



# PRODUCT CATALOG



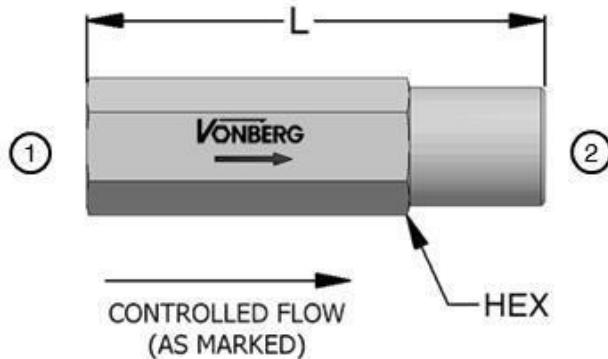
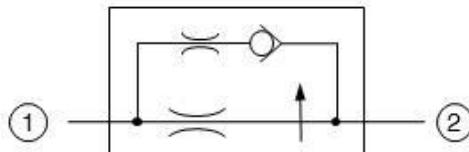
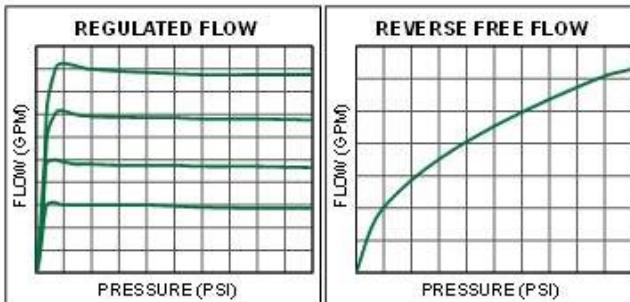
**Vonberg Valve, inc.**  
Hydraulic Valve Specialists

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# FLOW REGULATING VALVES



**PRODUCT**

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**DESCRIPTION**

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE NPTF PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

**OPERATION**

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

**FEATURES**

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- ALUMINUM BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

**SPECIFICATIONS**

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

**ORDERING INFORMATION**

13	XX	-	X	-	XX
SERIES NUMBER _____					
THREAD SIZE _____					
UNDAMPENED - BLANK _____					
DAMPENED (S.I.D.) - 1 _____					
REGULATED FLOW RATE (GPM) _____					

Model	INLET/OUTLET	FLOW RANGE	L	HEX
1302	1/4-18 NPTF	0.25 TO 6.0 GPM	3.50	0.938
1303	3/8-18 NPTF	0.5 TO 8.0 GPM	3.38	0.875
1304	1/2-14 NPTF	0.5 TO 15.0 GPM	4.00	1.125
1306	3/4-14 NPTF	1.0 TO 30.0 GPM	4.75	1.375
1308	1-11 1/2 NPTF	2.0 TO 50.0 GPM	5.50	1.625
1312	1 1/2-11 1/2 NPTF	5.0 TO 75.0 GPM	6.29	2.250

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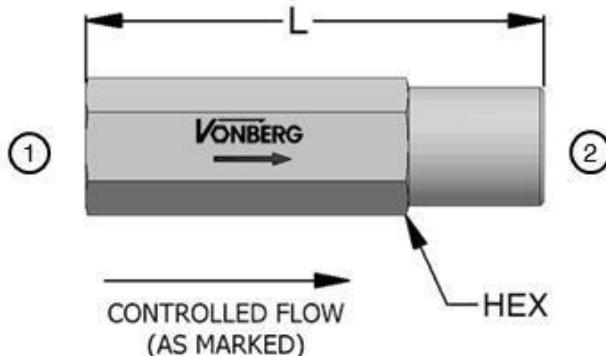
Page last updated: February 06, 2015



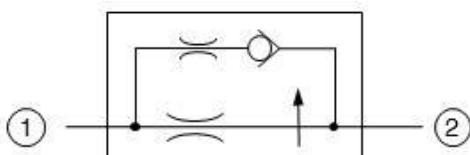
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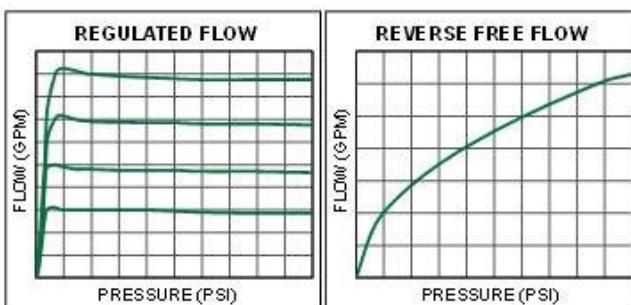
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE NPTF PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 60 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- ALUMINUM BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	25 PSI TO 3000 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

13	XX	L	-X-	XX
SERIES NUMBER _____				
THREAD SIZE _____				
LOW PRESSURE _____				
UNDAMPENED - BLANK				
DAMPENED (S.I.D.) - 1				
REGULATED FLOW RATE (GPM) _____				

Model	INLET/OUTLET	FLOW RANGE	L	HEX
1302L	1/4-18 NPTF	0.2 TO 2.0 GPM	3.50	0.938
1303L	3/8-18 NPTF	0.2 TO 3.0 GPM	3.38	0.875
1304L	1/2-14 NPTF	0.5 TO 6.0 GPM	4.00	1.125
1306L	3/4-14 NPTF	1.0 TO 10.0 GPM	4.75	1.375
1308L	1-11 1/2 NPTF	2.0 TO 20.0 GPM	5.50	1.625
1312L	1 1/2-11 1/2 NPTF	2.0 TO 40.0 GPM	6.29	2.250

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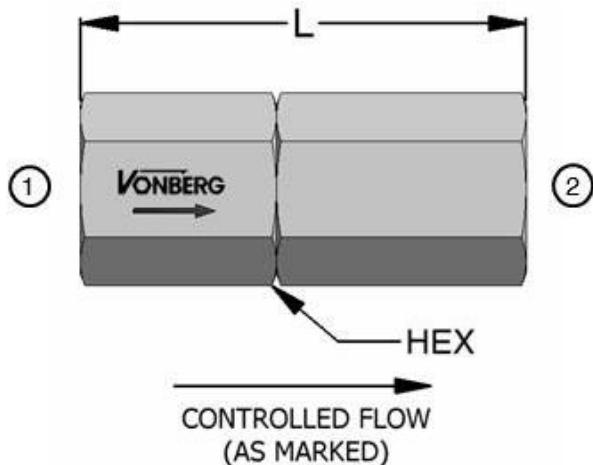
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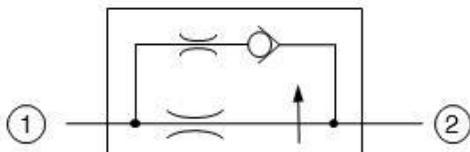
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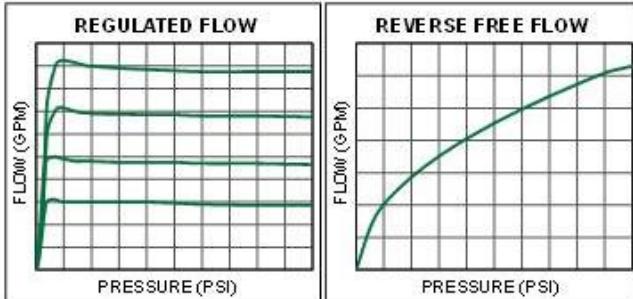
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE NPTF PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

135	X	-X	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
UNDAMPENED - BLANK _____			
DAMPENED (S.I.D.) - 1 _____			
REGULATED FLOW RATE (GPM) _____			

Model	Inlet/Outlet	Flow Range	L	Hex
1352	1/4-18 NPTF	0.25 TO 4.0 GPM	2.25	0.938
1353	3/8-18 NPTF	0.25 TO 5.0 GPM	2.50	0.938
1354	1/2-14 NPTF	0.5 TO 10.0 GPM	2.88	1.062

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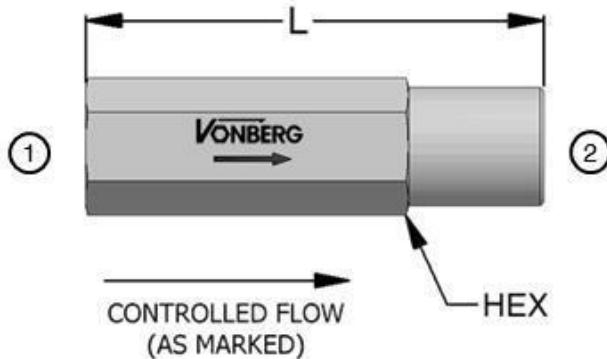
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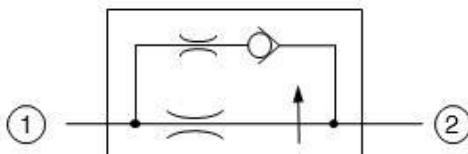
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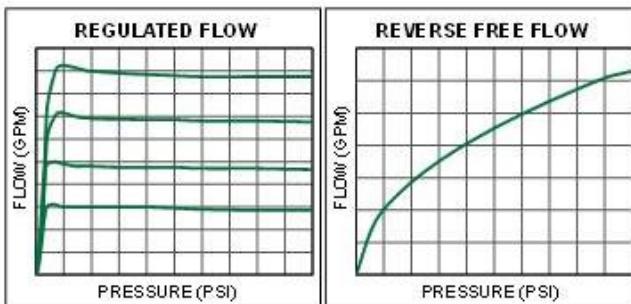
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE SAE PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- ALUMINUM BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

14	XX	-X-	XX
SERIES NUMBER _____			
THREAD SIZE _____			
UNDAMPENED - BLANK _____			
DAMPENED (S.I.D.) - 1 _____			
REGULATED FLOW RATE (GPM) _____			

Model	INLET/OUTLET	THREAD	FLOW RANGE	L	HEX
1406	-06 SAE	9/16-18	0.25 TO 8.0 GPM	3.00	0.750
1408	-08 SAE	3/4-16	0.5 TO 15.0 GPM	4.00	1.000
1410	-10 SAE	7/8-14	0.5 TO 15.0 GPM	4.00	1.125
1412	-12 SAE	1 1/16-12	1.0 TO 30.0 GPM	4.75	1.375
1416	-16 SAE	1 5/16-12	2.0 TO 50.0 GPM	5.50	1.625
1424	-24 SAE	1 7/8-12	5.0 TO 75.0 GPM	5.50	2.250

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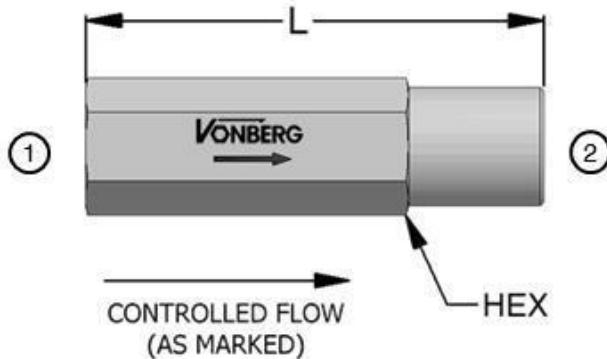
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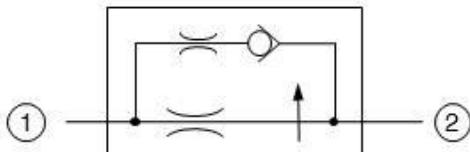
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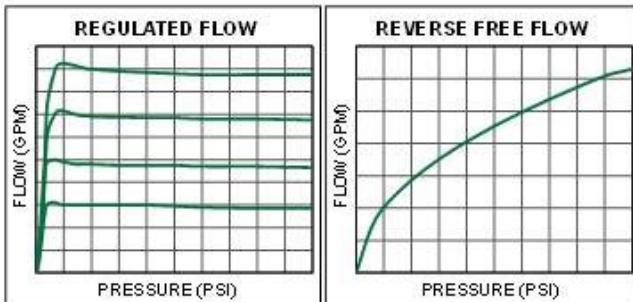
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE SAE PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 60 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- ALUMINUM BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	25 PSI TO 3000 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

14	XX	L	-X-	XX
SERIES NUMBER _____				
THREAD SIZE _____				
LOW PRESSURE _____				
UNDAMPENED - BLANK				
DAMPENED (S.I.D.) - 1				
REGULATED FLOW RATE (GPM) _____				

Model	INLET/OUTLET	THREAD	FLOW RANGE	L	HEX
1406L	#6 SAE	9/16-18	0.2 TO 2.0 GPM	3.00	0.750
1408L	#8 SAE	3/4-16	0.2 TO 3.0 GPM	4.00	1.000
1410L	#10 SAE	7/8-14	0.5 TO 6.0 GPM	4.00	1.125
1412L	#12 SAE	1 1/16-12	1.0 TO 10.0 GPM	4.75	1.375
1416L	#16 SAE	1 5/16-12	2.0 TO 20.0 GPM	5.50	1.625
1424L	#24 SAE	1 7/8-12	2.0 TO 40.0 GPM	5.50	2.250

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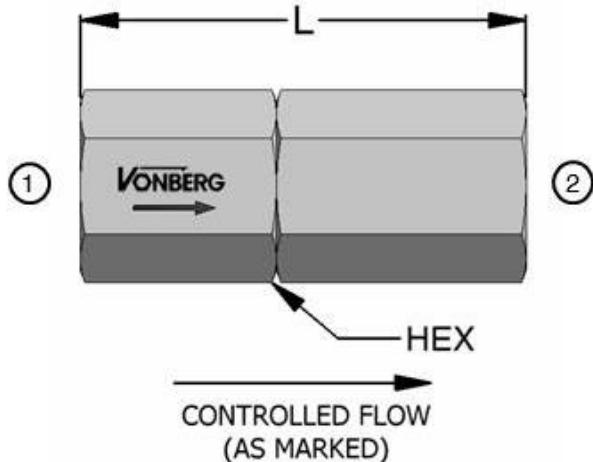
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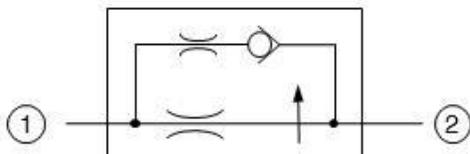
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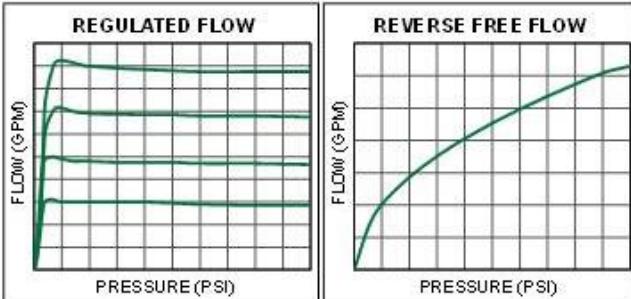
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE SAE PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

145	X	-X	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
UNDAMPENED - BLANK _____			
DAMPENED (S.I.D.) - 1 _____			
REGULATED FLOW RATE (GPM) _____			

Model	INLET/OUTLET	FLOW RANGE	L	HEX
1454	-04 SAE - 7/16-20	0.25 TO 4.0 GPM	2.25	0.750
1456	-06 SAE - 9/16-18	0.25 TO 5.0 GPM	2.50	0.938
1458	-08 SAE - 3/4-16	0.5 TO 10.0 GPM	2.88	1.062

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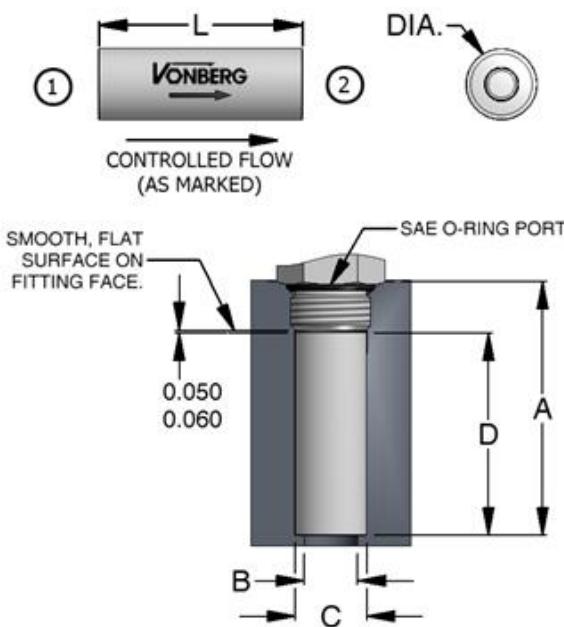
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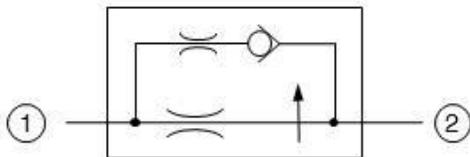
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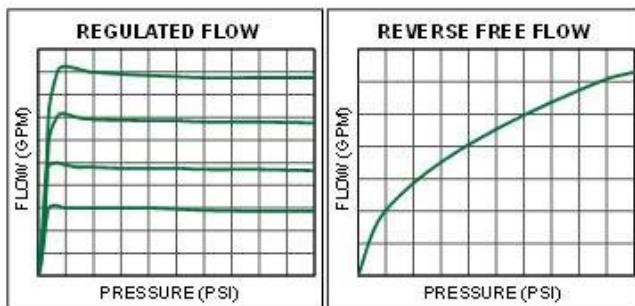
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, SLIP-IN CARTRIDGE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.
- BORE DEPTHS ASSUME THE USE OF A STD. O-RING BOSS CONNECTOR WITH THREAD LENGTHS BASED ON SAE J514.
- CARTRIDGE BODY SEATS ON SMOOTH, FLAT SURFACE OF FITTING IN THE REGULATED FLOW DIRECTION.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- ALUMINUM BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

15	XX	-X-	XX
SERIES NUMBER _____			
PORT SIZE _____			
UNDAMPENED - BLANK _____			
DAMPENED (S.I.D.) - 1 _____			
REGULATED FLOW RATE (GPM) _____			

Model	VALVE DIA.	FLOW RANGE	L	A	B (MAX.)	C	D
1508	0.670	0.25 TO 8.0 GPM	1.90	2.40 / 2.41	0.500	0.672 / 0.677	1.96 / 1.97
1510	0.795	0.5 TO 15.0 GPM	2.03	2.59 / 2.60	0.625	0.797 / 0.802	2.09 / 2.10
1512	0.970	1.0 TO 30.0 GPM	2.78	3.43 / 3.44	0.812	0.972 / 0.977	2.84 / 2.85
1514	1.095	1.0 TO 30.0 GPM	3.00	3.65 / 3.66	0.812	1.097 / 1.102	3.06 / 3.07
1516	1.220	2.0 TO 50.0 GPM	3.19	3.84 / 3.85	0.937	1.222 / 1.227	3.24 / 3.25
1524	1.783	5.0 TO 75.0 GPM	3.25	3.90 / 3.91	1.437	1.787 / 1.792	3.31 / 3.32

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## PRODUCT



## DESCRIPTION

A CARTRIDGE STYLE FLOW DIVIDER, INTENDED FOR SUPPLYING EQUAL FLOWS TO MULTIPLE CIRCUITS WITH A COMMON SUPPLY. A CARTRIDGE STYLE FLOW COMBINER, INTENDED FOR COMBINING EQUAL FLOWS FROM MULTIPLE CIRCUITS INTO A COMMON LINE.

## OPERATION

- FLOW FROM (3) IS DIVIDED EQUALLY BETWEEN (2) AND (4) WITHIN THE FLOW TOLERANCE.
- FLOWS FROM (2) AND (4) ARE COMBINED INTO (3) WITHIN THE FLOW TOLERANCE.

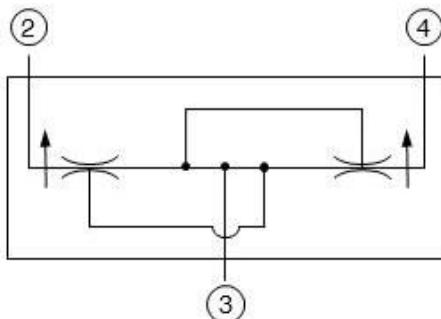
## FEATURES

- STEEL BODY, STEEL SPOOLS
- LOW INTERNAL LEAKAGE
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)
MAX. PRESSURE DIFFERENTIAL "2" TO "4"	500 PSI

## SCHEMATIC



## ORDERING INFORMATION

23	XX	-X-	XX
SERIES NUMBER _____			
PORT SIZE _____			
FLOW RANGE AT (3) (GPM) _____			
1 = 1 - 3		FLOW RATIO (2) : (4) _____	
2 = 3 - 6		25 = 25:75	
3 = 6 - 10		33 = 33:67	
4 = 10 - 15		50 = 50:50	
5 = 15 - 25			
6 = 25 - 40			

Model	THREAD	FLOW RANGE	CAVITY	L1	L2	HEX	A	B	C	TORQUE
2310	7/8 - 14	1.0 TO 12.0 GPM	10-4	2.46	0.33	1.00	0.621 / 0.622	0.683 / 0.684	0.746 / 0.747	25 ft-lbs

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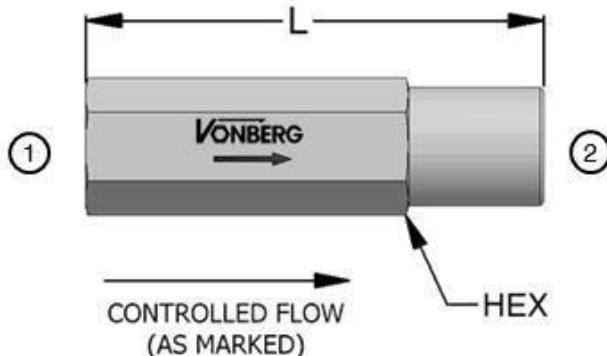
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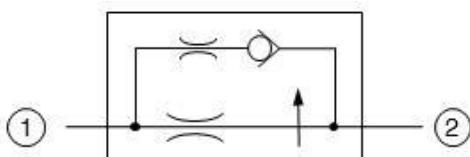
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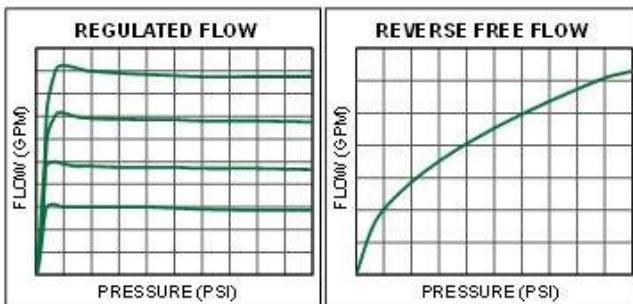
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE NPTF PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

23	X	XX	X	-XX
SERIES NUMBER _____				
UNDAMPENED - 0 _____				
DAMPENED (S.I.D.) - 1 _____				
PORT SIZE _____				
STEEL BODY (STANDARD) - BLANK _____				
STAINLESS STEEL BODY (OPTIONAL) - S _____				
REGULATED FLOW RATE (GPM) _____				

Model	INLET/OUTLET	FLOW RANGE	L	HEX
23002	1/4-18 NPTF	0.25 TO 6.0 GPM	3.50	0.938
23003	3/8-18 NPTF	0.5 TO 8.0 GPM	3.38	0.875
23004	1/2-14 NPTF	0.5 TO 15.0 GPM	4.00	1.125
23006	3/4-14 NPTF	1.0 TO 30.0 GPM	4.75	1.375
23008	1-11 1/2 NPTF	2.0 TO 50.0 GPM	5.50	1.625
23012	1 1/2-11 1/2 NPTF	5.0 TO 75.0 GPM	6.29	2.250

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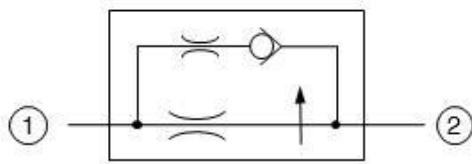
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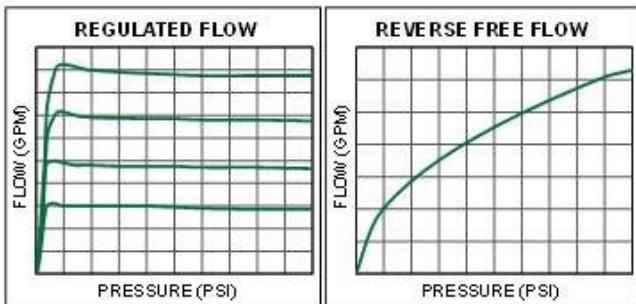
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A NON-ADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (2) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- INDUSTRY COMMON CAVITY.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

24	XX	-	X	-	XX	-	XX
SERIES NUMBER _____							
PORT SIZE _____							
UNDAMPENED – BLANK _____							
DAMPENED (S.I.D.) – 1 _____							
REGULATED FLOW RATE (GPM) _____							
BODY PORT SIZE CODE _____							
BLANK..... CARTRIDGE ONLY							
SERIES CODE... SEE "CARTRIDGE BODIES", X-2 SERIES							

Model	THREAD	FLOW RANGE	CAVITY	L1	L2	HEX	A	TORQUE
2404	7/16 - 20	0.4 TO 2.0 GPM	VC04-2	0.94	0.55	0.56	0.277 / 0.278	10 ft-lbs
2406	9/16 - 18	0.4 TO 4.0 GPM	FC06-2	0.84	0.53	0.69	0.467 / 0.468	15 ft-lbs
2408	3/4 - 16	0.4 TO 8.0 GPM	VC08-2	1.10	0.85	0.88	0.495 / 0.497	20 ft-lbs
2410	7/8 - 14	0.5 TO 10.0 GPM	VC10-2	1.25	0.80	1.00	0.621 / 0.623	25 ft-lbs
2412	1 1/16 - 12	2.0 TO 20.0 GPM	VC12-2	1.81	1.35	1.25	0.870 / 0.873	40 ft-lbs
2416	1 5/16 - 12	2.0 TO 30.0 GPM	VC16-2	1.75	1.35	1.50	1.121 / 1.123	60 ft-lbs

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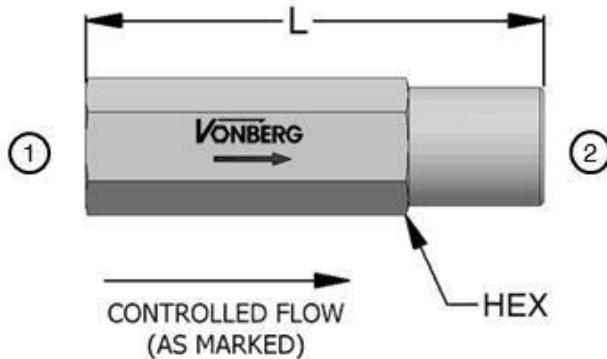
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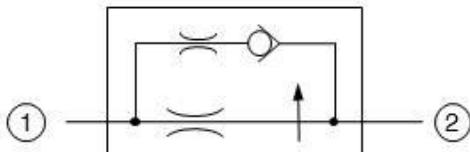
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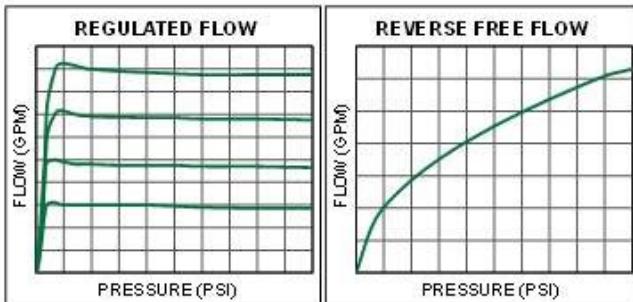
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, PRESSURE-COMPENSATED, NONADJUSTABLE FLOW REGULATOR WITH FEMALE SAE PORTS, INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- IN THE CONTROLLED DIRECTION THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

24	X	XX	X	-XX
SERIES NUMBER _____				
UNDAMPENED - 0 _____				
DAMPENED (S.I.D.) - 1 _____				
PORT SIZE _____				
STEEL BODY (STANDARD) - BLANK _____				
STAINLESS STEEL BODY (OPTIONAL) - S _____				
REGULATED FLOW RATE (GPM) _____				

Model	INLET/OUTLET	THREAD	FLOW RANGE	L	HEX
24006	-06 SAE	9/16-18	0.25 TO 8.0 GPM	3.00	0.750
24008	-08 SAE	3/4-16	0.5 TO 15.0 GPM	4.00	1.000
24010	-10 SAE	7/8-14	0.5 TO 15.0 GPM	4.00	1.125
24012	-12 SAE	1 1/16-12	1.0 TO 30.0 GPM	4.75	1.375
24016	-16 SAE	1 5/16-12	2.0 TO 50.0 GPM	5.50	1.625
24024	-24 SAE	1 7/8-12	5.0 TO 75.0 GPM	5.50	2.250

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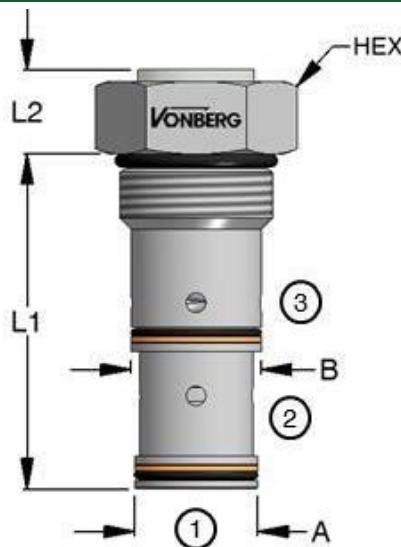
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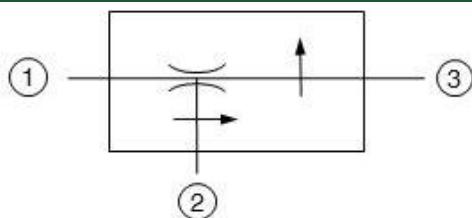
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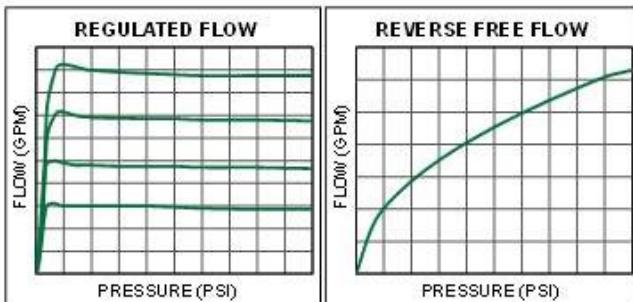
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A NONADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, PRIORITY FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (3) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- WHEN INLET FLOW EXCEEDS THE PRIORITY SETTING, THE SURPLUS FLOW IS DIVERTED TO (2), THE BYPASS.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- INDUSTRY COMMON CAVITY.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

25	XX	-X-	XX	-XX
SERIES NUMBER				
PORT SIZE				
UNDAMPENED - BLANK				
DAMPENED (S.I.D.) - 1				
REGULATED FLOW RATE (GPM)				
BODY PORT SIZE CODE				
BLANK..... CARTRIDGE ONLY				
SERIES CODE... SEE "CARTRIDGE BODIES", X-3 SERIES				

MODEL	THREAD	FLOW RANGE	CAVITY	L1	L2	HEX``	A	B	TORQUE
2508	3/4 - 16	0.4 TO 5.0 GPM	8-3	1.60	0.65	0.88	0.558 / 0.560	0.621 / 0.623	20 ft-lbs
2510	7/8 - 14	0.5 TO 8.0 GPM	10-3	1.79	0.42	1.00	0.621 / 0.623	0.683 / 0.685	25 ft-lbs
2512	1 1/16 - 12	1.0 TO 15.0 GPM	12-3	2.63	1.00	1.25	0.870 / 0.873	0.933 / 0.935	40 ft-lbs
2516	1 5/16 - 12	2.0 TO 25.0 GPM	16-3	2.88	0.75	1.50	1.058 / 1.060	1.121 / 1.123	60 ft-lbs

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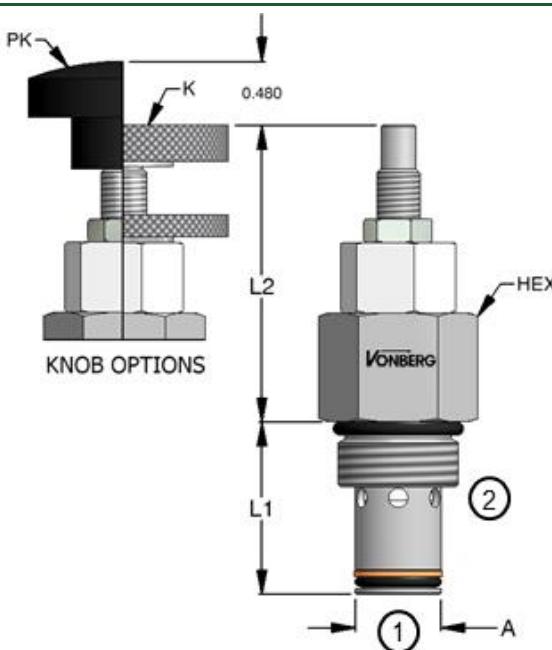
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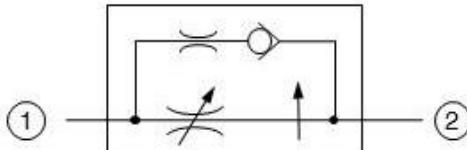
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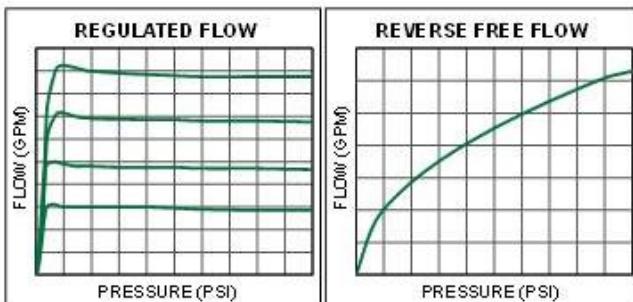
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A FULLY ADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (2) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED, PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AND 150% OF CONTROLLED FLOW.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- INDUSTRY COMMON CAVITY.
- FULLY ADJUSTABLE

## SPECIFICATIONS

PRESSURE RANGE	120 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

SERIES NUMBER	26	XX	X	-	X	-	XX	-	XX
PORT SIZE									
ADJUSTING SCREW									
BLANK....	1/8" SOCKET HEX** WITH LOCK NUT								
K.....	1.50" DIA. ADJ. KNOB WITH LOCKING KNOB**								
PK.....	1.375" DIA. PLASTIC ADJ. KNOB WITH LOCK NUT								
UNDAMPENED - BLANK									
DAMPENED (S.I.D.) - 1									
PRESET FLOW RATE (OPTIONAL) (GPM)									
BODY PORT SIZE CODE									
BLANK.....	CARTRIDGE ONLY								
SERIES CODE.....	SEE "CARTRIDGE BODIES", X-2 SERIES								

\*\* 5/64 HEX, 0.88 DIA. KNOB FOR MODEL 2606

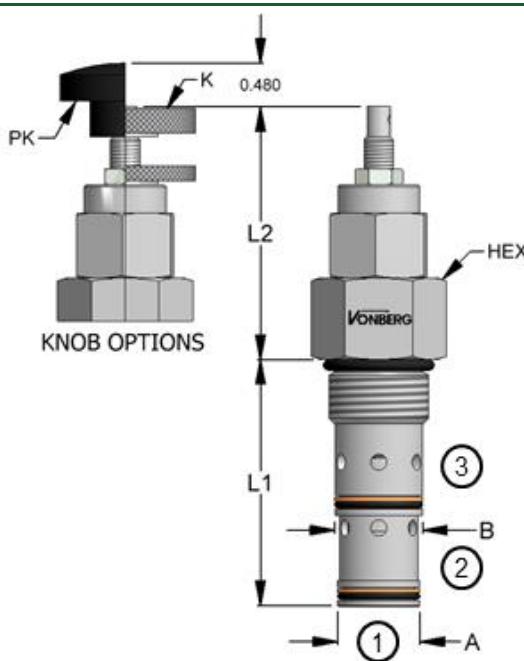
Model	THREAD	FLOW RANGE	CAVITY	L1	L2 (MAX.)	HEX	A	TORQUE
2606	9/16 - 18	0.4 TO 4.0 GPM	FC06-2	0.84	1.08	0.69	0.467 / 0.468	15 ft-lbs
2608	3/4 - 16	0.4 TO 8.0 GPM	VC08-2	1.10	2.20	0.88	0.495 / 0.497	20 ft-lbs
2610	7/8 - 14	0.5 TO 10.0 GPM	VC10-2	1.25	2.25	1.00	0.621 / 0.623	25 ft-lbs
2612	1 1/16 - 12	2.0 TO 20.0 GPM	VC12-2	1.81	2.75	1.25	0.870 / 0.873	40 ft-lbs
2616	1 5/16 - 12	2.0 TO 30.0 GPM	VC16-2	1.75	2.75	1.50	1.121 / 1.123	60 ft-lbs

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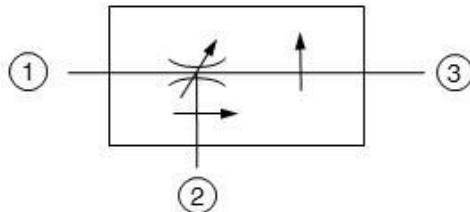
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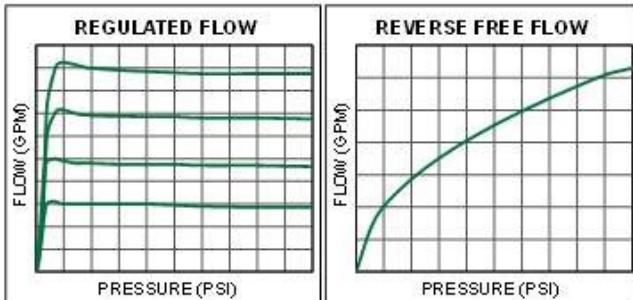
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A FULLY ADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, PRIORITY FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (3) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- WHEN INLET FLOW EXCEEDS THE PRIORITY SETTING, THE SURPLUS FLOW IS DIVERTED TO (2), THE BYPASS.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- INDUSTRY COMMON CAVITY.
- FULLY ADJUSTABLE

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

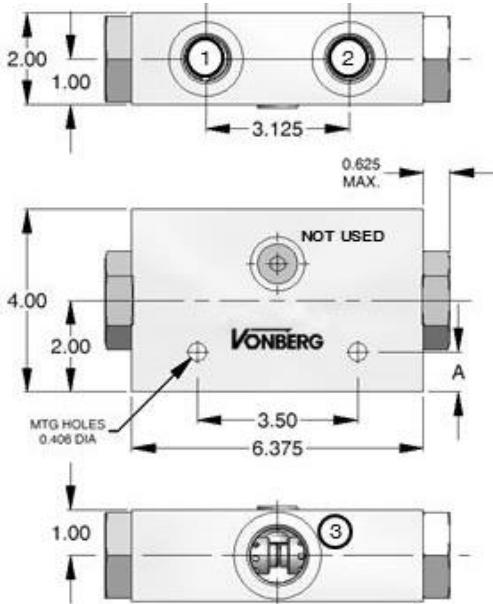
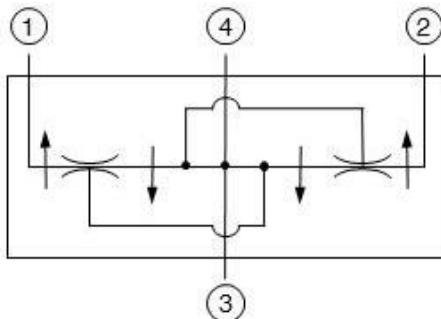
## ORDERING INFORMATION

SERIES NUMBER	27	XX	X	-X-	XX	-XX
PORT SIZE						
ADJUSTING SCREW						
BLANK.....	1/8" SOCKET HEX WITH LOCK NUT					
K.....	1.50" DIA. ADJ. KNOB WITH LOCKING KNOB**					
PK.....	1.375" DIA. PLASTIC ADJ. KNOB WITH LOCK NUT					
UNDAMPENED - BLANK						
DAMPENED (S.I.D.) - 1						
PRESET FLOW RATE (OPTIONAL) (GPM)						
BODY PORT SIZE CODE						
BLANK.....	CARTRIDGE ONLY					
SERIES CODE...	SEE "CARTRIDGE BODIES", X-3 SERIES					

MODEL	THREAD	FLOW RANGE	CAVITY	L1	L2 (MAX.)	HEX	A	B	TORQUE
2708	3/4 - 16	0.4 TO 5.0 GPM	8-3	1.60	1.95	0.88	0.558 / 0.560	0.621 / 0.623	20 ft-lbs
2710	7/8 - 14	0.5 TO 8.0 GPM	10-3	1.79	1.72	1.00	0.621 / 0.623	0.683 / 0.685	25 ft-lbs
2712	1 1/16 - 12	1.0 TO 15.0 GPM	12-3	2.63	2.30	1.25	0.870 / 0.873	0.933 / 0.935	40 ft-lbs
2716	1 5/16 - 12	2.0 TO 25.0 GPM	16-3	2.88	2.05	1.50	1.058 / 1.060	1.121 / 1.123	60 ft-lbs

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**PRODUCT**

**SCHEMATIC**

**DESCRIPTION**

AN IN-LINE SPOOL TYPE FLOW DIVIDER, INTENDED FOR SUPPLYING FLOWS TO MULTIPLE CIRCUITS WITH A COMMON SUPPLY, OR FOR COMBINING FLOWS FROM MULTIPLE CIRCUITS INTO A COMMON LINE.

**OPERATION**

- FLOW FROM (3) IS DIVIDED EQUALLY BETWEEN (1) AND (2) WITHIN THE FLOW TOLERANCE.
- FLOWS FROM (1) AND (2) ARE COMBINED INTO (3) WITHIN THE FLOW TOLERANCE.

**FEATURES**

- ALUMINUM BODY, STEEL SPOOLS
- PRESSURE COMPENSATED
- HYDRAULIC FLUIDS - GENERAL.
- BUNA-N 90 DURO O-RINGS
- TAMPER RESISTANT
- ALTERNATE DIVIDE RATIOS AVAILABLE UPON REQUEST.

**SPECIFICATIONS**

PRESSURE RANGE	250 PSI TO 4500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10%
MAX. PRESSURE DIFFERENTIAL "1" TO "2"	100 PSI
DIVIDE / COMBINE RATIO	50:50

**ORDERING INFORMATION**

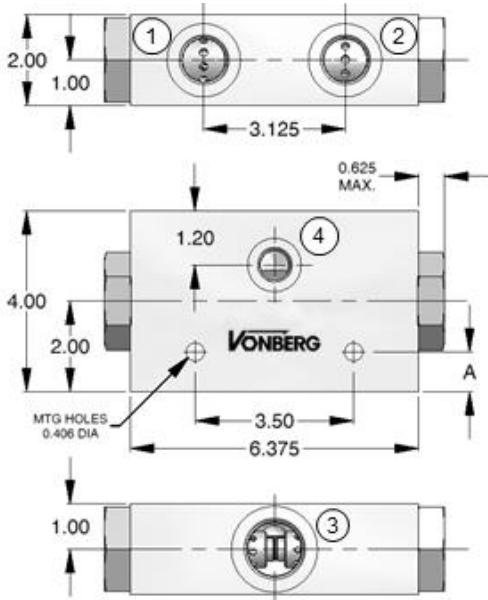
270   X   1 - 2   XX
SERIES NUMBER _____
MAX FLOW INDICATOR _____
5.....25 - 50 GPM
6.....30 - 60 GPM
SAE PORT "3" SIZE _____

Model	POR TS 1 & 2	PORT 3	FLOW RANGE	A
27051-216	-12 SAE - 1 1/16-12	-16 SAE - 1 5/16-12	25.0 TO 50.0 GPM	0.875
27051-220	-16 SAE - 1 5/16-12	-20 SAE - 1 5/8-12	30.0 TO 60.0 GPM	0.375
27061-220	-16 SAE - 1 5/16-12	-20 SAE - 1 5/8-12	30.0 TO 60.0 GPM	0.375

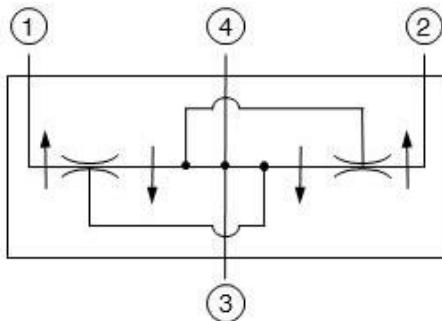
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Page last updated: February 06, 2015

## PRODUCT



## SCHEMATIC



## DESCRIPTION

AN IN-LINE SPOOL TYPE FLOW DIVIDER, INTENDED FOR SUPPLYING FLOWS TO MULTIPLE CIRCUITS WITH A COMMON SUPPLY, OR FOR COMBINING FLOWS FROM MULTIPLE CIRCUITS INTO A COMMON LINE.

## OPERATION

- FLOW FROM (3) IS DIVIDED EQUALLY BETWEEN (1) AND (2) WITHIN THE FLOW TOLERANCE.
- FLOWS FROM (1) AND (2) ARE COMBINED INTO (3) WITHIN THE FLOW TOLERANCE.
- -08 SAE GAGE PORT AT (4)

## FEATURES

- ALUMINUM BODY, STEEL INTERNALS
- PRESSURE COMPENSATED
- HYDRAULIC FLUIDS - GENERAL.
- BUNA-N 90 DURO O-RINGS
- TAMPER RESISTANT
- ALTERNATE DIVIDE RATIOS AVAILABLE UPON REQUEST.

## SPECIFICATIONS

PRESSURE RANGE	250 PSI TO 4500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10%
MAX. PRESSURE DIFFERENTIAL "1" TO "2"	100 PSI
DIVIDE / COMBINE RATIO	50:50

## ORDERING INFORMATION

SERIES NUMBER	27903
---------------	-------

Model	POR TS 1 & 2	PORT 3	PORT 4	FLOW RANGE	A
27903	-12 SAE - 1 1/16-12	-16 SAE - 1 5/16-12	-08 SAE - 3/4-16	10.0 TO 30.0 GPM	0.975

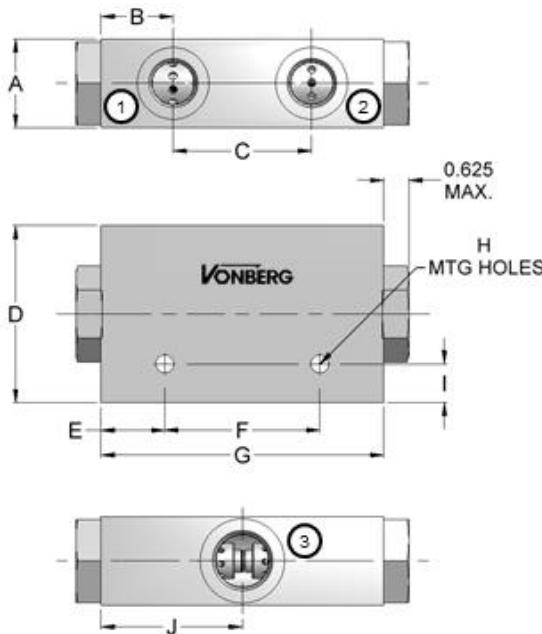
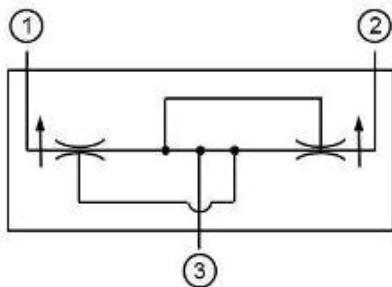
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Hydraulic Valve Specialists

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**PRODUCT**

**SCHEMATIC**

**DESCRIPTION**

AN IN-LINE SPOOL TYPE FLOW DIVIDER, INTENDED FOR SUPPLYING FLOWS TO MULTIPLE CIRCUITS WITH A COMMON SUPPLY, OR FOR COMBINING FLOWS FROM MULTIPLE CIRCUITS INTO A COMMON LINE.

**OPERATION**

- FLOW FROM (3) IS DIVIDED EQUALLY BETWEEN (1) AND (2) WITHIN THE FLOW TOLERANCE.
- FLOWS FROM (1) AND (2) ARE COMBINED INTO (3) WITHIN THE FLOW TOLERANCE.

**FEATURES**

- ALUMINUM BODY, STEEL SPOOLS
- PRESSURE COMPENSATED
- HYDRAULIC FLUIDS - GENERAL.
- BUNA-N 90 DURO O-RINGS
- TAMPER RESISTANT
- ALTERNATE DIVIDE RATIOS AND PORT SIZES AVAILABLE UPON REQUEST.

**SPECIFICATIONS**

PRESSURE RANGE	250 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10%
MAX. PRESSURE DIFFERENTIAL "1" TO "2"	150 PSI
DIVIDE / COMBINE RATIO	50:50

**ORDERING INFORMATION**

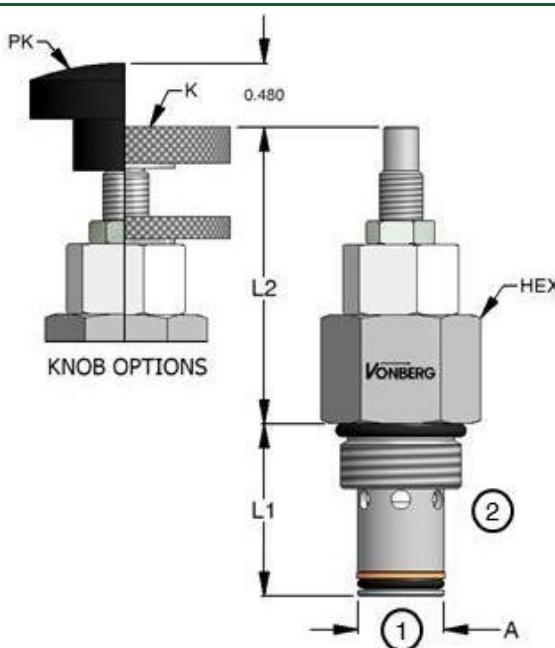
SERIES NUMBER	27	X	X	0	-	2	XX
BLOCK SIZE INDICATOR							
FLOW INDICATOR							
	2	3	4	5	6		
0 - SMALL							
1 - MEDIUM							
2 - LARGE							
FLOW RANGE INDICATOR							
2.....1 - 5 GPM				5.....31 - 45 GPM			
3.....6 - 15 GPM				6.....46 - 60 GPM			
4.....16 - 30 GPM							
SAE PORT "3" SIZE							

Model	PORTS 1 & 2	PORT 3	TOTAL FLOW RANGE	A	B	C	D	E	F	G	H	I	J
270X0-208	-06 SAE - 9/16-18	-08 SAE - 3/4-16	2.0 TO 15.0 GPM	1.50	1.25	2.00	2.50	0.34	3.81	4.50	0.28	.038	2.25
270X0-210	-08 SAE - 3/4-16	-10 SAE - 7/8-14	2.0 TO 20.0 GPM	1.50	1.25	2.00	2.50	0.34	3.81	4.50	0.28	0.38	2.25
271X0-212	-10 SAE - 7/8-14	-12 SAE - 1 1/16-12	5.0 TO 30.0 GPM	1.50	1.25	2.00	3.00	0.34	3.81	4.50	0.28	0.38	2.25
272X0-216	-12 SAE - 1 1/16-12	-16 SAE - 1 5/16-12	30.0 TO 50.0 GPM	2.00	1.62	2.12	4.00	1.44	3.50	6.38	0.41	0.38	3.14
272X0-220	-16 SAE - 1 5/16-12	-20 SAE - 1 5/8-12	30.0 TO 60.0 GPM	2.00	1.62	2.12	4.00	1.44	3.50	6.38	0.41	0.38	3.14

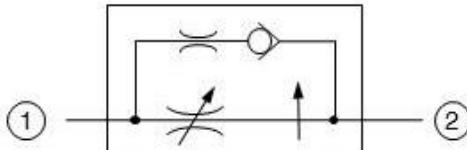
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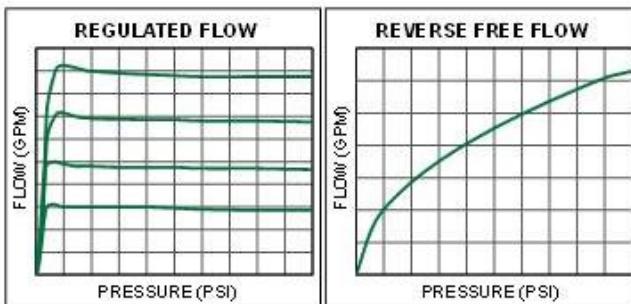
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A PARTIALLY ADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (2) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED, PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- INDUSTRY COMMON CAVITY.
- PARTIALLY ADJUSTABLE

## SPECIFICATIONS

PRESSURE RANGE	120 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)
FLOW ADJUSTMENT RANGE	+/- 25% OF NOMINAL FLOW

## ORDERING INFORMATION

SERIES NUMBER	28	XX	X	-	X	-	XX	-	XX	
PORT SIZE										
ADJUSTING SCREW										
BLANK....	1/8" SOCKET HEX** WITH LOCK NUT									
K.....	1.50" DIA. ADJ. KNOB WITH LOCKING KNOB**									
PK.....	1.375" DIA. PLASTIC ADJ. KNOB WITH LOCK NUT									
UNDAMPENED	-	BLANK								
DAMPENED (S.I.D.)	-	1								
NOMINAL FLOW RATE (GPM)										
BODY PORT SIZE CODE										
BLANK.....	CARTRIDGE ONLY									
SERIES CODE...	SEE "CARTRIDGE BODIES", X-2 SERIES									

\*\* 5/64" HEX, 0.88" DIA. KNOB FOR MODEL 2806

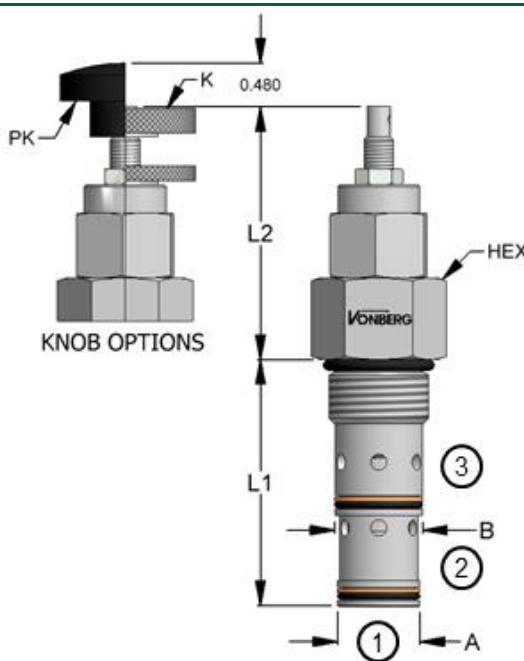
Model	THREAD	FLOW RANGE	CAVITY	L1	L2 (MAX.)	HEX	A	TORQUE
2808	3/4 - 16	0.4 TO 6.0 GPM	8-2	1.10	2.20	0.88	0.495 / 0.497	20 ft-lbs
2810	7/8 - 14	0.5 TO 8.0 GPM	10-2	1.25	2.25	1.00	0.621 / 0.623	25 ft-lbs
2812	1 1/16 - 12	2.0 TO 15.0 GPM	12-2	1.81	2.75	1.25	0.870 / 0.873	40 ft-lbs
2816	1 5/16 - 12	2.0 TO 25.0 GPM	16-2	1.75	2.75	1.50	1.121 / 1.123	60 ft-lbs

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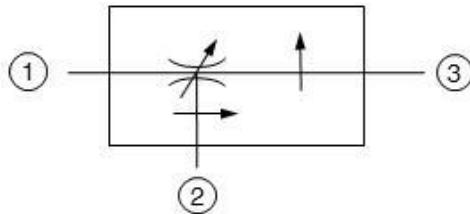
Page last updated: February 06, 2015



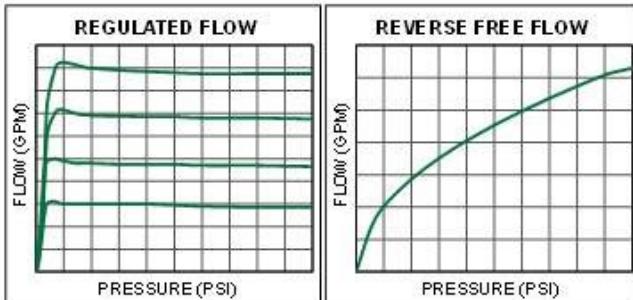
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A FULLY ADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, PRIORITY FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (3) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- WHEN INLET FLOW EXCEEDS THE PRIORITY SETTING, THE SURPLUS FLOW IS DIVERTED TO (2), THE BYPASS.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- INDUSTRY COMMON CAVITY.
- PARTIALLY ADJUSTABLE.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

29	XX	X	-	X	-	XX	-	XX
SERIES NUMBER								
PORT SIZE								
ADJUSTING SCREW								
BLANK....	1/8" SOCKET HEX WITH LOCK NUT							
K.....	1.50" DIA. ADJ. KNOB WITH LOCKING KNOB**							
PK.....	1.375" DIA. PLASTIC ADJ. KNOB WITH LOCK NUT							
UNDAMPENED - BLANK								
DAMPENED (S.I.D.) - 1								
PRESET FLOW RATE (OPTIONAL) (GPM)								
BODY PORT SIZE CODE								
BLANK.....	CARTRIDGE ONLY							
SERIES CODE... SEE "CARTRIDGE BODIES", X-3 SERIES								

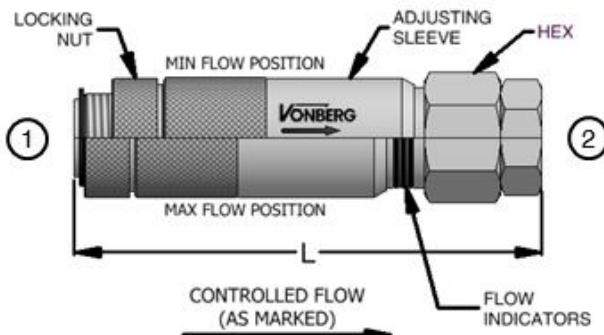
MODEL	THREAD	FLOW RANGE	CAVITY	L1	L2 (MAX.)	HEX	A	B	TORQUE
2908	3/4 - 16	0.4 TO 5.0 GPM	8-3	1.60	1.95	0.88	0.558 / 0.560	0.621 / 0.623	20 ft-lbs
2910	7/8 - 14	0.5 TO 8.0 GPM	10-3	1.79	1.72	1.00	0.621 / 0.623	0.683 / 0.685	25 ft-lbs
2912	1 1/16 - 12	1.0 TO 15.0 GPM	12-3	2.63	2.30	1.25	0.870 / 0.873	0.933 / 0.935	40 ft-lbs
2916	1 5/16 - 12	2.0 TO 25.0 GPM	16-3	2.88	2.05	1.50	1.058 / 1.060	1.121 / 1.123	60 ft-lbs

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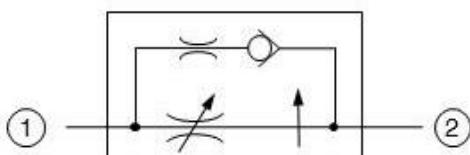
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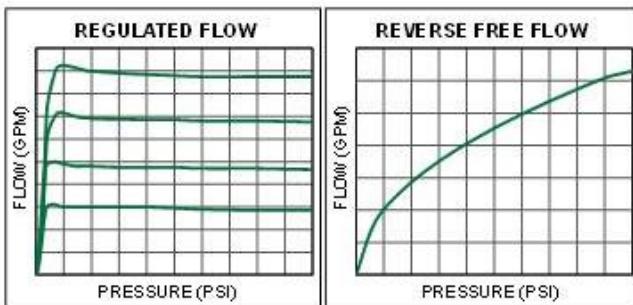
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A FULLY ADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (2) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE FLOW.

## FEATURES

- UNIQUE AXIAL ROTATION FOR FULL ADJUSTABILITY.
- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- ALUMINUM AND STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

3100	X	-	X
SERIES NUMBER _____			
PORT SIZE _____			
UNDAMPENED – BLANK _____			
DAMPENED (S.I.D.) – 1 _____			

Model	INLET/OUTLET	FLOW RANGE	L	HEX
31002	1/4-18 NPTF PORT	0.2 TO 6.0 GPM	4.66	1.125

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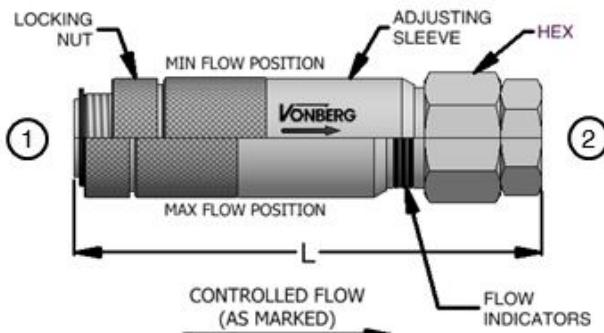
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## PRODUCT



## DESCRIPTION

A FULLY ADJUSTABLE, CARTRIDGE STYLE, PRESSURE-COMPENSATED, FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (2) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE FLOW.

## FEATURES

- UNIQUE AXIAL ROTATION FOR FULL ADJUSTABILITY.
- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- ALUMINUM AND STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.

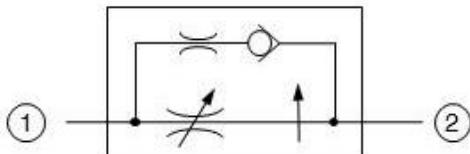
## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

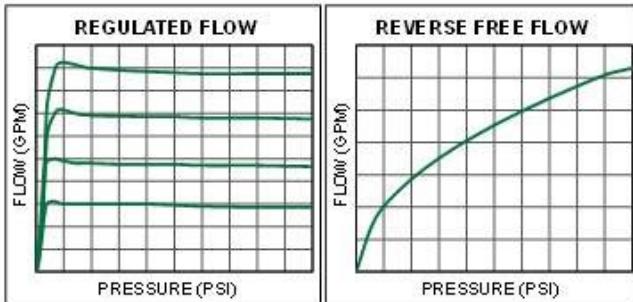
## ORDERING INFORMATION

3200	X	-	X
SERIES NUMBER _____			
PORT SIZE _____			
UNDAMPENED – BLANK _____			
DAMPENED (S.I.D.) – 1 _____			

## SCHEMATIC



## TYPICAL PERFORMANCE



Model	INLET/OUTLET	FLOW RANGE	L	HEX
32004	-04 SAE PORT	0.2 TO 5.0 GPM	4.75	1.125
32006	-06 SAE PORT	0.5 TO 6.0 GPM	3.85	1.000
32008	-08 SAE PORT	1.0 TO 12.0 GPM	4.50	1.250

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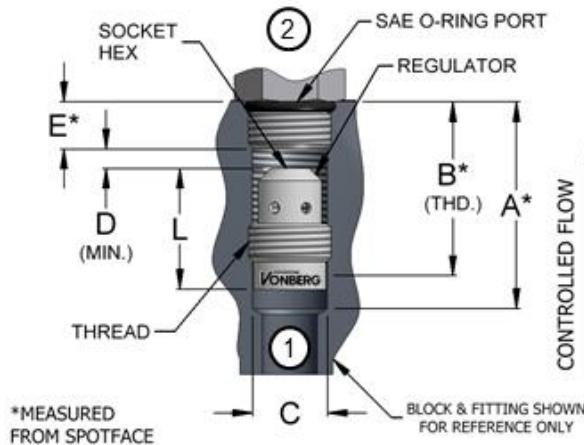
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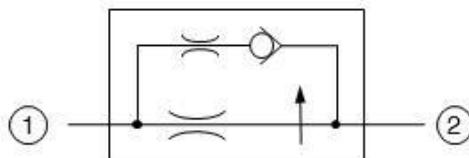
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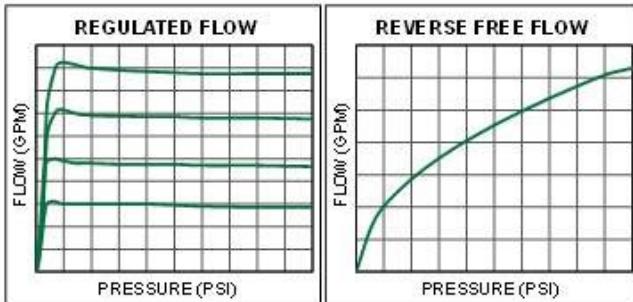
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A NON-ADJUSTABLE, THREADED INSERTABLE IN-LINE, PRESSURE-COMPENSATED, FLOW REGULATOR INTENDED FOR FIXED DISPLACEMENT HYDRAULIC CIRCUIT APPLICATIONS.

## OPERATION

- THIS REGULATOR WILL MAINTAIN A CONSTANT FLOW RATE FROM (1) TO (2) THROUGHOUT A SPECIFIED PRESSURE RANGE.
- REVERSE FLOW PASSES THROUGH THE CONTROLLING ORIFICE AND IS UNCONTROLLED PRODUCING A PRESSURE DIFFERENTIAL OF 120 PSI MAX. AT 150% OF CONTROLLED FLOW.

## FEATURES

- **S.I.D.** SURGES INTERNALLY DAMPENED FEATURE IS OPTIONAL FOR LOAD LOWERING APPLICATIONS.
- STEEL BODY, STEEL INTERNALS.
- HYDRAULIC FLUIDS - GENERAL.
- NO INTERNAL PACKINGS

## SPECIFICATIONS

PRESSURE RANGE	50 PSI TO 3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
FLOW TOLERANCE	+/- 10% (+/- 15% UNDER 1.5 GPM)

## ORDERING INFORMATION

65	XX	-X-	XX
SERIES NUMBER _____			
PORT SIZE _____			
UNDAMPENED - BLANK			
DAMPENED (S.I.D.) - 1			
REGULATED FLOW RATE (GPM) _____			

Model	THREAD	FLOW RANGE	L	A	B	C	D	E	HEX	TORQUE
6506	9/16 - 18	0.25 TO 2.5 GPM	0.875	1.50	1.22	0.502 - 0.515	0.10	0.391	0.187	5 ft-lbs
6508	3/4 - 16	0.5 TO 5.0 GPM	1.100	1.90	1.46	0.682 - 0.696	0.18	0.438	0.250	8 ft-lbs
6510	7/8 - 14	0.5 TO 15.0 GPM	1.100	2.12	1.58	0.798 - 0.814	0.25	0.500	0.250	12 ft-lbs
6512	1 1/16 - 12	1.0 TO 20.0 GPM	1.780	3.00	2.24	0.972 - 0.990	0.31	0.594	0.312	18 ft-lbs
6516	1 5/16 - 12	1.0 TO 25.0 GPM	1.875	3.25	2.42	1.222 - 1.240	0.38	0.594	0.375	30 ft-lbs

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Hydraulic Valve Specialists

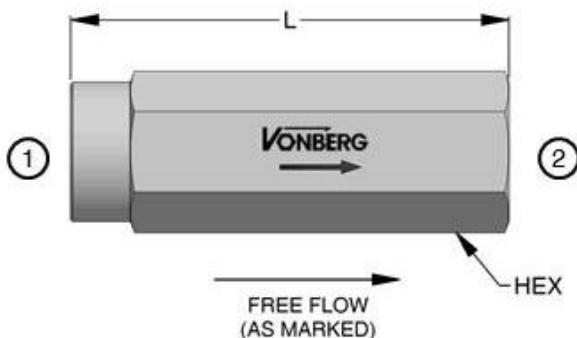
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# DIRECTIONAL VALVES



**PRODUCT**



**DESCRIPTION**

AN IN-LINE STYLE, BALL TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

**OPERATION**

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

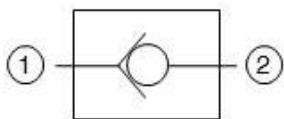
**FEATURES**

- STEEL BODY AND CHROME BALL.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

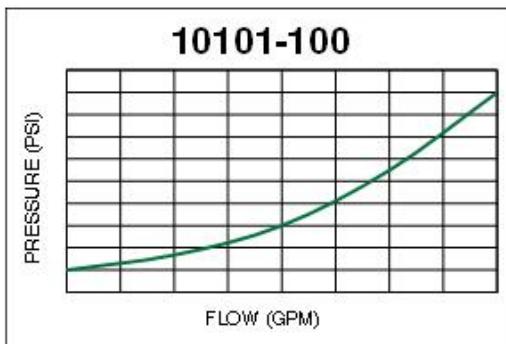
**SPECIFICATIONS**

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

**SCHEMATIC**



**TYPICAL PERFORMANCE**



**ORDERING INFORMATION**

10101 - 1	XX	- XX
SERIES NUMBER		
THREAD SIZE		
CRACK PRESSURE (PSI) (IF NON-STANDARD)		

MODEL	INLET / OUTLET	FLOW CAPACITY	L	HEX
10101-102	1/4-18 NPTF	3.0 GPM	2.40	0.75
10101-103	3/8-18 NPTF	6.0 GPM	2.75	0.88
10101-104	1/2-14 NPTF	10.0 GPM	3.50	1.13

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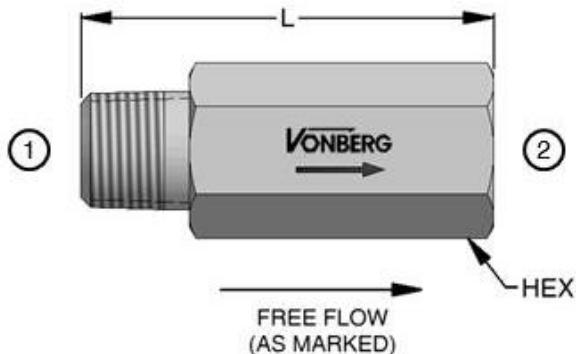
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Hydraulic Valve Specialists

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phone: 847/259-3800 • fax 847/259-3997 • email: info@vonberg.com

## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
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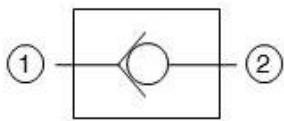
## FEATURES

- STEEL BODY AND CHROME BALL.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

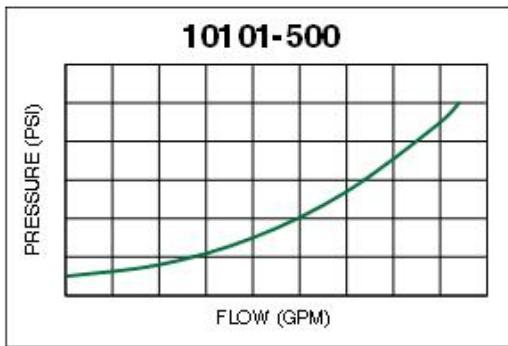
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

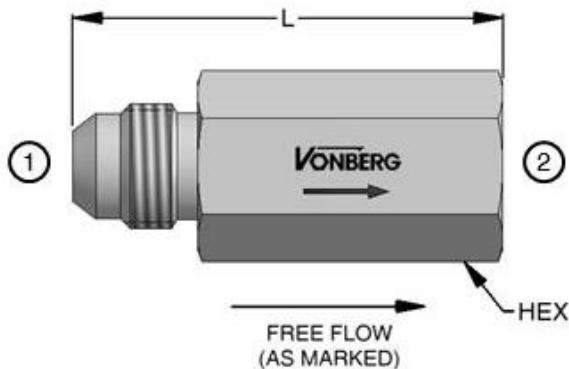
10101 - 5	XX	XX
SERIES NUMBER		
THREAD SIZE		
CRACK PRESSURE (PSI) (IF NON-STANDARD)		

MODEL	INLET 1	OUTLET 2	FLOW CAPACITY	L	HEX
10101-502	1/4-18 NPTF BOSS	1/4-18 NPTF PORT	3.0 GPM	1.94	0.75
10101-503	3/8-18 NPTF BOSS	3/8-18 NPTF PORT	6.0 GPM	2.38	0.88
10101-504	1/2-14 NPTF BOSS	1/2-14 NPTF PORT	10.0 GPM	3.00	1.13

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## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
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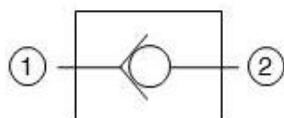
## FEATURES

- STEEL BODY AND CHROME BALL.
- LOW INTERNAL LEAKAGE, 5 DPM.
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- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

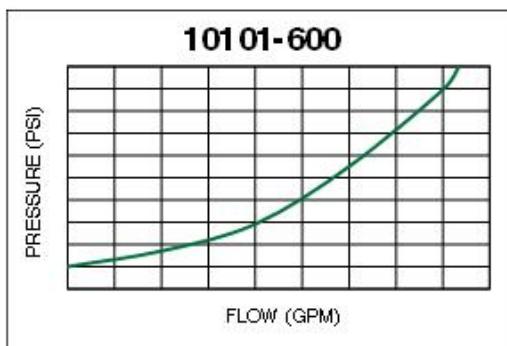
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

10101 - [6] XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____

MODEL	INLET 1	OUTLET 2	FLOW CAPACITY	L	T	HEX
10101-606	-06 JIC - 9/16-18	1/4-18 NPTF PORT	3.0 GPM	1.94	0.562	0.75
10101-608	-08 JIC - 3/4-16	3/8-18 NPTF PORT	6.0 GPM	2.38	0.656	0.88

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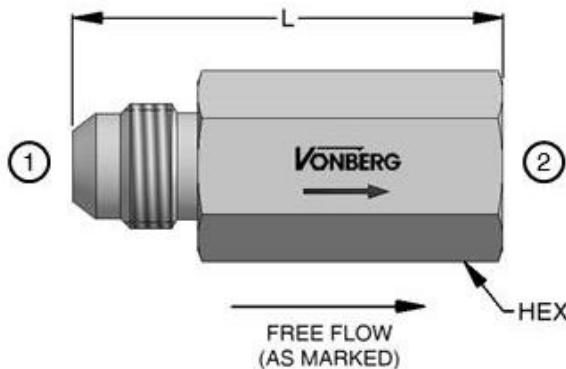
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## PRODUCT



## DESCRIPTION

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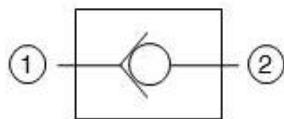
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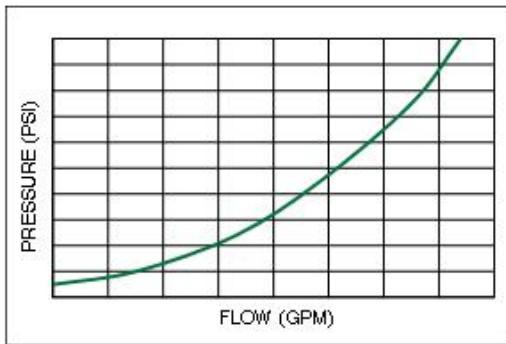
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

10112 - [ ] - [ ]
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____

MODEL	INLET 1	OUTLET 2	THREAD	FLOW CAPACITY	L	HEX
10112-604	-04 JIC	-04 SAE PORT	7/16-20	2.0 GPM	1.93	0.625
10112-606	-06 JIC	-06 SAE PORT	9/16-18	4.0 GPM	1.94	0.750
10112-608	-08 JIC	-08 SAE PORT	3/4-16	6.0 GPM	2.56	0.938
10112-610	-10 JIC	-10 SAE PORT	7/8-14	10.0 GPM	2.82	1.000

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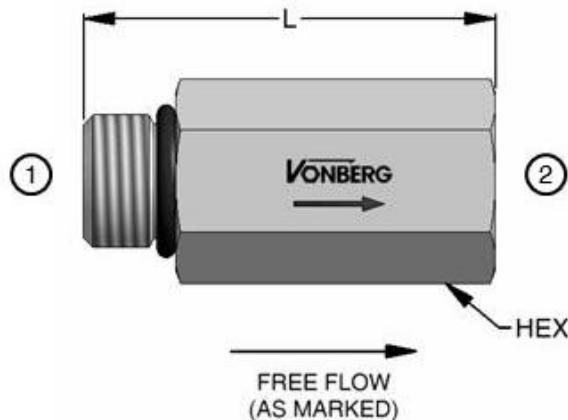
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## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
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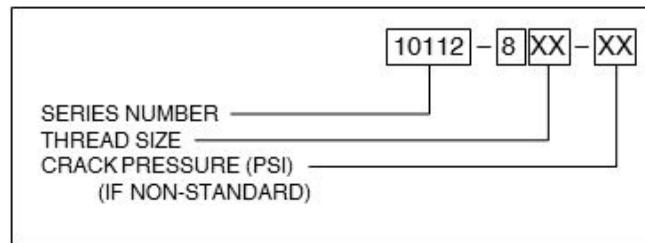
## FEATURES

- STEEL BODY AND CHROME BALL.
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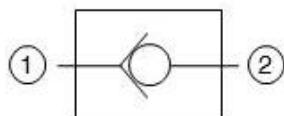
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

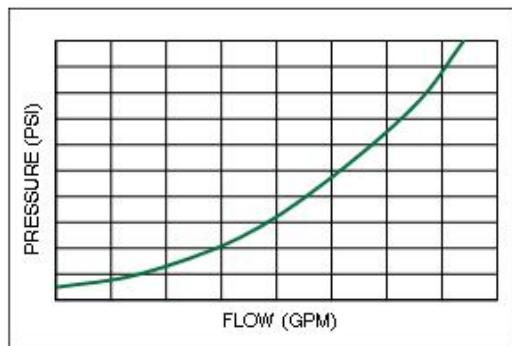
## ORDERING INFORMATION



## SCHEMATIC



## TYPICAL PERFORMANCE



MODEL	INLET 1	OUTLET 2	THREAD	FLOW CAPACITY	L	HEX
10112-804	-04 SAE	-04 SAE PORT	7/16-20	2.0 GPM	1.72	0.625
10112-806	-06 SAE	-06 SAE PORT	9/16-18	4.0 GPM	1.75	0.750
10112-808	-.08 SAE	-.08 SAE PORT	3/4-16	6.0 GPM	2.31	0.938
10112-810	-10 SAE	-10 SAE PORT	7/8-14	10.0 GPM	2.56	1.000

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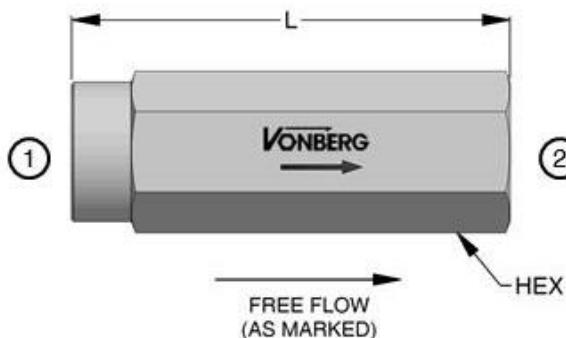
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### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

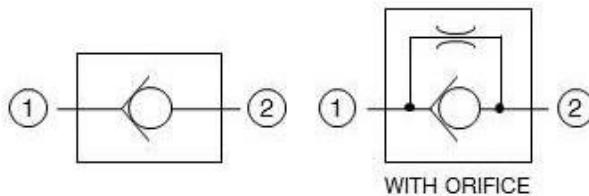
### FEATURES

- ALUMINUM BODY AND STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

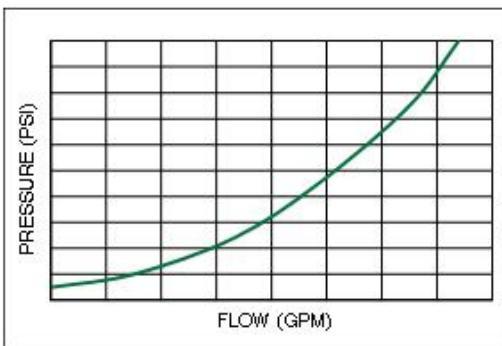
### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

10301 - 1 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET / OUTLET	FLOW CAPACITY	L	HEX
10301-101	1/8-27 NPTF	2.0 GPM	1.80	0.562
10301-102	1/4-18 NPTF	5.0 GPM	2.40	0.750
10301-103	3/8-18 NPTF	10.0 GPM	2.75	0.875
10301-104	1/2-14 NPTF	20.0 GPM	3.50	1.125
10301-106	3/4-14 NPTF	40.0 GPM	4.00	1.375
10301-108	1 - 11 1/2 NPTF	50.0 GPM	4.78	1.625
10301-110	1 1/4 - 11 1/2 NPTF	60.0 GPM	4.90	2.000
10301-112	1 1/2 - 11 1/2 NPTF	80.0 GPM	7.00	2.250

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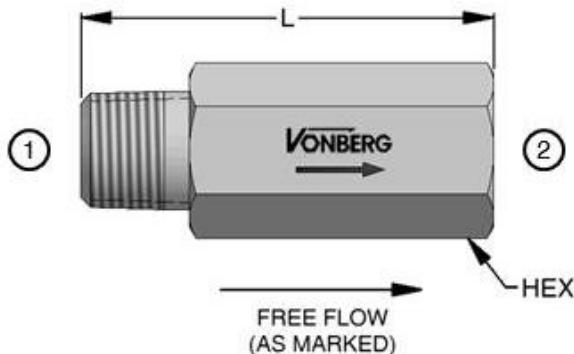
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### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

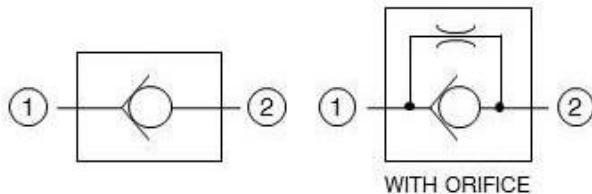
### FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- LOW PRESSURE DROP
- NO INTERNAL PACKINGS.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

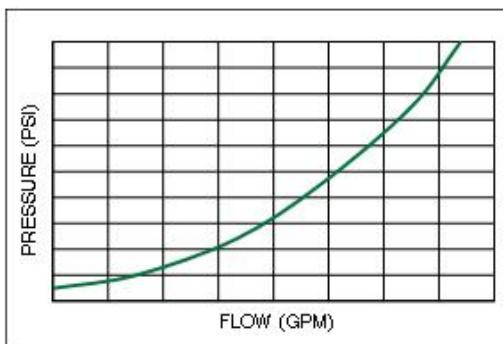
### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

10301 - 5 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET 1	OUTLET 2	FLOW CAPACITY	L	HEX
10301-502	1/4-18 NPTF BOSS	1/4-18 NPTF PORT	5.0 GPM	1.94	0.75
10301-503	3/8-18 NPTF BOSS	3/8-18 NPTF PORT	10.0 GPM	2.38	0.88
10301-504	1/2-14 NPTF BOSS	1/2-14 NPTF PORT	20.0 GPM	3.00	1.13
10301-506	3/4-14 NPTF BOSS	3/4-14 NPTF PORT	40.0 GPM	3.65	1.38
10301-508	1-11 1/2 NPTF BOSS	1-11 1/2 NPTF PORT	50.0 GPM	4.40	1.63

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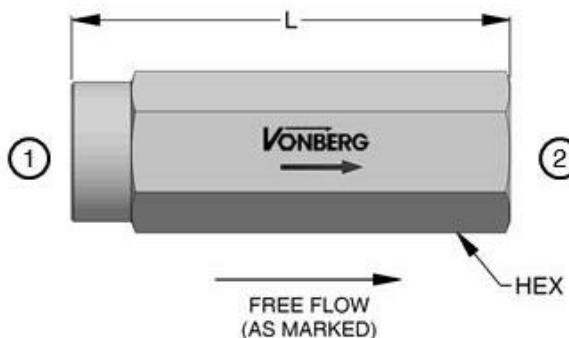
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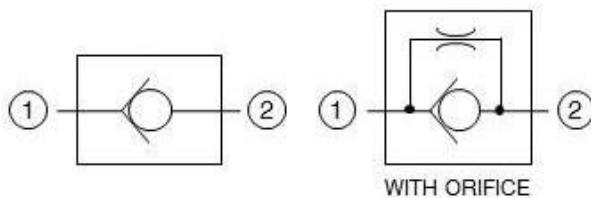
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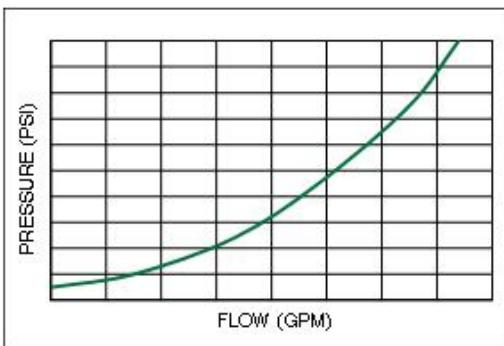
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

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## FEATURES

- ALUMINUM BODY AND STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## ORDERING INFORMATION

10312 - 2 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET / OUTLET	THREAD	FLOW CAPACITY	L	HEX
10312-204	-04 SAE	7/16-20	5.0 GPM	2.05	0.625
10312-206	-06 SAE	9/16-18	10.0 GPM	2.15	0.750
10312-208	-08 SAE	3/4-16	20.0 GPM	2.90	0.937
10312-210	-10 SAE	7/8-14	30.0 GPM	3.40	1.125
10312-212	-12 SAE	1 1/16-12	40.0 GPM	3.90	1.375
10312-216	-16 SAE	1 5/16-12	50.0 GPM	4.78	1.625
10312-220	-20 SAE	1 5/8-12	60.0 GPM	4.78	2.000

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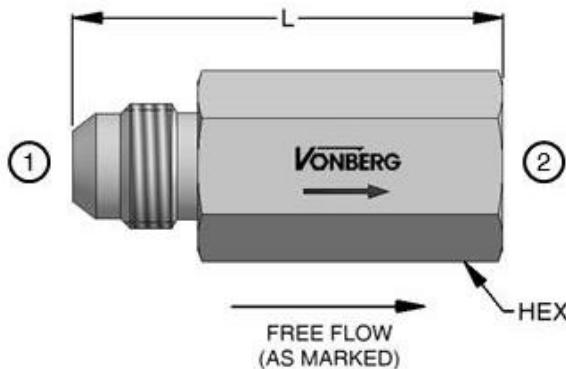
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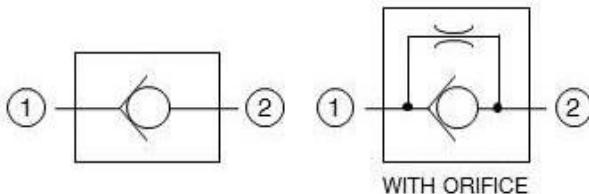
### FEATURES

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- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

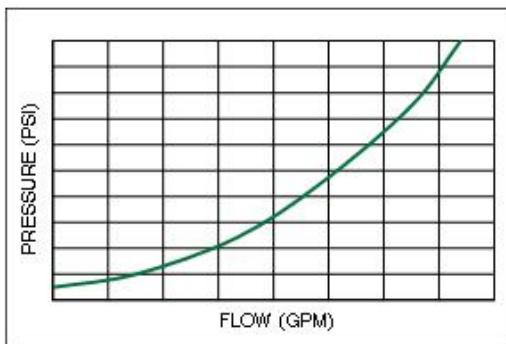
### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

10312 - 6 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

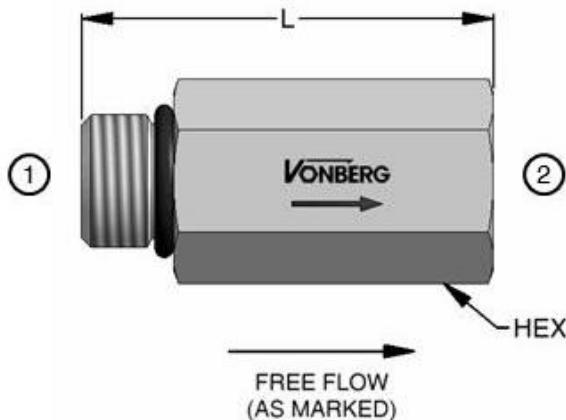
MODEL	INLET 1	OUTLET 2	THREAD	FLOW CAPACITY	L	HEX
10312-604	-04 JIC	-04 SAE PORT	7/16-20	3.0 GPM	1.93	0.625
10312-606	-06 JIC	-06 SAE PORT	9/16-18	10.0 GPM	1.94	0.750
10312-608	-08 JIC	-08 SAE PORT	3/4-16	20.0 GPM	2.72	0.938
10312-610	-10 JIC	-10 SAE PORT	7/8-14	30.0 GPM	3.25	1.125
10312-612	-12 JIC	-12 SAE PORT	1 1/16-12	40.0 GPM	3.75	1.250
10312-616	-16 JIC	-16 SAE PORT	1 5/16-12	50.0 GPM	4.50	1.625

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

Page last updated: February 09, 2015



## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

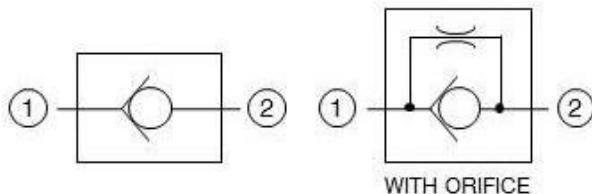
## FEATURES

- ALUMINUM BODY AND STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

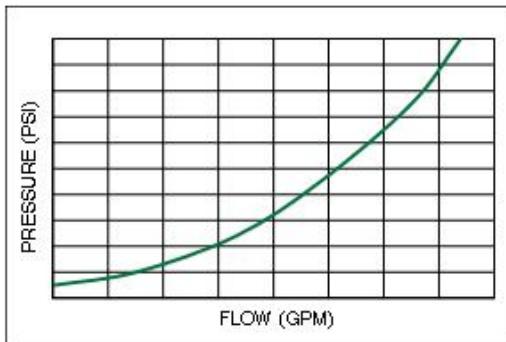
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

10312 - 8	XX	- XX
SERIES NUMBER	_____	
THREAD SIZE	_____	
CRACK PRESSURE (PSI) (IF NON-STANDARD)	_____	
ORIFICE DIAMETER (0.001") (OPTIONAL)	_____	

MODEL	INLET 1	OUTLET 2	THREAD	FLOW CAPACITY	L	HEX
10312-804	-04 SAE	-04 SAE PORT	7/16-20	3.0 GPM	1.74	0.625
10312-806	-06 SAE	-06 SAE PORT	9/16-18	10.0 GPM	1.78	0.750
10312-808	-08 SAE	-08 SAE PORT	3/4-16	20.0 GPM	2.50	0.938
10312-810	-10 SAE	-10 SAE PORT	7/8-14	30.0 GPM	3.00	1.125
10312-812	-12 SAE	-12 SAE PORT	1 1/16-12	40.0 GPM	3.48	1.250
10312-816	-16 SAE	-16 SAE PORT	1 5/16-12	50.0 GPM	4.18	1.625

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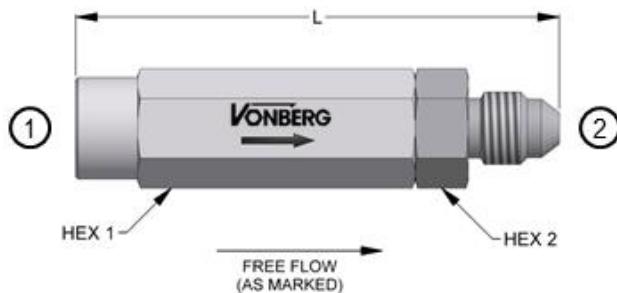
Page last updated: February 09, 2015



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Hydraulic Valve Specialists

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### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

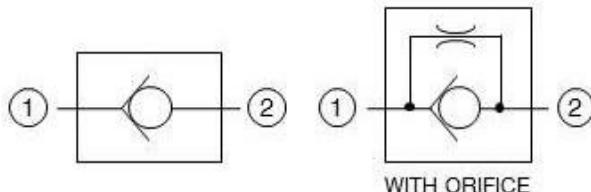
### FEATURES

- ALUMINUM / STEEL BODY AND STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

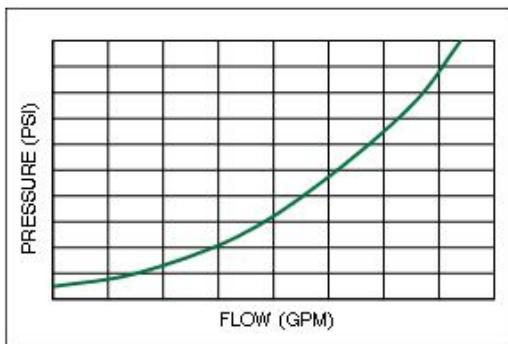
### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

10412 - 2 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET 1	OUTLET 2	THREAD	FLOW CAPACITY	L	HEX 1	HEX 2
10412-204	-04 SAE	-04 JIC	7/16-20	5.0 GPM	2.90	0.63	0.56
10412-206	-06 SAE	-06 JIC	9/16-18	10.0 GPM	3.06	0.75	0.69
10412-208	-08 SAE	-08 JIC	3/4-16	20.0 GPM	3.94	0.94	0.88
10412-210	-10 SAE	-10 JIC	7/8-14	30.0 GPM	4.61	1.13	1.00
10412-212	-12 SAE	-12 JIC	1 1/16-12	40.0 GPM	5.28	1.38	1.25
10412-216	-16 SAE	-16 JIC	1 5/16-12	50.0 GPM	6.23	1.63	1.50

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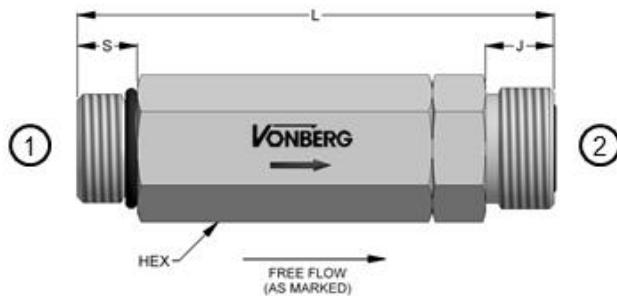
Page last updated: February 09, 2015



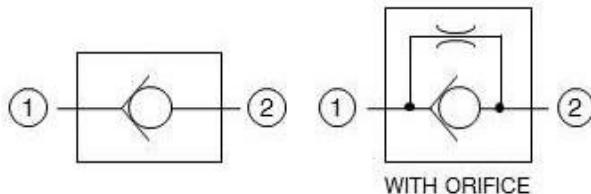
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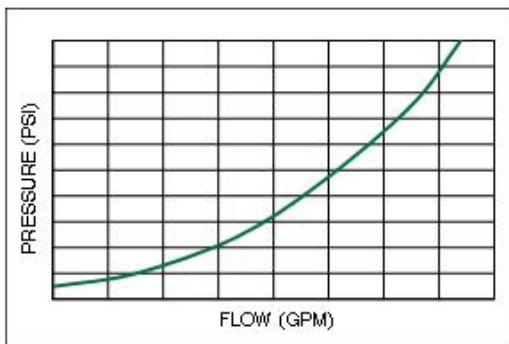
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

### FEATURES

- ALUMINUM / STEEL BODY AND STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### ORDERING INFORMATION

10414 - 8 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET 1	OUTLET 2	FLOW CAPACITY	L	J	S	HEX
10414-804	-04 SAE - 7/16-20	-04 ORS - 9/16-18	3.0 GPM	2.44	0.38	0.36	0.63
10414-806	-06 SAE - 9/16-18	-06 ORS - 11/16-16	6.0 GPM	2.56	0.44	0.39	0.75
10414-808	-08 SAE - 3/4-16	-08 ORS - 13/16-16	20.0 GPM	3.39	0.50	0.44	0.88
10414-810	-10 SAE - 7/8-14	-10 ORS - 1-14	30.0 GPM	4.07	0.61	0.50	1.13
10414-812	-12 SAE - 1 1/16-12	-12 ORS - 1 3/16-12	40.0 GPM	4.67	0.67	0.60	1.25
10414-816	-16 SAE - 1 5/16-12	-16 ORS - 1 7/16-12	50.0 GPM	5.43	0.69	0.60	1.63

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

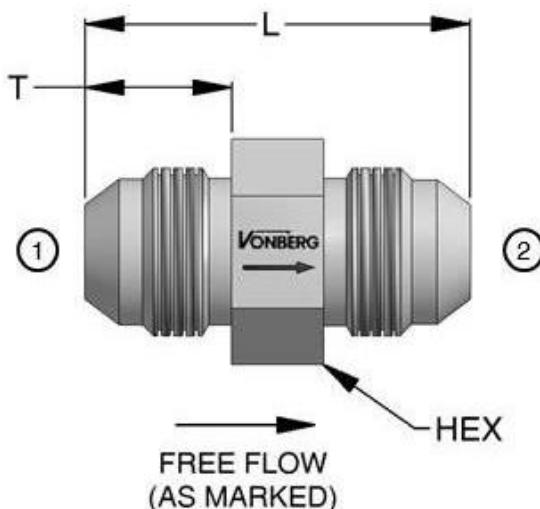
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### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

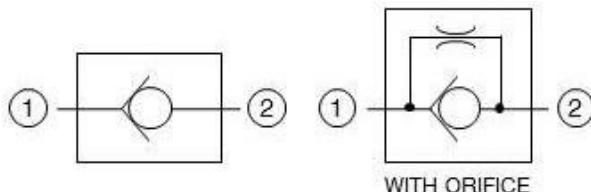
### FEATURES

- STEEL BODY AND POPPET.
- FULLY ENCAPSULATED SPRING.
- NO SNAP-RING.
- LOW INTERNAL LEAKAGE, 5 DPM.
- HIGH FLOW CAPACITY.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

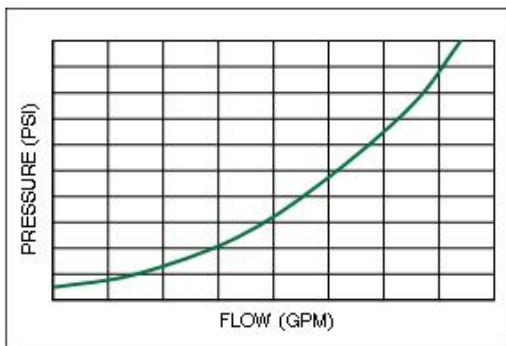
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

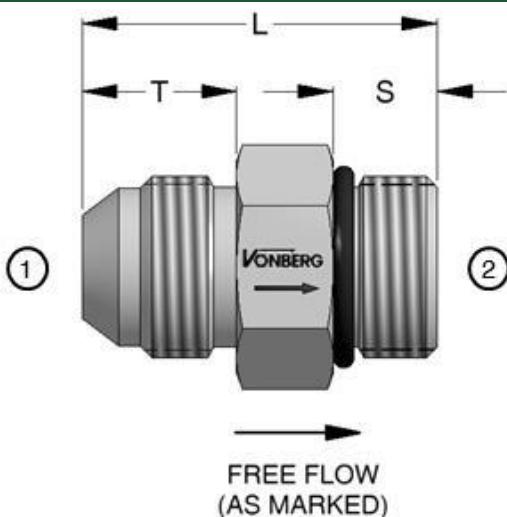
SERIES NUMBER	11	XX	-	XX
THREAD SIZE				
CRACK PRESSURE (PSI) (IF NON-STANDARD)				
ORIFICE DIAMETER (0.001") (OPTIONAL)				

MODEL	INLET/OUTLET	THREAD	L	T	HEX
1104	-04 JIC	7/16-20	1.45	0.550	0.562
1106	-06 JIC	9/16-18	1.45	0.555	0.750
1108	-08 JIC	3/4-16	1.82	0.655	0.875
1110	-10 JIC	7/8-14	2.00	0.760	1.000
1112	-12 JIC	1 1/16-12	2.45	0.860	1.250
1116	-16 JIC	1 5/16-12	2.60	0.910	1.500
1120	-20 JIC	1 5/8-12	2.75	0.960	1.875

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

Page last updated: March 19, 2015

### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

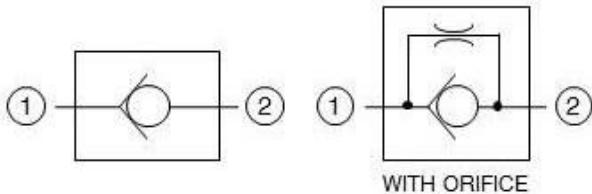
### FEATURES

- STEEL BODY AND POPPET.
- FULLY ENCAPSULATED SPRING.
- NO SNAP-RING.
- LOW INTERNAL LEAKAGE, 5 DPM.
- HIGH FLOW CAPACITY.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

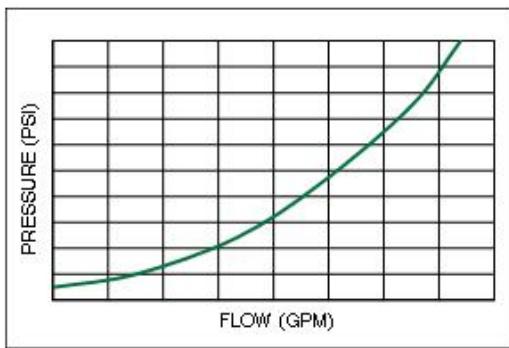
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

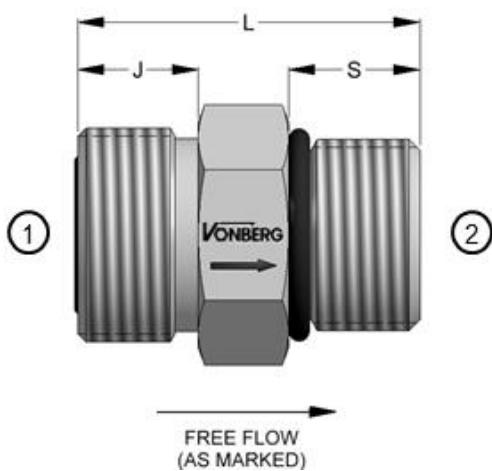
SERIES NUMBER	11	XX	F	-XX
THREAD SIZE				
CRACK PRESSURE (PSI) (IF NON-STANDARD)				
ORIFICE DIAMETER (0.001") (OPTIONAL)				

MODEL	INLET 1	OUTLET 2	THREAD	L	T	S	HEX
1104F	-04 JIC	-04 SAE	7/16-20	1.23	0.550	0.360	0.562
1106F	-06 JIC	-06 SAE	9/16-18	1.28	0.555	0.390	0.750
1108F	-08 JIC	-08 SAE	3/4-16	1.60	0.655	0.440	0.875
1110F	-10 JIC	-10 SAE	7/8-14	1.93	0.760	0.500	1.000
1112F	-12 JIC	-12 SAE	1 1/16-12	2.18	0.860	0.594	1.250
1116F	-16 JIC	-16 SAE	1 5/16-12	2.50	0.910	0.594	1.500
1120F	-20 JIC	-20 SAE	1 5/8-12	2.57	0.960	0.594	1.875

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

Page last updated: February 09, 2015

## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

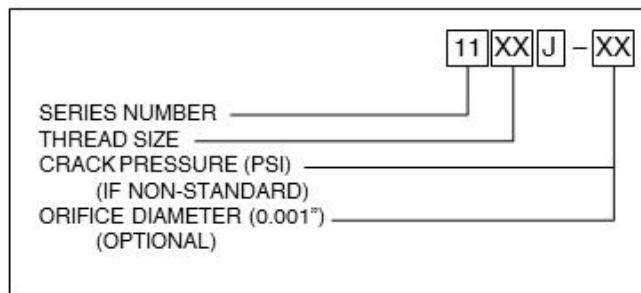
## FEATURES

- STEEL BODY AND POPPET.
- FULLY ENCAPSULATED SPRING.
- NO SNAP-RING.
- LOW INTERNAL LEAKAGE, 5 DPM.
- HIGH FLOW CAPACITY.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

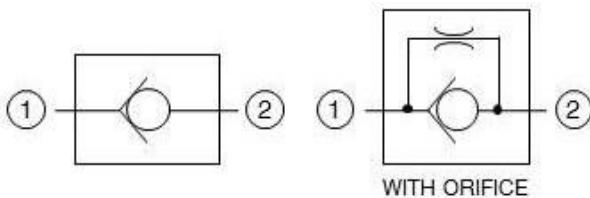
## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

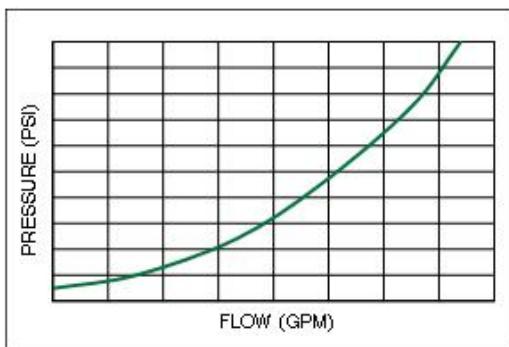
## ORDERING INFORMATION



## SCHEMATIC



## TYPICAL PERFORMANCE



MODEL	INLET 1	OUTLET 2	L	J	S	HEX
1104J	-04 ORS - 9/16-18	-04 SAE - 7/16-20	1.07	0.38	0.43	0.625
1106J	-06 ORS - 11/16-16	-06 SAE - 9/16-18	1.16	0.44	0.47	0.750
1108J	-08 ORS - 13/16-16	-08 SAE - 3/4-16	1.40	0.50	0.55	0.875
1110J	-10 ORS - 1-14	-10 SAE - 7/8-14	1.65	0.61	0.63	1.125
1112J	-12 ORS - 1 3/16-12	-12 SAE - 1 1/16-12	1.90	0.67	0.73	1.250

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

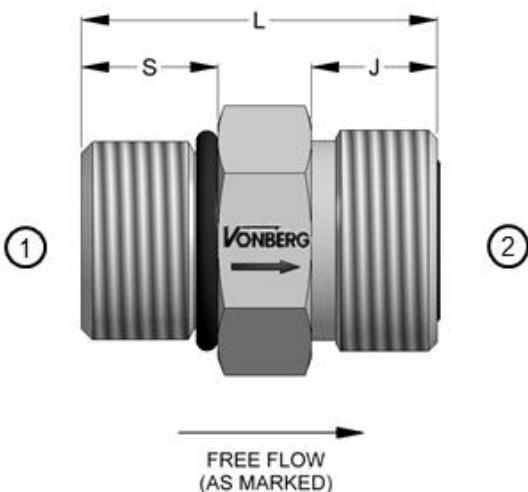
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#### PRODUCT



#### DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

#### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

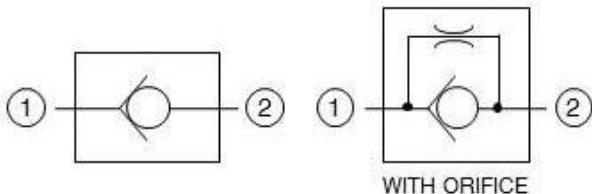
#### FEATURES

- STEEL BODY AND POPPET.
- FULLY ENCAPSULATED SPRING.
- NO SNAP-RING.
- LOW INTERNAL LEAKAGE, 5 DPM.
- HIGH FLOW CAPACITY.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

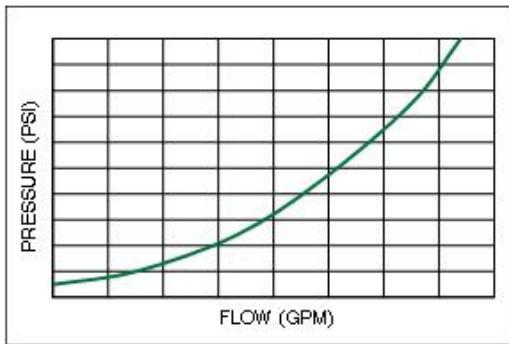
#### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

#### SCHEMATIC



#### TYPICAL PERFORMANCE



#### ORDERING INFORMATION

11	XX	K	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____			
ORIFICE DIAMETER (0.001") (OPTIONAL) _____			

MODEL	INLET 1	OUTLET 2	L	J	S	HEX
1104K	-04 SAE - 7/16-20	-04 ORS - 9/16-18	1.07	0.38	0.43	0.625
1106K	-06 SAE - 9/16-18	-06 ORS - 11/16-16	1.16	0.44	0.47	0.750
1108K	-08 SAE - 3/4-16	-08 ORS - 13/16-16	1.40	0.50	0.55	0.875
1110K	-10 SAE - 7/8-14	-10 ORS - 1-14	1.65	0.61	0.63	1.125
1112K	-12 SAE - 1 1/16-12	-12 ORS - 1 3/16-12	1.90	0.67	0.73	1.250
1116K	-16 SAE - 1 5/16-12	-16 ORS - 1 7/16-12	2.00	0.69	0.73	1.500

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves. The user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

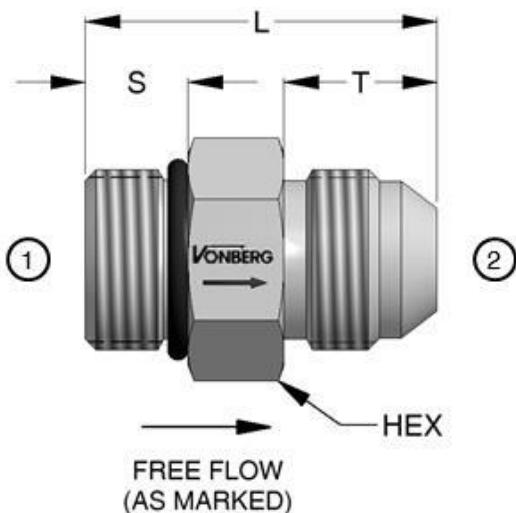
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### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

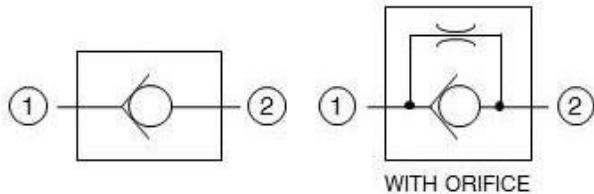
### FEATURES

- STEEL BODY AND POPPET.
- FULLY ENCAPSULATED SPRING.
- NO SNAP-RING.
- LOW INTERNAL LEAKAGE, 5 DPM.
- HIGH FLOW CAPACITY.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

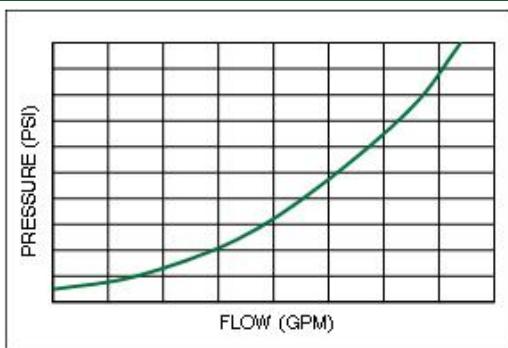
### SCHEMATIC



### ORDERING INFORMATION

SERIES NUMBER	11	XX	R	-XX
THREAD SIZE				
CRACK PRESSURE (PSI) (IF NON-STANDARD)				
ORIFICE DIAMETER (0.001") (OPTIONAL)				

### TYPICAL PERFORMANCE

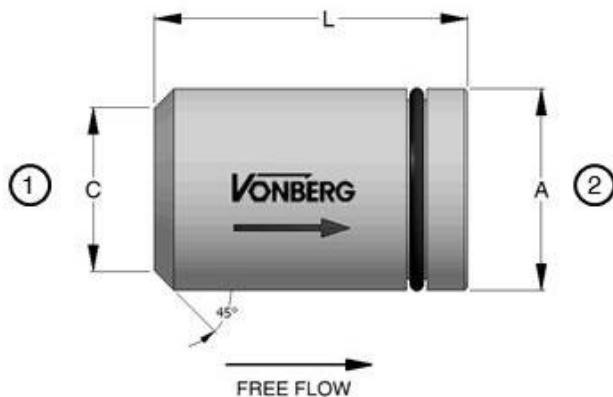


MODEL	INLET 1	OUTLET 2	THREAD	L	T	S	HEX
1104R	-04 SAE	-04 JIC	7/16-20 UNF	1.26	0.550	0.360	0.562
1106R	-06 SAE	-06 JIC	9/16-18 UNF	1.28	0.555	0.390	0.750
1108R	-08 SAE	-08 JIC	3/4-16 UNF	1.60	0.655	0.440	0.875
1110R	-10 SAE	-10 JIC	7/8-14 UNF	1.86	0.760	0.500	1.000
1112R	-12 SAE	-12 JIC	1 1/16-12 UN	2.18	0.860	0.594	1.250
1116R	-16 SAE	-16 JIC	1 5/16-12 UN	2.50	0.910	0.594	1.500
1120R	-20 SAE	-20 JIC	1 5/8-12 UN	2.57	0.960	0.594	1.875

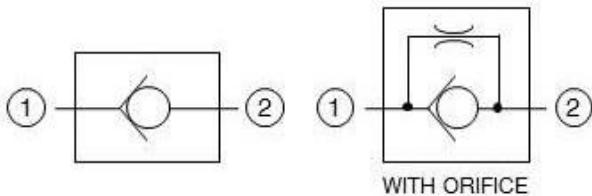
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Page last updated: February 09, 2015

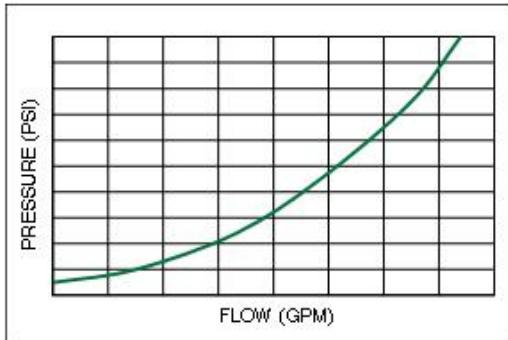
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

## FEATURES

- STEEL BODY AND HARDENED POPPET.
- METAL TO METAL SEAT
- LOW PRESSURE DROP.
- EXTERNAL O-RING INCLUDED (EXCEPT MODEL 14101).
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.
- \*MODEL 14101 REQUIRES AND EXTERNAL SEAL #008 AT INLET CHAMFER.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## ORDERING INFORMATION

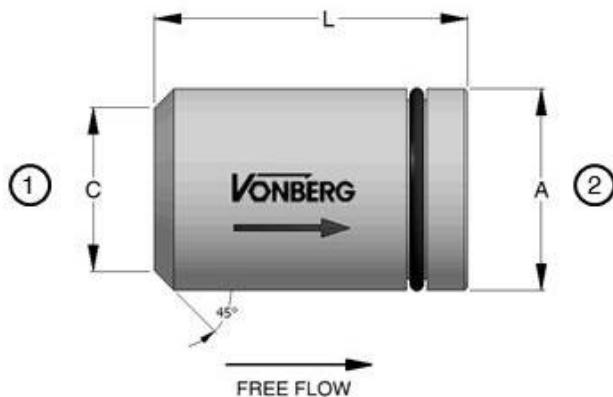
141	XX	-	XX
SERIES NUMBER _____			
PORT SIZE _____			
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____			
ORIFICE DIAMETER (0.001") (OPTIONAL) _____			

MODEL	FLOW RANGE	A	C	L	REC. BORE DIA.	ASSEMBLED GAP
14101*	0.1 TO 1.0 GPM	0.306 / 0.311	0.172	0.620 / 0.630	0.3125 / 0.3145	0.015 / 0.025
14103	1.0 TO 5.0 GPM	0.494 / 0.499	0.420	0.835 / 0.845	0.5000 / 0.5020	0.015 / 0.025
14106	2.0 TO 10.0 GPM	0.650 / 0.655	0.500	1.215 / 1.225	0.6562 / 0.6582	0.015 / 0.025
14108	5.0 TO 20.0 GPM	0.806 / 0.811	0.640	1.490 / 1.500	0.8125 / 0.8145	0.015 / 0.025

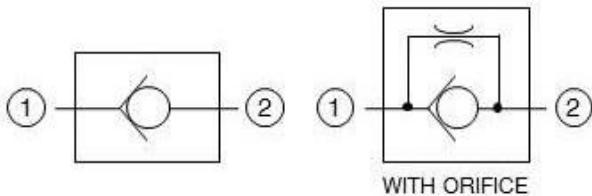
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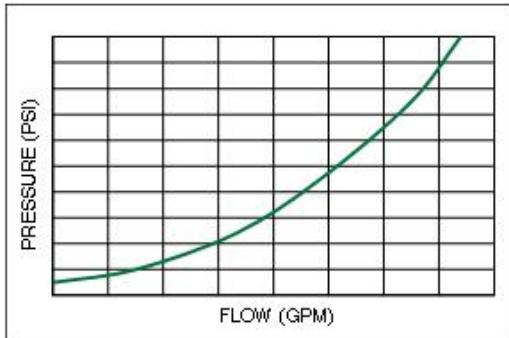
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

## FEATURES

- BRASS BODY.
- SOFT SEAT.
- LOW PRESSURE DROP.
- EXTERNAL O-RING INCLUDED (EXCEPT MODEL 14203).
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.
- \*MODEL 14203 REQUIRES AND EXTERNAL SEAL #012 AT INLET CHAMFER.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## ORDERING INFORMATION

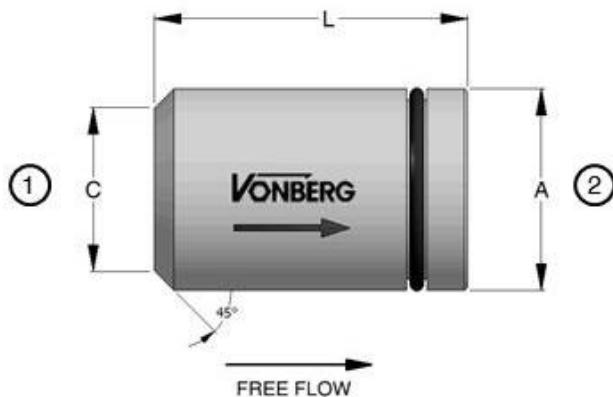
142	XX	-	XX
SERIES NUMBER _____			
PORT SIZE _____			
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____			
ORIFICE DIAMETER (0.001") (OPTIONAL) _____			

MODEL	FLOW RANGE	A	C	L	REC. BORE DIA.	ASSEMBLED GAP
14203*	0.5 TO 3.0 GPM	0.494 / 0.499	0.312	0.835 / 0.845	0.5000 / 0.5020	0.015 / 0.025
14206	1.0 TO 5.0 GPM	0.650 / 0.655	0.469	1.215 / 1.225	0.6562 / 0.6582	0.015 / 0.025
14208	2.0 TO 10.0 GPM	0.806 / 0.811	0.625	1.490 / 1.500	0.8125 / 0.8145	0.015 / 0.025
14210	5.0 TO 20.0 GPM	0.994 / 0.999	0.812	1.545 / 1.555	1.0000 / 1.0020	0.015 / 0.025
14212	5.0 TO 30.0 GPM	1.212 / 1.217	1.031	1.930 / 1.940	1.2188 / 1.2208	0.015 / 0.025
14216	5.0 TO 50.0 GPM	1.681 / 1.686	1.406	2.615 / 2.625	1.6875 / 1.6895	0.015 / 0.025

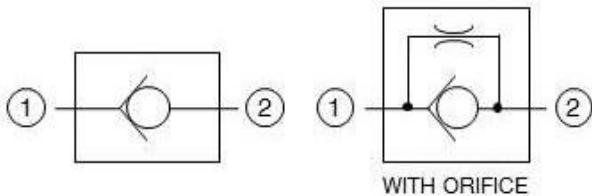
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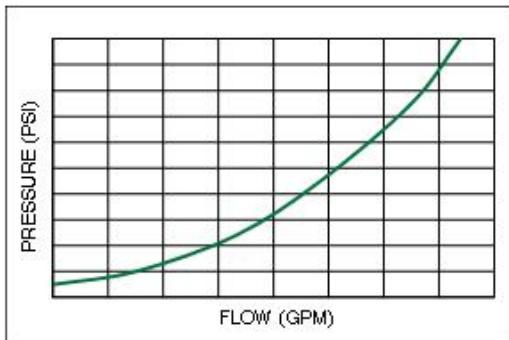
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

### FEATURES

- STEEL BODY AND HARDENED POPPET.
- METAL TO METAL SEAT
- LOW PRESSURE DROP.
- URETHANE O-RING INCLUDED.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### ORDERING INFORMATION

151	XX	-	XX
SERIES NUMBER _____			
PORT SIZE _____			
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____			
ORIFICE DIAMETER (0.001") (OPTIONAL) _____			

MODEL	FLOW RANGE	A	C	L	REC. BORE DIA.	ASSEMBLED GAP
15103	1.0 TO 5.0 GPM	0.494 / 0.499	0.420	0.835 / 0.845	0.5000 / 0.5020	0.015 / 0.025
15106	2.0 TO 10.0 GPM	0.650 / 0.655	0.500	1.215 / 1.225	0.6562 / 0.6582	0.015 / 0.025
15108	5.0 TO 20.0 GPM	0.806 / 0.811	0.640	1.490 / 1.500	0.8125 / 0.8145	0.015 / 0.025

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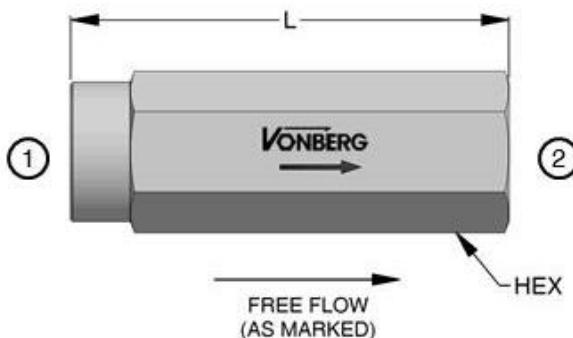
Page last updated: March 10, 2015



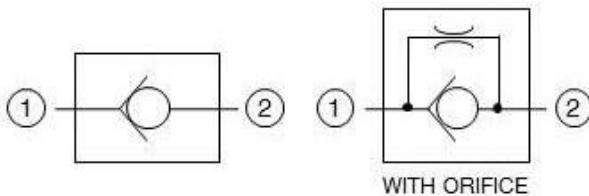
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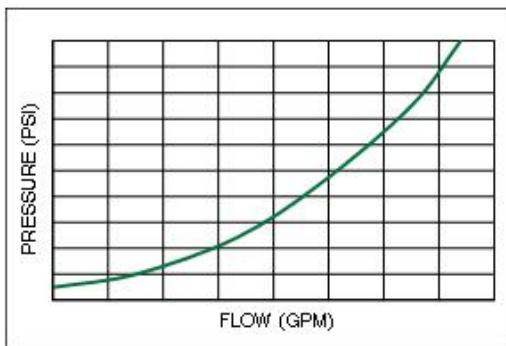
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

### FEATURES

- STEEL BODY
- HARDENED STEEL POPPET
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### ORDERING INFORMATION

15301 - 1	XX	XX
SERIES NUMBER	_____	
THREAD SIZE	_____	
CRACK PRESSURE (PSI) (IF NON-STANDARD)	_____	
ORIFICE DIAMETER (0.001") (OPTIONAL)	_____	

MODEL	INLET / OUTLET	FLOW CAPACITY	L	HEX
15301-101	1/8-27 NPTF	2.0 GPM	1.80	0.562
15301-102	1/4-18 NPTF	5.0 GPM	2.40	0.750
15301-103	3/8-18 NPTF	10.0 GPM	2.75	0.875
15301-104	1/2-14 NPTF	20.0 GPM	3.50	1.125
15301-106	3/4-14 NPTF	40.0 GPM	4.00	1.375
15301-108	1 - 11 1/2 NPTF	50.0 GPM	4.78	1.625
15301-110	1 1/4 - 11 1/2 NPTF	60.0 GPM	4.90	2.000
15301-112	1 1/2 - 11 1/2 NPTF	80.0 GPM	7.00	2.250

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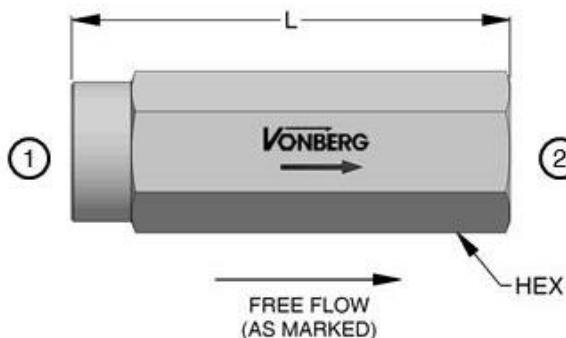
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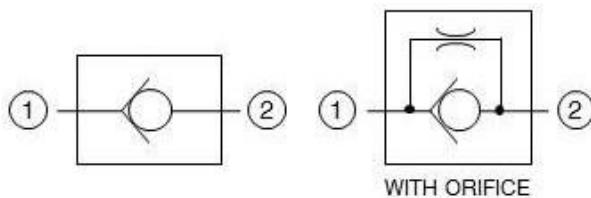
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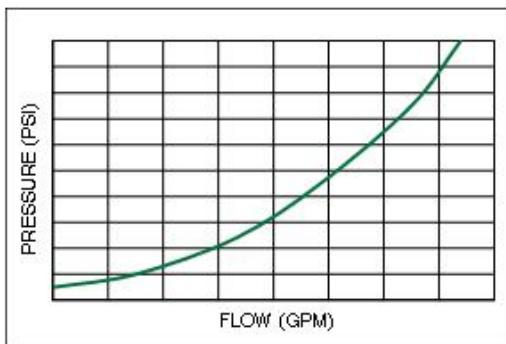
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

## FEATURES

- STEEL BODY.
- HARDENED STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## ORDERING INFORMATION

15312 - 2 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET / OUTLET	THREAD	FLOW CAPACITY	L	HEX
15312-204	-04 SAE	7/16-20	5.0 GPM	2.05	0.625
15312-206	-06 SAE	9/16-18	10.0 GPM	2.15	0.750
15312-208	-08 SAE	3/4-16	20.0 GPM	2.90	0.937
15312-210	-10 SAE	7/8-14	30.0 GPM	3.40	1.125
15312-212	-12 SAE	1 1/16-12	40.0 GPM	3.90	1.375
15312-216	-16 SAE	1 5/16-12	50.0 GPM	4.78	1.625
15312-220	-20 SAE	1 5/8-12	60.0 GPM	4.78	2.000

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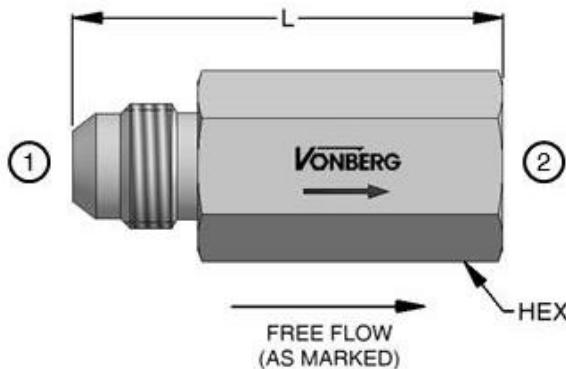
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### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

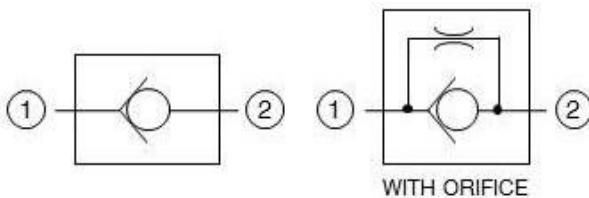
### FEATURES

- STEEL BODY.
- HARDENED STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

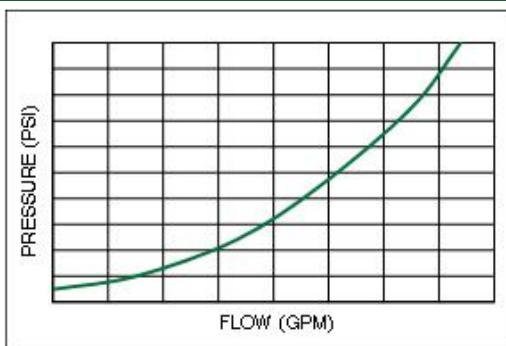
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

15312 - [6] XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET 1	OUTLET 2	THREAD	FLOW CAPACITY	L	HEX
15312-604	-04 JIC	-04 SAE PORT	7/16-20	3.0 GPM	1.93	0.625
15312-606	-06 JIC	-06 SAE PORT	9/16-18	10.0 GPM	1.94	0.750
15312-608	-08 JIC	-08 SAE PORT	3/4-16	20.0 GPM	2.72	0.938
15312-610	-10 JIC	-10 SAE PORT	7/8-14	30.0 GPM	3.25	1.125
15312-612	-12 JIC	-12 SAE PORT	1 1/16-12	40.0 GPM	3.75	1.250
15312-616	-16 JIC	-16 SAE PORT	1 5/16-12	50.0 GPM	4.50	1.625

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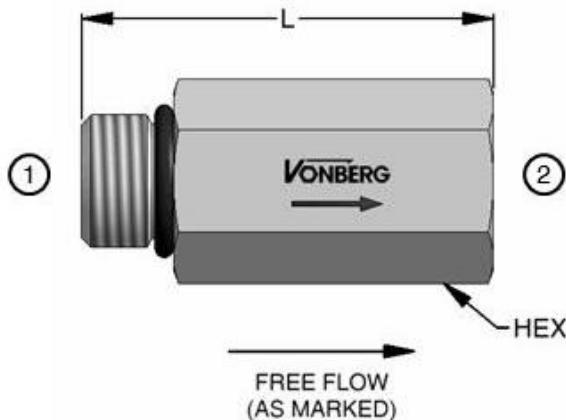
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### PRODUCT



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

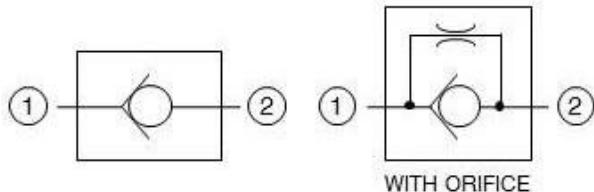
### FEATURES

- STEEL BODY.
- HARDENED STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

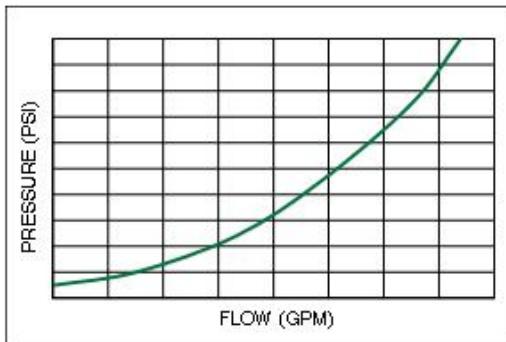
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

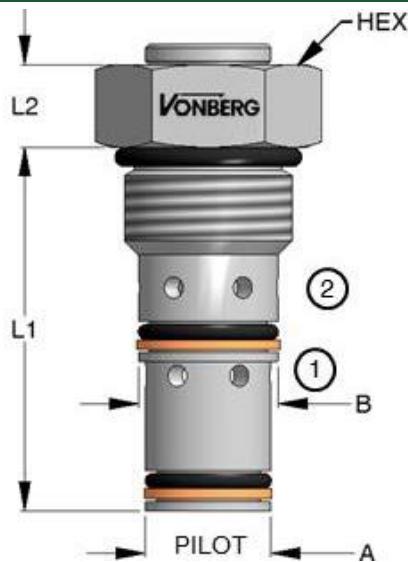
15312 - 8 XX - XX
SERIES NUMBER _____
THREAD SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	INLET 1	OUTLET 2	THREAD	FLOW CAPACITY	L	HEX
15312-804	-04 SAE	-04 SAE PORT	7/16-20	3.0 GPM	1.74	0.625
15312-806	-06 SAE	-06 SAE PORT	9/16-18	10.0 GPM	1.78	0.750
15312-808	-08 SAE	-08 SAE PORT	3/4-16	20.0 GPM	2.50	0.938
15312-810	-10 SAE	-10 SAE PORT	7/8-14	30.0 GPM	3.00	1.125
15312-812	-12 SAE	-12 SAE PORT	1 1/16-12	40.0 GPM	3.48	1.250
15312-816	-16 SAE	-16 SAE PORT	1 5/16-12	50.0 GPM	4.18	1.625

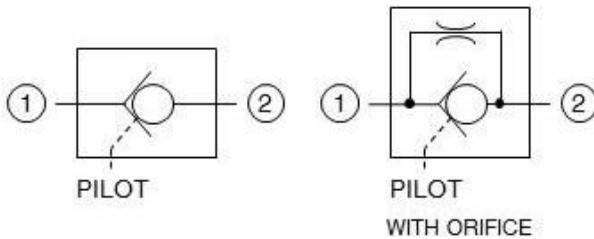
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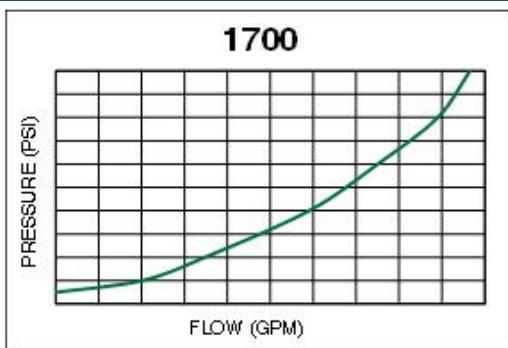
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

A CARTRIDGE STYLE, POPPET TYPE PILOT TO OPEN CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 30 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.
- THE CARTRIDGE HAS A STANDARD 4:1 PILOT RATIO TO ALLOW FLOW FROM (2) TO (1).

### FEATURES

- STEEL BODY AND POPPET.
- INDUSTRY COMMON CAVITY.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL PILOT RATIOS AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	30 PSI

### ORDERING INFORMATION

17	XX	X	-XX
SERIES NUMBER _____			
PORT SIZE _____			
PILOT PISTON TYPE _____			
BLANK..... UNSEALED P..... O-RING SEALED			
BODY PORT SIZE CODE _____			
BLANK..... CARTRIDGE ONLY SERIES CODE... SEE "CARTRIDGE BODIES", X-3 SERIES			

MODEL	THREAD	RATED FLOW	CAVITY	L1	L2	HEX	A	B	TORQUE
1706	9/16 - 18	3.0 GPM	FC06-3	1.23	0.27	0.69	0.438 / 0.439	0.467 / 0.468	15 ft-lbs
1708	3/4 - 16	6.0 GPM	VC08-3	1.63	0.37	0.88	0.558 / 0.560	0.621 / 0.623	20 ft-lbs
1710	7/8 - 14	10.0 GPM	VC10-3	1.82	0.43	1.00	0.621 / 0.623	0.683 / 0.685	25 ft-lbs
1712	1 1/16 - 12	20.0 GPM	VC12-3	2.63	0.52	1.25	0.870 / 0.873	0.933 / 0.935	40 ft-lbs
1716	1 5/16 - 12	30.0 GPM	VC16-3	2.88	0.63	1.50	1.058 / 1.060	1.121 / 1.123	60 ft-lbs

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

Page last updated: February 13, 2015

## PRODUCT



## DESCRIPTION

A CARTRIDGE STYLE, POPPET TYPE, STANDARD FLOW CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

## FEATURES

- STEEL BODY AND POPPET.
- INDUSTRY COMMON CAVITY.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

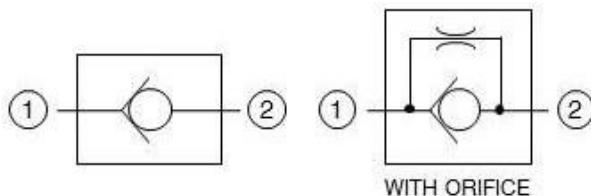
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

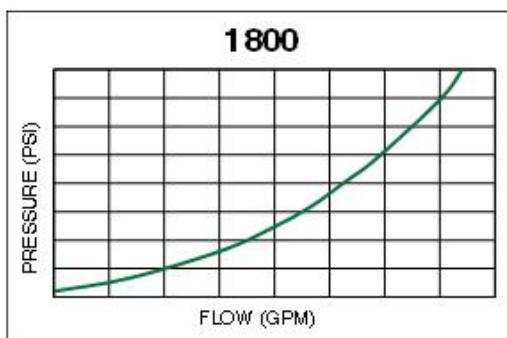
## ORDERING INFORMATION

18	XX	-	XX	-	XX
SERIES NUMBER _____					
PORT SIZE _____					
CRACK PRESSURE (PSI) _____					
(IF NON-STANDARD)					
ORIFICE DIAMETER (0.001") _____					
(OPTIONAL)					
BODY PORT SIZE CODE _____					
BLANK..... CARTRIDGE ONLY					
SERIES CODE... SEE "CARTRIDGE BODIES", X-2 SERIES					

## SCHEMATIC



## TYPICAL PERFORMANCE



MODEL	THREAD	RATED FLOW	CAVITY	L1	L2	HEX	A	TORQUE
1804	7/16 - 20	2.0 GPM	VC04-2	0.94	0.52	0.56	0.277 / 0.278	10 ft-lbs
1806	9/16 - 18	4.0 GPM	FC06-2	0.84	0.52	0.69	0.467 / 0.468	15 ft-lbs
1808	3/4 - 16	6.0 GPM	VC08-2	1.10	0.36	0.88	0.495 / 0.497	20 ft-lbs
1810	7/8 - 14	10.0 GPM	VC10-2	1.25	0.40	1.00	0.621 / 0.623	25 ft-lbs
1812	1 1/16 - 12	20.0 GPM	VC12-2	1.81	0.49	1.25	0.870 / 0.873	40 ft-lbs
1816	1 5/16 - 12	30.0 GPM	VC16-2	1.75	0.55	1.50	1.121 / 1.123	60 ft-lbs

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Hydraulic Valve Specialists

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## PRODUCT



## DESCRIPTION

A CARTRIDGE STYLE, POPPET TYPE, REVERSE FLOW CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (2) TO (1) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 25 PSI.
- FLOW FROM (1) TO (2) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

## FEATURES

- STEEL BODY AND POPPET.
- INDUSTRY COMMON CAVITY.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

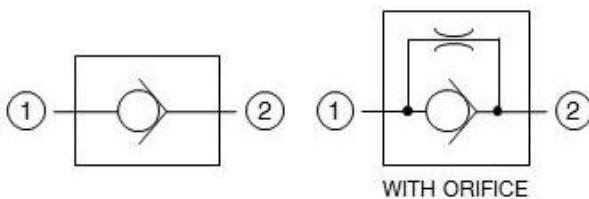
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	25 PSI

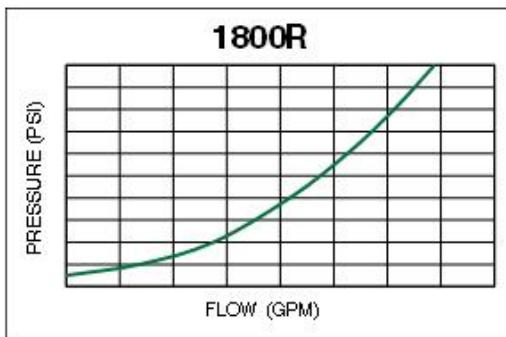
## ORDERING INFORMATION

18	XX	R	-	XX	-	XX
SERIES NUMBER _____						
PORT SIZE _____						
CRACK PRESSURE (PSI) _____						
(IF NON-STANDARD)						
ORIFICE DIAMETER (0.001") _____						
(OPTIONAL)						
BODY PORT SIZE CODE _____						
BLANK..... CARTRIDGE ONLY						
SERIES CODE... SEE "CARTRIDGE BODIES", X-2 SERIES						

## SCHEMATIC



## TYPICAL PERFORMANCE



MODEL	THREAD	RATED FLOW	CAVITY	L1	L2	HEX	A	TORQUE
1804R	7/16 - 20	2.0 GPM	4-2	0.94	0.52	0.56	0.277 / 0.278	10 ft-lbs
1806R	9/16 - 18	4.0 GPM	6-2	0.84	0.52	0.69	0.467 / 0.468	15 ft-lbs
1808R	3/4 - 16	6.0 GPM	8-2	1.10	0.36	0.88	0.495 / 0.497	20 ft-lbs
1810R	7/8 - 14	10.0 GPM	10-2	1.25	0.40	1.00	0.621 / 0.623	25 ft-lbs
1812R	1 1/16 - 12	20.0 GPM	12-2	1.81	0.49	1.25	0.870 / 0.873	40 ft-lbs
1816R	1 5/16 - 12	30.0 GPM	16-2	1.75	0.55	1.50	1.121 / 1.123	60 ft-lbs

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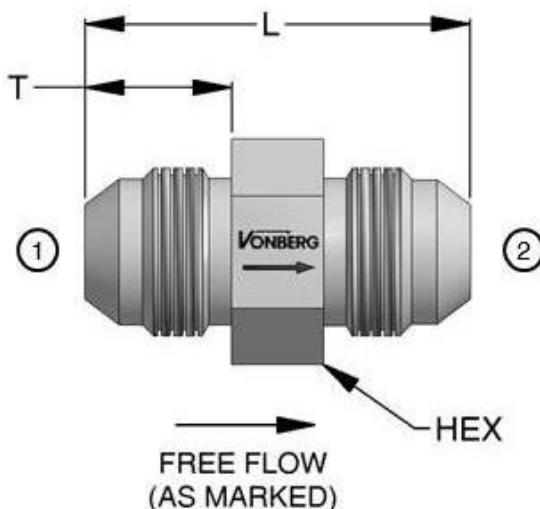
Page last updated: February 13, 2015



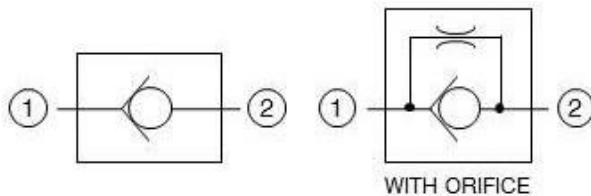
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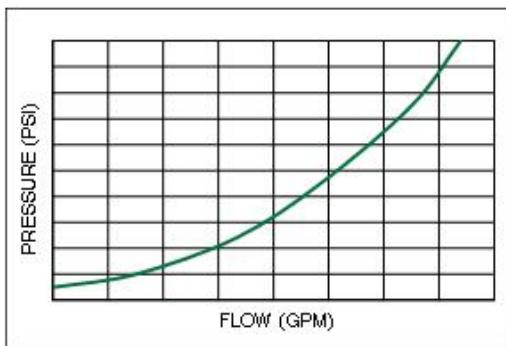
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE WITH MALE JIC CONNECTIONS INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

### FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### ORDERING INFORMATION

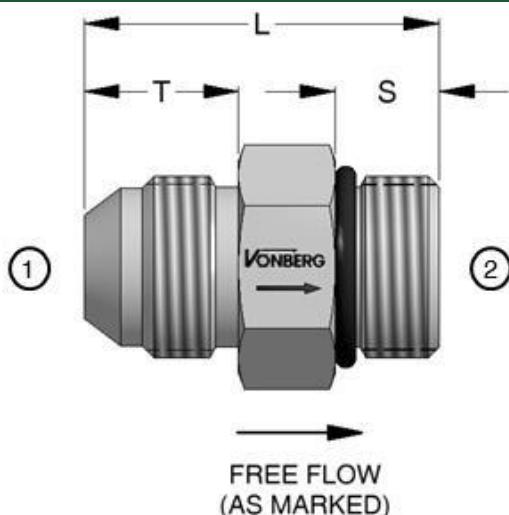
SERIES NUMBER _____	19	XX	-	XX
THREAD SIZE _____				
CRACK PRESSURE (PSI) (IF NON-STANDARD)				
ORIFICE DIAMETER (0.001") (OPTIONAL)				

MODEL	INLET / OUTLET	THREAD	CAPACITY	L	T	HEX
1904	-04 JIC	7/16-20	2 GPM	1.42	0.540	0.562
1906	-06 JIC	9/16-18	4 GPM	1.60	0.540	0.750
1908	-08 JIC	3/4-16	8 GPM	1.68	0.655	0.875
1910	-10 JIC	7/8-14	12 GPM	1.88	0.760	1.000
1912	-12 JIC	1 1/16-12	15 GPM	2.12	0.860	1.250
1916	-16 JIC	1 5/16-12	40 GPM	2.55	0.880	1.500
1920	-20 JIC	1 5/8-12	50 GPM	3.15	0.950	1.875
1924	-24 JIC	1 7/8-12	80 GPM	3.50	0.950	2.125

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Page last updated: February 13, 2015

## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

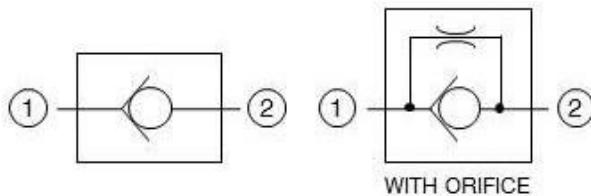
## FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

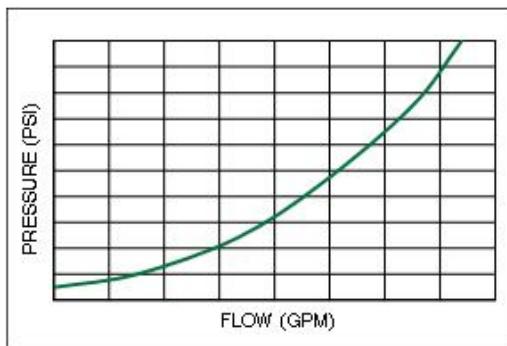
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

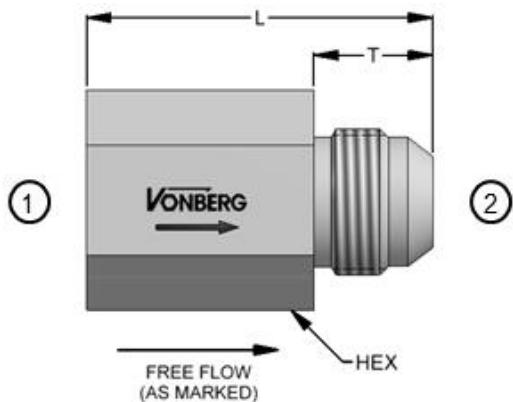
19	XX	F	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
CRACK PRESSURE (PSI) _____			
(IF NON-STANDARD)			
ORIFICE DIAMETER (0.001") (OPTIONAL)			

MODEL	INLET 1	OUTLET 2	THREAD	CAPACITY	L	T	S	HEX
1904F	-04 JIC	-04 SAE	7/16-20	2 GPM	1.23	0.540	0.360	0.562
1906F	-06 JIC	-06 SAE	9/16-18	4 GPM	1.45	0.540	0.390	0.750
1908F	-08 JIC	-08 SAE	3/4-16	8 GPM	1.47	0.655	0.440	0.875
1910F	-10 JIC	-10 SAE	7/8-14	12 GPM	1.62	0.760	0.500	1.000
1912F	-12 JIC	-12 SAE	1 1/16-12	30 GPM	2.00	0.860	0.594	1.250
1916F	-16 JIC	-16 SAE	1 5/16-12	40 GPM	2.27	0.910	0.594	1.500
1920F	-20 JIC	-20 SAE	1 5/8-12	50 GPM	2.75	0.960	0.594	1.875
1924F	-24 JIC	-24 SAE	1 7/8-12	80 GPM	3.50	1.080	0.594	2.125

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Page last updated: February 13, 2015

## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

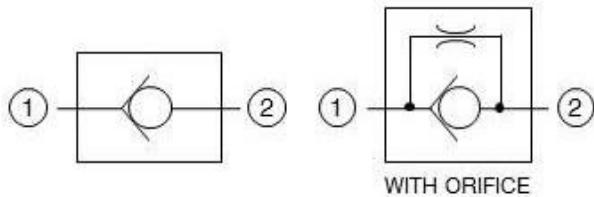
## FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

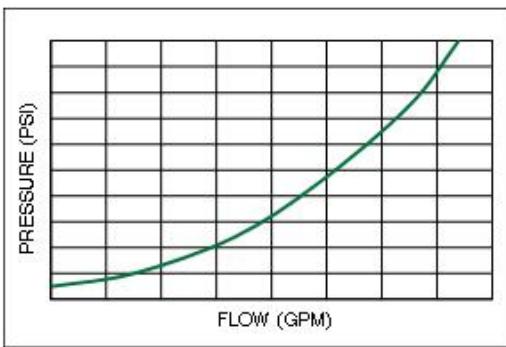
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

19	XX	FF	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
CRACK PRESSURE (PSI) _____ (IF NON-STANDARD)			
ORIFICE DIAMETER (0.001") (OPTIONAL)			

MODEL	INLET 1	OUTLET 2	THREAD	CAPACITY	L	T	HEX
1904FF	-04 JIC PORT	-04 JIC	7/16-20	2 GPM	1.72	0.530	0.625
1906FF	-06 JIC PORT	-06 JIC	9/16-18	4 GPM	1.94	0.545	0.750
1908FF	-08 JIC PORT	-08 JIC	3/4-16	8 GPM	1.88	0.635	0.938
1910FF	-10 JIC PORT	-10 JIC	7/8-14	12 GPM	2.38	0.760	1.125
1912FF	-12 JIC PORT	-12 JIC	1 1/16-12	20 GPM	2.50	0.860	1.375
1916FF	-16 JIC PORT	-16 JIC	1 5/16-12	40 GPM	3.19	0.880	1.625
1920FF	-20 JIC PORT	-20 JIC	1 5/8-12	50 GPM	4.00	0.950	2.000

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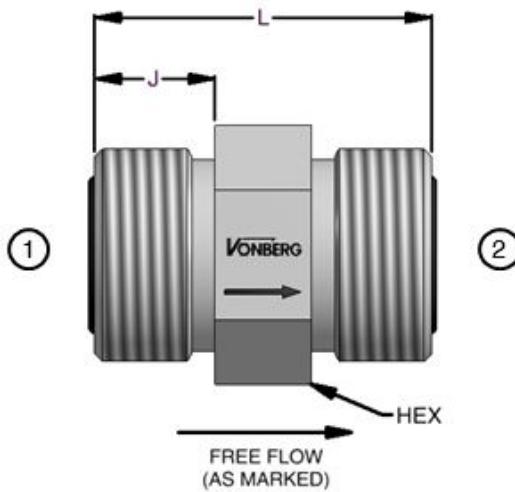
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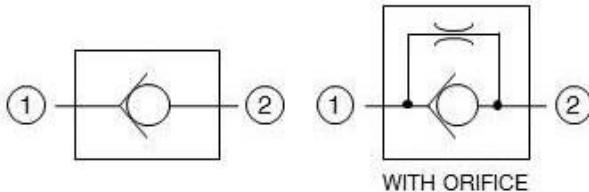
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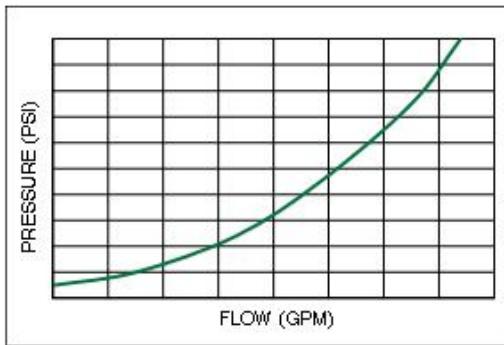
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE WITH MALE ORS CONNECTIONS INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

### FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### ORDERING INFORMATION

19	XX	FS	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
CRACK PRESSURE (PSI) (IF NON-STANDARD)			
ORIFICE DIAMETER (0.001") (OPTIONAL)			

MODEL	INLET / OUTLET	THREAD	CAPACITY	L	J	HEX
1904FS	-04 ORS	9/16-18	2 GPM	1.140	0.385	0.625
1906FS	-06 ORS	11/16-16	4 GPM	1.250	0.440	0.750
1908FS	-08 ORS	13/16-16	8 GPM	1.375	0.500	0.875
1910FS	-10 ORS	1-14	12 GPM	1.700	0.610	1.062
1912FS	-12 ORS	1 3/16-12	15 GPM	1.875	0.670	1.250
1916FS	-16 ORS	1 7/16-12	40 GPM	2.125	0.690	1.500
1920FS	-20 ORS	1 11/16-12	50 GPM	2.450	0.690	1.750

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**PRODUCT**

**DESCRIPTION**

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

**OPERATION**

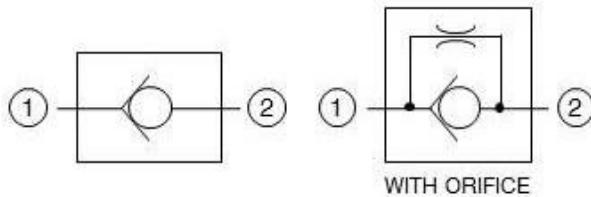
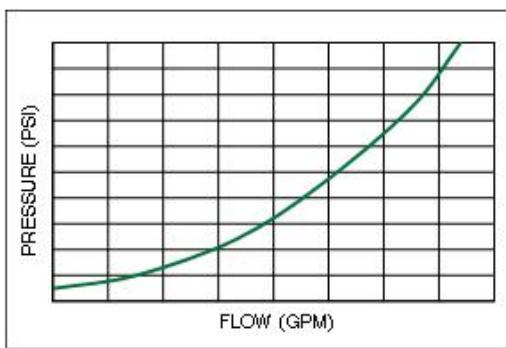
- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

**FEATURES**

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

**SPECIFICATIONS**

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**ORDERING INFORMATION**

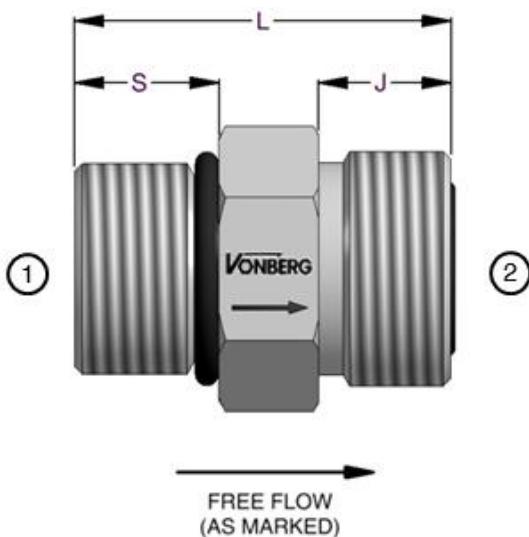
19	XX	J	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
CRACK PRESSURE (PSI) _____ (IF NON-STANDARD)			
ORIFICE DIAMETER (0.001") (OPTIONAL)			

MODEL	INLET 1	OUTLET 2	CAPACITY	L	J	S	HEX
1904J	-04 ORS - 9/16-18	-04 SAE - 7/16-20	2 GPM	1.06	0.38	0.43	0.625
1906J	-06 ORS - 11/16-16	-06 SAE - 9/16-18	4 GPM	1.42	0.44	0.47	0.750
1908J	-08 ORS - 13/16-16	-08 SAE - 3/4-16	8 GPM	1.42	0.50	0.55	0.875
1910J	-10 ORS - 1-14	-10 SAE - 7/8-14	12 GPM	1.62	0.61	0.63	1.125
1912J	-12 ORS - 1 3/16-12	-12 SAE - 1 1/16-12	30 GPM	2.00	0.67	0.73	1.250
1916J	-16 ORS - 1 7/16-12	-16 SAE - 1 5/16-12	40 GPM	2.27	0.69	0.73	1.500
1920J	-20 ORS - 1 11/16-12	-20 SAE - 1 5/8-12	50 GPM	2.40	0.69	0.73	1.875

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Page last updated: February 13, 2015

## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

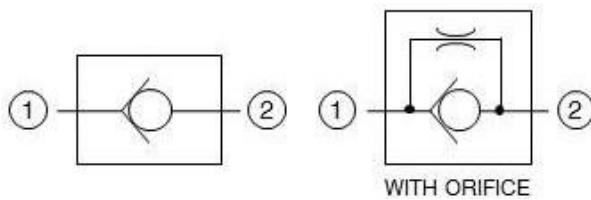
## FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

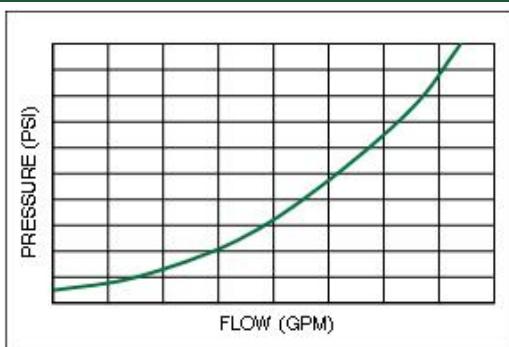
## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

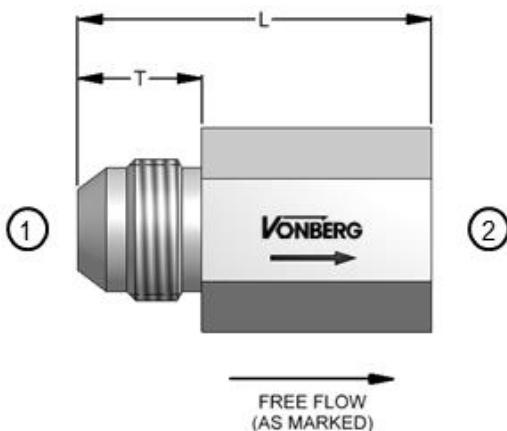
19	XX	K	-	XX
SERIES NUMBER _____				
THREAD SIZE _____				
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____				
ORIFICE DIAMETER (0.001") (OPTIONAL) _____				

MODEL	INLET 1	OUTLET 2	CAPACITY	L	J	S	HEX
1904K	-04 SAE - 7/16-20	-04 ORS - 9/16-18	2 GPM	1.07	0.38	0.43	0.625
1906K	-06 SAE - 9/16-18	-06 ORS - 11/16-16	4 GPM	1.42	0.44	0.47	0.750
1908K	-08 SAE - 3/4-16	-08 ORS - 13/16-16	8 GPM	1.42	0.50	0.55	0.875
1910K	-10 SAE - 7/8-14	-10 ORS - 1-14	12 GPM	1.62	0.61	0.63	1.125
1912K	-12 SAE - 1 1/16-12	-12 ORS - 1 3/16-12	30 GPM	2.00	0.67	0.73	1.250
1916K	-16 SAE - 1 5/16-12	-16 ORS - 1 7/16-12	40 GPM	2.27	0.69	0.73	1.500
1920K	-20 SAE - 1 5/8-12	-20 ORS - 1 11/16-12	50 GPM	2.45	0.69	0.73	1.875

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Page last updated: February 13, 2015

## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

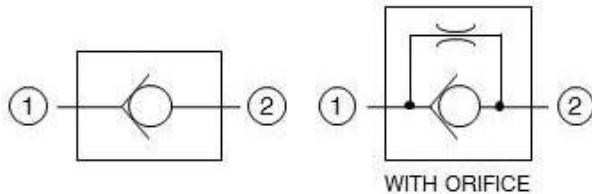
## FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

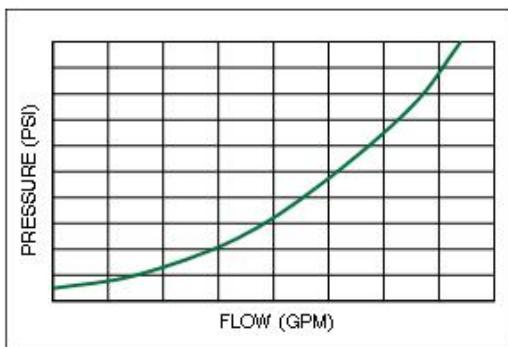
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

SERIES NUMBER	19	XX	MF	XX
THREAD SIZE				
CRACK PRESSURE (PSI) (IF NON-STANDARD)				
ORIFICE DIAMETER (0.001") (OPTIONAL)				

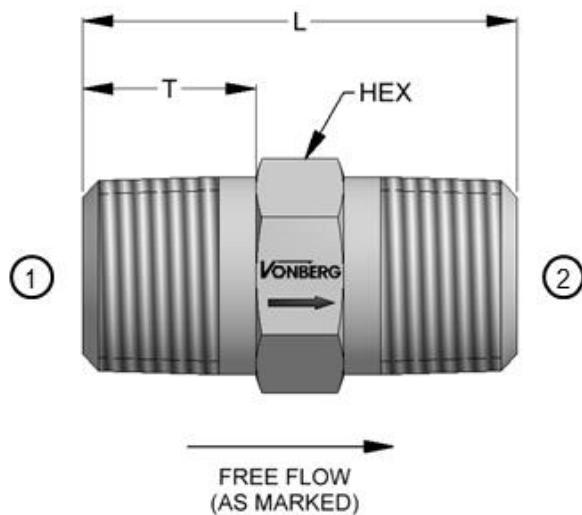
MODEL	INLET 1	OUTLET 2	THREAD	CAPACITY	L	T	HEX
1904MF	-04 JIC	-04 JIC PORT	7/16-20	2 GPM	1.72	0.530	0.625
1906MF	-06 JIC	-06 JIC PORT	9/16-18	4 GPM	1.94	0.545	0.750
1908MF	-08 JIC	-08 JIC PORT	3/4-16	8 GPM	1.88	0.635	0.938
1910MF	-10 JIC	-10 JIC PORT	7/8-14	12 GPM	2.38	0.760	1.125
1912MF	-12 JIC	-12 JIC PORT	1 1/16-12	25 GPM	2.50	0.860	1.375
1916MF	-16 JIC	-16 JIC PORT	1 5/16-12	40 GPM	3.19	0.880	1.625
1920MF	-20 JIC	-20 JIC PORT	1 5/8-12	50 GPM	4.00	0.950	2.000

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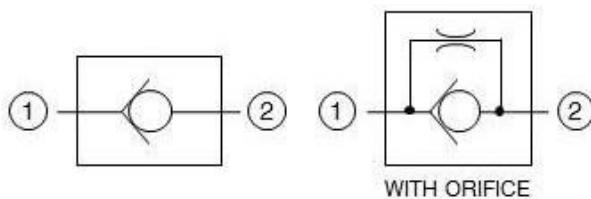
Page last updated: February 13, 2015



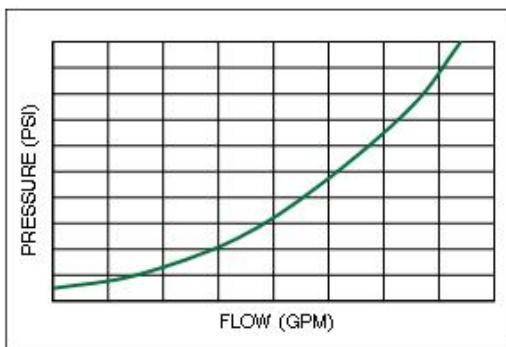
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE WITH MALE NPTF CONNECTIONS INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

### FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### ORDERING INFORMATION

SERIES NUMBER	19	XX	P	-XX
THREAD SIZE				
CRACK PRESSURE (PSI) (IF NON-STANDARD)				
ORIFICE DIAMETER (0.001") (OPTIONAL)				

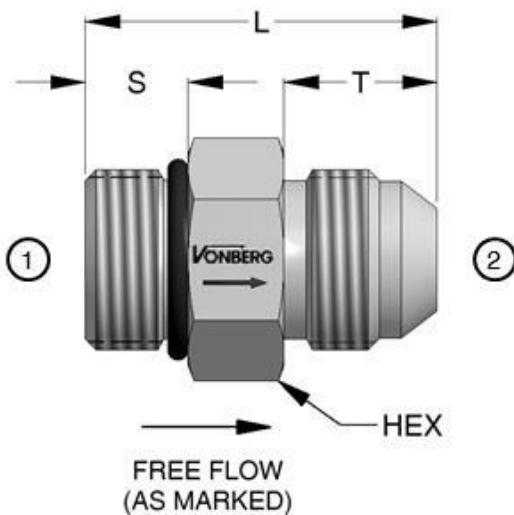
MODEL	INLET / OUTLET	FLOW CAPACITY	L	T	HEX
1901P	1/8-27 NPTF	2 GPM	1.00	0.38	0.50
1902P	1/4-18 NPTF	4 GPM	1.38	0.56	0.63
1903P	3/8-18 NPTF	8 GPM	1.45	0.56	0.75
1904P	1/2-14 NPTF	12 GPM	1.88	0.75	0.88
1906P	3/4-14 NPTF	25 GPM	1.96	0.75	1.13
1908P	1-11 1/2 NPTF	40 GPM	2.34	0.94	1.38

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Page last updated: February 13, 2015



## PRODUCT



## DESCRIPTION

AN IN-LINE STYLE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

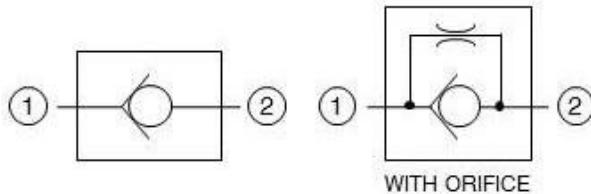
## FEATURES

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

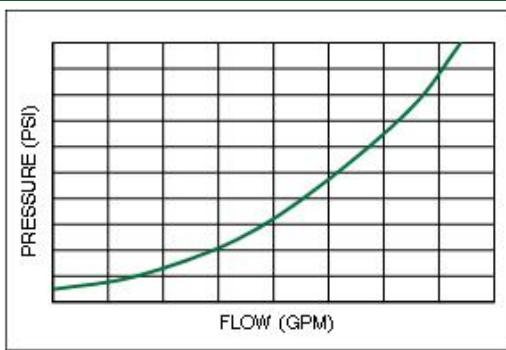
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## SCHEMATIC



## TYPICAL PERFORMANCE



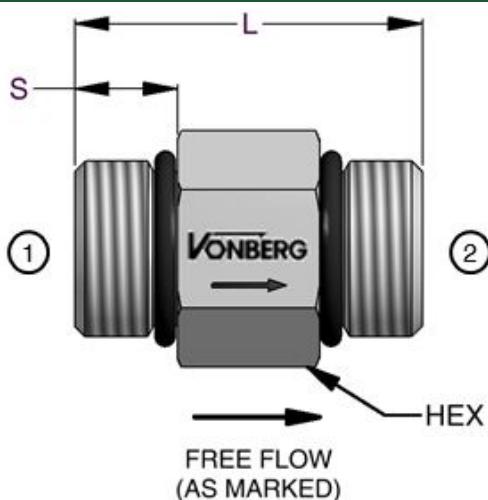
## ORDERING INFORMATION

19	XX	R	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
CRACK PRESSURE (PSI) _____ (IF NON-STANDARD)			
ORIFICE DIAMETER (0.001") (OPTIONAL)			

MODEL	INLET 1	OUTLET 2	THREAD	CAPACITY	L	T	S	HEX
1904R	-04 SAE	-04 JIC	7/16-20	2 GPM	1.23	0.540	0.360	0.562
1906R	-06 SAE	-06 JIC	9/16-18	4 GPM	1.45	0.540	0.390	0.750
1908R	-08 SAE	-08 JIC	3/4-16	8 GPM	1.47	0.655	0.440	0.875
1910R	-10 SAE	-10 JIC	7/8-14	12 GPM	1.62	0.760	0.500	1.000
1912R	-12 SAE	-12 JIC	1 1/16-12	30 GPM	2.00	0.860	0.594	1.250
1916R	-16 SAE	-16 JIC	1 5/16-12	40 GPM	2.27	0.910	0.594	1.500
1920R	-20 SAE	-20 JIC	1 5/8-12	50 GPM	2.75	0.960	0.594	1.875
1924R	-24 SAE	-24 JIC	1 7/8-12	80 GPM	3.50	1.080	0.594	2.125

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Page last updated: February 13, 2015

**PRODUCT**

**DESCRIPTION**

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

**OPERATION**

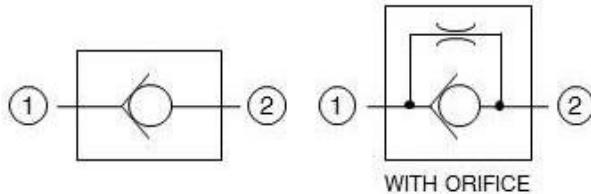
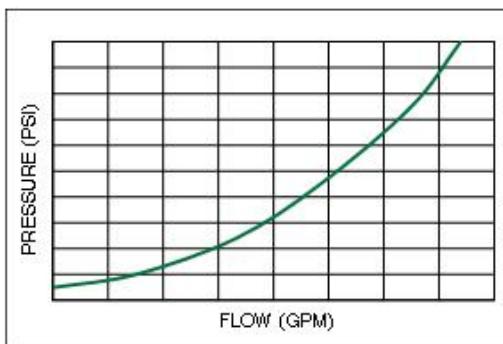
- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

**FEATURES**

- STEEL BODY AND POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

**SPECIFICATIONS**

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**ORDERING INFORMATION**

19	XX	RR	-XX
SERIES NUMBER _____			
THREAD SIZE _____			
CRACK PRESSURE (PSI) _____ (IF NON-STANDARD)			
ORIFICE DIAMETER (0.001") (OPTIONAL)			

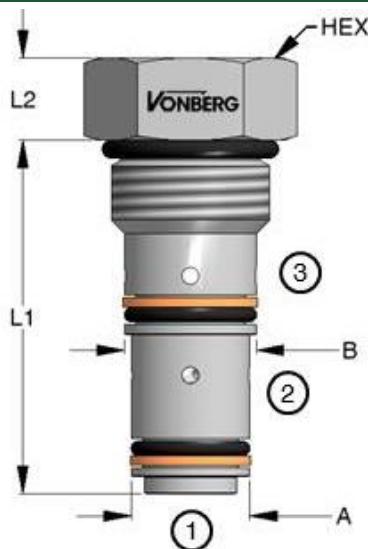
MODEL	INLET / OUTLET	THREAD	CAPACITY	L	S	HEX
1904RR	-04 SAE	7/16-20	2 GPM	1.14	0.360	0.562
1906RR	-06 SAE	9/16-18	4 GPM	1.45	0.390	0.750
1908RR	-08 SAE	3/4-16	8 GPM	1.47	0.440	0.875
1910RR	-10 SAE	7/8-14	12 GPM	1.62	0.500	1.000
1912RR	-12 SAE	1 1/16-12	15 GPM	2.00	0.595	1.250
1916RR	-16 SAE	1 5/16-12	40 GPM	2.27	0.595	1.500
1920RR	-20 SAE	1 5/8-12	50 GPM	2.75	0.595	1.875

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Page last updated: February 13, 2015



## PRODUCT



## DESCRIPTION

A CARTRIDGE STYLE, BALL TYPE SHUTTLE VALVE FOR USE IN CIRCUITS WHERE THE PRIORITY OF FLOW DIRECTION IS GRANTED TO THE GREATER OF TWO INLETS.

## OPERATION

- FLOW FROM (1) OR (3) TO (2) IS ALLOWED.
- FLOW FROM (1) TO (3) AND (3) TO (1) IS BLOCKED.

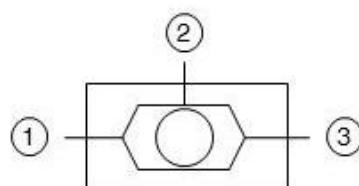
## FEATURES

- STEEL BODY AND CHROME BALL.
- HARDENED STEEL SEATS.
- INDUSTRY COMMON CAVITY.
- NO INTERNAL PACKINGS.

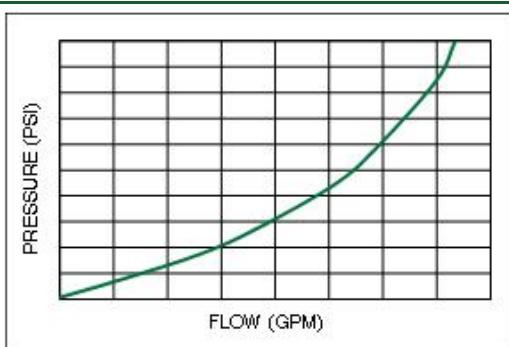
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
INTERNAL LEAKAGE	5 DPM @ 3500 PSI MAX.

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

SERIES NUMBER	32	XX	-	XX
PORT SIZE				
BODY PORT SIZE CODE				
BLANK.....	CARTRIDGE ONLY			
SERIES CODE...	SEE "CARTRIDGE BODIES", X-3 SERIES			

MODEL	THREAD	RATED FLOW	CAVITY	L1	L2	HEX	A	B
3204	7/16-20	1.5 GPM	C04-3	1.24	0.30	0.56	0.308 / 0.310	0.340 / 0.342
3208	3/4 - 16	5.0 GPM	VC08-3	1.67	0.31	0.88	0.558 / 0.560	0.621 / 0.623
3210	7/8-14	8.0 GPM	VC10-3	1.85	0.31	1.00	0.621 / 0.623	0.683 / 0.685

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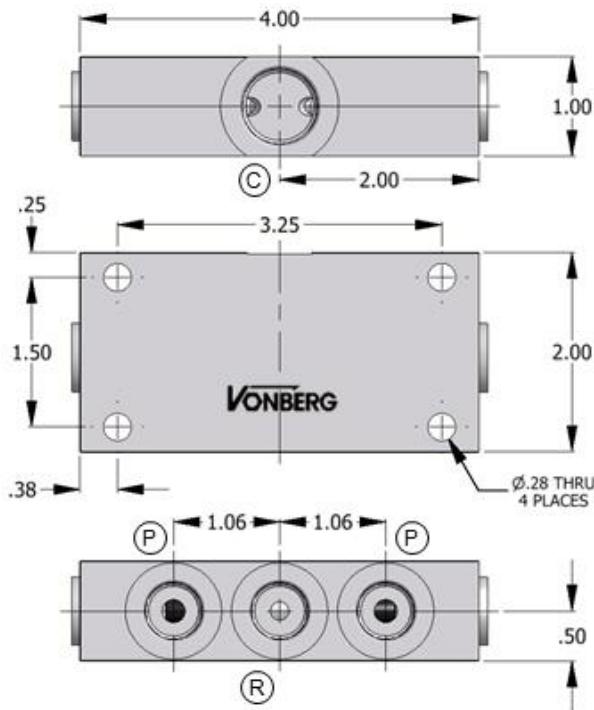
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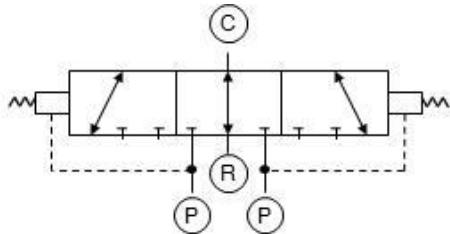
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Hydraulic Valve Specialists

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## PRODUCT



## SCHEMATIC



## DESCRIPTION

AN IN-LINE STYLE, SPOOL TYPE SHUTTLE VALVE FOR USE IN SPRING APPLIED BRAKE CIRCUITS.

## OPERATION

- IN THE NORMALLY CENTERED POSITION, FLOW FROM (C) TO (R) IS ALLOWED.
- SHIFT PRESSURE IS REQUIRED, EACH DIRECTION (SEE TABLE)
- IN THE SHUTTLED POSITION, FLOW FROM (P) TO (C) IS ALLOWED.

## FEATURES

- SPRING BIAS NORMALLY CENTERED.
- ALUMINUM BODY AND SPOOL.
- NO INTERNAL PACKINGS.
- HIGHER SHIFT PRESSURE AVAILABLE UPON REQUEST.
- HYDRAULIC OILS - GENERAL.

## SPECIFICATIONS

OPERATING PRESSURE 3500 PSI

TEMPERATURE RANGE 250° F TO -40° F

## ORDERING INFORMATION

SERIES NUMBER	601	XX	X
SHIFT PRESSURE ID			
BODY MATERIAL			
BLANK.....	ALUMINUM		
S.....	STEEL		

MODEL	PORT SIZE (C)	PORT SIZE (P, R)	CRACK (P-C)	HOLD (P-C)
60101	-08 SAE - 3/4-16	-06 SAE - 9/16-18	12 PSI (MIN.)	22.5 PSI (MIN.)
60112	-08 SAE - 3/4-16	-06 SAE - 9/16-18	50 PSI (MIN.)	80 PSI (MIN.)

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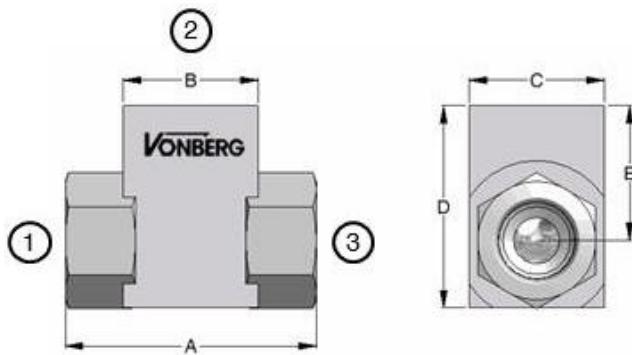
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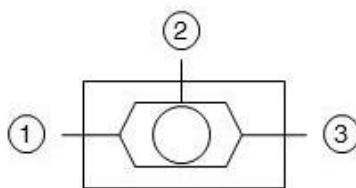
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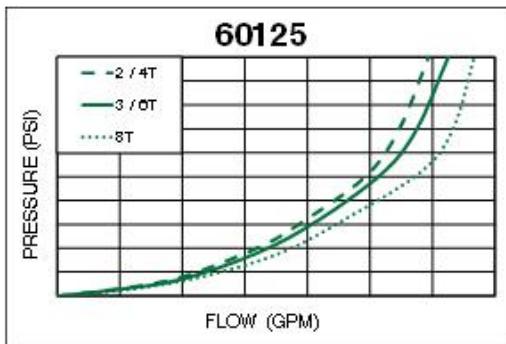
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE SHUTTLE VALVE FOR USE IN CIRCUITS WHERE THE PRIORITY OF FLOW DIRECTION IS GRANTED TO THE GREATER OF TWO INLETS.

## OPERATION

- FLOW FROM (1) OR (3) TO (2) IS ALLOWED.
- FLOW FROM (1) TO (3) AND (3) TO (1) IS BLOCKED.

## FEATURES

- ALUMINUM BODY AND CHROME BALL.
- HARDENED STEEL SEATS
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
INTERNAL LEAKAGE	5 DPM @ 3500 PSI MAX.

## ORDERING INFORMATION

60125	-XX-	XX
SERIES NUMBER	_____	
INLET PORTS ID	_____	
OUTLET PORT ID**	_____	

\*\* WHEN INLET AND OUTLET PORTS MATCH, ONLY ONE SUFFIX IS NECESSARY

MODEL	PORT SIZE	A	B	C	D	E
60125-2	1/4-18 NPTF	2.22	1.00	1.00	1.50	1.00
60125-3	3/8-18 NPTF	2.22	1.00	1.00	1.50	1.00
60125-4T	-04 SAE - 7/16-20	1.86	1.00	1.00	1.50	1.00
60125-6T	-06 SAE - 9/16-18	1.86	1.00	1.00	1.50	1.00
60125-8T	-08 SAE - 3/4-16	2.82	1.00	1.00	1.50	1.00

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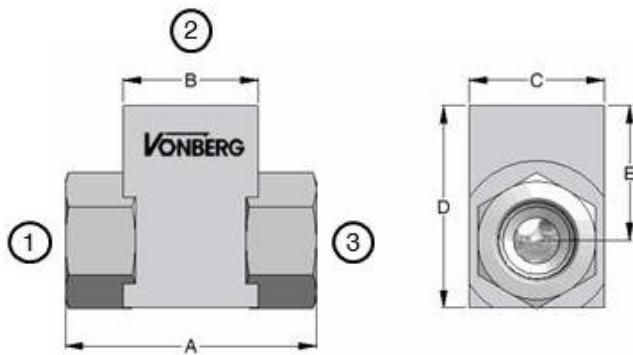
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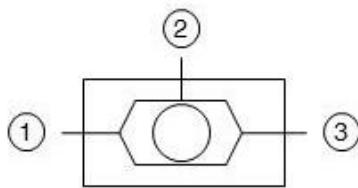
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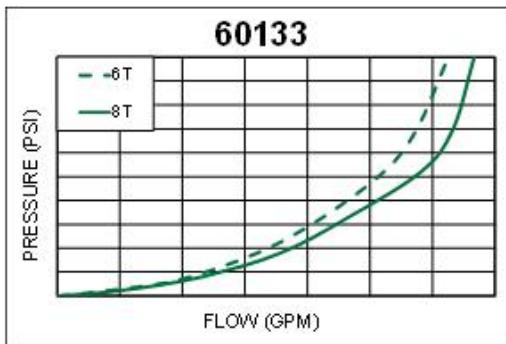
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE SHUTTLE VALVE FOR USE IN CIRCUITS WHERE THE PRIORITY OF FLOW DIRECTION IS GRANTED TO THE GREATER OF TWO INLETS.

## OPERATION

- FLOW FROM (1) OR (3) TO (2) IS ALLOWED.
- FLOW FROM (1) TO (3) AND (3) TO (1) IS BLOCKED.

## FEATURES

- ALUMINUM BODY AND CHROME BALL.
- HARDENED STEEL SEATS
- LOW PRESSURE DROP.
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
INTERNAL LEAKAGE	5 DPM @ 3500 PSI MAX.

## ORDERING INFORMATION

60133	-XX-	XX
SERIES NUMBER	_____	
INLET PORTS ID	_____	
OUTLET PORT ID**	_____	
** WHEN INLET AND OUTLET PORTS MATCH, ONLY ONE SUFFIX IS NECESSARY		

MODEL	PORT SIZE	A	B	C	D	E
60133-6T	-06 SAE - 9/16-18	1.94	1.00	1.00	1.50	1.00
60133-8T	-08 SAE - 3/4-16	2.70	1.00	1.00	1.75	1.25

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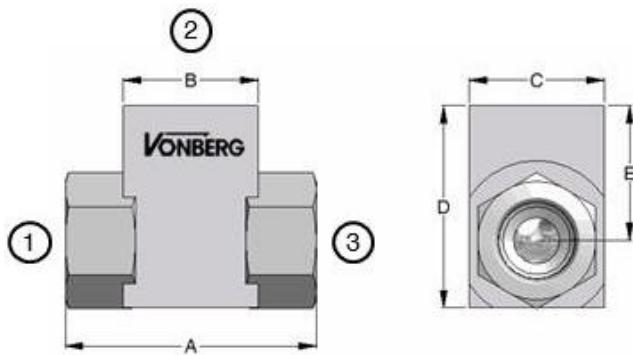
Page last updated: February 09, 2015



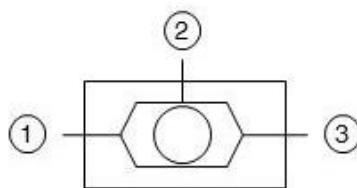
**Vonberg Valve, inc.**  
Hydraulic Valve Specialists

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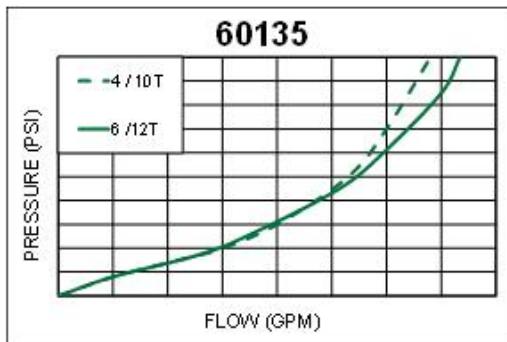
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE SHUTTLE VALVE FOR USE IN CIRCUITS WHERE THE PRIORITY OF FLOW DIRECTION IS GRANTED TO THE GREATER OF TWO INLETS.

## OPERATION

- FLOW FROM (1) OR (3) TO (2) IS ALLOWED.
- FLOW FROM (1) TO (3) AND (3) TO (1) IS BLOCKED.

## FEATURES

- ALUMINUM BODY AND CHROME BALL.
- HARDENED STEEL SEATS
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
INTERNAL LEAKAGE	5 DPM @ 3500 PSI MAX.

## ORDERING INFORMATION

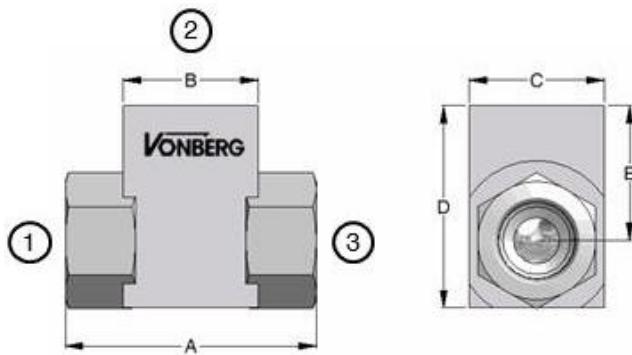
60135	-XX	-XX
SERIES NUMBER	_____	
INLET PORTS ID	_____	
OUTLET PORT ID**	_____	
** WHEN INLET AND OUTLET PORTS MATCH, ONLY ONE SUFFIX IS NECESSARY		

PORT ID.	PORT SIZE	A	B	C	D	E
60135-4	1/2-14 NPTF	4.00	1.75	1.75	2.50	1.60
60135-6	3/4-16 NPTF	4.00	1.75	1.75	2.50	1.60
60135-10T	-10 SAE - 7/8-14	4.00	1.75	1.75	2.50	1.60
60135-12T	-12 SAE - 1 1/16-12	4.00	1.75	1.75	2.50	1.60

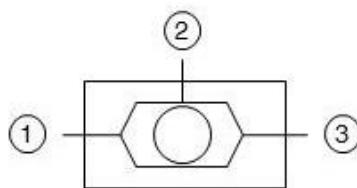
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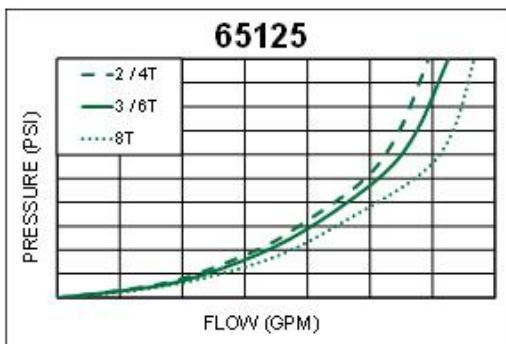
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE SHUTTLE VALVE FOR USE IN CIRCUITS WHERE THE PRIORITY OF FLOW DIRECTION IS GRANTED TO THE GREATER OF TWO INLETS.

## OPERATION

- FLOW FROM (1) OR (3) TO (2) IS ALLOWED.
- FLOW FROM (1) TO (3) AND (3) TO (1) IS BLOCKED.

## FEATURES

- STEEL BODY AND CHROME BALL.
- HARDENED STEEL SEATS
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
INTERNAL LEAKAGE	5 DPM @ 3500 PSI MAX.

## ORDERING INFORMATION

65125 - <input type="text"/> - <input type="text"/>
SERIES NUMBER _____
INLET PORTS ID _____
OUTLET PORT ID** _____

\*\* WHEN INLET AND OUTLET PORTS MATCH, ONLY ONE SUFFIX IS NECESSARY

PORT ID.	PORT SIZE	A	B	C	D	E
65125-2	1/4-18 NPTF	2.58	1.25	1.00	1.50	1.00
65125-3	3/8-18 NPTF	2.78	1.25	1.00	1.50	1.00
65125-4T	-04 SAE - 7/16-20	2.58	1.25	1.00	1.50	1.00
65125-6T	-06 SAE - 9/16-18	2.58	1.25	1.00	1.50	1.00
65125-8T	-08 SAE - 3/4-16	2.82	1.25	1.00	1.50	1.00

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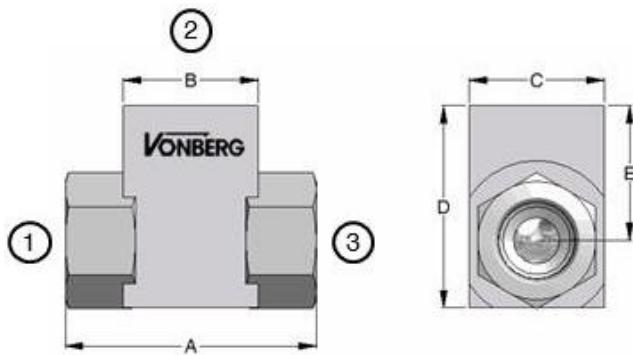
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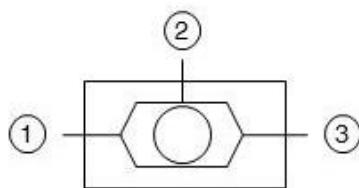
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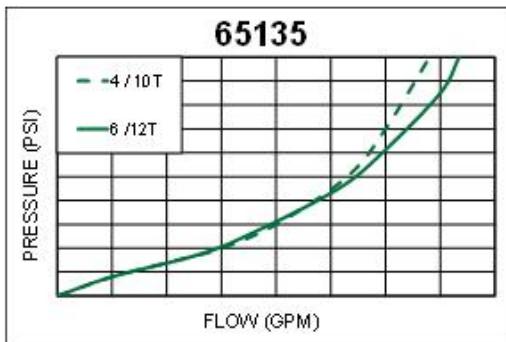
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, BALL TYPE SHUTTLE VALVE FOR USE IN CIRCUITS WHERE THE PRIORITY OF FLOW DIRECTION IS GRANTED TO THE GREATER OF TWO INLETS.

## OPERATION

- FLOW FROM (1) OR (3) TO (2) IS ALLOWED.
- FLOW FROM (1) TO (3) AND (3) TO (1) IS BLOCKED.

## FEATURES

- STEEL BODY AND CHROME BALL.
- HARDENED STEEL SEATS
- NO INTERNAL PACKINGS.

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
INTERNAL LEAKAGE	5 DPM @ 3500 PSI MAX.

## ORDERING INFORMATION

65135 - XX - XX
SERIES NUMBER _____
INLET PORTS ID _____
OUTLET PORT ID** _____

\*\* WHEN INLET AND OUTLET PORTS MATCH, ONLY ONE SUFFIX IS NECESSARY

PORT ID.	PORT SIZE	A	B	C	D	E
65135-4	1/2-14 NPTF	4.24	1.88	2.00	2.50	1.60
65135-6	3/4-16 NPTF	4.24	1.88	2.00	2.50	1.60
65135-10T	-10 SAE - 7/8-14	4.24	1.88	2.00	2.50	1.60
65135-12T	-12 SAE - 1 1/16-12	4.24	1.88	2.00	2.50	1.60

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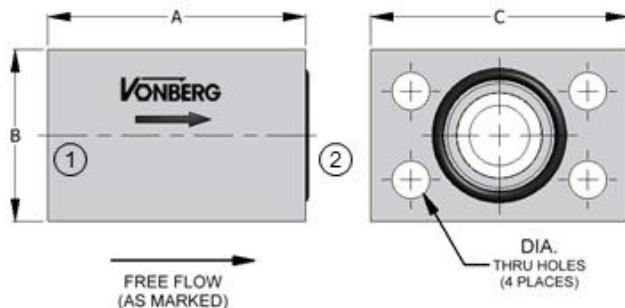
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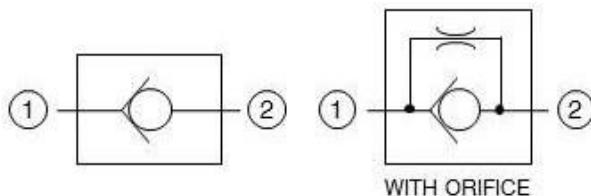
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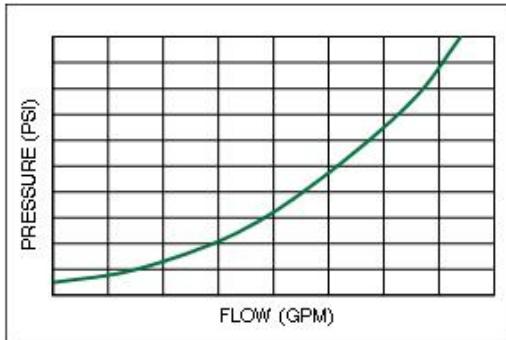
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

### OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

### FEATURES

- ALUMINUM BODY AND STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- BOLT PATTERN FOR SAE STANDARD PRESSURE (CODE 61).
- HYDRAULIC OILS - GENERAL.
- INCLUDES O-RING.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

### ORDERING INFORMATION

90175 - XXX - XX
SERIES NUMBER _____
FLANGE SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	SAE FLANGE SIZE	FLOW CAPACITY	A	B	C	DIA.
90175-100	1.00	35 GPM	300	2.00	3.00	0.44
90175-125	1.25	60 GPM	3.00	2.50	3.25	0.47
90175-150	1.50	95 GPM	4.00	2.50	4.00	0.56
90175-200	2.00	130 GPM	4.00	3.00	4.00	0.56

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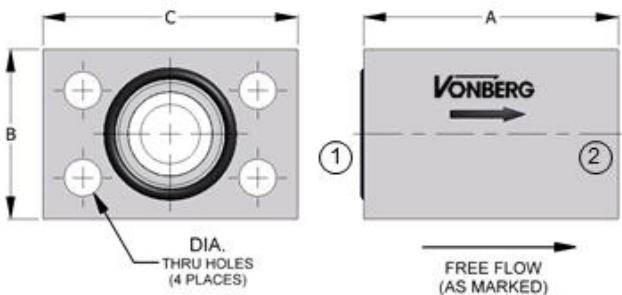
Page last updated: February 13, 2015



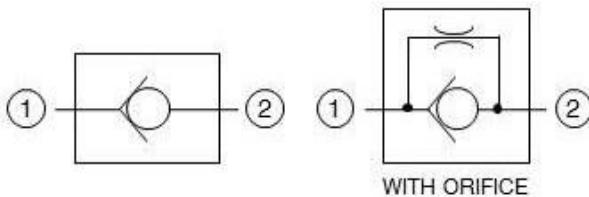
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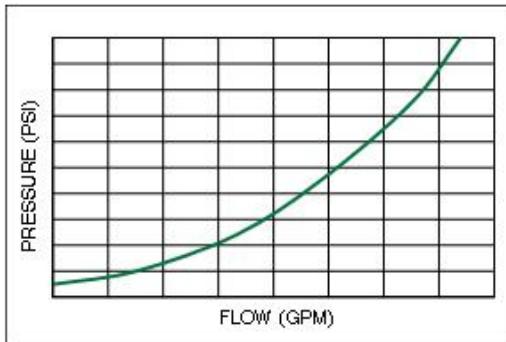
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE STYLE, POPPET TYPE CHECK VALVE INTENDED FOR BLOCKING FLUID FLOW.

## OPERATION

- FLOW FROM (1) TO (2) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 3-5 PSI.
- FLOW FROM (2) TO (1) IS BLOCKED WITH A SPRING BIAS TO ASSIST IN STATIC AND LOW LOAD CONDITIONS.

## FEATURES

- ALUMINUM BODY AND STEEL POPPET.
- LOW INTERNAL LEAKAGE, 5 DPM.
- NO INTERNAL PACKINGS.
- LOW PRESSURE DROP.
- BOLT PATTERN FOR SAE STANDARD PRESSURE (CODE 61).
- HYDRAULIC OILS - GENERAL.
- INCLUDES O-RING.
- SPECIAL CRACK PRESSURES AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
STANDARD CRACK PRESSURE	3-5 PSI

## ORDERING INFORMATION

90200 - <input type="text"/> - <input type="text"/>
SERIES NUMBER _____
FLANGE SIZE _____
CRACK PRESSURE (PSI) (IF NON-STANDARD) _____
ORIFICE DIAMETER (0.001") (OPTIONAL) _____

MODEL	SAE FLANGE SIZE	FLOW CAPACITY	A	B	C	DIA.
90200-100	1.00	35 GPM	3.00	2.00	3.00	0.44
90200-125	1.25	60 GPM	3.00	2.50	3.25	0.47
90200-150	1.50	95 GPM	4.00	2.50	4.00	0.56
90200-200	2.00	130 GPM	4.00	3.00	4.00	0.56

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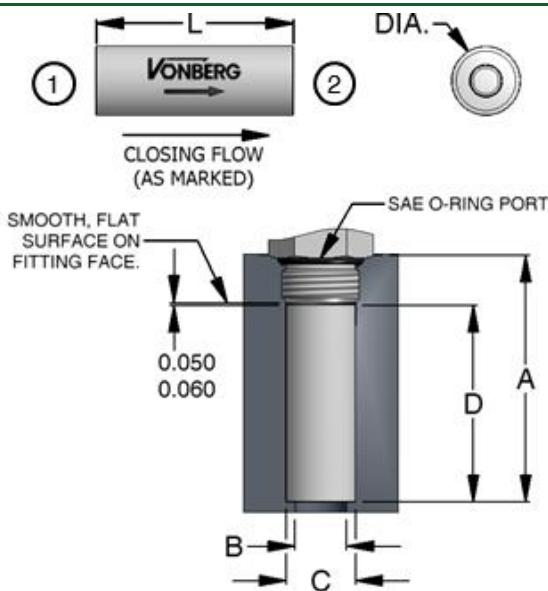
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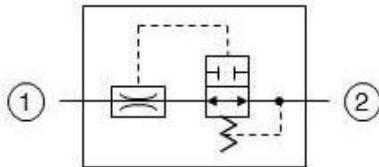
# SAFETY VALVES



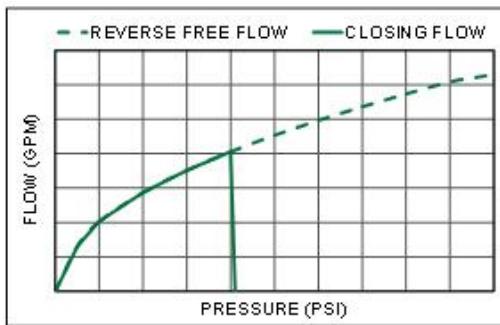
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, SLIP-IN CARTRIDGE STYLE VELOCITY FUSE THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BORE DEPTHS ASSUME THE USE OF A STANDARD O-RING COSS CONNECTOR WITH THREAD LENGTHS BASED ON SAE J514.
- VALVE BODY IS LEFT WITH APPROX. 0.060" OF SLACK IN THE CAVITY TO PREVENT DAMAGING VALVE.
- VALVE BODY SEATS ON SMOOTH, FLAT SURFACE OF FITTING IN THE CLOSING FLOW DIRECTION.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

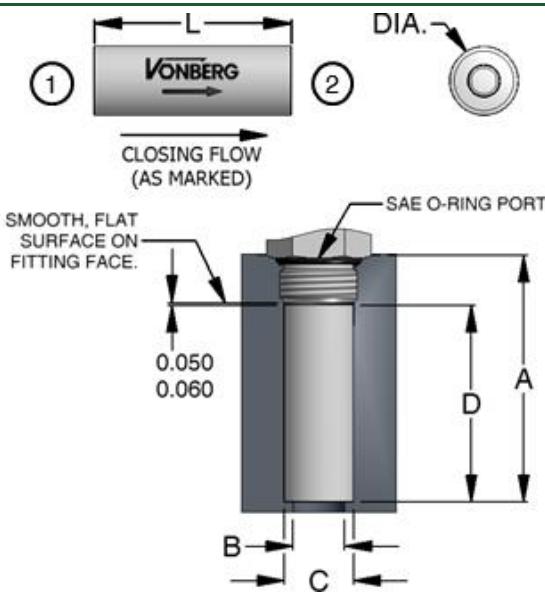
21800 - 0	XX	- XX
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

Model	DIA.	L	FLOW RANGE	A	B (MAX.)	C	D
21800-006	0.506	1.70	0.5 TO 10.0 GPM	2.15 / 2.16	0.375	0.510 / 0.515	1.76 / 1.77
21800-008	0.670	1.88	0.5 TO 25.0 GPM	2.38 / 2.39	0.500	0.672 / 0.677	1.94 / 1.95
21800-010	0.795	1.90	2.0 TO 40.0 GPM	2.46 / 2.47	0.625	0.797 / 0.802	1.96 / 1.97
21800-012	0.970	1.90	2.0 TO 40.0 GPM	2.56 / 2.57	0.812	0.972 / 0.977	1.96 / 1.97
21800-014	1.095	2.14	2.0 TO 50.0 GPM	2.80 / 2.81	0.812	1.097 / 1.102	2.20 / 2.21
21800-016	1.220	2.14	2.0 TO 50.0 GPM	2.80 / 2.81	0.937	1.222 / 1.227	2.20 / 2.21
21800-024	1.783	3.25	5.0 TO 80.0 GPM	3.91 / 3.92	1.437	1.787 / 1.792	3.31 / 3.32

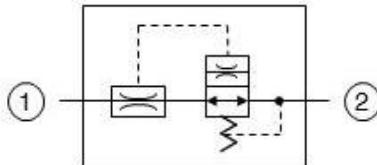
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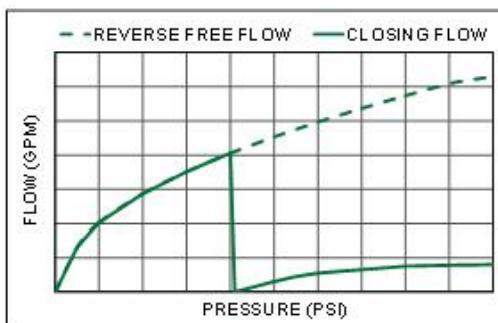
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, SLIP-IN CARTRIDGE STYLE FLOW LIMITER THAT PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3500 PSI.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BORE DEPTHS ASSUME THE USE OF A STANDARD O-RING BOSS CONNECTOR WITH THREAD LENGTHS BASED ON SAE J514.
- VALVE BODY IS LEFT WITH APPROX. 0.060" OF SLACK IN THE CAVITY TO PREVENT DAMAGING VALVE.
- VALVE BODY SEATS ON SMOOTH, FLAT SURFACE OF FITTING IN THE CLOSING FLOW DIRECTION.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

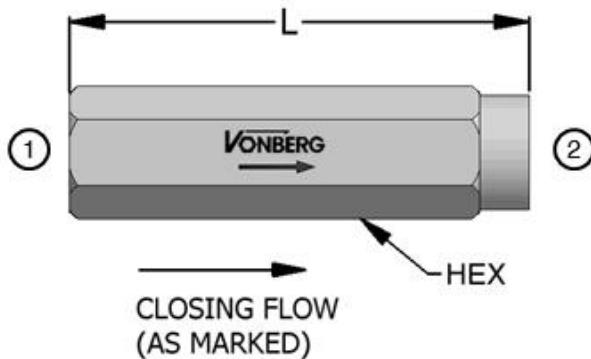
21850 - 0 XX - XX
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	DIA.	L	FLOW RANGE	A	B (MAX.)	C	D
21850-006	0.506	1.70	0.5 TO 10.0 GPM	2.15 / 2.16	0.375	0.510 / 0.515	1.76 / 1.77
21850-008	0.670	1.88	0.5 TO 25.0 GPM	2.38 / 2.39	0.500	0.672 / 0.677	1.94 / 1.95
21850-010	0.795	1.90	2.0 TO 40.0 GPM	2.46 / 2.47	0.625	0.797 / 0.802	1.96 / 1.97
21850-012	0.970	1.90	2.0 TO 40.0 GPM	2.56 / 2.57	0.812	0.972 / 0.977	1.96 / 1.97
21850-014	1.095	2.14	2.0 TO 50.0 GPM	2.80 / 2.81	0.812	1.097 / 1.102	2.20 / 2.21
21850-016	1.220	2.14	2.0 TO 50.0 GPM	2.80 / 2.81	0.937	1.222 / 1.227	2.20 / 2.21
21850-024	1.783	3.25	5.0 TO 80.0 GPM	3.91 / 3.92	1.437	1.787 / 1.792	3.31 / 3.32

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Page last updated: February 18, 2015

## PRODUCT



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH FEMALE NPTF PORTS THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

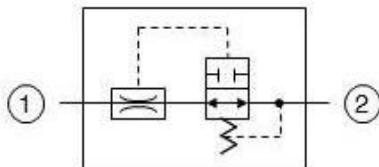
## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

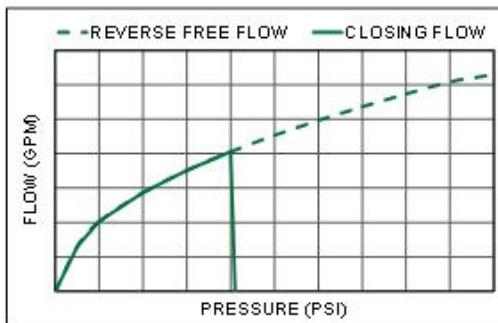
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

28000 - 1	XX	- XX
SERIES NUMBER	_____	
PORT SIZE	_____	
CLOSING FLOW (GPM)	_____	

Model	INLET / OUTLET	FLOW RANGE	L	HEX
28000-102	1/4-18 NPTF	0.5 TO 10.0 GPM	3.18	0.750
28000-103	3/8-18 NPTF	0.5 TO 25.0 GPM	3.50	0.875
28000-104	1/2-14 NPTF	2.0 TO 40.0 GPM	3.85	1.125
28000-106	3/4-14 NPTF	2.0 TO 50.0 GPM	4.20	1.375

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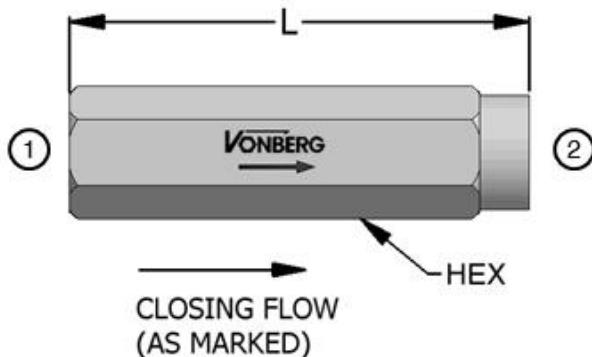
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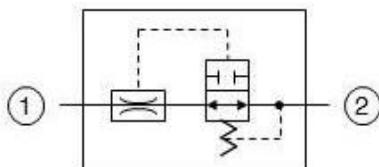
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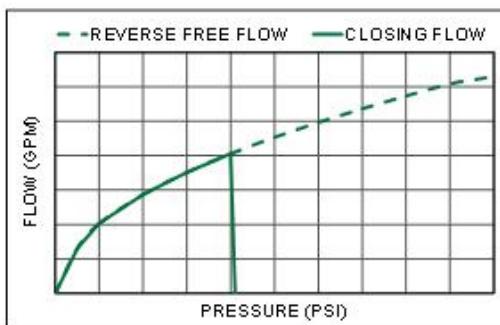
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH FEMALE SAE PORTS THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28000 - 2	XX	- XX
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

Model	INLET / OUTLET	THREAD	FLOW RANGE	L	HEX
28000-204	-04 SAE	7/16-20	0.1 TO 4.0 GPM	2.75	0.625
28000-206	-06 SAE	9/16-18	0.5 TO 10.0 GPM	3.00	0.750
28000-208	-08 SAE	3/4-16	0.5 TO 25.0 GPM	3.38	0.938
28000-210	-10 SAE	7/8-14	2.0 TO 40.0 GPM	3.75	1.125
28000-212	-12 SAE	1 1/16-12	2.0 TO 50.0 GPM	4.25	1.375

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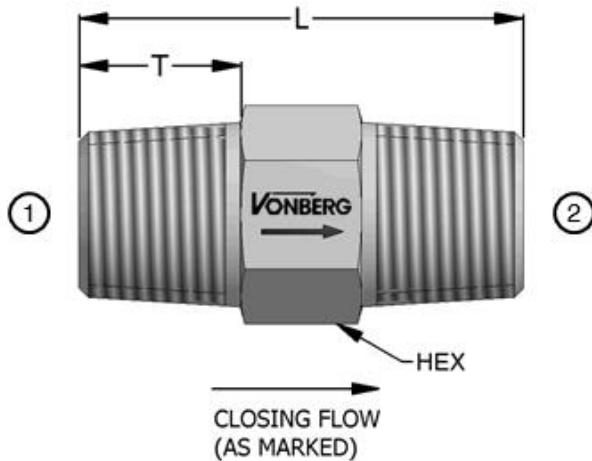
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## PRODUCT



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH MALE NPTF CONNECTIONS THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

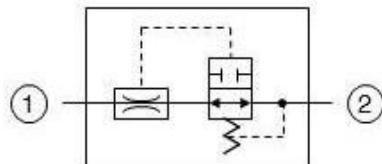
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

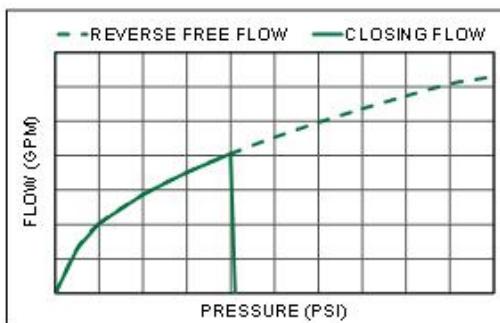
## ORDERING INFORMATION

28000 - 5	XX	- XX
SERIES NUMBER	_____	
PORT SIZE	_____	
CLOSING FLOW (GPM)	_____	

## SCHEMATIC



## TYPICAL PERFORMANCE



Model	INLET/OUTLET	FLOW RANGE	L	T	HEX
28000-502	1/4-18 NPTF	0.1 TO 4.0 GPM	2.05	0.563	0.625
28000-503	3/8-18 NPTF	0.5 TO 10.0 GPM	1.75	0.600	0.750
28000-504	1/2-14 NPTF	1.0 TO 25.0 GPM	2.06	0.750	0.875
28000-506	3/4-14 NPTF	2.0 TO 40.0 GPM	2.00	0.750	1.125
28000-508	1-11 1/2 NPTF	2.0 TO 50.0 GPM	2.34	0.920	1.375
28000-512	1 1/2-11 1/2 NPTF	2.0 TO 80.0 GPM	4.75	1.000	2.000

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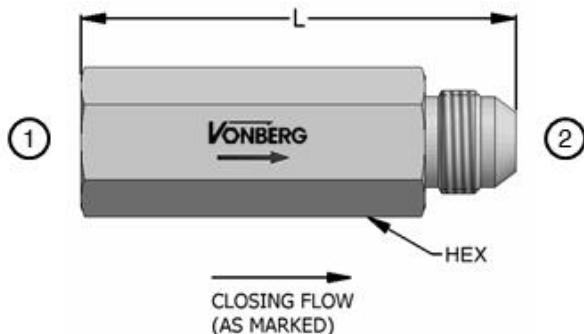
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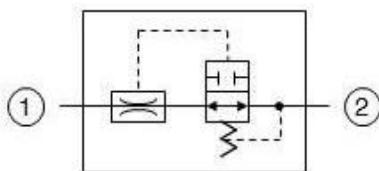
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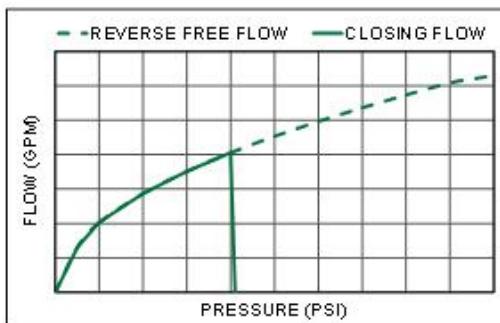
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A FEMALE NPTF PORT INLET AND A MALE JIC OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

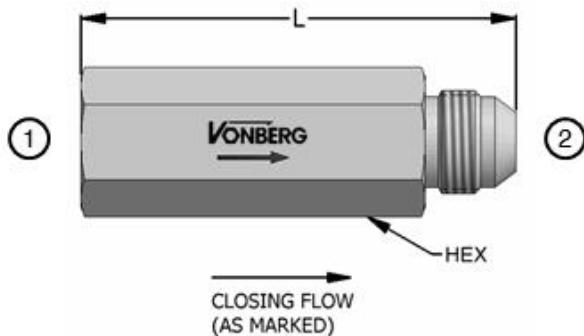
28000 - 1 XX - XX
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28001-102	1/4-18 NPTF	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	2.78	0.750
28001-103	3/8-18 NPTF	-06 JIC - 9/16-18	1.0 TO 25.0 GPM	3.10	0.875
28001-104	1/2-14 NPTF	-08 JIC - 3/4-16	2.0 TO 40.0 GPM	3.30	1.125

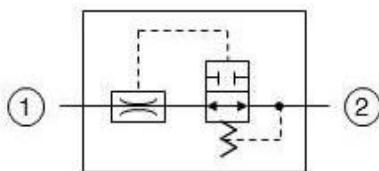
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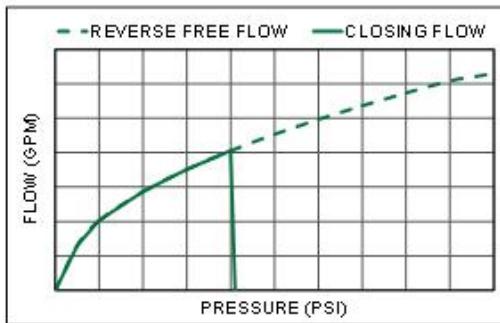
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A FEMALE SAE O-RING INLET AND A MALE JIC OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28001 - 2	XX	XX
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28001-204	-04 SAE - 7/16-20	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	2.65	0.625
28001-206	-06 SAE - 9/16-18	-06 JIC - 9/16-18	0.5 TO 10.0 GPM	2.90	0.750
28001-208	-08 SAE - 3/4-16	-08 JIC - 3/4-16	1.0 TO 25.0 GPM	3.15	0.938
28001-210	-10 SAE - 7/8-14	-10 JIC - 7/8-14	2.0 TO 40.0 GPM	3.40	1.125
28001-212	-12 SAE - 1 1/16-12	-12 JIC - 1 1/6-12	2.0 TO 50.0 GPM	3.95	1.375

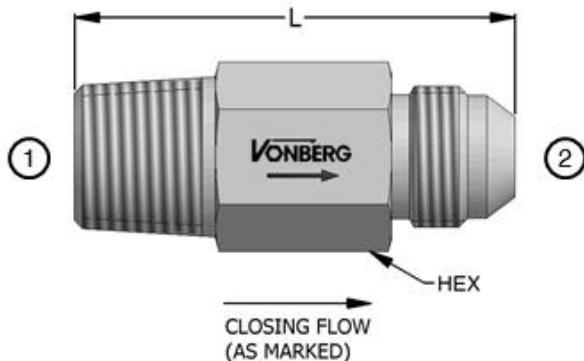
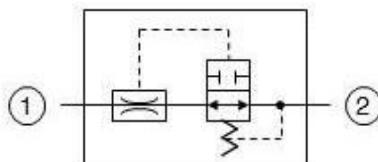
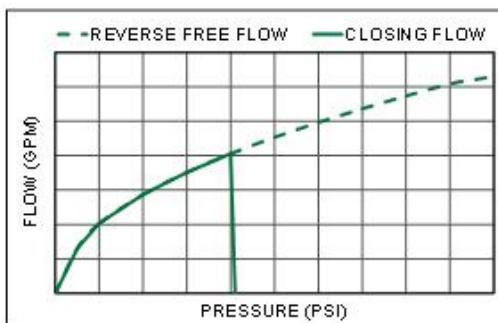
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**PRODUCT**

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**DESCRIPTION**

AN IN-LINE VELOCITY FUSE WITH A MALE NPTF INLET AND A MALE JIC OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

**OPERATION**

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

**FEATURES**

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

**SPECIFICATIONS**

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

**ORDERING INFORMATION**

28001 - 5	XX	- XX
SERIES NUMBER _____		
PORT SIZE _____		
CLOSING FLOW (GPM) _____		

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28001-502	1/4-18 NPTF	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	2.30	0.625
28001-503	3/8-18 NPTF	-06 JIC - 9/16-18	0.5 TO 10.0 GPM	2.30	0.750
28001-504	1/2-14 NPTF	-08 JIC - 3/4-16	1.0 TO 25.0 GPM	2.34	0.875
28001-506	3/4-14 NPTF	-12 JIC - 1 1/6-12	2.0 TO 40.0 GPM	2.75	1.250
28001-508	1-11 1/2 NPTF	-16 JIC - 1 5/6-12	2.0 TO 50.0 GPM	3.25	1.375
28001-512	1 1/2-11 1/2 NPTF	-24 JIC - 1 7/8-12	5.0 TO 80.0 GPM	4.85	2.000

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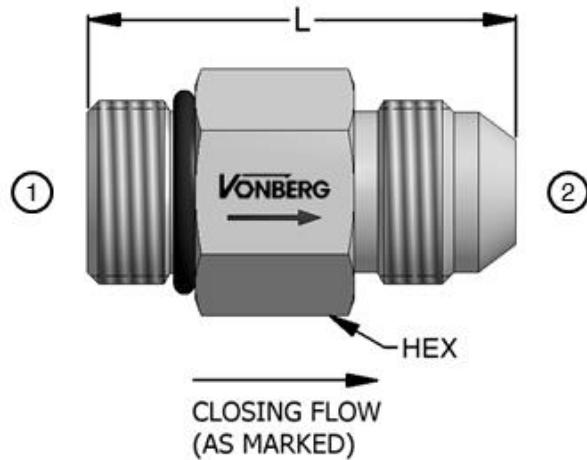
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## PRODUCT



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A MALE SAE O-RING INLET AND A MALE JIC OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

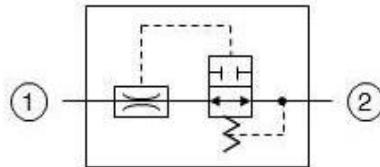
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

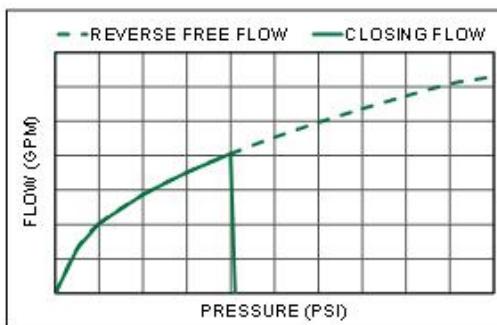
## ORDERING INFORMATION

28001 - 8	XX	XX
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

## SCHEMATIC



## TYPICAL PERFORMANCE

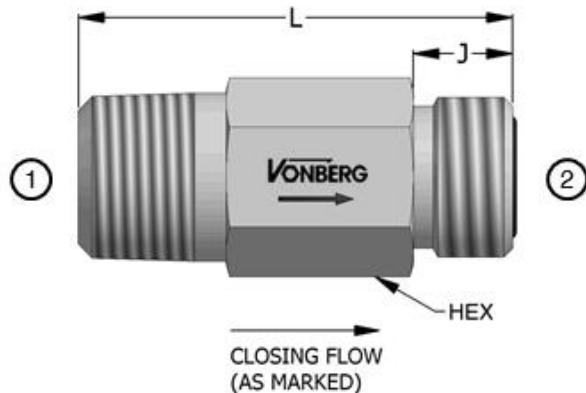


Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28001-804	-04 SAE - 7/16-20	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	3.06	0.625
28001-806	-06 SAE - 9/16-18	-06 JIC - 9/16-18	0.1 TO 4.0 GPM	1.61	0.750
28001-808	-08 SAE - 3/4-16	-08 JIC - 3/4-16	0.5 TO 10.0 GPM	1.75	0.875
28001-810	-10 SAE - 7/8-14	-10 JIC - 7/8-14	1.0 TO 25.0 GPM	2.06	1.000
28001-812	-12 SAE - 1 1/16-12	-12 JIC - 1 1/6-12	2.0 TO 40.0 GPM	1.97	1.250
28001-816	-16 SAE - 1 5/16-12	-16 JIC - 1 5/16-12	2.0 TO 50.0 GPM	2.50	1.500
28001-824	-24 SAE - 1 7/8-12	-24 JIC - 1 7/8-12	5.0 TO 80.0 GPM	4.47	2.125

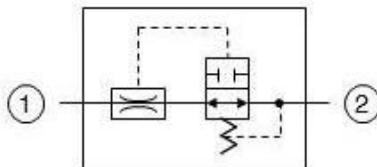
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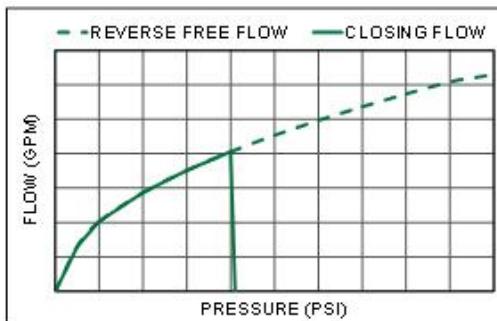
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A MALE NPTF INLET AND A MALE ORS OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

### OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

### FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

### ORDERING INFORMATION

28009 - 5	XX	- XX
SERIES NUMBER _____		
PORT SIZE _____		
CLOSING FLOW (GPM) _____		

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX	J
28009-502	1/4-18 NPTF	-04 ORS - 9/16-18	0.1 TO 4.0 GPM	2.30	0.625	0.386
28009-503	3/8-18 NPTF	-06 ORS - 11/16-16	0.5 TO 10.0 GPM	2.10	0.750	0.441
28009-504	1/2-14 NPTF	-08 ORS - 13/16-16	1.0 TO 25.0 GPM	2.34	0.875	0.504
28009-506	3/4-14 NPTF	-12 ORS - 1 3/16-12	2.0 TO 40.0 GPM	2.75	1.250	0.670
28009-508	1-11 1/2 NPTF	-16 ORS - 1 7/16-12	2.0 TO 50.0 GPM	3.25	1.375	0.689
28009-512	1 1/2-11 1/2 NPTF	-24 ORS - 2-12	5.0 TO 80.0 GPM	4.85	2.125	0.689

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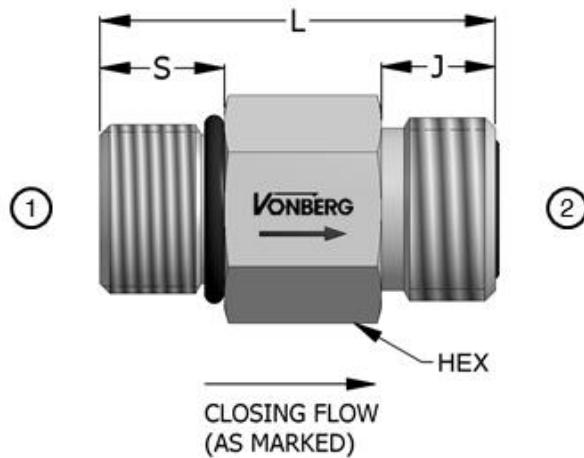
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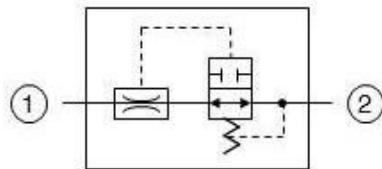
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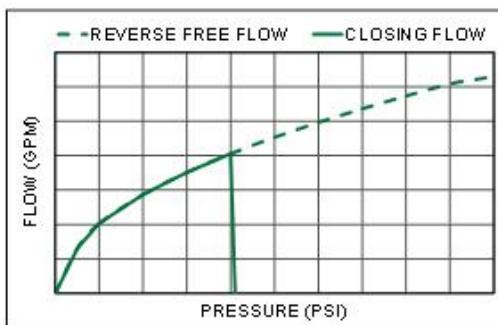
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A MALE SAE INLET AND A MALE ORS OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28009 - 8	XX	- XX
SERIES NUMBER _____		
PORT SIZE _____		
CLOSING FLOW (GPM) _____		

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX	S	J
28009-806	-06 SAE - 9/16-18	-06 ORS - 11/16-16	0.1 TO 4.0 GPM	1.60	0.750	0.472	0.441
28009-808	-08 SAE - 3/4-16	-08 ORS - 13/16-16	0.5 TO 10.0 GPM	1.75	0.875	0.551	0.504
28009-810	-10 SAE - 7/8-14	-10 ORS - 1-14	1.0 TO 25.0 GPM	1.90	1.125	0.630	0.610
28009-812	-12 SAE - 1 1/16-12	-12 ORS - 1 3/16-12	2.0 TO 40.0 GPM	2.00	1.250	0.728	0.670
28009-816	-16 SAE - 1 5/16-12	-16 ORS - 1 7/16-12	2.0 TO 50.0 GPM	2.40	1.500	0.728	.0689
28009-824	-24 SAE - 1 7/8-12	-24 ORS - 2-12	5.0 TO 80.0 GPM	3.25	2.125	0.728	0.689

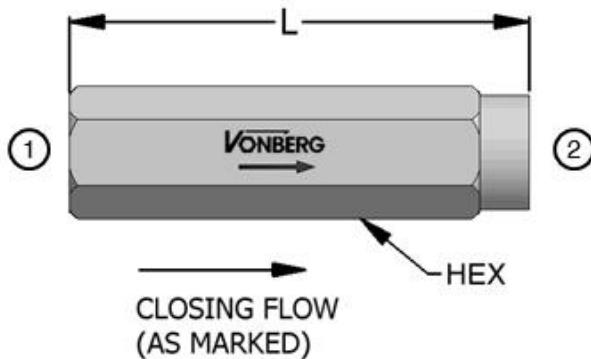
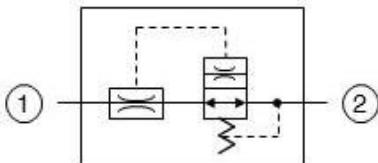
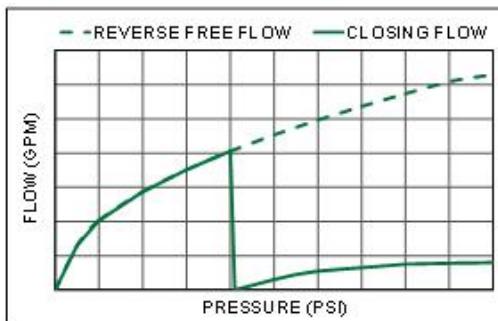
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Hydraulic Valve Specialists

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**PRODUCT**

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**DESCRIPTION**

AN IN-LINE VELOCITY FUSE WITH FEMALE NPTF PORTS THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

**OPERATION**

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI

**FEATURES**

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

**SPECIFICATIONS**

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

**ORDERING INFORMATION**

28050 - 1 XX - XX
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	INLET / OUTLET	FLOW RANGE	L	HEX
28050-102	1/4-18 NPTF	0.5 TO 10.0 GPM	3.18	0.750
28050-103	3/8-18 NPTF	0.5 TO 25.0 GPM	3.50	0.875
28050-104	1/2-14 NPTF	2.0 TO 40.0 GPM	3.85	1.125
28050-106	3/4-14 NPTF	2.0 TO 50.0 GPM	4.20	1.375

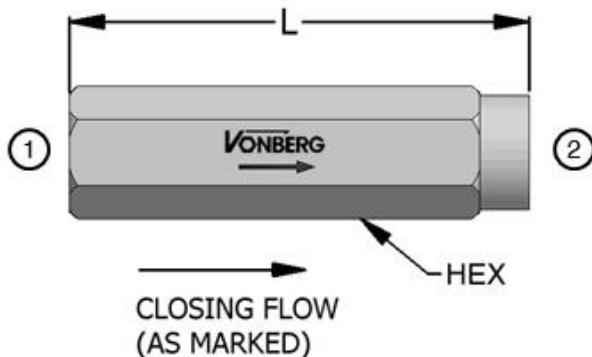
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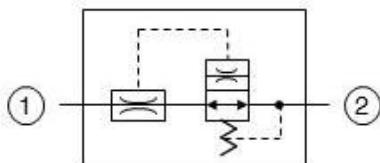

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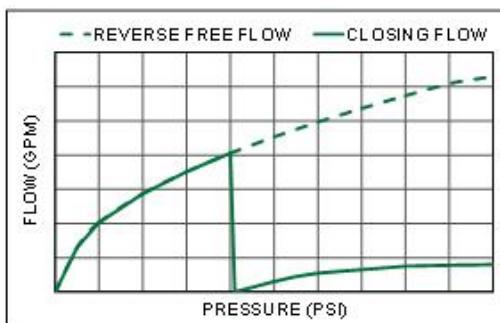
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH FEMALE SAE PORTS THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28050 - 2 [XX] - XX
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	INLET / OUTLET	FLOW RANGE	L	HEX
28050-204	-04 SAE	0.1 TO 4.0 GPM	2.75	0.625
28050-206	-06 SAE	0.5 TO 10.0 GPM	3.00	0.750
28050-208	-08 SAE	0.5 TO 25.0 GPM	3.38	0.938
28050-210	-10 SAE	2.0 TO 40.0 GPM	3.75	1.125
28050-212	-12 SAE	2.0 TO 50.0 GPM	4.25	1.375

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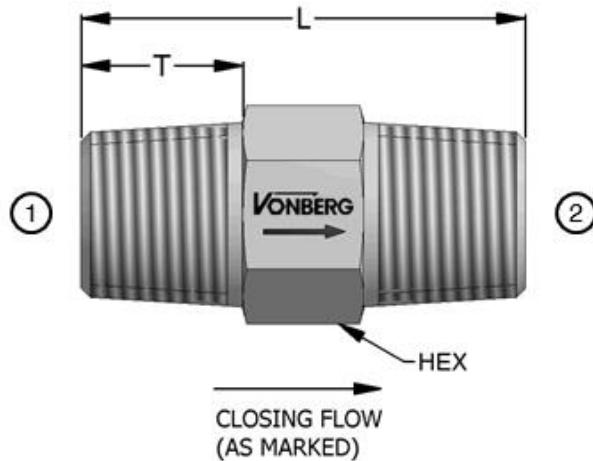
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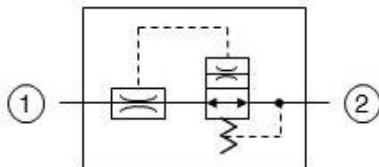
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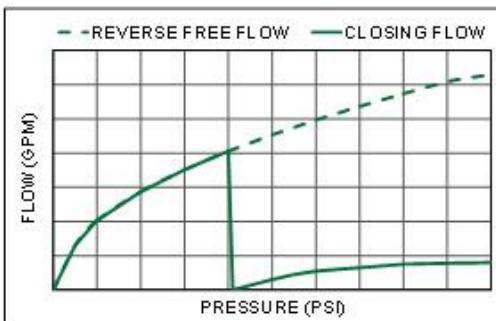
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE FLOW LIMITER WITH MALE NPTF CONNECTIONS THAT PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3500 PSI.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28050 - 5	XX	XX
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

Model	INLET / OUTLET	FLOW RANGE	L	T	HEX
28050-502	1/4-18 NPTF	0.1 TO 4.0 GPM	1.75	0.56	0.63
28050-503	3/8-18 NPTF	0.5 TO 10.0 GPM	1.75	0.60	0.75
28050-504	1/2-14 NPTF	0.5 TO 25.0 GPM	2.06	0.75	0.88
28050-506	3/4-14 NPTF	2.0 TO 40.0 GPM	2.00	0.75	1.13
28050-508	1-11 1/2 NPTF	2.0 TO 50.0 GPM	2.34	0.92	1.38
28050-512	1 1/2-11 1/2 NPTF	2.0 TO 80.0 GPM	4.75	1.00	2.00

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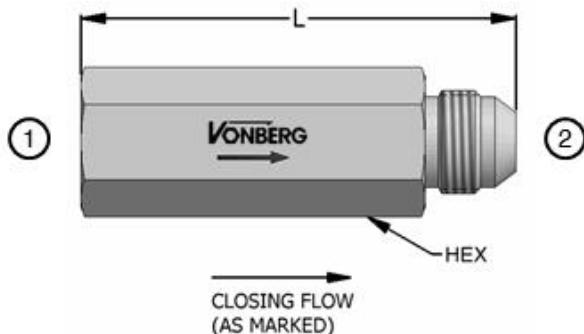
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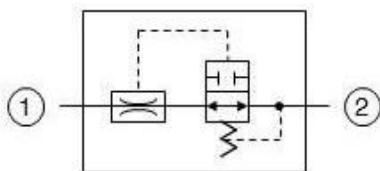
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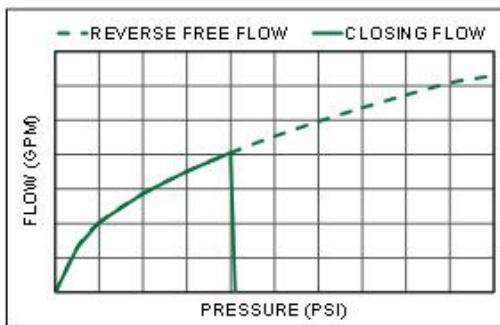
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE FLOW LIMITER WITH A FEMALE NPTF PORT INLET AND A MALE JIC OUTLET THAT PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3500 PSI.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28051 - 1 XX - XX	
SERIES NUMBER	
PORT SIZE	
CLOSING FLOW (GPM)	

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28051-102	1/4-18 NPTF	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	2.78	0.750
28051-103	3/8-18 NPTF	-06 JIC - 9/16-18	1.0 TO 25.0 GPM	3.10	0.875
28051-104	1/2-14 NPTF	-08 JIC - 3/4-16	2.0 TO 40.0 GPM	3.30	1.125

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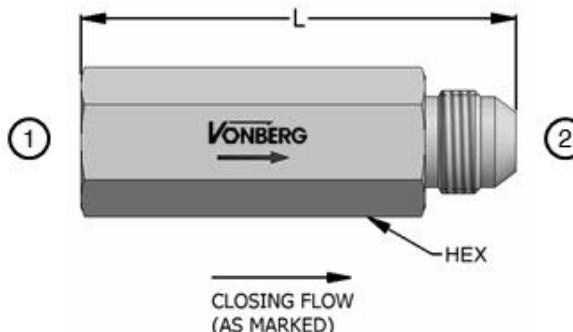
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## PRODUCT



## DESCRIPTION

AN IN-LINE FLOW LIMITER WITH A FEMALE SAE O-RING PORT INLET AND A MALE JIC OUTLET THAT PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
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## FEATURES

- STEEL COMPONENTS.
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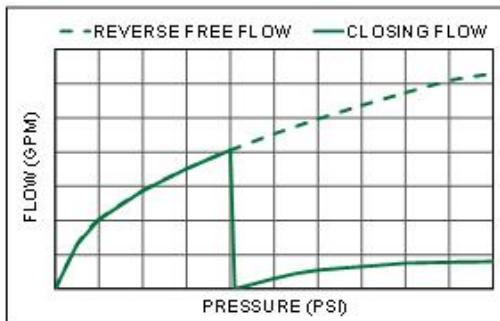
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28051 - 2	XX	XX
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

## TYPICAL PERFORMANCE



Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28051-204	-04 SAE - 7/16-20	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	2.40	0.63
28051-206	-06 SAE - 9/16-18	-06 JIC - 9/16-18	0.5 TO 10.0 GPM	2.90	0.75
28051-208	-08 SAE - 3/4-16	-08 JIC - 3/4-16	1.0 TO 25.0 GPM	3.15	0.94
28051-210	-10 SAE - 7/8-14	-10 JIC - 7/8-14	2.0 TO 40.0 GPM	3.40	1.13
28051-212	-12 SAE - 1 1/16-12	-12 JIC - 1 1/6-12	2.0 TO 50.0 GPM	3.95	1.38

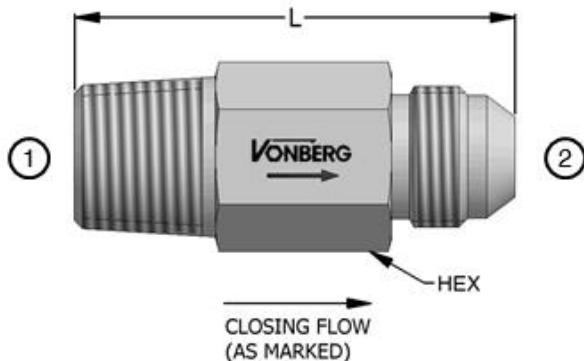
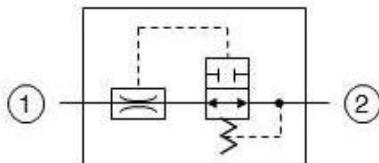
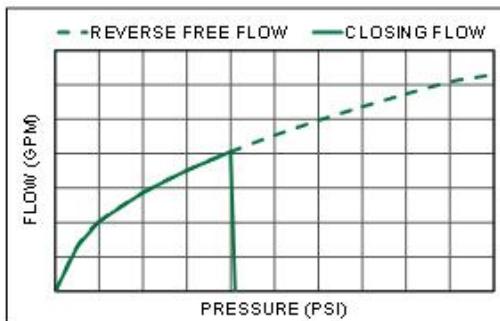
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**PRODUCT**

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**DESCRIPTION**

AN IN-LINE FLOW LIMITER WITH A MALE NPTF INLET AND A MALE JIC OUTLET THAT PROVIDES PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

**OPERATION**

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**FEATURES**

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- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

**SPECIFICATIONS**

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

**ORDERING INFORMATION**

28051 - 5 [XX] - XX
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28051-502	1/4-18 NPTF	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	2.30	0.625
28051-503	3/8-18 NPTF	-06 JIC - 9/16-18	0.5 TO 10.0 GPM	2.30	0.750
28051-504	1/2-14 NPTF	-08 JIC - 3/4-16	1.0 TO 25.0 GPM	2.34	0.875
28051-506	3/4-14 NPTF	-12 JIC - 1 1/6-12	2.0 TO 40.0 GPM	2.75	1.250
28051-508	1-11 1/2 NPTF	-16 JIC - 1 5/6-12	2.0 TO 50.0 GPM	3.25	1.375
28051-512	1 1/2-11 1/2 NPTF	-24 JIC - 1 7/8-12	5.0 TO 80.0 GPM	4.85	2.000

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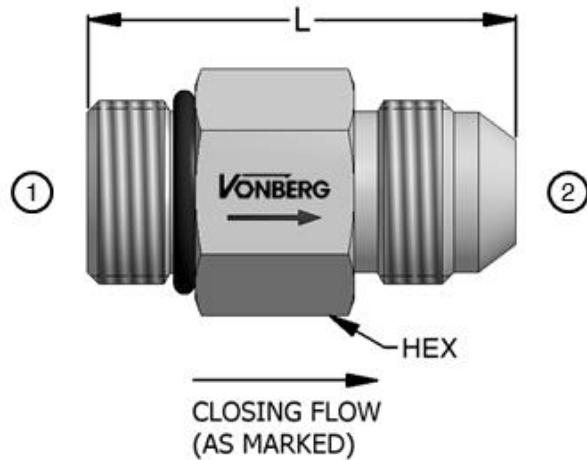
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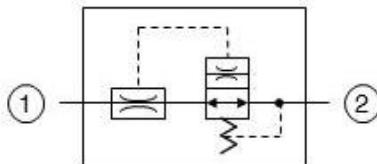
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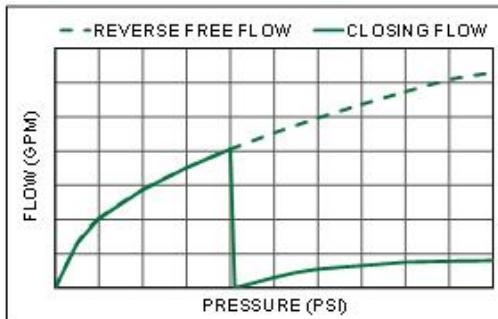
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE FLOW LIMITER WITH A MALE SAE O-RING INLET AND A MALE JIC OUTLET THAT PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

## OPERATION

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## FEATURES

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- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

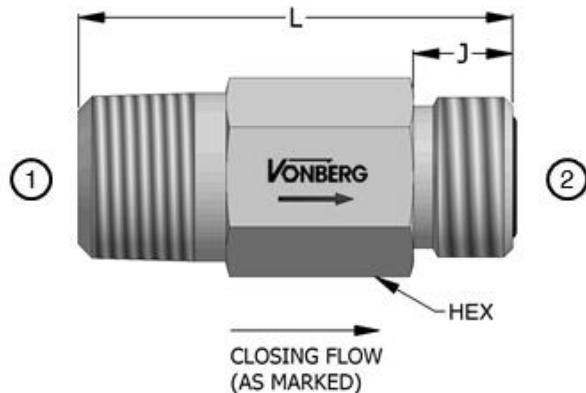
28051 - 8 [XX] - [XX]
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28051-804	-04 SAE - 7/16-20	-04 JIC - 7/16-20	0.1 TO 4.0 GPM	3.06	0.625
28051-806	-06 SAE - 9/16-18	-06 JIC - 9/16-18	0.1 TO 4.0 GPM	1.61	0.750
28051-808	-08 SAE - 3/4-16	-08 JIC - 3/4-16	0.5 TO 10.0 GPM	1.75	0.875
28051-810	-10 SAE - 7/8-14	-10 JIC - 7/8-14	1.0 TO 25.0 GPM	2.06	1.000
28051-812	-12 SAE - 1 1/16-12	-12 JIC - 1 1/6-12	2.0 TO 40.0 GPM	1.97	1.250
28051-816	-16 SAE - 1 5/16-12	-16 JIC - 1 5/16-12	2.0 TO 50.0 GPM	2.50	1.500
28051-824	-24 SAE - 1 7/8-12	-24 JIC - 1 7/8-12	2.0 TO 80.0 GPM	4.47	2.125

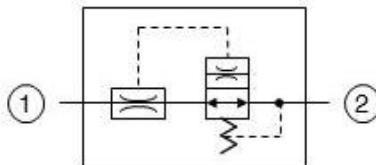
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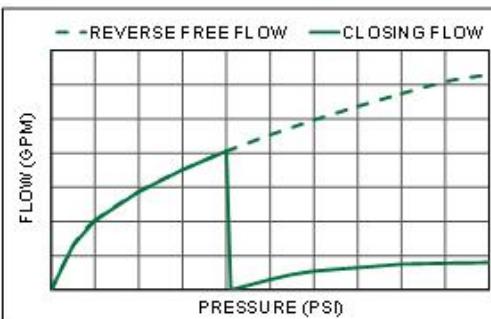
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A MALE NPTF INLET AND A MALE ORS OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28059 - 5 [XX] - [XX]		
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX	J
28059-502	1/4-18 NPTF	-04 ORS - 9/16-18	0.1 TO 4.0 GPM	2.30	0.625	0.389
28059-503	3/8-18 NPTF	-06 ORS - 11/16-16	0.5 TO 10.0 GPM	2.10	0.750	0.441
28059-504	1/2-14 NPTF	-08 ORS - 13/16-16	1.0 TO 25.0 GPM	2.34	0.875	0.504
28059-506	3/4-14 NPTF	-12 ORS - 1 3/16-12	2.0 TO 40.0 GPM	2.75	1.250	0.670
28059-508	1-11 1/2 NPTF	-16 ORS - 1 7/16-12	2.0 TO 50.0 GPM	3.25	1.375	0.689
28059-512	1 1/2-11 1/2 NPTF	-24 ORS - 2-12	5.0 TO 80.0 GPM	4.85	2.125	0.689

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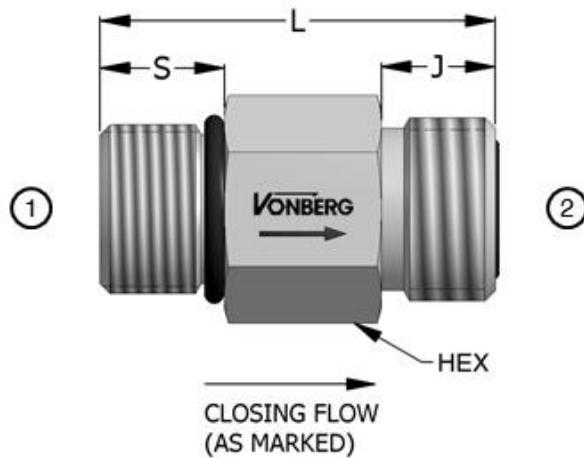
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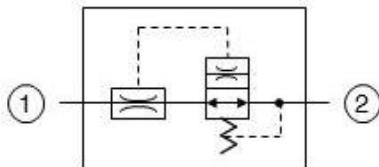
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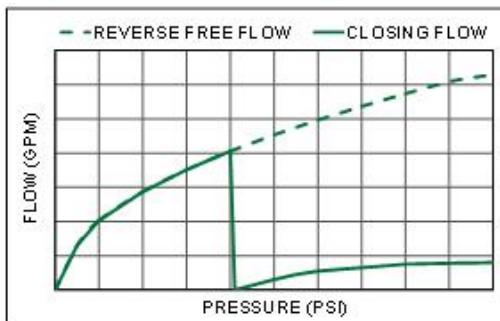
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A MALE SAE INLET AND A MALE ORS OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28059 - 8 XX - XX
SERIES NUMBER
PORT SIZE
CLOSING FLOW (GPM)

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX	S	J
28059-806	-06 SAE - 9/16-18	-06 ORS - 11/16-16	0.1 TO 4.0 GPM	1.60	0.750	0.472	0.441
28059-808	-08 SAE - 3/4-16	-08 ORS - 13/16-16	0.5 TO 10.0 GPM	1.75	0.875	0.551	0.504
28059-810	-10 SAE - 7/8-14	-10 ORS - 1-14	1.0 TO 25.0 GPM	1.90	1.125	0.630	0.610
28059-812	-12 SAE - 1 1/16-12	-12 ORS - 1 3/16-12	2.0 TO 40.0 GPM	2.00	1.250	0.728	0.670
28059-816	-16 SAE - 1 5/16-12	-16 ORS - 1 7/16-12	2.0 TO 50.0 GPM	2.40	1.500	0.728	0.689
28059-824	-24 SAE - 1 7/8-12	-24 ORS - 2-12	5.0 TO 80.0 GPM	3.25	2.125	0.728	0.689

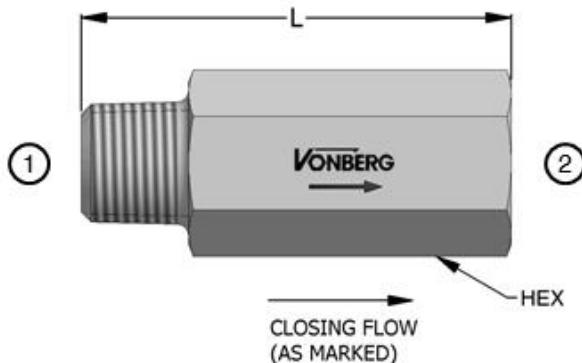
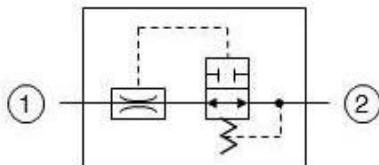
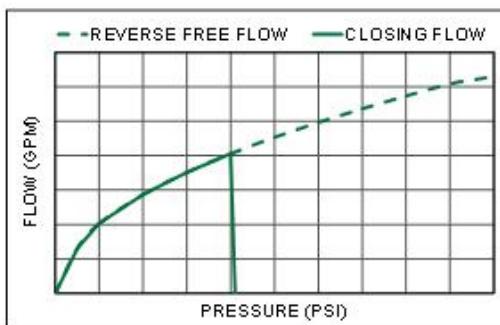
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**PRODUCT**

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**DESCRIPTION**

AN IN-LINE VELOCITY FUSE WITH A MALE NPTF INLET AND A FEMALE NPTF OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

**OPERATION**

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

**FEATURES**

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

**SPECIFICATIONS**

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

**ORDERING INFORMATION**

28900 - 5	XX	- XX
SERIES NUMBER _____		
PORT SIZE _____		
CLOSING FLOW (GPM) _____		

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28900-502	1/4-18 NPTF	1/4-18 NPTF PORT	0.1 TO 4.0 GPM	2.70	0.75
28900-503	3/8-18 NPTF	3/8-18 NPTF PORT	0.5 TO 10.0 GPM	2.70	0.88
28900-504	1/2-14 NPTF	1/2-14 NPTF PORT	1.0 TO 25.0 GPM	3.00	1.13
28900-506	3/4-14 NPTF	3/4-14 NPTF PORT	2.0 TO 40.0 GPM	3.20	1.38
28900-508	1-11 1/2 NPTF	1-11 1/2 NPTF PORT	2.0 TO 50.0 GPM	3.80	1.63

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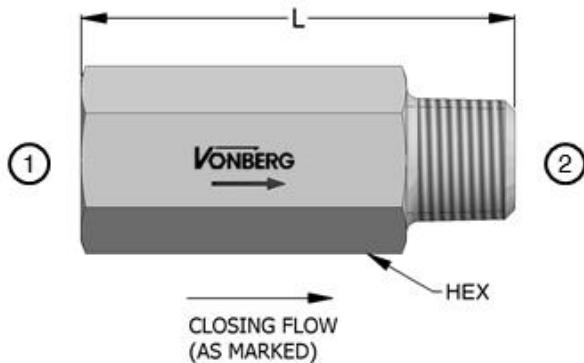
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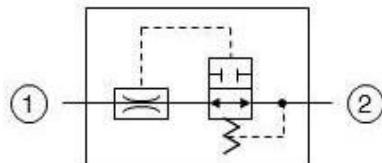
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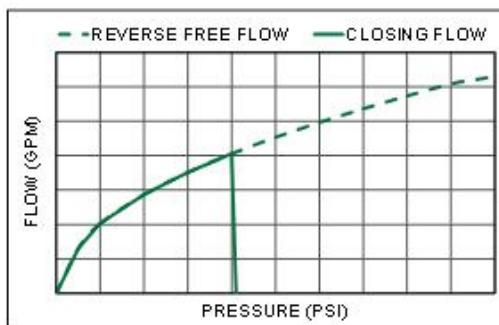
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A FEMALE NPTF INLET AND A MALE NPTF OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

28901 - 1	XX	XX
SERIES NUMBER		
PORT SIZE		
CLOSING FLOW (GPM)		

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28901-102	1/4-18 NPTF PORT	1/4-18 NPTF	0.5 TO 10.0 GPM	2.85	0.750
28901-103	3/8-18 NPTF PORT	3/8-18 NPTF	1.0 TO 25.0 GPM	3.25	0.785
28901-104	1/2-14 NPTF PORT	1/2-14 NPTF	2.0 TO 40.0 GPM	3.30	1.125
28901-106	3/4-14 NPTF PORT	3/4-14 NPTF	2.0 TO 50.0 GPM	3.65	1.375

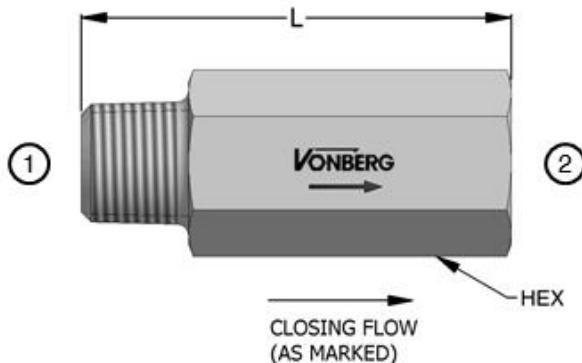
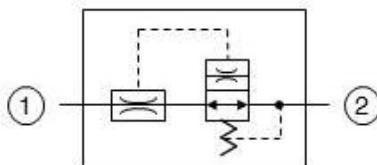
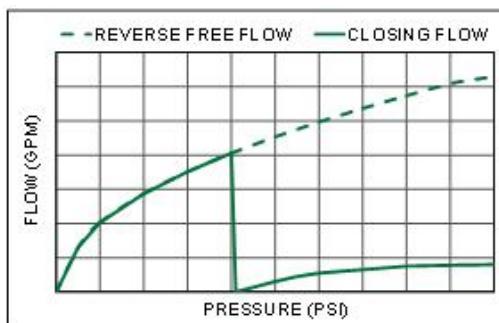
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**PRODUCT**

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**DESCRIPTION**

AN IN-LINE VELOCITY FUSE WITH A MALE NPTF INLET AND A FEMALE NPTF OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

**OPERATION**

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI.

**FEATURES**

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

**SPECIFICATIONS**

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

**ORDERING INFORMATION**

28950 - 5 [XX] - [XX]
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28950-502	1/4-18 NPTF	1/4-18 NPTF PORT	0.1 TO 4.0 GPM	2.70	0.750
28950-503	3/8-18 NPTF	3/8-18 NPTF PORT	0.5 TO 10.0 GPM	2.70	0.875
28950-504	1/2-14 NPTF	1/2-14 NPTF PORT	1.0 TO 25.0 GPM	3.00	1.125
28950-506	3/4-14 NPTF	3/4-14 NPTF PORT	2.0 TO 40.0 GPM	3.20	1.375
28950-508	1-11 1/2 NPTF	1-11 1/2 NPTF PORT	2.0 TO 50.0 GPM	3.80	1.625

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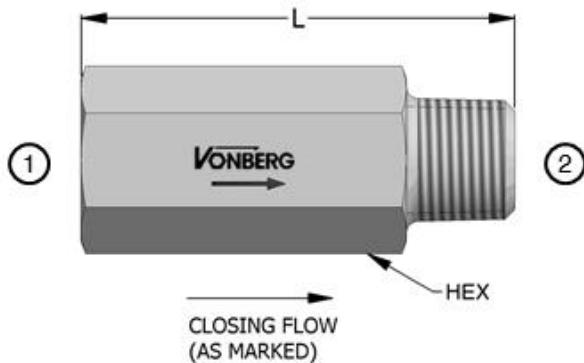
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## PRODUCT



## DESCRIPTION

AN IN-LINE VELOCITY FUSE WITH A FEMALE NPTF INLET AND A MALE NPTF OUTLET THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI.

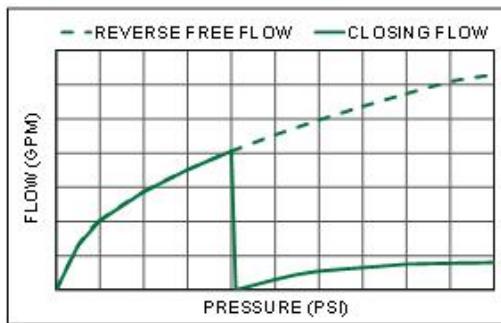
## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## TYPICAL PERFORMANCE



## ORDERING INFORMATION

28951 - 1 [XX] - XX
SERIES NUMBER _____
PORT SIZE _____
CLOSING FLOW (GPM) _____

Model	INLET 1	OUTLET 2	FLOW RANGE	L	HEX
28951-102	1/4-18 NPTF PORT	1/4-18 NPTF	0.5 TO 10.0 GPM	2.85	0.750
28951-103	3/8-18 NPTF PORT	3/8-18 NPTF	1.0 TO 25.0 GPM	3.25	0.875
28951-104	1/2-14 NPTF PORT	1/2-14 NPTF	2.0 TO 40.0 GPM	3.30	1.125
28951-106	3/4-14 NPTF PORT	3/4-14 NPTF	2.0 TO 50.0 GPM	3.65	1.375

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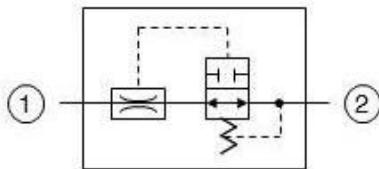
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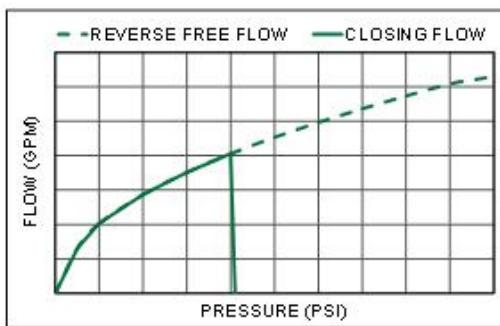
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE VELOCITY FUSE THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- INDUSTRY COMMON CAVITY.
- RAPID RESPONSE.
- POSITIVE CLOSE.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

81	XX	-	XX	-	XX
SERIES NUMBER _____					
PORT SIZE _____					
CLOSING FLOW (GPM) _____					
BODY PORT SIZE CODE _____					
BLANK.....	CARTRIDGE ONLY				
SERIES CODE... SEE "CARTRIDGE BODIES", X-2 SERIES					

MODEL	THREAD	FLOW RANGE	CAVITY	L1	L2	HEX	A	TORQUE
8104	7/16 - 20	0.2 TO 2.0 GPM	4-2	0.94	0.55	0.56	0.277 / 0.278	10 ft-lbs
8106	9/16 - 18	0.5 TO 3.0 GPM	6-2	0.84	0.53	0.69	0.467 / 0.468	15 ft-lbs
8108	3/4 - 16	0.2 TO 5.0 GPM	8-2	1.10	0.50	0.88	0.495 / 0.497	20 ft-lbs
8110	7/8 - 14	0.5 TO 8.0 GPM	10-2	1.25	0.75	1.00	0.621 / 0.623	25 ft-lbs
8112	1 1/16 - 12	1.0 TO 15.0 GPM	12-2	1.81	0.75	1.25	0.870 / 0.873	40 ft-lbs
8116	1 5/16 - 12	2.0 TO 25.0 GPM	16-2	1.75	0.75	1.50	1.121 / 1.123	60 ft-lbs

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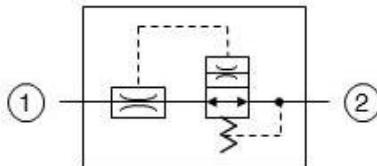
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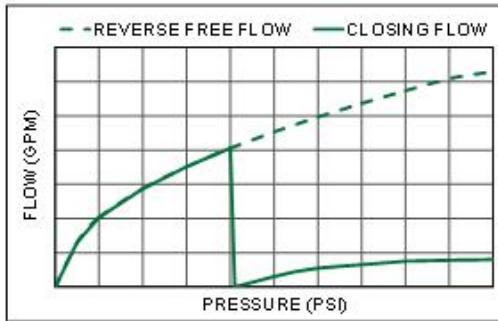
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE FLOW LIMITER THAT PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI.

## FEATURES

- STEEL COMPONENTS.
- INDUSTRY COMMON CAVITY.
- RAPID RESPONSE.
- POSITIVE CLOSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

82	XX	-	XX	-	XX
SERIES NUMBER _____					
PORT SIZE _____					
CLOSING FLOW (GPM) _____					
BODY PORT SIZE CODE _____					
BLANK.....	CARTRIDGE ONLY				
SERIES CODE... SEE "CARTRIDGE BODIES", X-2 SERIES					

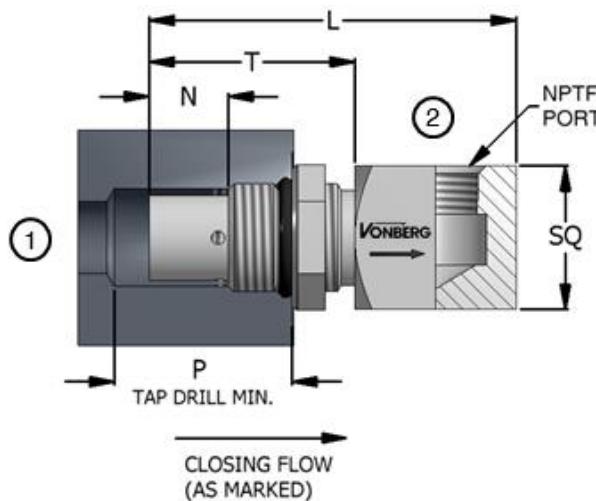
MODEL	THREAD	FLOW RANGE	CAVITY	L1	L2	HEX	A	TORQUE
8204	7/16 - 20	0.2 TO 2.0 GPM	4-2	0.94	0.55	0.56	0.277 / 0.278	10 ft-lbs
8206	9/16 - 18	0.5 TO 3.0 GPM	6-2	0.84	0.53	0.69	0.467 / 0.468	15 ft-lbs
8208	3/4 - 16	0.2 TO 5.0 GPM	8-2	1.10	0.50	0.88	0.495 / 0.497	20 ft-lbs
8210	7/8 - 14	0.5 TO 8.0 GPM	10-2	1.25	0.75	1.00	0.621 / 0.623	25 ft-lbs
8212	1 1/16 - 12	1.0 TO 15.0 GPM	12-2	1.81	0.75	1.25	0.870 / 0.873	40 ft-lbs
8216	1 5/16 - 12	2.0 TO 25.0 GPM	16-2	1.75	0.75	1.50	1.121 / 1.123	60 ft-lbs

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Page last updated: February 18, 2015



## PRODUCT



## DESCRIPTION

AN IN-LINE, 90&deg SWIVEL ELBOW VELOCITY FUSE WITH AN NPTF OUTLET PORT THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

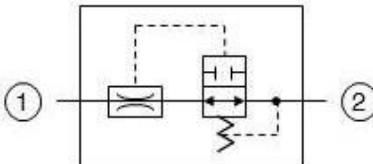
## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- POSITIVE CLOSE
- SWIVEL DESIGN FOR EASY ALIGNMENT.
- 90&deg ELBOW FOR LOW PROFILE APPLICATIONS.

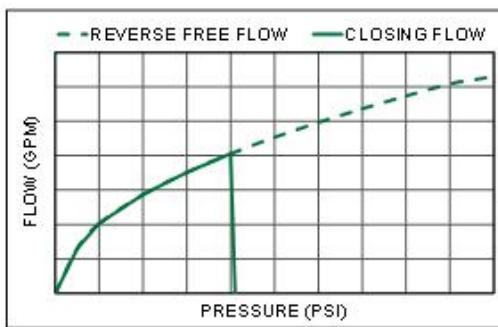
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

SERIES NUMBER	83	XX	-	XX
OUTLET PORT SIZE				
CLOSING FLOW (GPM)				

Model	PORT 1	PORT 2	FLOW RANGE	L	T	N	P (MIN)	SQ
8302	-06 SAE - 9/16-18	1/4-18 NPTF	0.2 TO 8.0 GPM	2.125	1.160	0.390	1.000	0.875
8303	-08 SAE - 3/4-16	3/8-18 NPTF	0.5 TO 15.0 GPM	2.555	1.430	0.550	1.250	1.000
8304	-10 SAE - 7/8-14	1/2-14 NPTF	1.0 TO 25.0 GPM	3.230	1.870	0.850	1.688	1.125
8306	-12 SAE - 1 1/16-12	3/4-14 NPTF	2.0 TO 40.0 GPM	3.625	2.065	0.905	1.980	1.375

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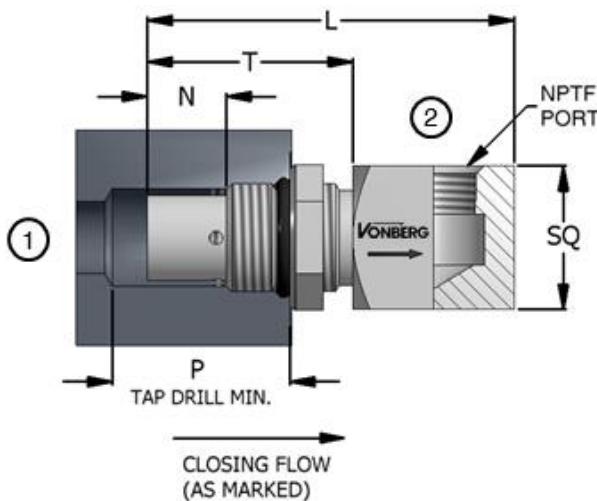
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## PRODUCT



## DESCRIPTION

AN IN-LINE, 90&deg SWIVEL ELBOW FLOW LIMITER WITH AN NPTF OUTLET PORT THAT PROVIDES PARTIAL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE. ALLOWS RESTRICTED FLOW AFTER CLOSING.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI.

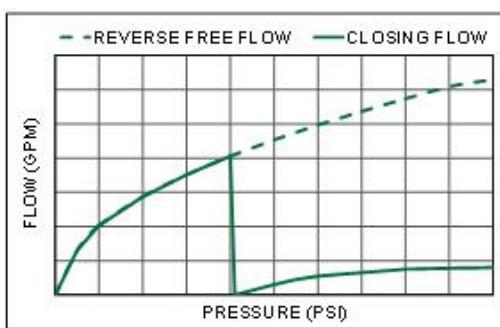
## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- POSITIVE CLOSE
- SWIVEL DESIGN FOR EASY ALIGNMENT.
- 90&deg ELBOW FOR LOW PROFILE APPLICATIONS.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## TYPICAL PERFORMANCE



## ORDERING INFORMATION

84	XX	-XX
SERIES NUMBER _____		
OUTLET PORT SIZE _____		
CLOSING FLOW (GPM) _____		

Model	PORT 1	PORT 2	FLOW RANGE	L	T	N	P (MIN)	SQ
8402	-06 SAE - 9/16-18	1/4-18 NPTF	0.2 TO 8.0 GPM	2.125	1.160	0.390	1.000	0.875
8403	-08 SAE - 3/4-16	3/8-18 NPTF	0.5 TO 15.0 GPM	2.555	1.430	0.550	1.250	1.000
8404	-10 SAE - 7/8-14	1/2-14 NPTF	1.0 TO 25.0 GPM	3.230	1.870	0.850	1.688	1.125
8406	-12 SAE - 1 1/16-12	3/4-14 NPTF	2.0 TO 40.0 GPM	3.625	2.065	0.905	1.980	1.375

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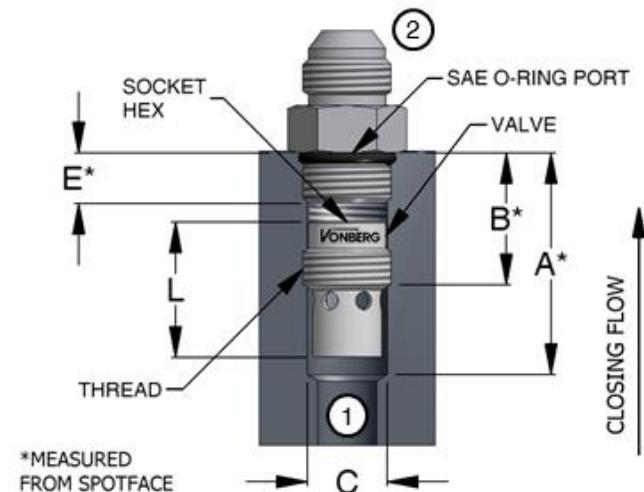
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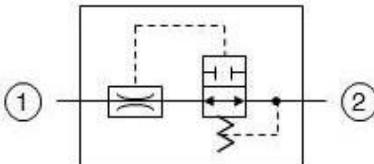
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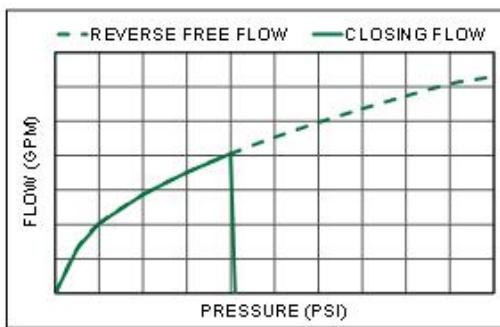
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A IN-LINE, THREADED INSERTABLE VELOCITY FUSE THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

## FEATURES

- STEEL COMPONENTS.
- RAPID RESPONSE.
- POSITIVE CLOSE.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

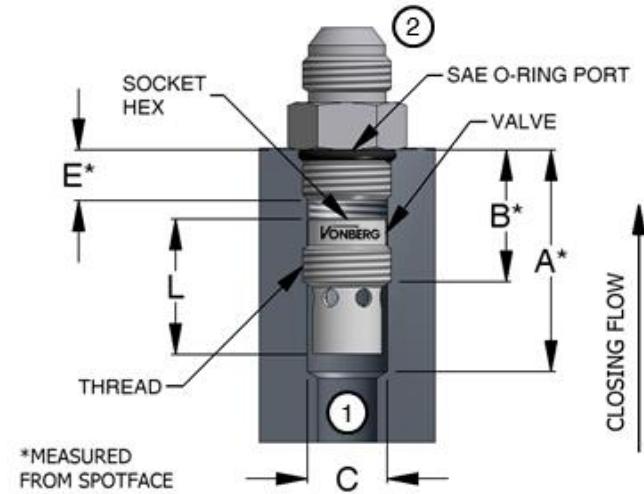
85	XX	-	XX
SERIES NUMBER _____			
PORT SIZE _____			
CLOSING FLOW (GPM) _____			

MODEL	THREAD	FLOW RANGE	L	A	B	C	E	HEX	TORQUE
8504	7/16 - 20	0.2 TO 4.0 GPM	0.66	1.30	0.80	0.390 - 0.395	0.360	0.125	25 in-lbs
8506	9/16 - 18	0.2 TO 8.0 GPM	0.72	1.41	0.87	0.502 - 0.515	0.391	0.187	5 ft-lbs
8508	3/4 - 16	0.5 TO 15.0 GPM	1.15	1.95	1.15	0.682 - 0.696	0.438	0.312	8 ft-lbs
8510	7/8 - 14	1.0 TO 25.0 GPM	1.25	2.15	1.05	0.798 - 0.814	0.500	0.375	12 ft-lbs
8512	1 1/16 - 12	2.0 TO 40.0 GPM	1.50	2.50	1.30	0.972 - 0.990	0.594	0.438	18 ft-lbs
8516	1 5/16 - 12	5.0 TO 50.0 GPM	1.50	2.67	1.30	1.222 - 1.240	0.594	0.500	30 ft-lbs
8520	1 5/8-12	5.0 TO 65.0 GPM	1.85	3.05	1.30	1.535 - 1.553	0.594	0.625	40 ft-lbs
8524	1 7/8-12	5.0 TO 80.0 GPM	2.13	3.38	1.37	1.785 - 1.803	0.594	0.687	50 ft-lbs

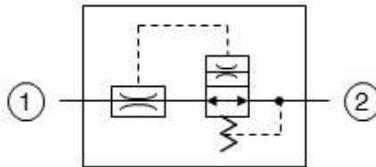
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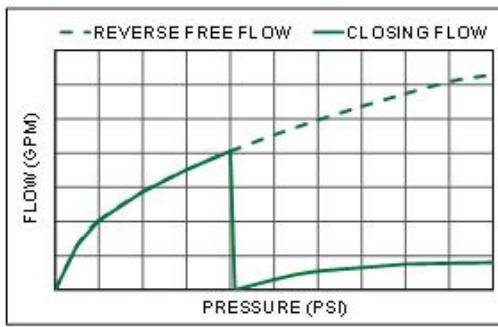
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A IN-LINE, THREADED INSERTABLE VELOCITY FUSE THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3000 PSI.

## FEATURES

- STEEL COMPONENTS.
- RAPID RESPONSE.
- POSITIVE CLOSE.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## ORDERING INFORMATION

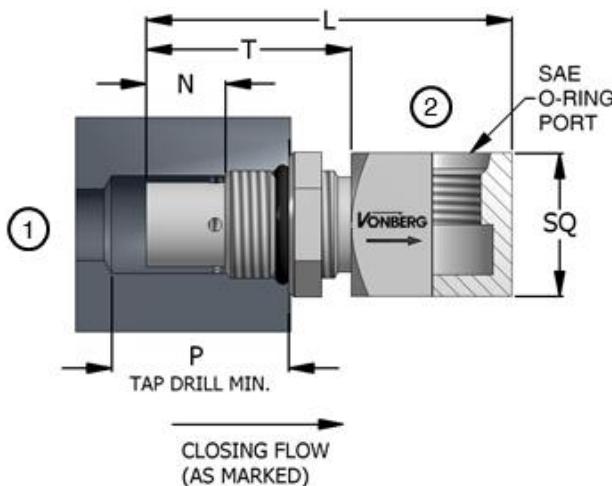
86	XX	-XX
SERIES NUMBER	_____	
PORT SIZE	_____	
CLOSING FLOW (GPM)	_____	

MODEL	THREAD	FLOW RANGE	L	A	B	C	E	HEX	TORQUE
8604	7/16 - 20	0.2 TO 4.0 GPM	0.66	1.30	0.80	0.390 - 0.395	0.360	0.125	25 in-lbs
8606	9/16 - 18	0.2 TO 8.0 GPM	0.72	1.41	0.87	0.502 - 0.515	0.391	0.187	5 ft-lbs
8608	3/4 - 16	0.5 TO 15.0 GPM	1.15	1.95	1.15	0.682 - 0.696	0.438	0.312	8 ft-lbs
8610	7/8 - 14	1.0 TO 25.0 GPM	1.25	2.15	1.05	0.798 - 0.814	0.500	0.375	12 ft-lbs
8612	1 1/16 - 12	2.0 TO 40.0 GPM	1.50	2.50	1.30	0.972 - 0.990	0.594	0.438	18 ft-lbs
8616	1 5/16 - 12	5.0 TO 50.0 GPM	1.50	2.67	1.30	1.222 - 1.240	0.594	0.500	30 ft-lbs
8620	1 5/8-12	5.0 TO 65.0 GPM	1.85	3.05	1.30	1.535 - 1.553	0.594	0.625	40 ft-lbs
8624	1 7/8-12	5.0 TO 80.0 GPM	2.13	3.38	1.37	1.785 - 1.803	0.594	0.687	50 ft-lbs

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Page last updated: February 18, 2015

## PRODUCT



## DESCRIPTION

AN IN-LINE, 90&deg SWIVEL ELBOW VELOCITY FUSE WITH AN SAE O-RING OUTLET PORT THAT PROVIDES FULL-LINE SHUT-OFF IN THE EVENT OF A LINE FAILURE.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS BLOCKED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.

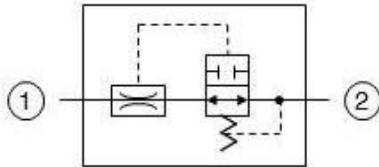
## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- POSITIVE CLOSE
- SWIVEL DESIGN FOR EASY ALIGNMENT.
- 90&deg ELBOW FOR LOW PROFILE APPLICATIONS.
- SAE O-RING PORT OUTLET FOR LEAK FREE CONNECTIONS.

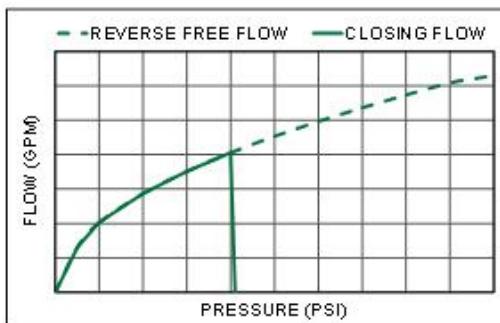
## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## SCHEMATIC



## TYPICAL PERFORMANCE



## ORDERING INFORMATION

87	XX	-XX
SERIES NUMBER _____		
OUTLET PORT SIZE _____		
CLOSING FLOW (GPM) _____		

Model	PORT 1	PORT 2	FLOW RANGE	L	T	N	P (MIN)	SQ
8704	-04 SAE - 7/16-20	-04 SAE - 7/16-20	0.2 TO 4.0 GPM	1.770	1.110	0.400	0.950	0.750
8706	-06 SAE - 9/16-18	-06 SAE - 9/16-18	0.2 TO 8.0 GPM	2.125	1.160	0.390	1.000	0.875
8708	-08 SAE - 3/4-16	-08 SAE - 3/4-16	0.5 TO 15.0 GPM	2.555	1.430	0.550	1.250	1.000
8710	-10 SAE - 7/8-14	-10 SAE - 7/8-14	1.0 TO 25.0 GPM	3.230	1.870	0.850	1.688	1.125
8712	-12 SAE - 1 1/16-12	-12 SAE - 1 1/16-12	2.0 TO 40.0 GPM	3.625	2.065	0.905	1.980	1.375
8716	-16 SAE - 1 5/16-12	-16 SAE - 1 5/16-12	5.0 TO 50.0 GPM	3.825	2.200	0.885	2.000	1.625

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

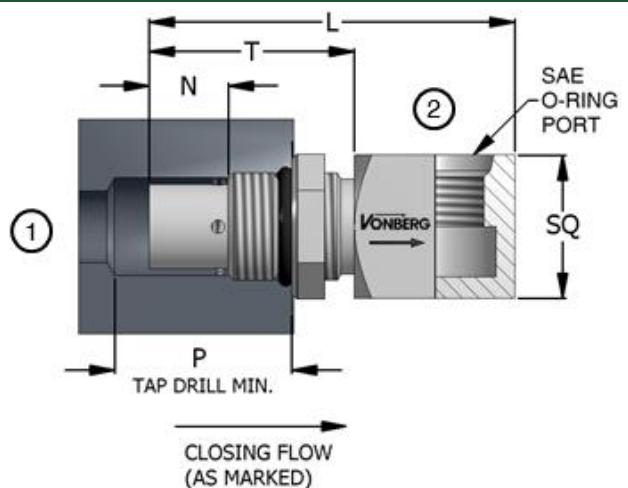
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## PRODUCT



## DESCRIPTION

AN IN-LINE, 90&deg SWIVEL ELBOW FLOW LIMITER WITH AN SAE O-RING OUTLET PORT THAT PREVENTS FREE FALL IN THE EVENT OF A LINE FAILURE, BUT ALLOWS A METERED FLOW AFTER CLOSING.

## OPERATION

- A FLOW BELOW THE SPECIFIED LIMIT IS ALLOWED FROM (1) TO (2).
- FLOW ABOVE THE SPECIFIED LIMIT IS ASSUMED TO BE A LINE FAILURE AND IS LIMITED.
- FLOW FROM (2) TO (1) PASSES THROUGH THE CONTROLLING ORIFICE BUT IS UNCONTROLLED.
- BLEED RATE AFTER CLOSING IS 2.0 - 3.0 GPM AT 3500 PSI.

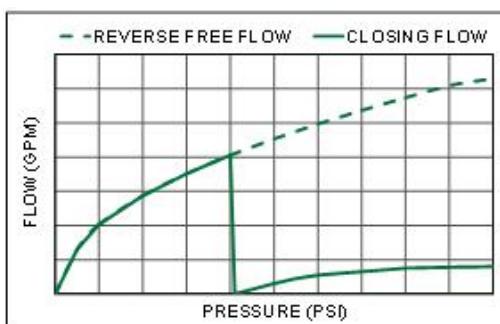
## FEATURES

- STEEL COMPONENTS.
- FAIL SAFE DESIGN.
- RAPID RESPONSE.
- POSITIVE CLOSE
- SWIVEL DESIGN FOR EASY ALIGNMENT.
- 90&deg ELBOW FOR LOW PROFILE APPLICATIONS.
- SAE O-RING PORT OUTLET FOR LEAK FREE CONNECTIONS.
- NON-STANDARD BLEED FLOW RATES ARE AVAILABLE UPON REQUEST.

## SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250° F TO -40° F
REOPENING DIFFERENTIAL	50 PSI
CLOSING FLOW TOLERANCE	+15% / -0%

## TYPICAL PERFORMANCE



## ORDERING INFORMATION

88	XX	-	XX
SERIES NUMBER _____			
OUTLET PORT SIZE _____			
CLOSING FLOW (GPM) _____			

Model	PORT 1	PORT 2	FLOW RANGE	L	T	N	P (MIN)	SQ
8804	-04 SAE - 7/16-20	-04 SAE - 7/16-20	0.2 TO 4.0 GPM	1.770	1.110	0.400	0.950	0.750
8806	-06 SAE - 9/16-18	-06 SAE - 9/16-18	0.2 TO 8.0 GPM	2.125	1.160	0.390	1.000	0.875
8808	-08 SAE - 3/4-16	-08 SAE - 3/4-16	0.5 TO 15.0 GPM	2.555	1.430	0.550	1.250	1.000
8810	-10 SAE - 7/8-14	-10 SAE - 7/8-14	1.0 TO 25.0 GPM	3.230	1.870	0.850	1.688	1.125
8812	-12 SAE - 1 1/16-12	-12 SAE - 1 1/16-12	2.0 TO 40.0 GPM	3.625	2.065	0.905	1.980	1.375
8816	-16 SAE - 1 5/16-12	-16 SAE - 1 5/16-12	5.0 TO 50.0 GPM	3.825	2.200	0.885	2.000	1.625

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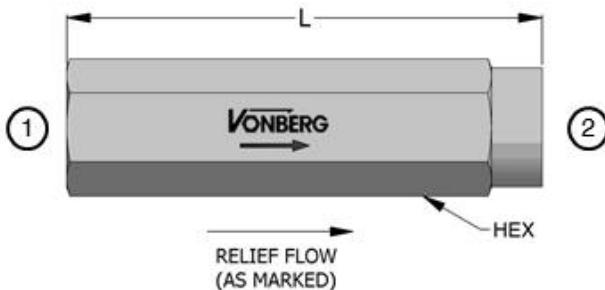
# PRESSURE CONTROLS



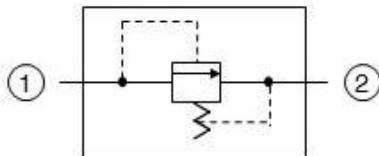
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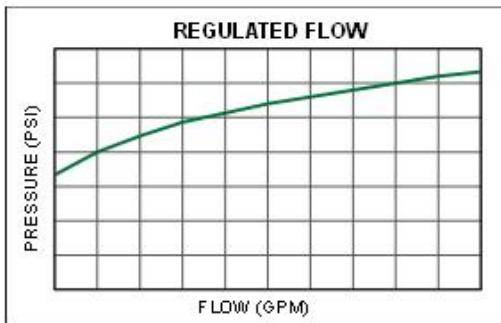
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

### FEATURES

- STEEL COMPONENTS.
- CHROME STEEL BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

### ORDERING INFORMATION

SERIES NUMBER	4030	[X]	-	10	[X]	-	XX
PRESSURE RANGE							
1..... 10 - 150 PSI							
2..... 160 - 1000 PSI							
3..... 800 - 3000 PSI							
4..... 3000 - 4000 PSI							
5..... 4000 - 5000 PSI							
FEMALE NPTF / FEMALE NPTF							
THREAD SIZE							
RELIEF PRESSURE (PSI)							

MODEL	INLET / OUTLET	L	HEX
4030X-102	1/4-18 NPTF	3.85	0.750
4030X-103	3/8-18 NPTF	3.65	0.875
4030X-104	1/2-14 NPTF	4.50	1.125

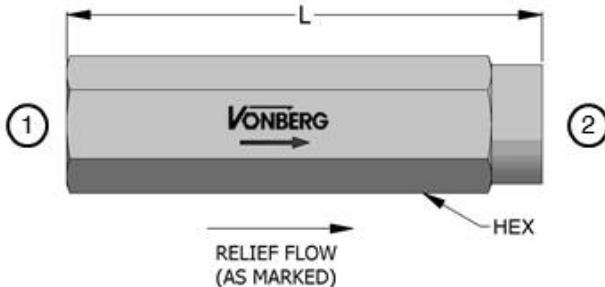
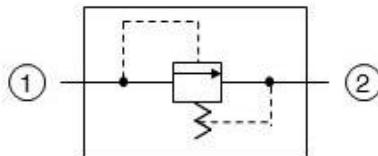
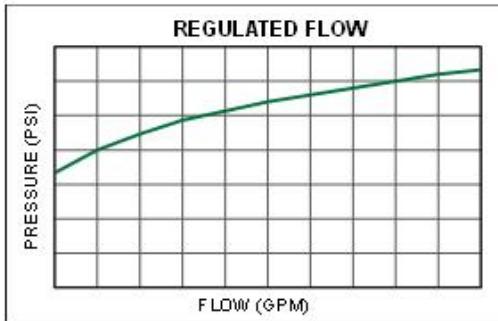
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Page last updated: January 19, 2015



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Hydraulic Valve Specialists

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phone: 847/259-3800 • fax 847/259-3997 • email: info@vonberg.com

**PRODUCT**

**SCHEMATIC**

**TYPICAL PERFORMANCE**

**DESCRIPTION**

AN IN-LINE, DIRECT ACTING RELIEF VALVE THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

**OPERATION**

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

**FEATURES**

- STEEL COMPONENTS.
- CHROME STEEL BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

**SPECIFICATIONS**

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

**ORDERING INFORMATION**

SERIES NUMBER	4030	[X]	-	20	[X]	-	XX
PRESSURE RANGE							
1..... 10 - 150 PSI							
2..... 160 - 1000 PSI							
3..... 800 - 3000 PSI							
4..... 3000 - 4000 PSI							
5..... 4000 - 5000 PSI							
FEMALE SAE / FEMALE SAE							
THREAD SIZE							
RELIEF PRESSURE (PSI)							

MODEL	INLET / OUTLET	THREAD	L	HEX
4030X-204	-04 SAE	7/16-20	3.20	0.63
4030X-206	-06 SAE	9/16-18	3.62	0.75
4030X-208	-08 SAE	3/4-16	3.75	0.94

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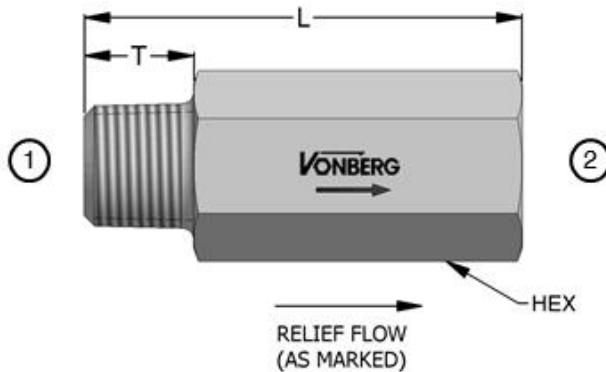
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### PRODUCT



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

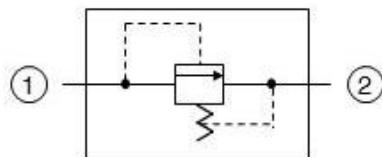
### FEATURES

- STEEL COMPONENTS.
- CHROME STEEL BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

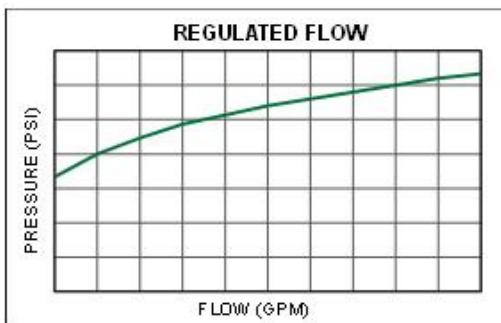
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

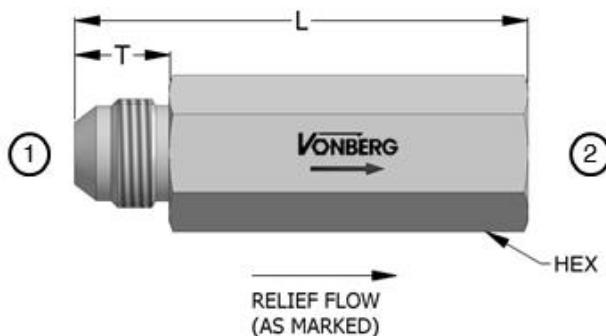
4030	X	-	50	X	-	XX
SERIES NUMBER						
PRESSURE RANGE						
1..... 10 - 150 PSI 2..... 180 - 1000 PSI 3..... 800 - 3000 PSI 4..... 3000 - 4000 PSI 5..... 4000 - 5000 PSI						
MALE NPTF / FEMALE NPTF						
THREAD SIZE						
RELIEF PRESSURE (PSI)						

MODEL	INLET 1	OUTLET 2	L	T	HEX
4030X-502	1/4-18 NPTF	1/4-18 NPTF PORT	3.70	0.563	0.750
4030X-503	3/8-18 NPTF	3/8-18 NPTF PORT	2.94	0.625	0.875
4030X-504	1/2-14 NPTF	1/2-14 NPTF PORT	3.50	0.750	1.125

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Page last updated: January 19, 2015

### PRODUCT



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

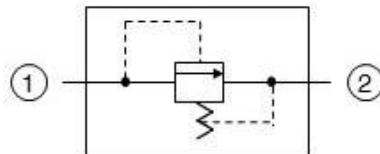
### FEATURES

- STEEL COMPONENTS.
- CHROME BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

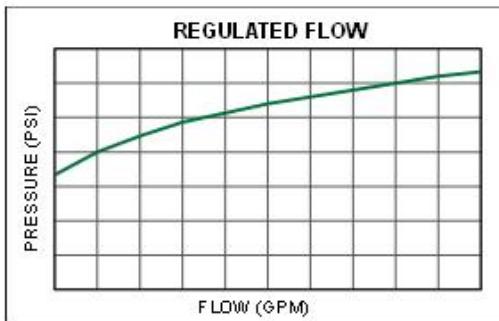
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

4030[X] - [60][X] - XX	
SERIES NUMBER	[ ]
PRESSURE RANGE	[ ]
1..... 10 - 150 PSI	
2..... 160 - 1000 PSI	
3..... 800 - 3000 PSI	
4..... 3000 - 4000 PSI	
5..... 4000 - 5000 PSI	
MALE JIC / FEMALE SAE	[ ]
THREAD SIZE	[ ]
RELIEF PRESSURE (PSI)	[ ]

MODEL	INLET 1	OUTLET 2	THREAD	L	T	HEX
4030X-604	-04 JIC	-04 SAE PORT	7/16-20	3.20	0.550	0.625
4030X-606	-06 JIC	-06 SAE PORT	9/16-18	3.56	0.560	0.750
4030X-608	-08 JIC	-08 SAE PORT	3/4-14	3.70	0.660	0.938

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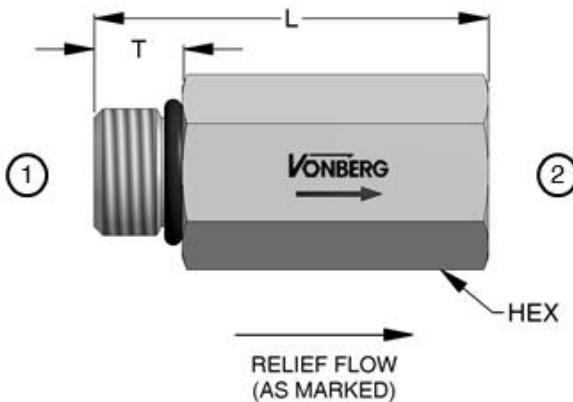
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## PRODUCT



## DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

## OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

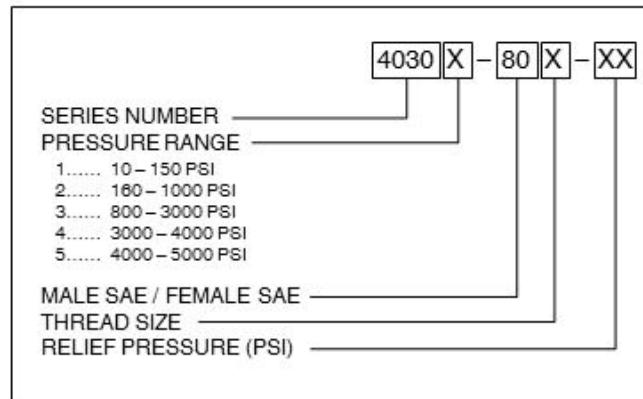
## FEATURES

- STEEL COMPONENTS.
- CHROME BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

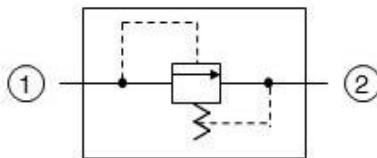
## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

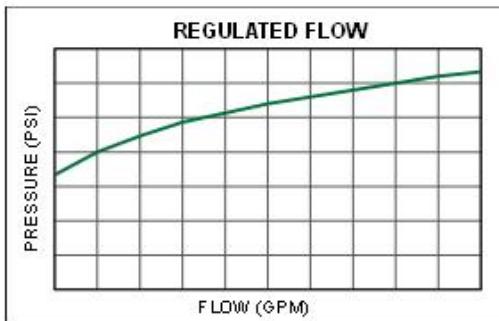
## ORDERING INFORMATION



## SCHEMATIC



## TYPICAL PERFORMANCE



MODEL	INLET 1	OUTLET 2	THREAD	L	T	HEX
4030X-804	-04 SAE	-04 SAE PORT	7/16-20	3.00	0.360	0.625
4030X-806	-06 SAE	-06 SAE PORT	9/16-18	3.40	0.390	0.750
4030X-808	-08 SAE	-08 SAE PORT	3/4-14	3.50	0.440	0.938

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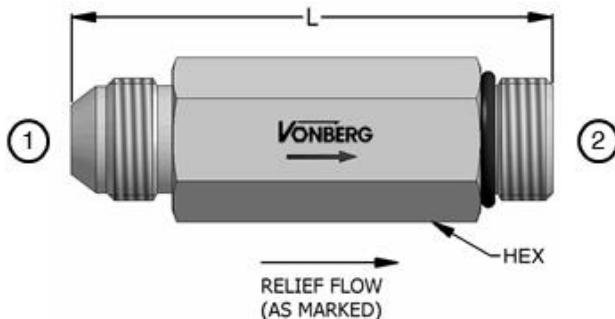
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### PRODUCT



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

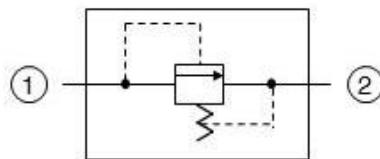
### FEATURES

- STEEL COMPONENTS.
- CHROME BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

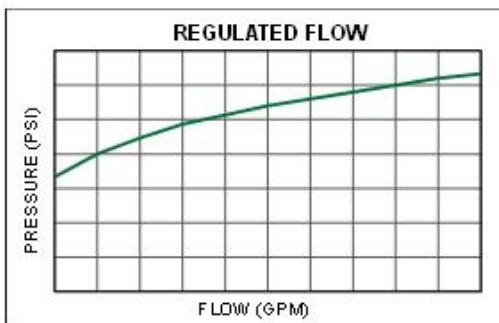
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

4031	[X]	-	60	[X]	-	XX
SERIES NUMBER			PRESSURE RANGE			
1..... 10 - 150 PSI			2..... 180 - 1000 PSI			
3..... 800 - 3000 PSI			4..... 3000 - 4000 PSI			
5..... 4000 - 5000 PSI						
MALE JIC / MALE SAE						
THREAD SIZE						
RELIEF PRESSURE (PSI)						

MODEL	INLET 1	OUTLET 2	THREAD	L	HEX
40310-608	-08 JIC	-08 SAE	3/4-14	2.98	0.875

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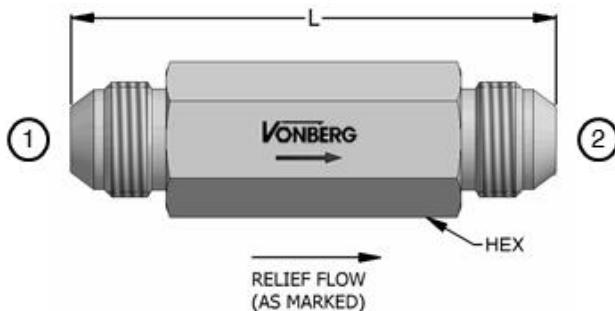
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### PRODUCT



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH MALE JIC CONNECTIONS THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

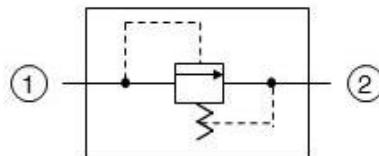
### FEATURES

- STEEL COMPONENTS.
- CHROME BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

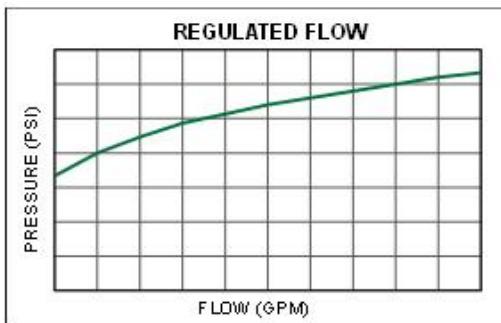
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

4033	X	-	60	X	-	XX
SERIES NUMBER						
PRESSURE RANGE						
1..... 10 - 150 PSI 2..... 160 - 1000 PSI 3..... 800 - 3000 PSI 4..... 3000 - 4000 PSI 5..... 4000 - 5000 PSI						
MALE JIC / MALE JIC						
THREAD SIZE						
RELIEF PRESSURE (PSI)						

MODEL	INLET / OUTLET	THREAD	FLOW CAPACITY	L	HEX
4033X-608	-08 JIC	3/4-16	15 GPM	3.16	0.88

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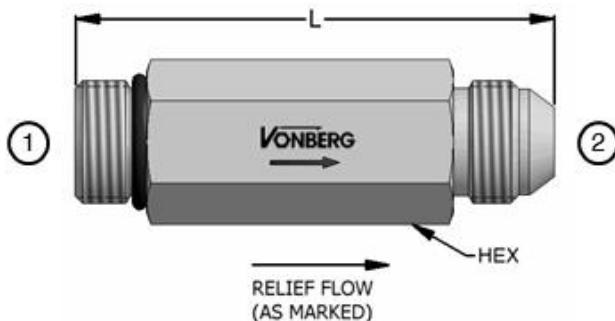
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### PRODUCT



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

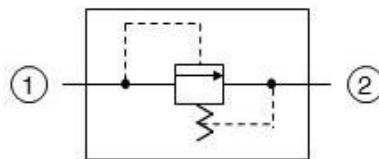
### FEATURES

- STEEL COMPONENTS.
- CHROME BALL / HARDENED SEAT.
- LOW INTERNAL LEAKAGE.

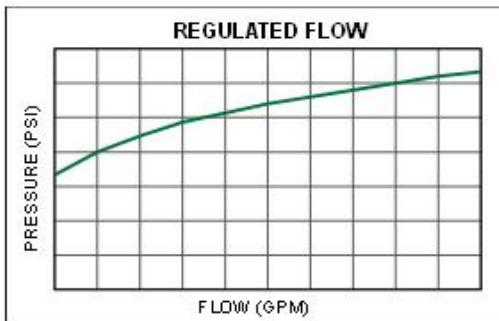
### SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

### SCHEMATIC



### TYPICAL PERFORMANCE



### ORDERING INFORMATION

4033[X] - 80[X] - XX
SERIES NUMBER _____
PRESSURE RANGE _____
1..... 10 - 150 PSI 2..... 160 - 1000 PSI 3..... 800 - 3000 PSI 4..... 3000 - 4000 PSI 5..... 4000 - 5000 PSI
MALE SAE / MALE JIC _____
THREAD SIZE _____
RELIEF PRESSURE (PSI) _____

MODEL	INLET 1	OUTLET 2	THREAD	L	HEX
4033X-808	-08 SAE	-08 JIC	3/4-14	2.94	0.875

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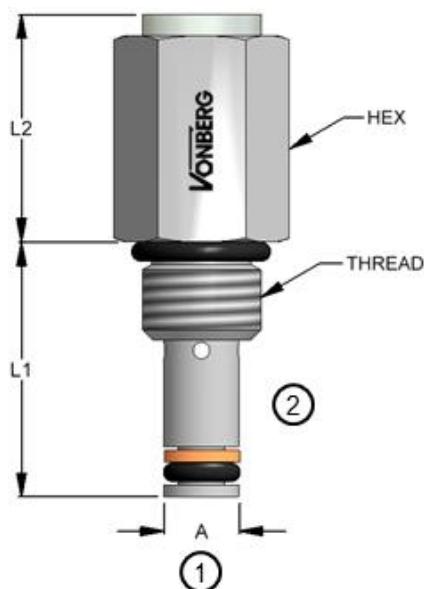
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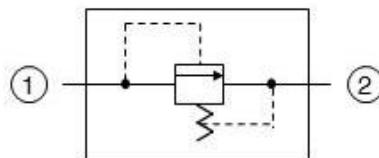
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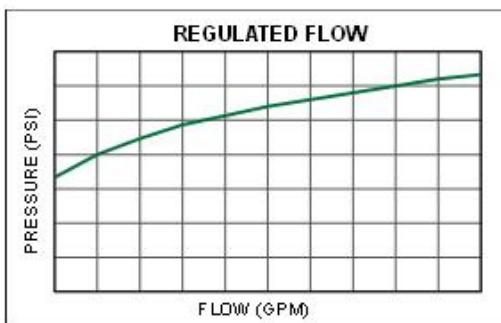
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

A CARTRIDGE STYLE, DIRECT ACTING RELIEF VALVE THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

### FEATURES

- STEEL COMPONENTS.
- GUIDED POPPET.
- HARDENED SEAT.
- LOW INTERNAL LEAKAGE.
- QUIET OPERATION.
- INDUSTRY COMMON CAVITY.

### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%
PRESSURE RANGE	50 PSI - 3500 PSI

### ORDERING INFORMATION

44	XX	-	XXXX	-	XX
SERIES NUMBER _____					
CAVITY SIZE _____					
RELIEF PRESSURE (PSI) _____					
BODY PORT SIZE CODE _____					
BLANK.....	CARTRIDGE ONLY				
SERIES CODE...	SEE "CARTRIDGE BODIES", X-2 SERIES				

MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2	HEX	A	TORQUE
4404	7/16 - 20	1.0 GPM	VC04-2	0.94	0.83	0.56	0.277 / 0.278	10 ft-lbs
4410	7/8 - 14	5.0 GPM	VC10-2	1.250	1.65	1.00	0.621 / 0.623	25 ft-lbs

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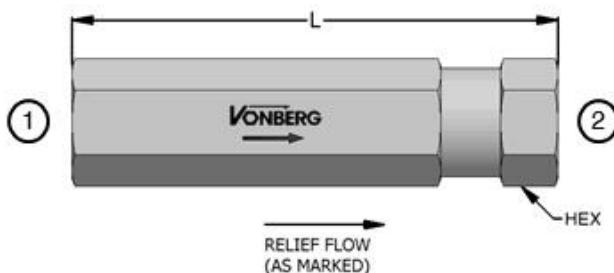
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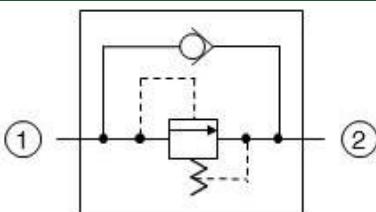
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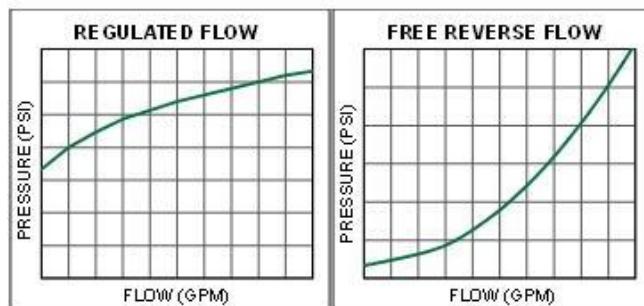
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH FREE REVERSE FLOW THAT LIMITS MAXIMUM SYSTEM PRESSURE OR ALLOWS SEQUENCING OF PRESSURES WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS UNRESTRICTED WITH A 5-10 PSI CRACK PRESSURE.

### FEATURES

- ALUMINUM BODY, STEEL INTERNALS.
- LOW INTERNAL LEAKAGE.
- INTERNAL PACKING - BUNA N.
- LOW PRESSURE DROP.

### SPECIFICATIONS

OPERATING PRESSURE 3000 PSI

TEMPERATURE RANGE 250°F TO -40°F

RELIEF TOLERANCE +/- 10%

### ORDERING INFORMATION

SERIES NUMBER	49000	-	1	XX	-	XX
THREAD SIZE						
RELIEF PRESSURE (PSI)						
10 – 150 (PSI)*						
* AVAILABLE IN 10 PSI INCREMENTS UP TO A MAXIMUM OF 150 PSI FOR HIGHER PRESSURE APPLICATIONS, SEE 49005 SERIES						

MODEL	INLET / OUTLET	FLOW CAPACITY	L	HEX
49000-103	3/8-18 NPTF PORT	15 GPM	4.13	0.875

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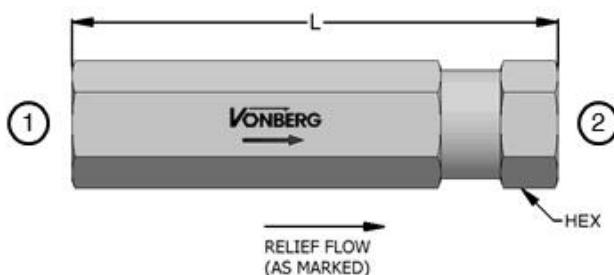
Page last updated: January 19, 2015



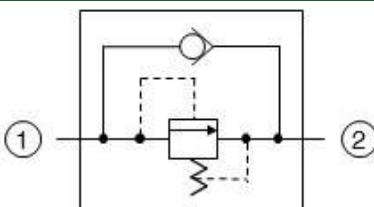
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Hydraulic Valve Specialists

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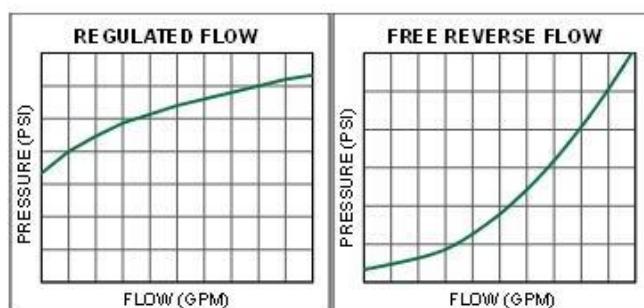
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH FREE REVERSE FLOW THAT LIMITS MAXIMUM SYSTEM PRESSURE OR ALLOWS SEQUENCING OF PRESSURES WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS UNRESTRICTED WITH A 5-10 PSI CRACK PRESSURE.

### FEATURES

- ALUMINUM BODY, STEEL INTERNALS.
- LOW INTERNAL LEAKAGE.
- INTERNAL PACKING - BUNA N.
- LOW PRESSURE DROP.

### SPECIFICATIONS

OPERATING PRESSURE 3000 PSI

TEMPERATURE RANGE 250°F TO -40°F

RELIEF TOLERANCE +/- 10%

### ORDERING INFORMATION

49000	-	2	XX	-	XX
SERIES NUMBER _____					
THREAD SIZE _____					
RELIEF PRESSURE (PSI) _____					
10 – 150 (PSI)*					

\* AVAILABLE IN 10 PSI INCREMENTS UP TO A MAXIMUM OF 150 PSI  
FOR HIGHER PRESSURE APPLICATIONS, SEE 40005 SERIES

MODEL	INLET / OUTLET	THREAD	FLOW CAPACITY	L	HEX
49000-208	-08 SAE PORT	3/4-16	15 GPM	4.13	0.88

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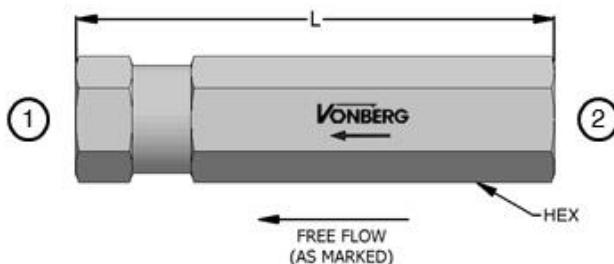
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### PRODUCT



### DESCRIPTION

AN IN-LINE, DIRECT ACTING RELIEF VALVE WITH FREE REVERSE FLOW THAT LIMITS MAXIMUM SYSTEM PRESSURE OR ALLOWS SEQUENCING OF PRESSURES WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS UNRESTRICTED WITH A 5-10 PSI CRACK PRESSURE.

### FEATURES

- ALUMINUM BODY, STEEL INTERNALS.
- LOW INTERNAL LEAKAGE.
- INTERNAL PACKING - BUNA N.
- LOW PRESSURE DROP.

### SPECIFICATIONS

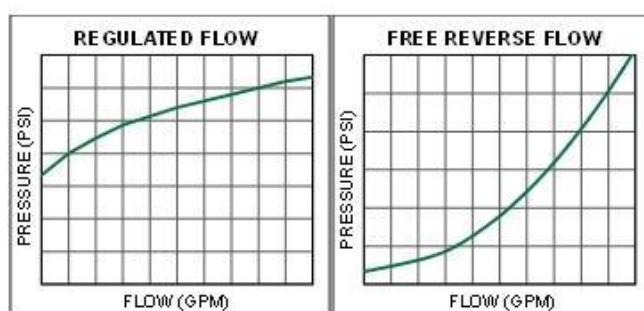
OPERATING PRESSURE	3000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

### ORDERING INFORMATION

49005 - <input type="text" value="XXXX"/>
SERIES NUMBER _____
RELIEF PRESSURE (PSI) _____
100 – 1000 (PSI)*

\* AVAILABLE IN 50 PSI INCREMENTS 100-500 PSI; 100 PSI INCREMENTS 500+ PSI  
FOR LOW PRESSURE APPLICATIONS, SEE 40000 SERIES

### TYPICAL PERFORMANCE



MODEL	INLET / OUTLET	FLOW RANGE	L	HEX
49005	3/8-18 NPTF	2.0 TO 12.0 GPM	4.13	0.88

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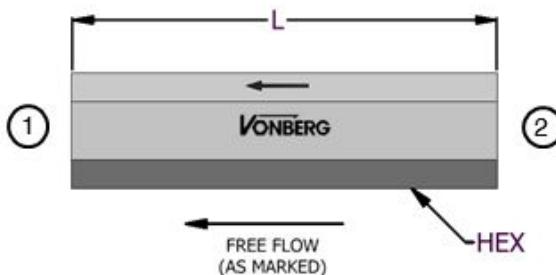
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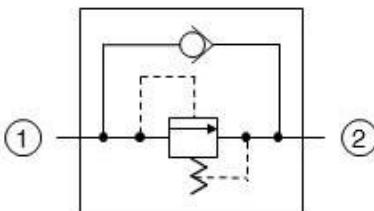
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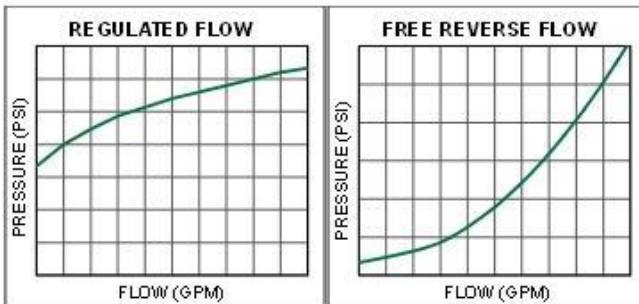
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

AN IN-LINE, DIFFERENTIAL AREA RELIEF VALVE WITH FREE REVERSE FLOW THAT LIMITS MAXIMUM SYSTEM PRESSURE OR ALLOWS SEQUENCING OF PRESSURES WITHIN A CIRCUIT.

## OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS UNRESTRICTED WITH A 5-10 PSI CRACK PRESSURE.

## FEATURES

- ALUMINUM BODY, STEEL INTERNALS.
- LOW INTERNAL LEAKAGE.
- INTERNAL PACKING - BUNA N.
- LOW PRESSURE DROP.

## SPECIFICATIONS

OPERATING PRESSURE	3000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10% (+/- 20% BELOW 150 PSI)

## ORDERING INFORMATION

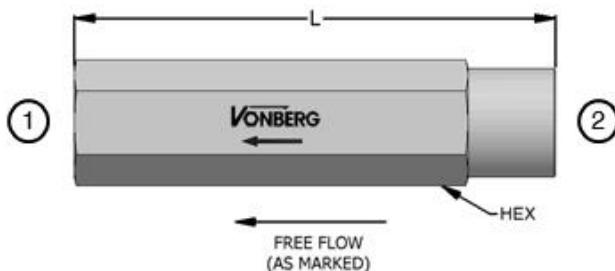
49023 - XXXX	
SERIES NUMBER _____	
RELIEF PRESSURE (PSI) _____	
100 - 1250 (PSI)*	
* AVAILABLE IN 50 PSI INCREMENTS 100-1250 PSI	

MODEL	INLET / OUTLET	THREAD	FLOW CAPACITY	L	HEX
49023	-12 SAE PORT	1 1/16-12	30 GPM	5.25	1.250

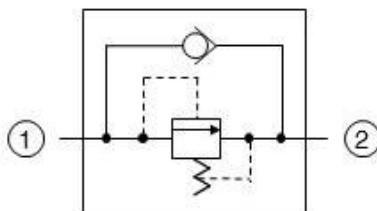
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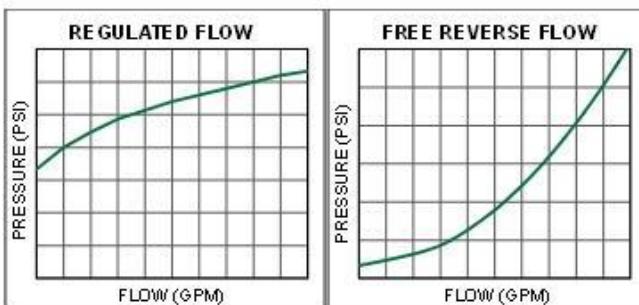
### PRODUCT



### SCHEMATIC



### TYPICAL PERFORMANCE



### DESCRIPTION

AN IN-LINE, DIFFERENTIAL AREA RELIEF VALVE WITH FREE REVERSE FLOW THAT LIMITS MAXIMUM SYSTEM PRESSURE OR ALLOWS SEQUENCING OF PRESSURES WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS UNRESTRICTED WITH A 5-10 PSI CRACK PRESSURE.

### FEATURES

- ALUMINUM BODY, STEEL INTERNALS.
- LOW INTERNAL LEAKAGE.
- INTERNAL PACKING - BUNA N.
- LOW PRESSURE DROP.

### SPECIFICATIONS

OPERATING PRESSURE	3000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10% (+/- 20% BELOW 150 PSI)

### ORDERING INFORMATION

49040 - XXXX	
SERIES NUMBER _____	
RELIEF PRESSURE (PSI) _____	
100 - 1250 (PSI)*	
* AVAILABLE IN 50 PSI INCREMENTS 100-1250 PSI	

MODEL	INLET / OUTLET	THREAD	FLOW CAPACITY	L	HEX
49040	-08 SAE PORT	3/4-16	20 GPM	4.12	0.94

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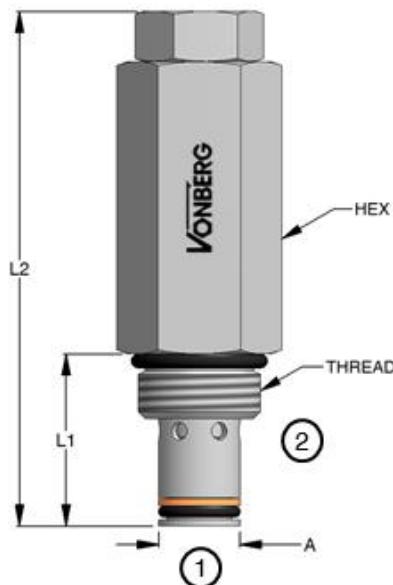
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### PRODUCT



### DESCRIPTION

AN CARTRIDGE STYLE, DIRECT ACTING RELIEF VALVE THAT LIMITS MAXIMUM SYSTEM PRESSURE OR MAINTAINS A DESIRED PRESSURE WITHIN A CIRCUIT.

### OPERATION

- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE SPECIFIED RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (2) TO (1) IS ALWAYS BLOCKED.

### FEATURES

- STEEL COMPONENTS.
- GUIDED POPPET.
- HARDENED SEAT.
- LOW INTERNAL LEAKAGE.
- QUIET OPERATION.
- INDUSTRY COMMON CAVITY.
- LIMITED ADJUSTABILITY.

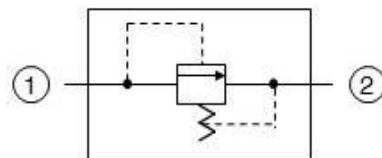
### SPECIFICATIONS

OPERATING PRESSURE	3500 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%

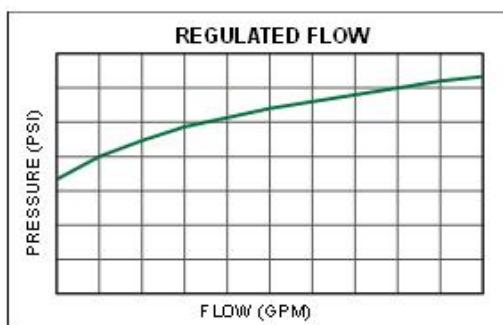
### ORDERING INFORMATION

49045 - <input type="text"/> - <input type="text"/>
SERIES NUMBER _____
RELIEF PRESSURE (PSI) _____
100 – 3500 (PSI)*
BODY PORT SIZE CODE _____
BLANK..... CARTRIDGE ONLY
SERIES CODE... SEE "CARTRIDGE BODIES", X-2 SERIES
* AVAILABLE IN 50 PSI INCREMENTS 100-3500 PSI

### SCHEMATIC



### TYPICAL PERFORMANCE



MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2	HEX	A	TORQUE
49045	3/4 - 16	6.0 GPM	8-2	1.00	3.09	0.88	0.495 / 0.497	20 ft-lbs

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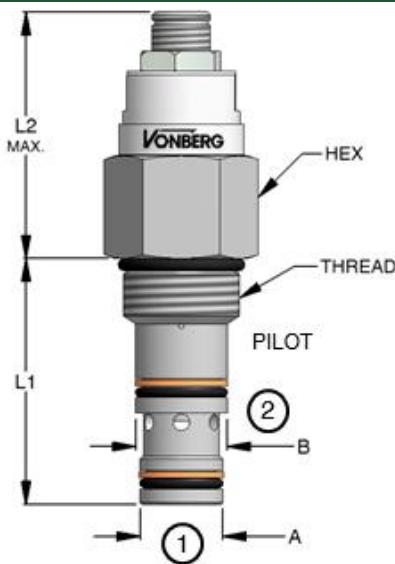
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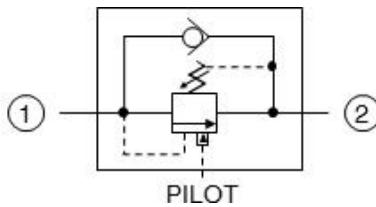
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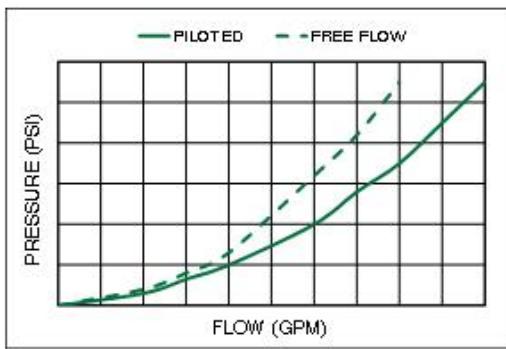
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE, THREE PORT, PILOT TO OPEN COUNTERBALANCE VALVE WITH AN INTERNALLY VENTED SPRING CHAMBER AND FREE REVERSE FLOW CHECK, INTENDED FOR MOTION CONTROL AND OVER-CENTER LOAD HOLDING APPLICATIONS.

## OPERATION

- FLOW FROM (2) TO (1) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 25 PSI.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL A PILOT PRESSURE INVERSELY PROPORTIONAL TO THE LOAD PRESSURE IS APPLIED TO THE PILOT PORT.
- BACK PRESSURE AT PORT (2) IS ADDITIVE TO RELIEF SETTING.

## FEATURES

- ADJUSTABLE WITH LOCKING NUT.
- CLOCKWISE ADJUSTMENT TO INCREASE RELIEF SETTING.
- SEALED PILOT PISTON, LOW INTERNAL LEAKAGE.
- QUIET, STABLE OPERATION.
- INDUSTRY COMMON CAVITY.
- LOW RELIEF HYSTERESIS.
- PILOT RATIOS UP TO 10:1 AVAILABLE (HIGHER PILOT RATIOS MAY REDUCE FLOW CAPACITY)

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%
INTERNAL LEAKAGE	5 DROPS/MIN. MAX.
STANDARD CRACK PRESSURE	25 PSI
RELIEF ADJUSTMENT RANGE	500 - 5000 PSI

## ORDERING INFORMATION

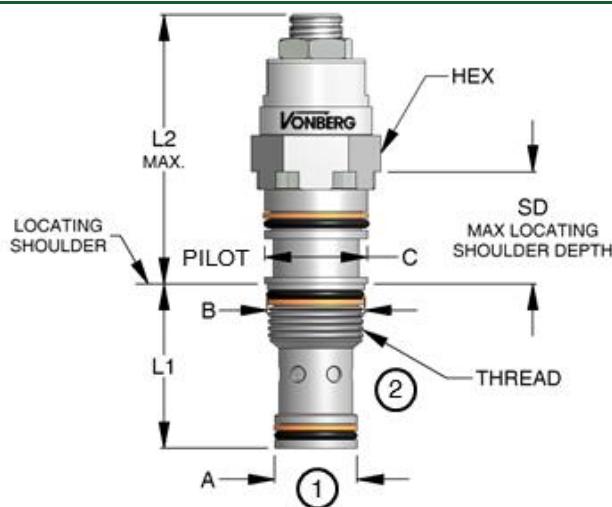
50	XX	-X-	XXXX
SERIES NUMBER			
CAVITY SIZE			
PILOT RATIO			
RELIEF SETTING (PSI)			

MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2 (MAX.)	HEX	A	B	TORQUE
5006	9/16 - 18	3.0 GPM	FC06-3	1.23	1.30	0.69	0.438 / 0.439	0.467 / 0.468	15 ft-lbs
5008	3/4 - 16	7.0 GPM	VC08-3	1.63	1.38	0.88	0.558 / 0.560	0.621 / 0.623	20 ft-lbs
5010	7/8 - 14	10.0 GPM	VC10-3	1.85	1.78	1.00	0.621 / 0.623	0.683 / 0.685	25 ft-lbs
5010S	7/8 - 14	10.0 GPM	VC10-S3	1.85	2.00	1.00	0.683 / 0.685	0.746 / 0.748	25 ft-lbs
5012	1 1/16 - 12	25.0 GPM	C12-3S	2.25	1.78	1.25	0.870 / 0.873	0.933 / 0.935	40 ft-lbs

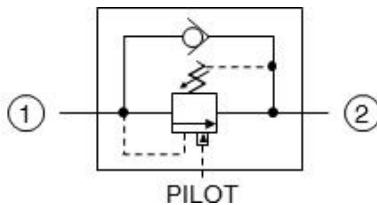
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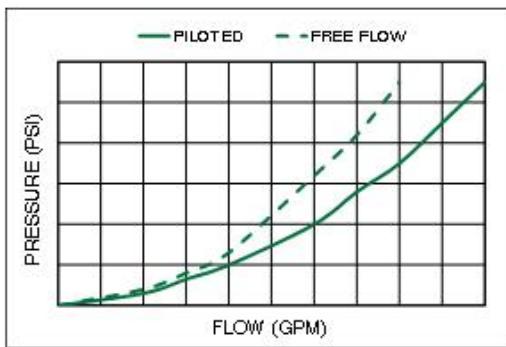
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE, THREE PORT, PILOT TO OPEN COUNTERBALANCE VALVE WITH AN INTERNALLY VENTED SPRING CHAMBER AND FREE REVERSE FLOW CHECK, INTENDED FOR MOTION CONTROL AND OVER-CENTER LOAD HOLDING APPLICATIONS.

## OPERATION

- FLOW FROM (2) TO (1) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 25 PSI.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL A PILOT PRESSURE INVERSELY PROPORTIONAL TO THE LOAD PRESSURE IS APPLIED TO THE PILOT PORT.
- BACK PRESSURE AT PORT (2) IS ADDITIVE TO RELIEF SETTING.

## FEATURES

- ADJUSTABLE WITH LOCKING NUT.
- CLOCKWISE ADJUSTMENT TO INCREASE RELIEF SETTING.
- SEALED PILOT PISTON, LOW INTERNAL LEAKAGE.
- QUIET, STABLE OPERATION.
- LOW RELIEF HYSTERESIS.
- PILOT RATIOS UP TO 10:1 AVAILABLE (HIGHER PILOT RATIOS MAY REDUCE FLOW CAPACITY)

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%
INTERNAL LEAKAGE	5 DROPS/MIN. MAX.
STANDARD CRACK PRESSURE	25 PSI
RELIEF ADJUSTMENT RANGE	500 - 5000 PSI

## ORDERING INFORMATION

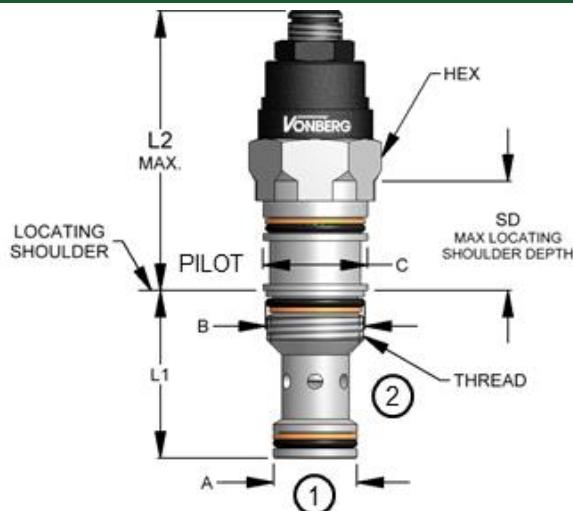
55T	XX	-X-	XXXX
SERIES NUMBER	_____		
CAVITY SIZE	_____		
PILOT RATIO	_____		
RELIEF SETTING (PSI)	_____		

MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2 (MAX.)	HEX	A	B	C	SD (MAX.)	TORQUE
55T163	M16 X 1.5	5.0 GPM	T-163A	1.22	1.80	0.750	0.512 / 0.513	0.653 / 0.654	0.700 / 0.701	0.650	20 ft-lbs
55T11	M20 X 1.5	10.0 GPM	T-11A	1.38	2.25	0.938	0.683 / 0.685	0.807 / 0.809	0.855 / 0.857	0.850	30 ft-lbs
55T2	1-14	25.0 GPM	T-2A	1.38	2.50	1.125	0.871 / 0.873	1.027 / 1.029	1.074 / 1.076	0.870	45 ft-lbs

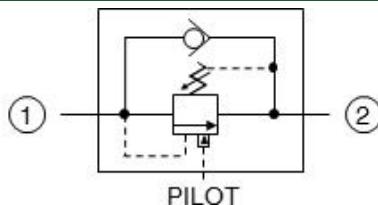
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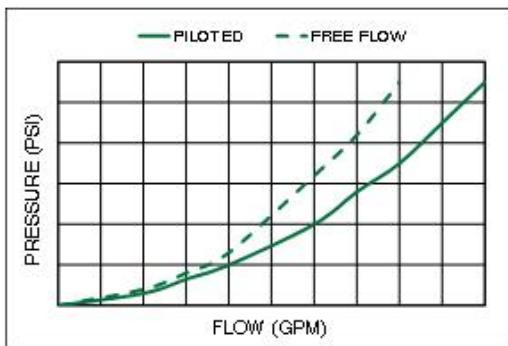
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE, THREE PORT, PILOT TO OPEN COUNTERBALANCE VALVE WITH AN INTERNALLY VENTED SPRING CHAMBER AND FREE REVERSE FLOW CHECK, INTENDED FOR MOTION CONTROL AND OVER-CENTER LOAD HOLDING APPLICATIONS.

## OPERATION

- FLOW FROM (2) TO (1) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 25 PSI.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL A PILOT PRESSURE INVERSELY PROPORTIONAL TO THE LOAD PRESSURE IS APPLIED TO THE PILOT PORT.
- BACK PRESSURE AT PORT (2) IS ADDITIVE TO RELIEF SETTING.

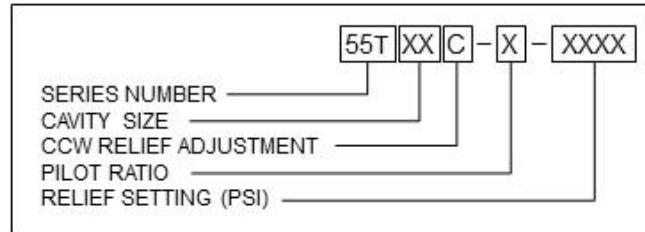
## FEATURES

- ADJUSTABLE WITH LOCKING NUT.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE RELIEF SETTING.
- SEALED PILOT PISTON, LOW INTERNAL LEAKAGE.
- QUIET, STABLE OPERATION.
- LOW RELIEF HYSTERESIS.
- PILOT RATIOS UP TO 10:1 AVAILABLE (HIGHER PILOT RATIOS MAY REDUCE FLOW CAPACITY)

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%
INTERNAL LEAKAGE	5 DROPS/MIN. MAX.
STANDARD CRACK PRESSURE	25 PSI
RELIEF ADJUSTMENT RANGE	500 - 5000 PSI

## ORDERING INFORMATION



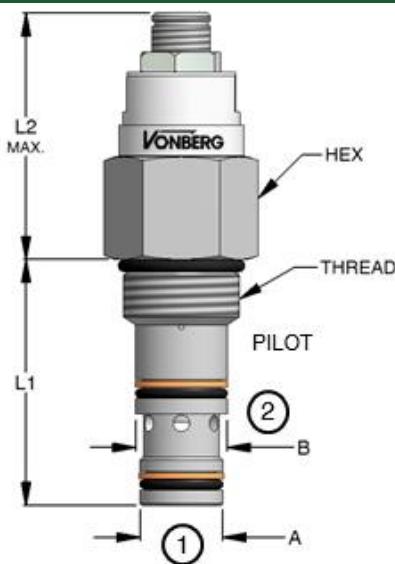
MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2 (MAX.)	HEX	A	B	C	SD (MAX.)	TORQUE
55T11C	M20 X 1.5	10.0 GPM	T-11A	1.38	2.25	0.938	0.683 / 0.685	0.807 / 0.809	0.855 / 0.857	0.850	30 ft-lbs

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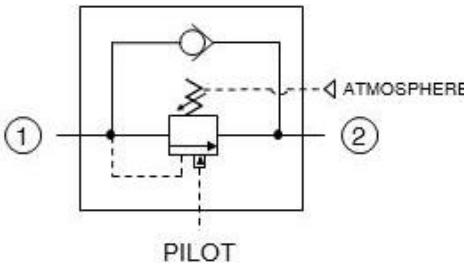
Page last updated: January 19, 2015



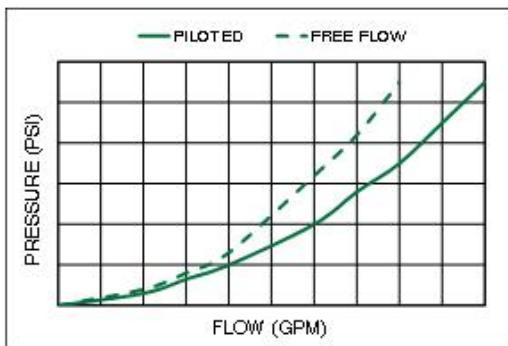
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE, THREE PORT, PILOT TO OPEN COUNTERBALANCE VALVE WITH AN ATMOSPHERICALLY VENTED SPRING CHAMBER AND FREE REVERSE FLOW CHECK, INTENDED FOR MOTION CONTROL AND OVER-CENTER LOAD HOLDING APPLICATIONS.

## OPERATION

- FLOW FROM (2) TO (1) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 25 PSI.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL A PILOT PRESSURE INVERSELY PROPORTIONAL TO THE LOAD PRESSURE IS APPLIED TO THE PILOT PORT.
- BACK PRESSURE AT PORT (2) DOES NOT AFFECT RELIEF SETTING.

## FEATURES

- ADJUSTABLE WITH LOCKING NUT.
- CLOCKWISE ADJUSTMENT TO INCREASE RELIEF SETTING.
- SEALED PILOT PISTON, LOW INTERNAL LEAKAGE.
- QUIET, STABLE OPERATION.
- INDUSTRY COMMON CAVITY.
- LOW RELIEF HYSTERESIS.
- PILOT RATIOS UP TO 10:1 AVAILABLE (HIGHER PILOT RATIOS MAY REDUCE FLOW CAPACITY)

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%
INTERNAL LEAKAGE	5 DROPS/MIN. MAX.
STANDARD CRACK PRESSURE	25 PSI
RELIEF ADJUSTMENT RANGE	500 - 5000 PSI

## ORDERING INFORMATION

56	XX	-X-	XXXX
SERIES NUMBER			
CAVITY SIZE			
PILOT RATIO			
RELIEF SETTING (PSI)			

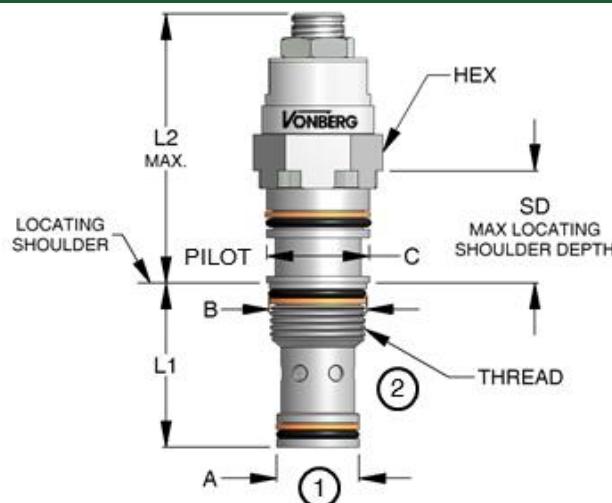
MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2 (MAX.)	HEX	A	B	TORQUE
5610	7/8 - 14	10.0 GPM	VC10-3	1.85	2.00	1.00	0.621 / 0.623	0.683 / 0.685	25 ft-lbs

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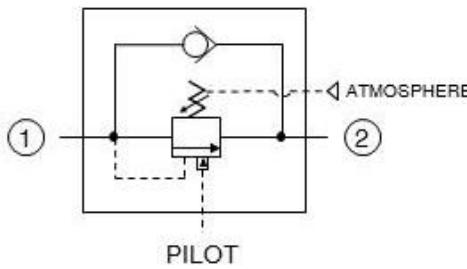
Page last updated: January 19, 2015



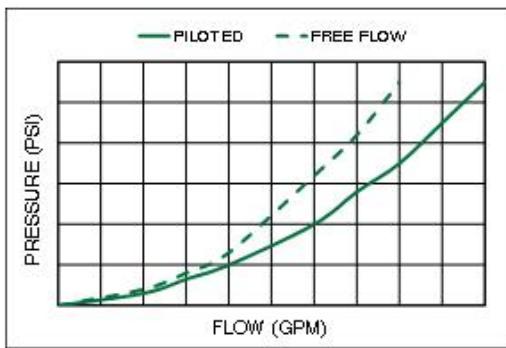
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE, THREE PORT, PILOT TO OPEN COUNTERBALANCE VALVE WITH AN ATMOSPHERICALLY VENTED SPRING CHAMBER AND FREE REVERSE FLOW CHECK, INTENDED FOR MOTION CONTROL AND OVER-CENTER LOAD HOLDING APPLICATIONS.

## OPERATION

- FLOW FROM (2) TO (1) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 25 PSI.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL A PILOT PRESSURE INVERSELY PROPORTIONAL TO THE LOAD PRESSURE IS APPLIED TO THE PILOT PORT.
- BACK PRESSURE AT PORT (2) DOES NOT AFFECT RELIEF SETTING.

## FEATURES

- ADJUSTABLE WITH LOCKING NUT.
- CLOCKWISE ADJUSTMENT TO INCREASE RELIEF SETTING.
- SEALED PILOT PISTON, LOW INTERNAL LEAKAGE.
- QUIET, STABLE OPERATION.
- LOW RELIEF HYSTERESIS.
- PILOT RATIOS UP TO 10:1 AVAILABLE (HIGHER PILOT RATIOS MAY REDUCE FLOW CAPACITY)

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%
INTERNAL LEAKAGE	5 DROPS/MIN. MAX.
STANDARD CRACK PRESSURE	25 PSI
RELIEF ADJUSTMENT RANGE	500 - 5000 PSI

## ORDERING INFORMATION

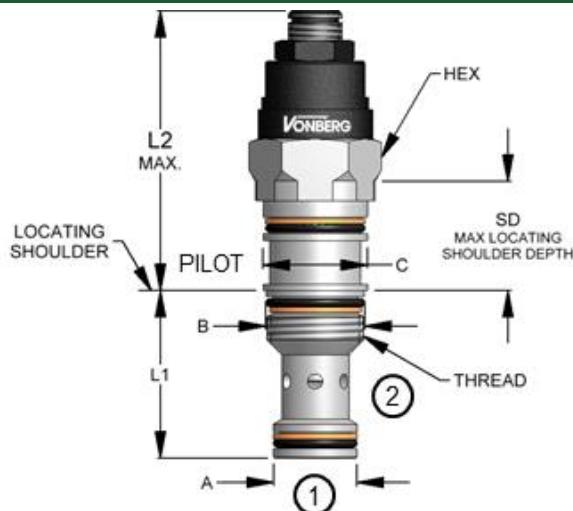
56T	XX	-X-	XXXX
SERIES NUMBER	_____		
CAVITY SIZE	_____		
PILOT RATIO	_____		
RELIEF SETTING (PSI)	_____		

MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2 (MAX.)	HEX	A	B	C	SD (MAX.)	TORQUE
56T11	M20 X 1.5	10.0 GPM	T-11A	1.38	2.45	0.938	0.683 / 0.685	0.807 / 0.809	0.855 / 0.857	0.850	30 ft-lbs
56T2	1-14	25.0 GPM	T-2A	1.38	2.75	1.125	0.871 / 0.873	1.027 / 1.029	1.074 / 1.076	0.870	45 ft-lbs

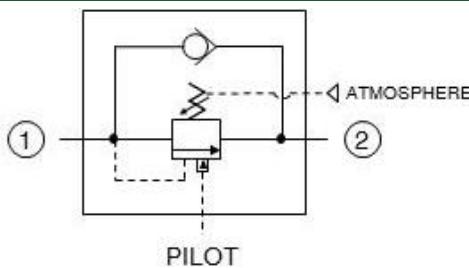
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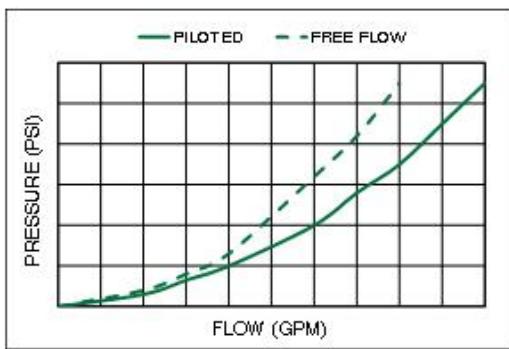
## PRODUCT



## SCHEMATIC



## TYPICAL PERFORMANCE



## DESCRIPTION

A CARTRIDGE STYLE, THREE PORT, PILOT TO OPEN COUNTERBALANCE VALVE WITH AN ATMOSPHERICALLY VENTED SPRING CHAMBER AND FREE REVERSE FLOW CHECK, INTENDED FOR MOTION CONTROL AND OVER-CENTER LOAD HOLDING APPLICATIONS.

## OPERATION

- FLOW FROM (2) TO (1) IS ALLOWED WITH A STANDARD CRACK PRESSURE OF 25 PSI.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL THE RELIEF PRESSURE SETTING HAS BEEN EXCEEDED.
- FLOW FROM (1) TO (2) IS BLOCKED UNTIL A PILOT PRESSURE INVERSELY PROPORTIONAL TO THE LOAD PRESSURE IS APPLIED TO THE PILOT PORT.
- BACK PRESSURE AT PORT (2) DOES NOT AFFECT RELIEF SETTING.

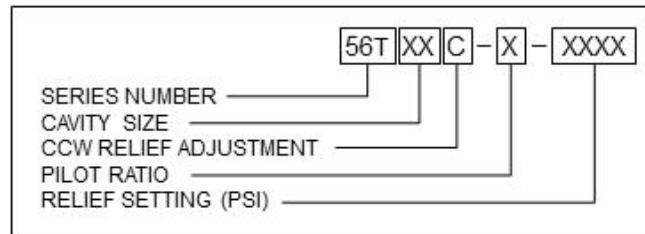
## FEATURES

- ADJUSTABLE WITH LOCKING NUT.
- COUNTERCLOCKWISE ADJUSTMENT TO INCREASE RELIEF SETTING.
- SEALED PILOT PISTON, LOW INTERNAL LEAKAGE.
- QUIET, STABLE OPERATION.
- LOW RELIEF HYSTERESIS.
- PILOT RATIOS UP TO 10:1 AVAILABLE (HIGHER PILOT RATIOS MAY REDUCE FLOW CAPACITY)

## SPECIFICATIONS

OPERATING PRESSURE	5000 PSI
TEMPERATURE RANGE	250°F TO -40°F
RELIEF TOLERANCE	+/- 10%
INTERNAL LEAKAGE	5 DROPS/MIN. MAX.
STANDARD CRACK PRESSURE	25 PSI
RELIEF ADJUSTMENT RANGE	500 - 5000 PSI

## ORDERING INFORMATION



MODEL	THREAD	FLOW CAPACITY	CAVITY	L1	L2 (MAX.)	HEX	A	B	C	SD (MAX.)	TORQUE
56T11C	M20 X 1.5	10.0 GPM	T-11A	1.38	2.45	0.938	0.683 / 0.685	0.807 / 0.809	0.855 / 0.857	0.850	30 ft-lbs

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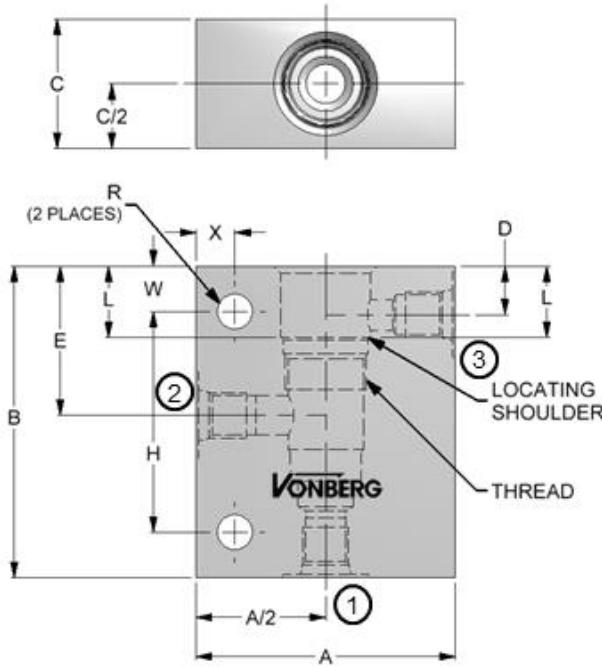
Page last updated: January 19, 2015



# CARTRIDGE BODIES



### PRODUCT



### DESCRIPTION

3 WAY CARTRIDGE BODY FOR T SERIES CAVITIES WITH NPTF PORTS OR O-RING PORTS CONFORMING TO SAE J1926.

### OPERATION

- FLOW DIRECTION IS DEPENDENT ON VALVE TO BE INSTALLED, CONSULT CARTRIDGE VALVE LITERATURE.

### FEATURES

- TO ORDER A CARTRIDGE VALVE IN A BODY AS AN ASSEMBLY, ADD THE PORT DESIGNATOR DIGITS OF THE BODY PART NUMBER TO THE END OF THE CARTRIDGE VALVE NUMBER. EXAMPLE: 55T11-4-3000-8T
- MANY PORT SIZE AND THREAD OPTIONS AVAILABLE.
- STANDARD BODIES ARE ALUMINUM
- CONSULT FACTORY FOR AVAILABILITY OF ALTERNATE MATERIALS.

### SPECIFICATIONS

PRESSURE RANGE 50 PSI TO 3500 PSI

TEMPERATURE RANGE 250°F TO -40°F

### ORDERING INFORMATION

MANIFOLD SERIES	T	XX	-	XX
FOR INTEGRATED MANIFOLD USE COUNTERBALANCE ASSEMBLY NUMBER WITH PORT DESIGNATOR ONLY				
MANIFOLD DESIGNATOR				
163..... T-163A CAVITY	11..... T-11A CAVITY			
2 ..... T-2A CAVITY				
PORT DESIGNATOR				
	PORTS (1)&(2)	PORT (3)	T163	T11
2P	1/4 NPTF	1/4 NPTF		
3P	3/8 NPTF			
4P	1/2 NPTF			
6P	3/4 NPTF			
4T	-04 SAE	-04 SAE		
64T	-06 SAE			
8T	-06 SAE			
8T	-08 SAE			
10T	-10 SAE	-06 SAE		
12T	-12 SAE			

MODEL	THREAD	A	B	C	D	E	H	R	W	X	L (MIN.)
T163-XX	M16X1.5-6H	2.00	3.00	1.00	0.44	1.27	2.13	0.28	0.44	0.28	0.61
T11-XX	M20X1.5-6H	2.50	3.00	1.25	0.47	1.44	2.13	0.34	0.44	0.38	0.69
T2-XX	1-14 UNS-2B	3.00	3.25	1.50	0.59	1.50	2.25	0.42	0.50	0.50	0.72

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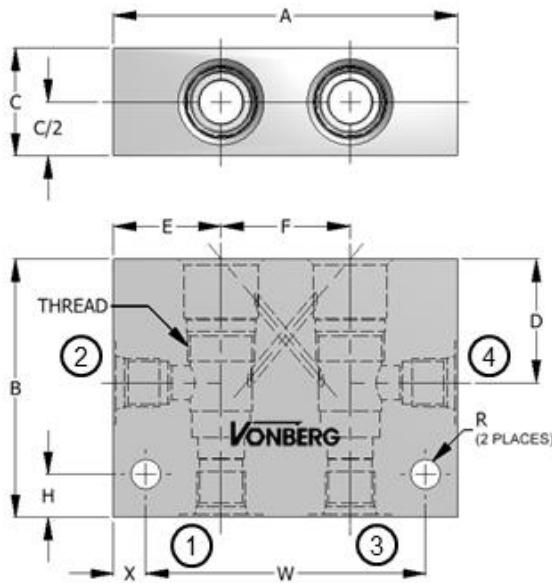
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Hydraulic Valve Specialists

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### PRODUCT



### DESCRIPTION

3 WAY DUAL CARTRIDGE BODY WITH CROSS-PILOTED T SERIES CAVITIES WITH NPTF PORTS OR O-RING PORTS CONFORMING TO SAE J1926.

### OPERATION

- FLOW DIRECTION IS DEPENDENT ON VALVE TO BE INSTALLED, CONSULT CARTRIDGE VALVE LITERATURE.

### FEATURES

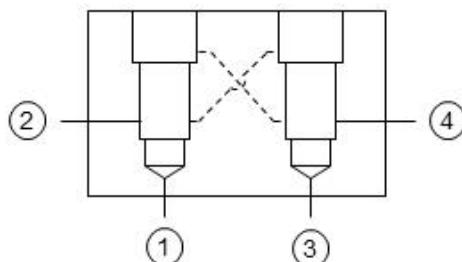
- TO ORDER A CARTRIDGE VALVE IN A BODY AS AN ASSEMBLY, ADD THE PORT DESIGNATOR DIGITS OF THE BODY PART NUMBER TO THE END OF THE CARTRIDGE VALVE NUMBER. EXAMPLE: 55T2-3-3000-D6P
- MANY PORT SIZE AND THREAD OPTIONS AVAILABLE.
- STANDARD BODIES ARE ALUMINUM
- CONSULT FACTORY FOR AVAILABILITY OF ALTERNATE MATERIALS.

### SPECIFICATIONS

PRESSURE RANGE 50 PSI TO 3500 PSI

TEMPERATURE RANGE 250°F TO -40°F

### SCHEMATIC



### ORDERING INFORMATION

MANIFOLD SERIES	T	XX	-	D	XX
FOR INTEGRATED MANIFOLD USE COUNTERBALANCE ASSEMBLY NUMBER WITH PORT DESIGNATOR ONLY					
MANIFOLD DESIGNATOR					
163..... T-163A CAVITY	11.....	T-11A CAVITY			
2..... T-2A CAVITY					
PORT DESIGNATOR					
	ALL PORTS	T163	T11	T2	
2P	1/4 NPTF				
3P	3/8 NPTF				
4P	1/2 NPTF				
6P	3/4 NPTF				
4T	-04 SAE				
6T	-06 SAE				
8T	-08 SAE				
10T	-10 SAE				
12T	-12 SAE				

MODEL	THREAD	A	B	C	D	E	F	H	R	X	W
T163-DXX	M16X1.5-6H	3.00	3.00	1.00	1.27	0.96	1.08	0.28	0.28	0.25	2.50
T11-DXX	M20X1.5-6H	4.00	3.00	1.25	1.44	1.25	1.50	0.50	0.34	0.38	3.25
T2-DXX	1-14 UNS-2B	4.50	3.25	1.50	1.50	1.50	1.50	0.50	0.34	0.50	3.50

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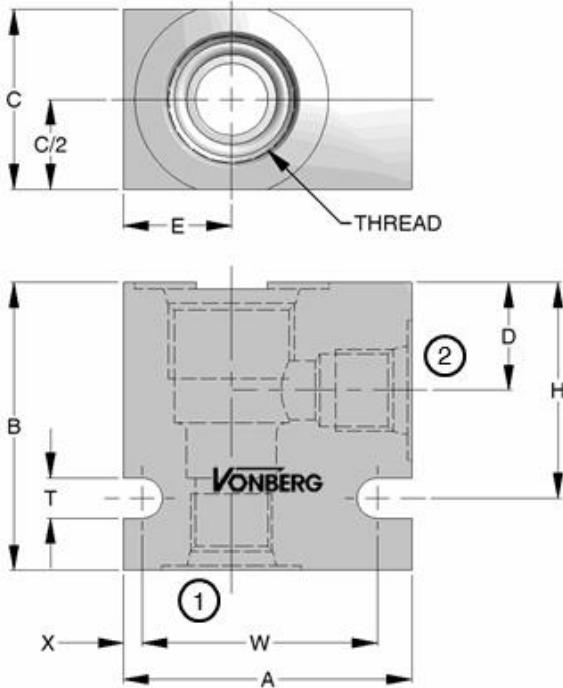
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### PRODUCT



### DESCRIPTION

STANDARD 2 WAY CARTRIDGE BODY FOR INDUSTRY COMMON CAVITIES WITH O-RING PORTS CONFORMING TO SAE J1926.

### OPERATION

- FLOW DIRECTION IS DEPENDENT ON VALVE TO BE INSTALLED, CONSULT CARTRIDGE VALVE LITERATURE.

### FEATURES

- TO ORDER A CARTRIDGE VALVE IN A BODY AS AN ASSEMBLY, ADD THE LAST TWO DIGITS OF THE BODY PART NUMBER TO THE END OF THE CARTRIDGE VALVE NUMBER. EXAMPLE: 1810-2P
- MANY PORT SIZE AND THREAD OPTIONS AVAILABLE.
- STANDARD BODIES ARE ALUMINUM
- CONSULT FACTORY FOR AVAILABILITY OF ALTERNATE MATERIALS.

### SPECIFICATIONS

PRESSURE RANGE 50 PSI TO 3500 PSI

TEMPERATURE RANGE 250°F TO -40°F

### ORDERING INFORMATION

CAVITY SIZE _____		X	-	2	-	XX	
CAVITY TYPE _____							
(1) & (2) PORT SIZE _____							
NPTF	CAVITY SIZE →	4	6	8	10	12	16
	2P	1/4"					
	3P	3/8"					
	4P	1/2"					
	6P	3/4"					
	8P	1"					
	4T	.04					
	6T	.06					
	8T	.08					
	10T	.10					
12T	.12						
16T	.16						
SAE							

MODEL	THREAD	A	B	C	D	E	H	T	W	X
4-2	7/16 - 20	1.50	1.50	0.75	0.55	0.60	1.25	0.20	1.25	0.13
6-2	9/16 - 18	1.75	1.75	1.00	0.55	0.70	1.25	0.28	1.38	0.19
8-2	3/4 - 16	2.00	2.00	1.00	0.60	0.75	1.50	0.28	1.63	0.13
10-2	7/8 - 14	2.00	2.00	1.25	0.75	0.75	1.50	0.28	1.63	0.13
12-2	1 1/16 - 12	3.00	3.00	2.00	1.06	1.13	2.25	0.34	2.56	0.16
16-2	1 5/16 - 12	3.00	3.00	2.00	1.00	1.13	2.25	0.34	2.56	0.16

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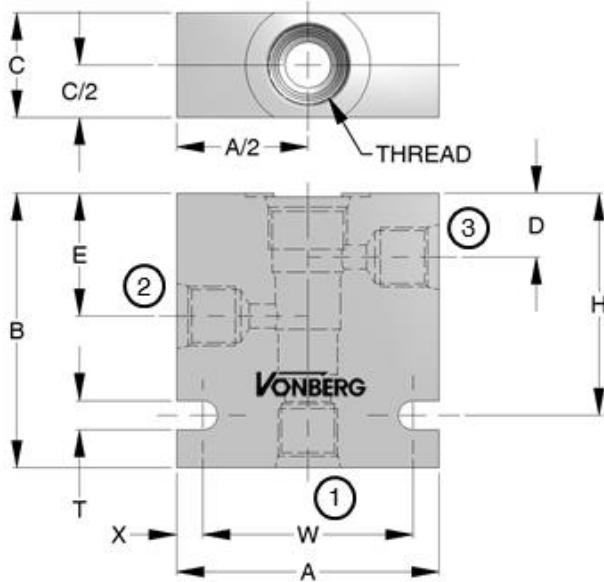
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Hydraulic Valve Specialists

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### PRODUCT



### DESCRIPTION

STANDARD 3 WAY CARTRIDGE BODY FOR INDUSTRY COMMON CAVITIES WITH NPTF PORTS OR O-RING PORTS CONFORMING TO SAE J1926.

### OPERATION

- FLOW DIRECTION IS DEPENDENT ON VALVE TO BE INSTALLED, CONSULT CARTRIDGE VALVE LITERATURE.

### FEATURES

- TO ORDER A CARTRIDGE VALVE IN A BODY AS AN ASSEMBLY, ADD THE PORT DESIGNATOR DIGITS OF THE BODY PART NUMBER TO THE END OF THE CARTRIDGE VALVE NUMBER. EXAMPLE: 1710-2P
- MANY PORT SIZE AND THREAD OPTIONS AVAILABLE.
- STANDARD BODIES ARE ALUMINUM
- CONSULT FACTORY FOR AVAILABILITY OF ALTERNATE MATERIALS.

### SPECIFICATIONS

PRESSURE RANGE 50 PSI TO 3500 PSI

TEMPERATURE RANGE 250°F TO -40°F

### ORDERING INFORMATION

CAVITY SIZE	X	-	3	-	XX	X		
CAVITY TYPE								
PORT DESIGNATOR								
PORT	SIZE	CAVITY →	6	8	10	12	16	
2P	1/4"	NPTF						
3P	3/8"							
4P	1/2"							
6P	3/4"							
8P	1"							
4T	.04		SAE					
6T	.06							
8T	.08							
10T	.10							
12T	.12							
16T	.16							
PORT (3) INDICATOR								
BLANK..... ALL PORTS SAME SIZE								
C..... 1/4" NPTF OR .06 SAE* AT PORT (3)								
*-04 SAE PORT IF 6T								

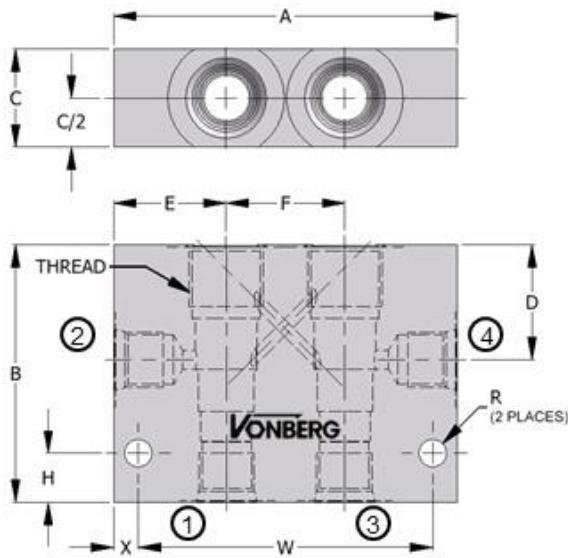
MODEL	THREAD	A	B	C	D	E	H	T	W	X
6-3-XX	9/16 - 18	2.00	2.00	1.00	0.55	0.95	1.75	0.20	1.75	0.13
8-3-XX	3/4 - 16	2.50	2.62	1.00	0.60	1.17	2.12	0.28	2.00	0.25
8-3S-XX	3/4 - 16	2.50	2.50	1.00	0.51	1.06	2.00	0.28	2.00	0.25
10-3-XX	7/8 - 14	2.50	2.62	1.25	0.75	1.36	2.12	0.28	2.00	0.25
10-3S-XX	7/8 - 14	2.50	2.50	1.25	0.59	1.25	2.00	0.28	2.00	0.25
12-3-XX	1 1/16 - 12	4.00	4.00	2.00	1.15	2.12	3.25	0.34	3.62	0.19
12-3S-XX	1 1/16 - 12	3.25	3.50	1.50	0.91	1.66	3.00	0.34	2.50	0.38
16-3-XX	1 5/16 - 12	4.00	4.00	2.00	1.00	2.12	3.25	0.34	3.62	0.19

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Page last updated: May 27, 2015



### PRODUCT



### DESCRIPTION

STANDARD 3 WAY DUAL CARTRIDGE BODY WITH CROSS-PILOTED INDUSTRY COMMON CAVITIES, WITH NPTF PORTS OR O-RING PORTS CONFORMING TO SAE J1926.

### OPERATION

- FLOW DIRECTION IS DEPENDENT ON VALVE TO BE INSTALLED, CONSULT CARTRIDGE VALVE LITERATURE.

### FEATURES

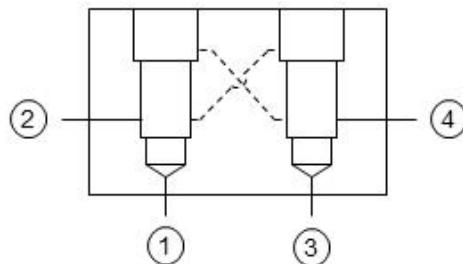
- TO ORDER A CARTRIDGE VALVE IN A BODY AS AN ASSEMBLY, ADD THE PORT DESIGNATOR DIGITS OF THE BODY PART NUMBER TO THE END OF THE CARTRIDGE VALVE NUMBER. EXAMPLE: 5008-3-3000-D8T
- MANY PORT SIZE AND THREAD OPTIONS AVAILABLE.
- STANDARD BODIES ARE ALUMINUM
- CONSULT FACTORY FOR AVAILABILITY OF ALTERNATE MATERIALS.

### SPECIFICATIONS

PRESSURE RANGE 50 PSI TO 3500 PSI

TEMPERATURE RANGE 250°F TO -40°F

### SCHEMATIC



### ORDERING INFORMATION

CAVITY SIZE	X	-	3	-	D	XX		
CAVITY TYPE								
PORT DESIGNATOR								
PORT	SIZE	CAVITY →	6	8	10	12	16	
2P	1/4"	NPTF						
3P	3/8"							
4P	1/2"							
6P	3/4"							
8P	1"							
4T	.04		SAE					
6T	.06							
8T	.08							
10T	.10							
12T	.12							
16T	.16							

MODEL	THREAD	A	B	C	D	E	F	H	R	W	X
6-3-DXX	9/16 - 18	3.00	2.00	1.00	0.95	1.00	1.00	0.38	0.28	2.50	0.25
8-3-DXX	3/4 - 16	3.50	2.62	1.00	1.17	1.15	1.20	0.50	0.28	3.00	0.25
8-3S-DXX	3/4 - 16	3.50	2.50	1.00	1.06	1.15	1.20	0.38	0.28	3.00	0.25
10-3-DXX	7/8 - 14	4.00	2.62	1.25	1.36	1.33	1.34	2.12	0.34	3.00	0.50
10-3S-DXX	7/8 - 14	4.00	2.50	1.25	1.25	1.33	1.34	2.12	0.34	3.00	0.50
12-3-DXX	1 1/16 - 12	5.00	4.00	2.00	2.12	1.60	1.80	0.75	0.34	4.25	0.38
12-3S-DXX	1 1/16 - 12	5.00	3.50	2.00	1.66	1.60	1.80	0.50	0.34	4.25	0.38
16-3-DXX	1 5/16 - 12	5.50	4.00	2.00	2.12	1.75	2.00	0.75	0.34	4.75	0.38

This document, as well as all catalogs, price lists and information provided by Vonberg Valve, Inc., is intended to provide product information for further consideration by users having substantial technical expertise due to the variety of operating conditions and applications for these valves, the user, through its own analysis, testing and evaluation, is solely responsible for making the final selection of the products and ensuring that all safety, warning and performance requirements of the application or use are met. The valves described herein, including without limitation, all component features, specifications, designs, pricing and availability, are subject to change at any time at the sole discretion of Vonberg Valve, Inc. without prior notification.

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