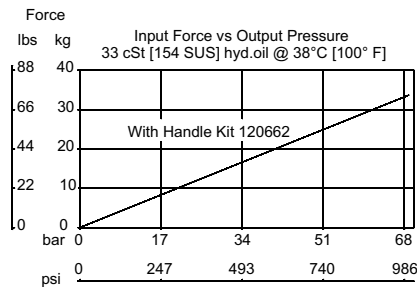
SPECIFICATIONS

Pressure rating	207 bar [3000 psi]
Displacement	9.2 cm ³ [0.56 in ³] / stroke
Leakage	6 drops/ minute @ Rated pressure
Cavity	SDC16-2

SCHEMATIC



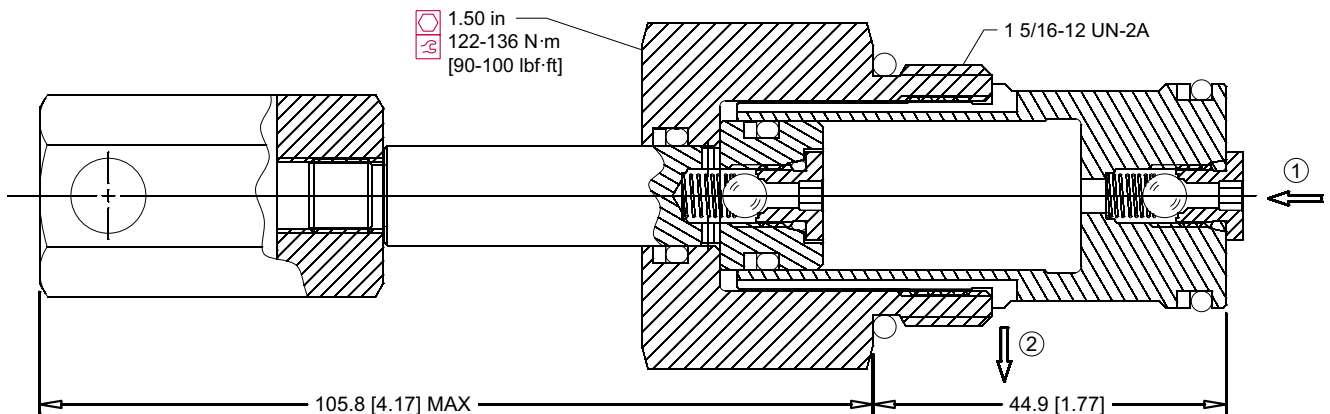
PERFORMANCE CURVE



DIMENSIONS

mm [in]

Cross section



ORDERING INFORMATION

CP602-5-B-12S			
Seals		Housing and Ports	Housing P/N
	Sealkit	0 = No Housing	No Housing
B = Buna-N	120019	6S = #6 SAE	11083731
V = Viton	120020	8S = #8 SAE	11083691
		12S = AL #12 SAE	CP16-2-12S
		16S = AL #16 SAE	CP16-2-16S
		6B = AL 3/4 BSPP	CP16-2-6B
		8B = AL 1 BSPP	CP16-2-8B
Handle kit is required (sold separately)		Other housings available	
P/N 120662			

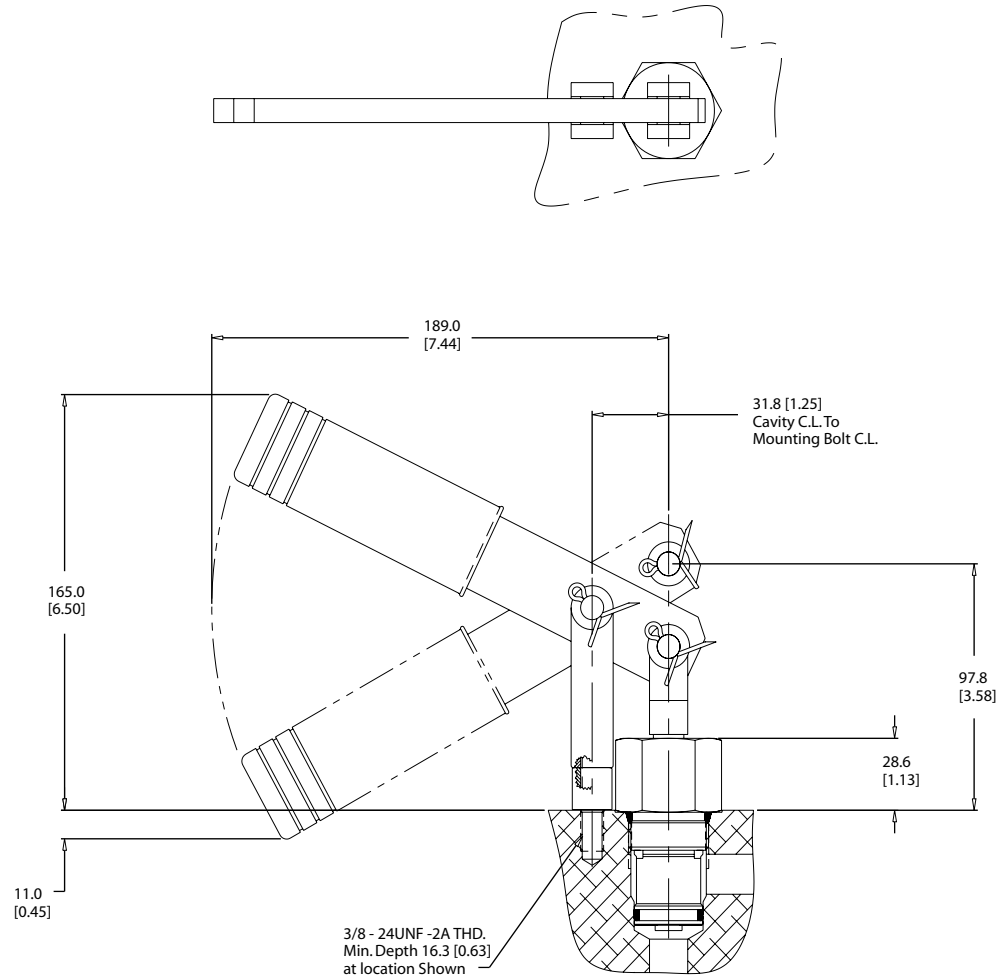


Cartridge Valves Accessories Technical Information

120662 Handle Kit

DIMENSIONS

Installation Drawing



ORDERING INFORMATION

To order, request part number 120662—handle kit

OPERATION

This is a manually operated uni-directional pump.

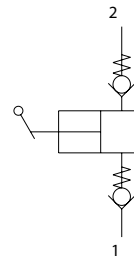
These small displacement hand pumps are used typically for piloting the operation of small hydraulic cylinders or valves. These pumps can be mounted inline using the standard housing or in custom HICs. For smooth operation, inlet lines should not be excessively long, and the vertical distance between pump and tank level no more than 300 mm (12 inch).

These pumps can work in outdoor applications if the ambient air is not contaminated by powder and dust.

SPECIFICATIONS

Size		06	
Displacement Per Stroke		cm ³ [in ³]	0.94 [0.057]
Max. pressure		bar [psi]	315 [4570]
NCS Cavity			NCS06/2
Max tightening torque		Nm [lbf·in]	40 [354]
Weight	cartridge	kg [lb]	0.254 [0.560]
	cartridge with handle	kg [lb]	0.550 [1.213]
	with housing	kg [lb]	0.854 [1.883]

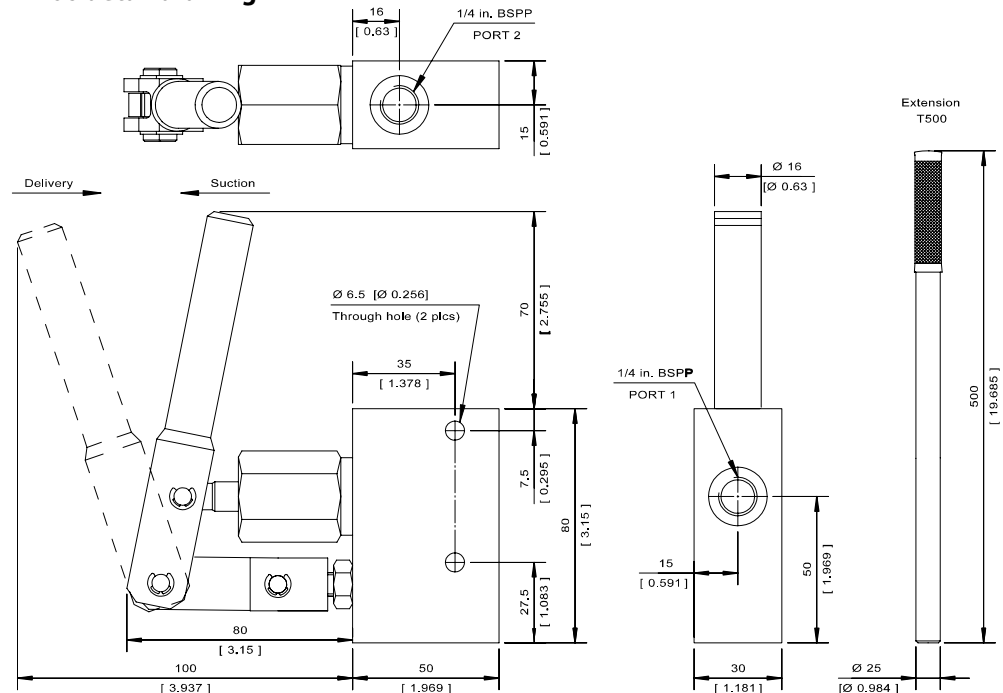
SCHEMATIC



DIMENSIONS

mm [in]

MP06 detail drawing



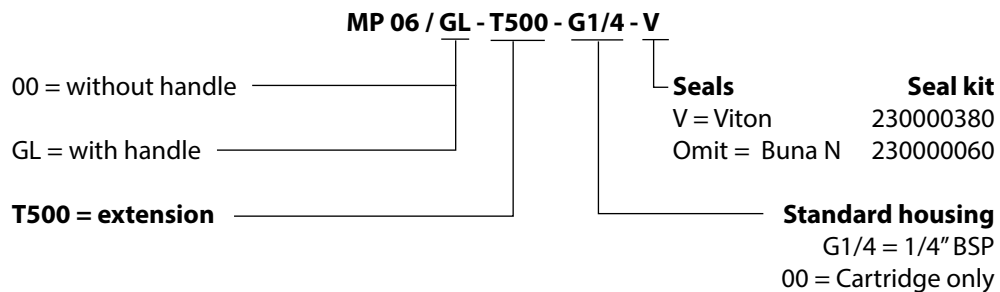


Cartridge Valves Accessories Technical Information

MP 06 Hand Pumps

ORDERING INFORMATION

Example of designation MP 06



Housing Part #502500313

OPERATION

This is a manually operated uni-directional pump.

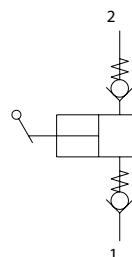
These small displacement hand pumps are used typically for piloting the operation of small hydraulic cylinders or valves. These pumps can be mounted inline using the standard housing or in custom HICs. For smooth operation, inlet lines should not be excessively long, and the vertical distance between pump and tank level no more than 300 mm (12 inch).

These pumps can work in outdoor applications if the ambient air is not contaminated by powder and dust.

SPECIFICATIONS

Size		12
Displacement Per Stroke	cm ³ [in ³]	5 [0.305]
Max. pressure	bar [psi]	315 [4570]
NCS Cavity		NCS12/2
Max tightening torque	Nm [lbf-in]	80 [708]

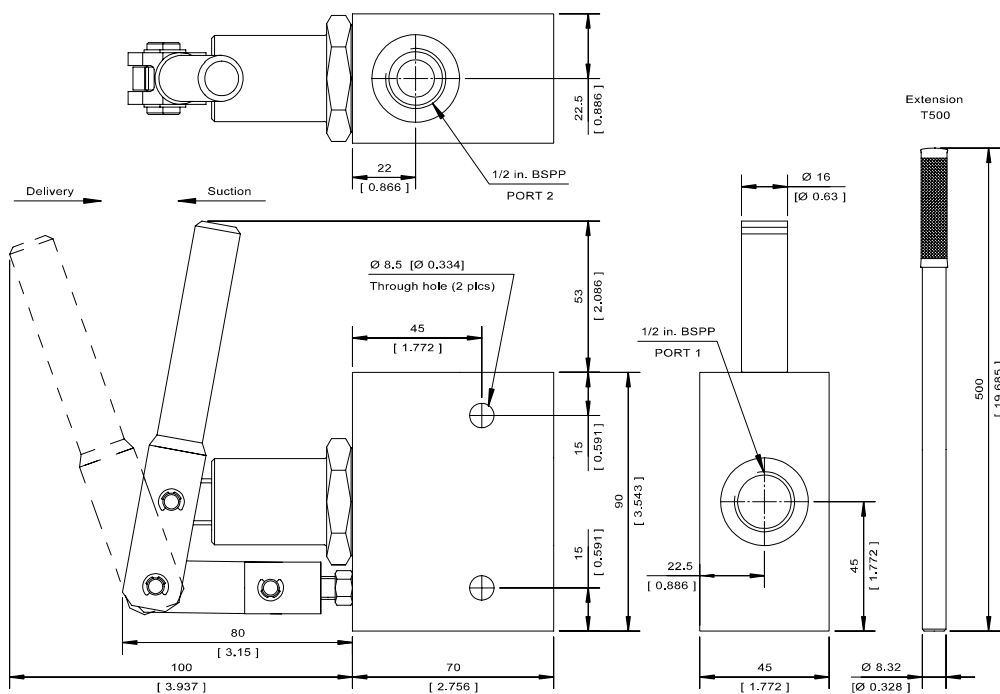
SCHEMATIC



DIMENSIONS

mm [in]

MP12 detail drawing



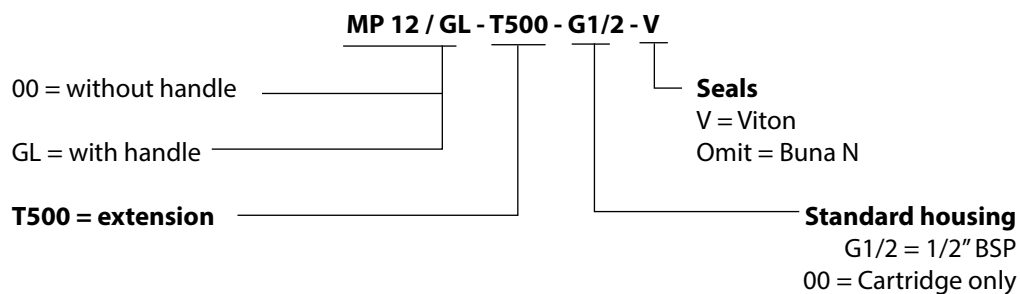


Cartridge Valves Accessories Technical Information

MP 12 Hand Pumps

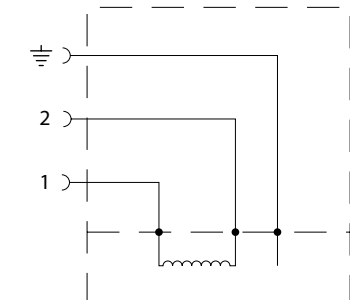
ORDERING INFORMATION

Example of designation MP 12

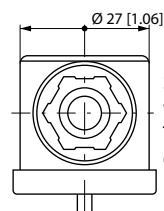
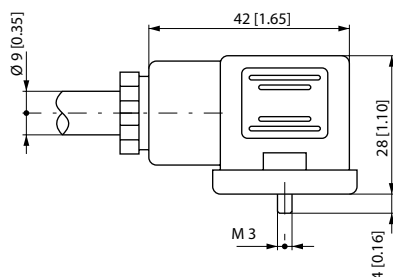


Housing Part #502500613

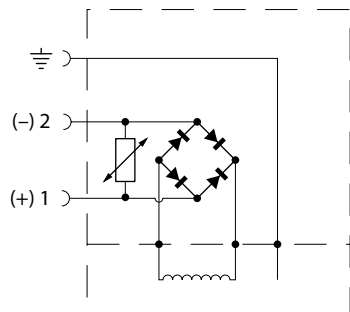
STANDARD CONNECTORS TO DIN 43650



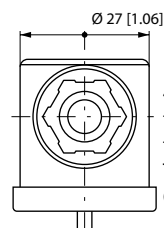
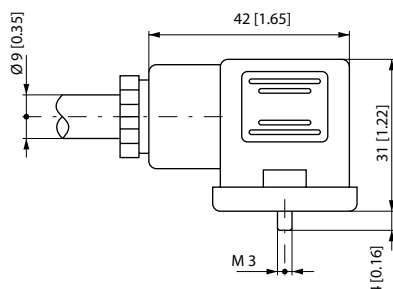
TYPE A CONNECTOR



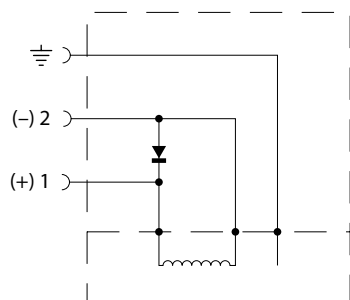
Standard connector for use with DC input.
Type A
Order no. R088010080



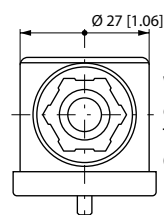
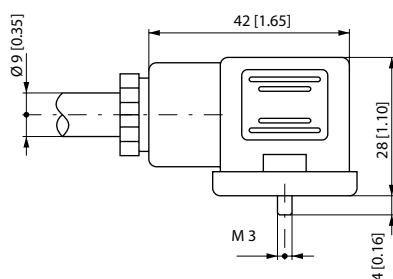
TYPE C CONNECTOR



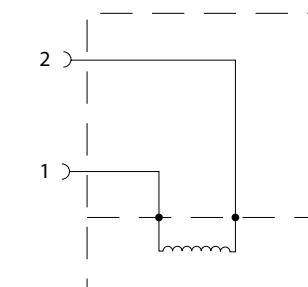
Full wave bridge rectifier with 4 diodes and VDR protecting the a.c. side against overvoltage from electrical power supply.
Type C
Order no. R088010060



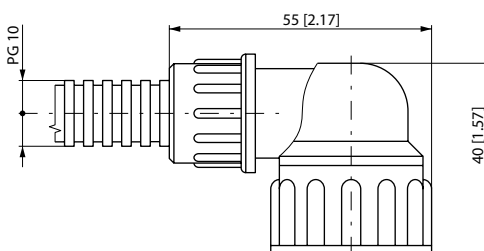
TYPE E CONNECTOR



With diode blocking overvoltage on opening.
Type E
Order no. R088010410



TYPE K CONNECTOR



Standard connector to Kostal pattern, for use with DC input.
Type K
Order no. R088010350

REMARK

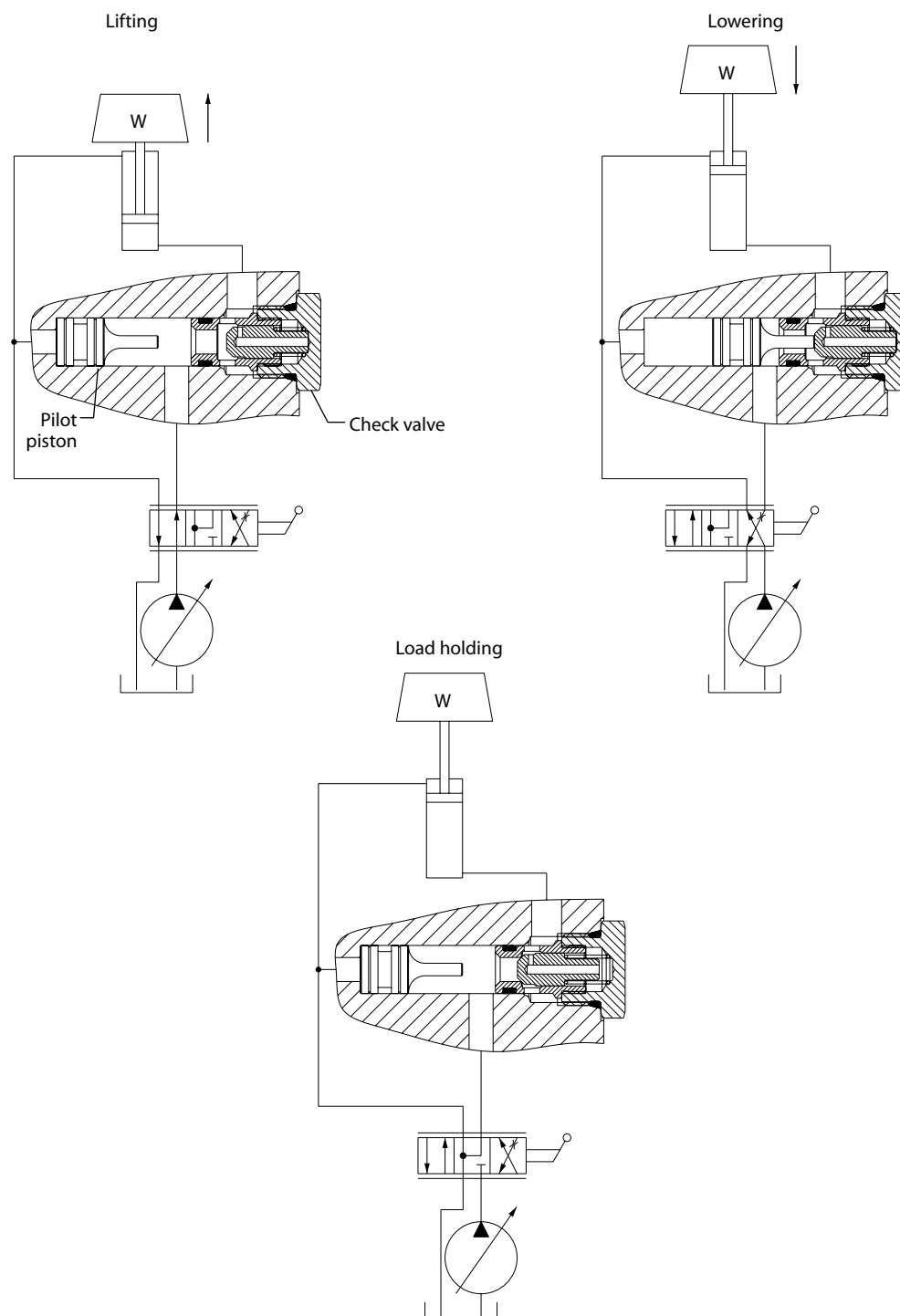
For details of use, see technical data relevant to the individual solenoid valves. All connector are supplied unassembled. Connectors with indicator lights are available on request (Consult factory).

OPERATION

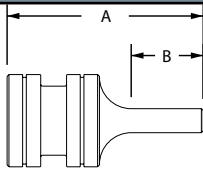
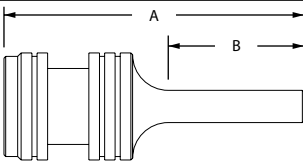
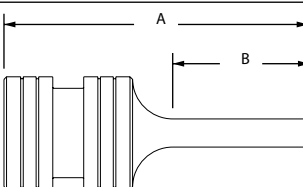
Pilot pistons used with check valve cartridges are an economical way to create pilot-operated check valve functions in custom **H**ydraulic **I**ntegrated **C**ircuits (HIC).

EXAMPLE

Application of pilot pistons



Single-acting pilot pistons

Series	Compatible valves	Pilot ratio	Seals (optional)	Pilot piston order code	A mm [in]	B mm [in]	Bore diameter* mm [in]	
8	CV08-NP	4:1	1) 720092 O-rings 2) 720500 back-up rings	621460	26.97 [1.062]	14.27 [0.562]	Ø 12.70 ± 0.03 [0.501 ± 0.001]	
10	CV10-NP	4:1	1) 720178 O-ring 2) 720412 back-up rings	621175	44.45 [1.750]	25.40 [1.000]	Ø 15.90 ± 0.03 [0.626 ± 0.001]	
	CP100-3	2.5:1		621176	47.63 [1.875]	28.58 [1.125]		
				621535	38.10 [1.500]	19.05 [0.750]		
12	CP101-1	4:1	1) 720031 O-ring 2) 720385 back-up rings	621538	60.33 [2.375]	34.93 [1.375]	Ø 22.25 ± 0.03 [0.876 ± 0.001]	

Consult factory for bore details.



Cartridge Valves Accessories Technical Information

Pilot Pistons

Double-acting pilot pistons

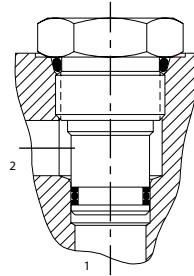
Series	Compatible valves	Pilot ratio	Seals (optional)	Pilot piston order code	A mm [in]	B mm [in]	Bore diameter* mm [in]	
8	CV08-NP	4:1	1) 720092 O-rings 2) 720500 back-up rings	621457	41.28 [1.625]	14.27 [0.562]	Ø 12.70 ± 0.03 [0.501 ± 0.001]	
				621553	52.37 [2.062]	19.84 [0.781]		
				625138	38.10 [1.500]	12.70 [0.500]		
				625298	49.53 [1.950]	18.42 [0.725]		
10	CV10-NP	4:1	1) 720178 O-ring 2) 720412 back-up rings	621058	60.50 [2.382]	20.73 [0.816]	Ø 15.90 ± 0.03 [0.626 ± 0.001]	
	CP100-3	2.5:1		621400	57.15 [2.250]	19.05 [0.750]		
				621692	69.85 [2.750]	25.40 [1.000]		
				625104	66.04 [2.600]	23.50 [0.925]		
12	CP101-1	4:1	1) 720031 O-ring 2) 720385 back-up rings	621539	82.55 [3.250]	28.58 [1.125]	Ø 22.25 ± 0.03 [0.876 ± 0.001]	

Consult factory for bore details.

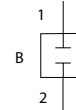
FUNCTION

Cavity plugs are used to block flow into and out of set ports or to block flow between given ports.

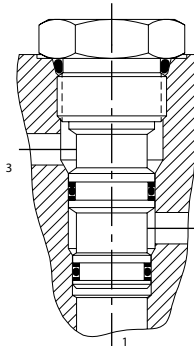
2 WAY PLUG



Plug options



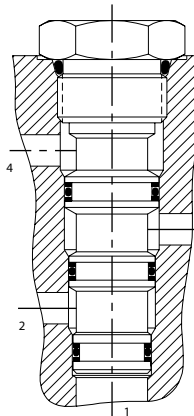
3 WAY PLUG



Plug options



4 WAY PLUG



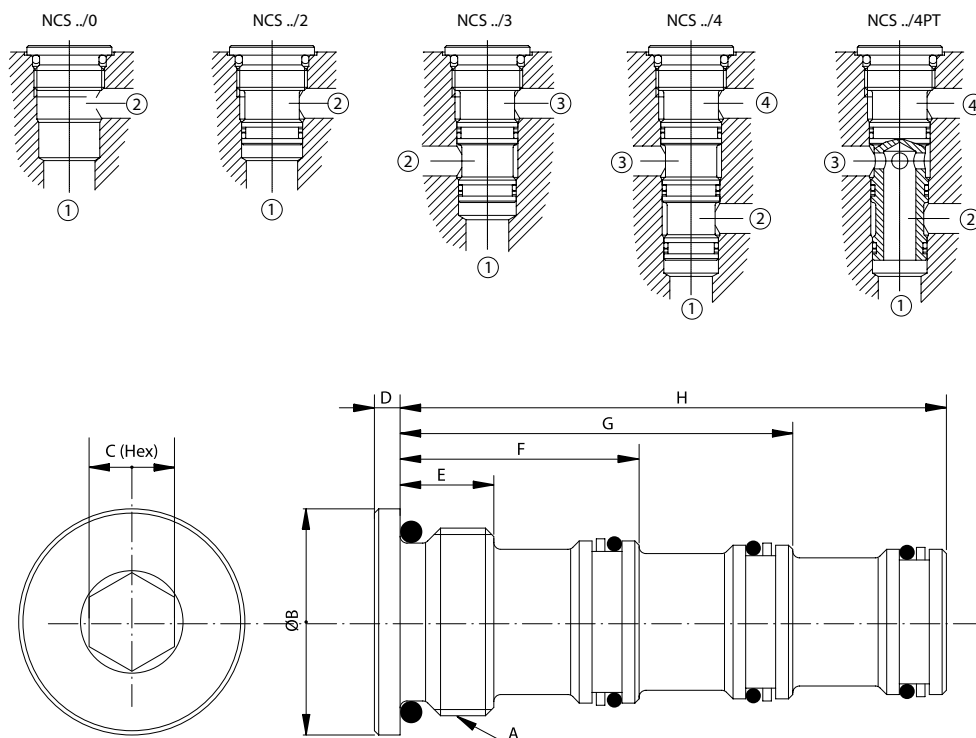
Plug options



ORDERING INFORMATION

Series	CP10 - B - 3 - B	Configuration See schematics
04 - 4 Series		
08 - 8 Series		
10 - 10 Series		
12 - 12 Series		
16 - 16 Series		
20 - 20 Series		
Seals		Cavity type
B - Buna-N (std.)		2 - 2 Way
V - Viton (opt.)		3 - 3 Way
		3S - 3 Way (10, 12, 16 & 20 series only)
		4 - 4 Way

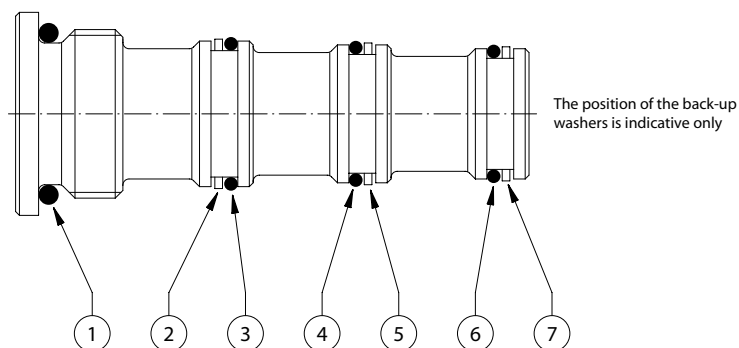
PLUGS FOR NCS CAVITIES



Dimensions

Type	Dimensions-mm								Order number for plug complete	Weight of plug complete-kg [lbs.]
	A	B	C	D	E	F	G	H		
NCS04/0	M18x1.5	22 [0.87]	8	3 [0.12]	10.5 [0.41]	—	—	—	92.00.010.1	0.018 [0.04]
NCS04/2	M18x1.5	22 [0.87]	8	3 [0.12]	—	24.5 [0.96]	—	—	92.00.009.1	0.035 [0.08]
NCS04/3	M18x1.5	22 [0.87]	8	3 [0.12]	—	—	39.5 [1.56]	—	92.00.008.1	0.057 [0.13]
NCS04/4	M18x1.5	22 [0.87]	8	3 [0.12]	—	—	—	54.5 [2.15]	92.00.007.1	0.070 [0.15]
NCS04/4PT	M18x1.5	22 [0.87]	8	3 [0.12]	—	—	—	54.5 [2.15]	92.00.021.1	0.060 [0.13]
NCS06/0	M22x1.5	26 [1.02]	10	3 [0.12]	11 [0.43]	—	—	—	92.00.006.1	0.032 [0.07]
NCS06/2	M22x1.5	26 [1.02]	10	3 [0.12]	—	28 [1.10]	—	—	92.00.004.1	0.060 [0.13]
NCS06/3	M22x1.5	26 [1.02]	10	3 [0.12]	—	—	46 [1.81]	—	92.00.014.1	0.098 [0.22]
NCS06/4	M22x1.5	26 [1.02]	10	3 [0.12]	—	—	—	64 [2.52]	92.00.013.1	0.120 [0.26]
NCS06/4PT	M22x1.5	26 [1.02]	10	3 [0.12]	—	—	—	64 [2.52]	92.00.020.1	0.100 [0.22]
NCS12/0	M33x2	38 [1.50]	12	3 [0.12]	15 [0.59]	—	—	—	92.00.018.1	0.117 [0.26]
NCS12/2	M33x2	38 [1.50]	12	3 [0.12]	—	38 [1.50]	—	—	92.00.017.1	0.200 [0.44]
NCS12/3	M33x2	38 [1.50]	12	3 [0.12]	—	—	63 [2.48]	—	92.00.016.1	0.280 [0.62]
NCS12/4	M33x2	38 [1.50]	12	3 [0.12]	—	—	—	88 [3.46]	92.00.015.1	0.370 [0.81]
NCS12/4PT	M33x2	38 [1.50]	12	3 [0.12]	—	—	—	88 [3.46]	92.00.022.1	0.310 [0.68]

NCS



Type	Seals back-up washers (composition)	Spares: Set of O-rings and back-up washers (pack of 10 sets minimum)	
		Standard seals	Viton seals
NCS04/0	1	230030070	230370070
NCS04/2	1 2 3	230000190	230000390
NCS04/3	1 2 3 4 5	230000160	230000450
NCS04/4	1 2 3 4 5 6 7	230000250	230000460
NCS06/0	1	230080210	230390210
NCS06/2	1 2 3	230000060	230000380
NCS06/3	1 2 3 4 5	230000070	230000110
NCS06/4	1 2 3 4 5 6 7	230000080	230000350
NCS12/0	1	230030110	230370110
NCS12/2	1 2 3	230000120	230000470
NCS12/3	1 2 3 4 5	230000130	230000360
NCS12/4	1 2 3 4 5 6 7	230000100	230000480



Cartridge Valves Accessories Technical Information

Orifice Plugs

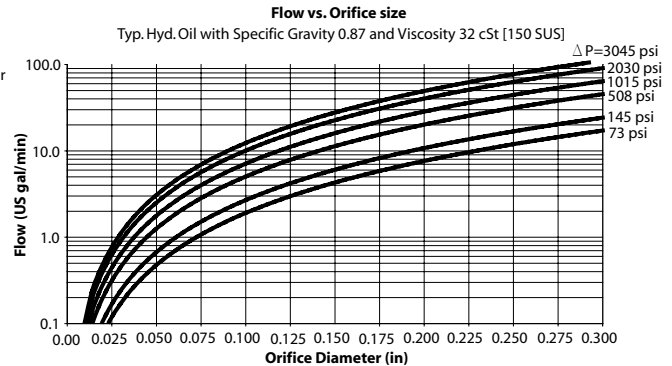
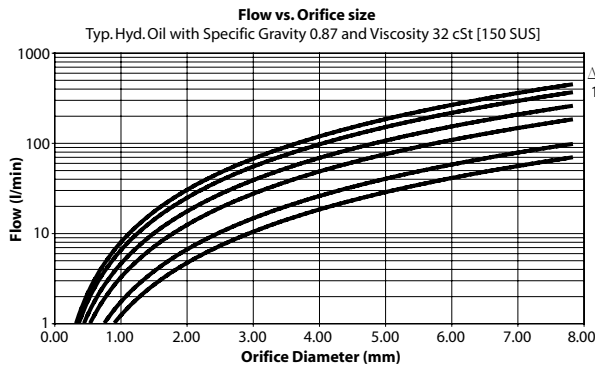
OPERATION

Install in manifold to restrict fluid flow.

SCHEMATIC

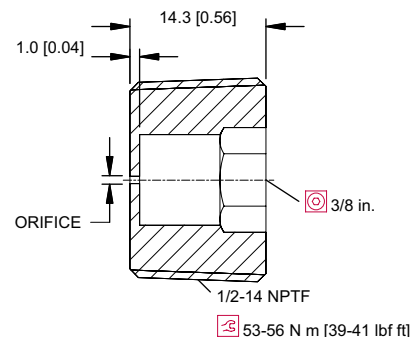
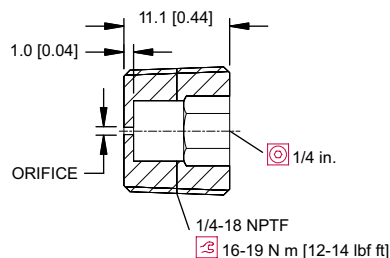
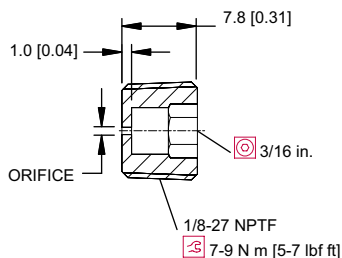
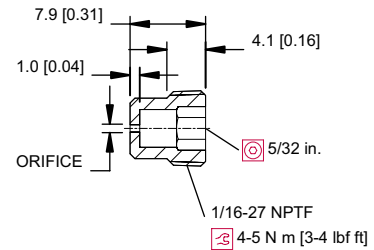
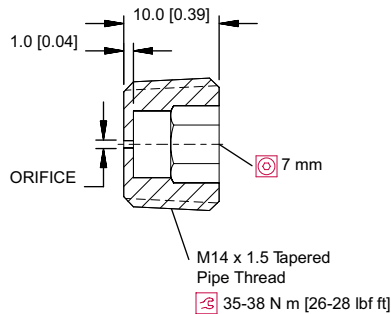
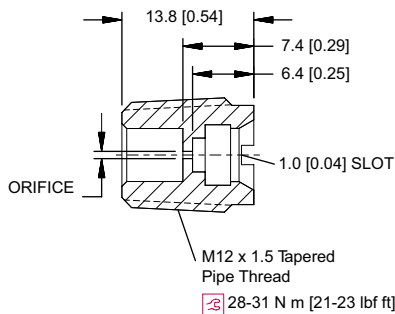
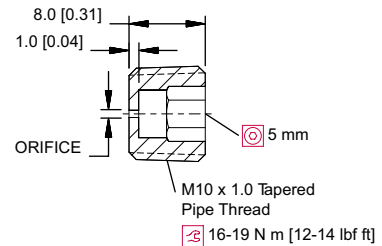
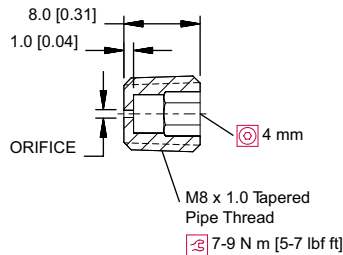
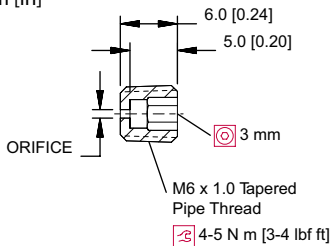


SPECIFICATIONS



DIMENSIONS

mm [in]





Cartridge Valves Accessories Technical Information

Orifice Plugs

ORDERING INFORMATION

Orifice Diameter		Orifice Plug Part Number								
		Plug Thread Size								
mm	[in]	1/16-27 NPTF	1/8-27 NPTF	1/4-18 NPTF	1/2-14 NPTF	M6 x 1.0 Tapered Pipe Thread	M8 x 1.0 Tapered Pipe Thread	M10 x 1.0 Tapered Pipe Thread	M12 x 1.5 Tapered Pipe Thread	M14 x 1.5 Tapered Pipe Thread
None	None			320151	320153					
0.33	0.013	11008337				625958				
0.38	0.015	620510				625414				
0.43	0.017								626062	
0.46	0.018									
0.51	0.020	621510	11015116			624898	625190			
0.61	0.024	622417				624904		624478		
0.64	0.025	620634				624862	624838			
0.71	0.028	622846				62486				
0.76	0.030	620296	620299							
0.79	0.031					624855	624857	624308	626133	625266
0.81	0.032	624410								
0.89	0.035	622447				624903	625346	625424		
0.91	0.036	620777				626022				
0.97	0.038	621608								
0.99	0.039					624856	624821			
1.02	0.040	620511								
1.07	0.042	621702				626075				
1.14	0.045	621210								
1.19	0.047	620814	620591				624892	624427		
1.32	0.052	620573				624911	626100			
1.40	0.055	620572								
1.50	0.059					624846	624822	624152		
1.52	0.060	620297								
1.57	0.062	621496								
1.60	0.063					625197	624902	625252		
1.70	0.067					624844				
1.78	0.070	621554				625871	626041			
1.98	0.078	622117								
2.01	0.079					626135	624681	624153		
2.03	0.080									
2.06	0.081									
2.13	0.084									
2.18	0.086	621246								
2.21	0.087						625067			
2.26	0.089									
2.29	0.090					625002				
2.39	0.094		622721			625542		626138		
2.44	0.096	621051		626010						
2.46	0.097						626185			
2.49	0.098									
2.59	0.102						625630			
2.64	0.104									
2.67	0.105			621665						
2.74	0.108							625049		
2.79	0.110						625492			
2.82	0.111									
2.95	0.116	620575								
3.00	0.118							624480		
3.05	0.120									
3.10	0.122									
3.18	0.125		622722				626058	626151		
3.28	0.129									
3.30	0.130									
3.35	0.132						625543			
3.45	0.136									
3.56	0.140		622114						625929	
3.78	0.149	623712								
3.96	0.156									
4.06	0.160			621666						
4.22	0.166									
4.57	0.180		624362							
4.78	0.188				623224					
5.00	0.197									624501
5.16	0.203									
5.61	0.221									
5.84	0.230									625981
6.35	0.250									625068
7.92	0.312									

*Contact factory for additional orifice sizes.

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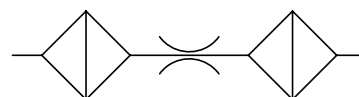
Cartridge Valves Accessories Technical Information

Screened Orifice Plug

OPERATION

Install in manifold to restrict fluid flow.

SCHEMATIC

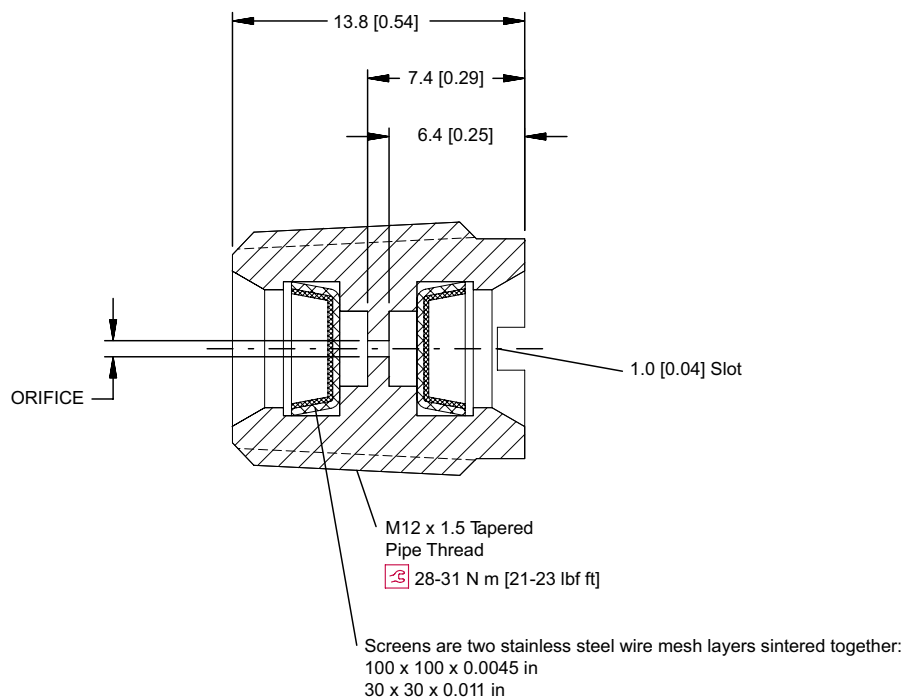


PERFORMANCE

Refer to Orifice plug sizing chart on page 18.28

DIMENSIONS

mm [in]



ORDERING INFORMATION

Orifice Diameter		Orifice Plug Part Number
mm	[in]	
0.38	0.015	923231
0.43	0.017	923038
0.46	0.018	923039
0.51	0.020	923061
0.64	0.025	923053
1.19	0.047	11070992
1.91	0.075	923186
3.56	0.140	923112