



TECHNICAL DATA

RATIO FLOW CONTROLLERS FOR BLADDER TANKS AND BALANCE PRESSURE MODEL CPC

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page.

1. DESCRIPTION

The Chemguard Model CPC 2.5, 3, 4, 6 & 8 ratio flow controllers are designed to meter the correct amount of Chemguard foam concentrate into the water stream over a wide range of flows and pressures with minimal pressure loss. These devices are used in conjunction with either a bladder tank or a foam pump proportioning system. Chemguard ratio flow controllers are UL Listed and FM Approved with certain Chemguard foam concentrates. Typical applications include flammable liquid storage tanks, loading racks, aircraft hangars, and heliports or anywhere flammable liquids are used, stored, processed or transported.



2. LISTINGS AND APPROVALS

UL Listed

3. TECHNICAL DATA

Specifications:

See Table 1.

Material Standards:

Body - ASTM UNS-C84400 Brass

Inlet Nozzle - SAE #72 Brass

Metering Orifice - SAE #72 Brass

Inlet Nozzle Set Screws - Stainless Steel

Metering Orifice Retaining Ring - Stainless Steel

Ordering Information:

See Table 1

4. INSTALLATION

To ensure correct operation of a ratio flow controller when used with a bladder tank, the pressure of the foam concentrate at the controller must be within 2 psi of the incoming water pressure.

To ensure accurate proportioning over the flow range of the controller, minimum water inlet pressure of 30 psi must be available during operation of the system.

Please review the controller dimension table for information on the minimum recommended length of straight pipe required upstream and downstream from the controller.

5. OPERATION

The operating principle of the controller is based upon the use of a modified venturi. As water passes through the inlet nozzle, pressure is reduced in the annular area of the nozzle. This reduction allows the metering of foam concentrate into the water stream through a foam concentrate metering orifice.

6. INSPECTIONS, TESTS AND MAINTENANCE

NOTICE

The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to recognized standards such as those produced by NFPA, LPC, and VdS which describe care and maintenance of sprinkler systems. In addition, the "Authority Having Jurisdiction" may have additional maintenance, testing and inspection requirements which must be followed.

WARNING

Any system maintenance or testing that involves placing a control valve or detection system out of service may eliminate the fire protection capabilities of that system. Prior to proceeding, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected areas.

7. AVAILABILITY

Viking Foam Products are available through a network of domestic and international distributors. See the Viking web site for closest distributor or contact The Viking Corporation.

8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



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Table 1: Ratio Flow Controller Specifications

Size	Foam Concentrate			Ratio Flow Controller					
	Foam Concentrate	Viking Part Number	Chemguard Model Number	Viking Part No.	Min. Flow		Max. Flow		Listings & Approvals
					gpm	(L/m)	gpm	(L/m)	
2" (50.8 mm) Threaded 1" NPT	1% AFFF	F20717	C1B	F20736	30	114	301	1139	UL
	3% AFFF	F20718	C3B	F20737	35	132	303	1147	UL
	3% AFFF MS	F20719	C306-MS-C	F20738	35	132	286	1083	UL
	3% / 6% AR-AFFF @ 3%	F20720	C364	--	45	170	307	1162	UL
	3% / 6% AR-AFFF @ 6%	F20720	C364	--	45	170	307	1162	UL
	2% High Ex	F20721	C2	F20740	--	--	--	--	UL
	3% AR-AFFF	F20722	C334-LV	F20739	86	326	285	1079	UL
2-1/2" (65 mm) Threaded 1" NPT	1% AFFF	F20717	C1B	F20585	40	151	408	1544	UL
	3% AFFF	F20718	C3B	F20586	34	129	404	1529	UL
	3% AFFF MS	F20719	C306-MS-C	F20587	36	136	387	1465	UL
	3% / 6% AR-AFFF @ 3%	F20720	C364	F20589	144	545	410	1552	UL
	3% / 6% AR-AFFF @ 6%	F20720	C364	F20591	144	545	410	1552	UL
	2% High Ex	F20721	C2	F20592	82	310	270	1022	UL
	3% AR-AFFF	F20722	C334-LV	F20588	114	432	420	1590	UL
3" (80 mm) Wafer 1-1/4" NPT	1% AFFF	F20717	C1B	F20593	70	265	802	3036	UL
	3% AFFF	F20718	C3B	F20594	54	204	797	3017	UL
	3% AFFF MS	F20719	C306-MS-C	F20595	54	204	810	3066	UL
	3% / 6% AR-AFFF @ 3%	F20720	C364	F20597	250	946	507	1919	UL
	3% / 6% AR-AFFF @ 6%	F20720	C364	F20599	250	946	507	1919	UL
	2% High Ex	F20721	C2	F20600	135	511	750	2839	UL
	3% AR-AFFF	F20722	C334-LV	F20596	135	511	818	3096	UL
4" (100 mm) Wafer 1-1/2" NPT	1% AFFF	F20717	C1B	F20601	98	371	1509	5712	UL
	3% AFFF	F20718	C3B	F20602	95	360	1522	5761	UL
	3% AFFF MS	F20719	C306-MS-C	F20603	97	367	1510	5716	UL
	3% / 6% AR-AFFF @ 3%	F20720	C364	F20605	245	927	1489	5636	UL
	3% / 6% AR-AFFF @ 6%	F20720	C364	F20607	245	927	1489	5636	UL
	2% High Ex	F20721	C2	F20608	210	795	1430	5413	UL
	3% AR-AFFF	F20722	C334-LV	F20604	252	954	1532	5799	UL
6" (150 mm) Wafer 2" NPT	1% AFFF	F20717	C1B	F20609	498	1885	3055	11564	UL
	3% AFFF	F20718	C3B	F20610	332	1257	2992	11326	UL
	3% AFFF MS	F20719	C306-MS-C	F20611	348	1317	3300	12492	UL
	3% / 6% AR-AFFF @ 3%	F20720	C364	F20613	487	1843	3412	12916	UL
	3% / 6% AR-AFFF @ 6%	F20720	C364	F20615	487	1843	3412	12916	UL
	2% High Ex	F20721	C2	F20616	497	1881	2724	10311	UL
	3% AR-AFFF	F20722	C334-LV	F20612	509	1927	3070	11621	UL

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8" (200 mm) Wafer 2-1/2" NPT	1% AFFF	F20717	C1B	F20617	497	1881	4800	18170	UL
	3% AFFF	F20718	C3B	F20618	477	1806	5519	20892	UL
	3% AFFF MS	F20719	C306-MS-C	F20619	838	3172	5081	19234	UL
	3% / 6% AR-AFFF @ 3%	F20720	C364	F20621	1468	5557	5558	21039	UL
	3% / 6% AR-AFFF @ 6%	F20720	C364	F20623	1468	5557	5558	21039	UL
	2% High Ex	F20721	C2	F20624	--	--	--	--	UL
	3% AR-AFFF	F20722	C334-LV	F20620	1107	4190	5170	19571	UL

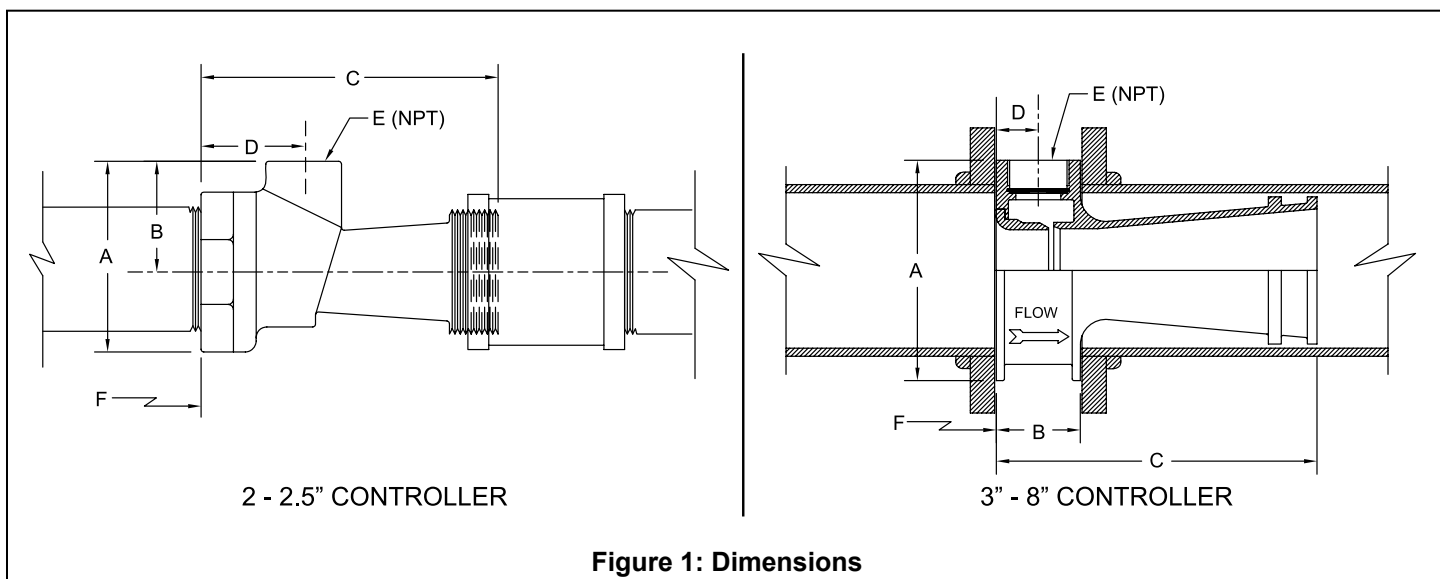


Table 2: Ratio Flow Controller Physical Data

Size Inches	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E (NPT)	F* Inches (mm)	Shipping Weight Lbs. (Kg)
2	3.94 (100)	2.44 (62)	9.1 (231)	2.25 (57)	1" NPT	10 (250)	8 (3.6)
2-1/2	4.25 (108)	2.47 (63)	6.9 (175)	2.28 (58)	1" NPT	12 (300)	8 (3.6)
3	5.3 (135)	2.50 (64)	6.0 (152)	1.19 (30)	1-1/4" NPT	15 (380)	10 (4.5)
4	6.8 (173)	2.54 (65)	8.0 (203)	1.27 (32)	1-1/2" NPT	20 (510)	20 (9.1)
6	8.6 (218)	3.25 (83)	12.0 (305)	1.63 (41)	2" NPT	30 (760)	40 (18.1)
8	11 (279)	3.56 (90)	12.0 (305)	1.78 (45)	2-1/2" NPT	40 (1200)	70 (31.8)

* Straight pipe length required upstream

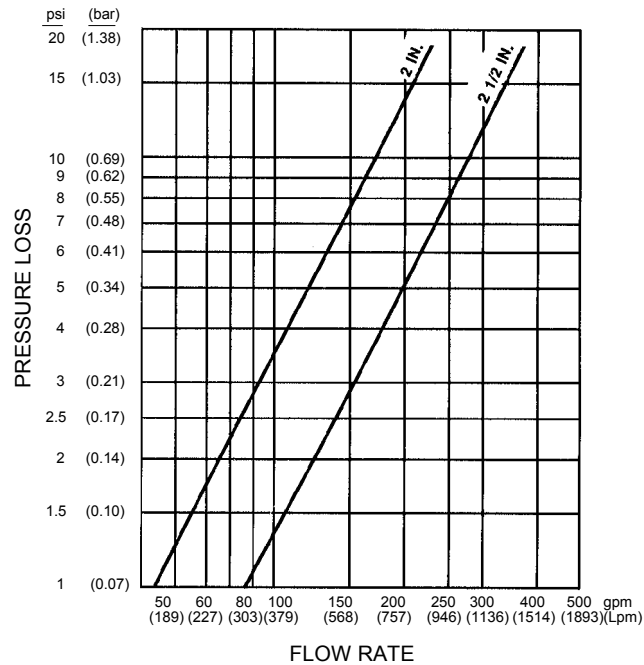


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2" & 2.5" RATIO FLOW CONTROLLERS FRICTION LOSS CURVES



3" - 8" RATIO FLOW CONTROLLERS FRICTION LOSS CURVES

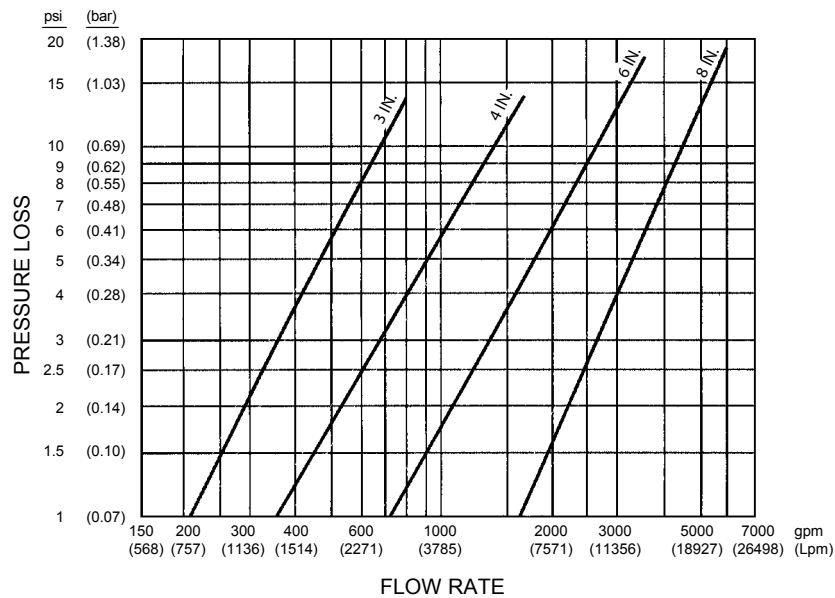


Figure 2: Friction Loss Curves

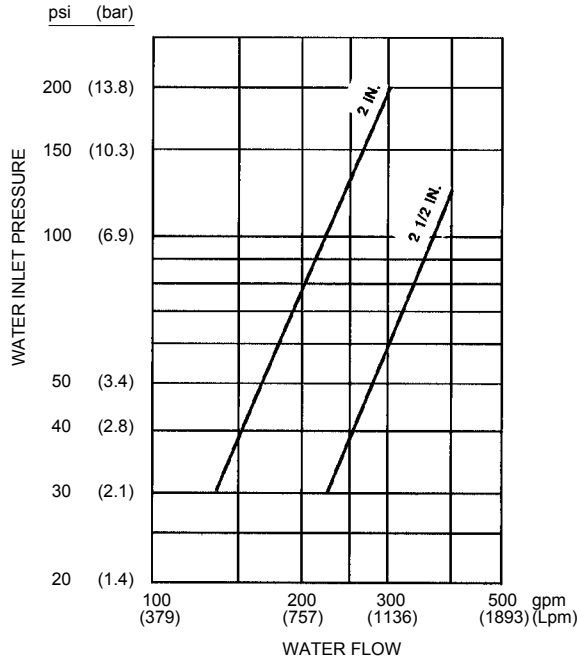


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2" & 2.5" RATIO FLOW CONTROLLERS MINIMUM INLET PRESSURE VS. WATER FLOW



3" - 8" RATIO FLOW CONTROLLERS MINIMUM INLET PRESSURE VS. WATER FLOW

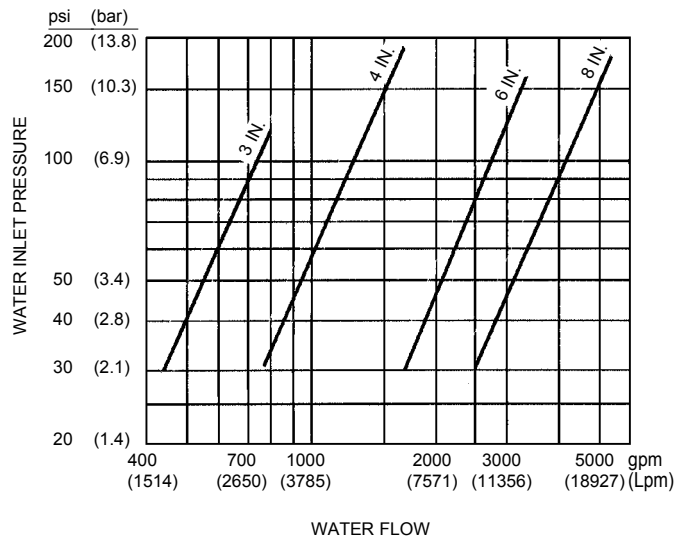


Figure 3: Minimum Inlet Pressure VS. Water Flow