

SEMI FIXED/PORTABLE LINE PROPORTIONERS "SLP"

NPR270

- Simple Inexpensive Foam Proportioner
- Portable
- Inlet Pressure Choices 90 to 200 PSI
- Foam Rate 44 GPM to 362 GPM
- Salt Water Compatible
- Special Flow And Pressure Designs



Description

The SLP Line of Proportioners are designed exactly the same as the LP series except these LP lines offer industry a device that may be either hard-piped into a semi fixed application with a dedicated foam supply or paired with an optional pick-up tube to be used as a portable device.

National Foam Line Proportioners are venturi devices that introduce Foam Concentrate into a flowing stream of water at a controlled rate of either 3% or 6%. As water flows through the venturi (water orifice) at a high velocity, a negative pressure area develops at the discharge of the venturi. This negative pressure creates a pressure differential across the foam concentrate metering orifice, thereby allowing atmospheric pressure to push foam concentrate in to the proportioner at the correct percentage. As the water pressure at the inlet to the proportioner increases or decreases the solution flow from the device will increase or decrease correspondingly. Because the amount of foam concentrate to be injected into the water stream is controlled by the relationship between the negative pressure area and atmospheric pressure the range over which proper injection occurs is limited. Therefore, each model of line proportioner has an operating pressure range and to achieve optimum performance, the water inlet pressure must be maintained within this range. Higher than design pressure will result in a leaner (lower percentage) mixture; lower than design pressure will result in a richer (higher

percentage) mixture. In addition to water pressure, LP's are sensitive to back pressure. Back pressure is the amount of pressure required down stream of the proportioner to discharge the total foam solution flow. This will include the pressure required at the inlet to the discharge device(s), elevation head and line losses. The total allowable back pressure on the discharge side of the LP can not exceed 65% of the water inlet pressure. If back pressure exceeds 65%, the LP may not pick-up foam concentrate or the solution may be lean.

Semi Fixed Application

When the SLP Line Proportioner is used in a semi fixed application the proportioner is hard-piped into a system whereby the foam inlet is permanently connected to a foam tank and the solution discharge is hard piped to the foam solution delivery line running to the discharge devices at the hazard area. The SLP is located in such a way that a fire truck or other water pumping device can connect a supply hose to the SLP inlet and supply fire water to the SLP causing it to proportion foam and deliver solution to the discharge device.

Portable Application

When SLP Line Proportioners are used in a portable application, the foam concentrate is drawn from 5 gallon pails, 55 gallon drums, totes, or other foam reservoirs. The foam concentrate connection is purchased with an optional pick-up tube which is used to draw foam concentrate from the portable foam containers.

Features

- Inexpensive
- No moving parts.
- Minimal maintenance.
- Simple operation.
- 65% Allowable back pressures
- Flows up to 250 GPM (946 LPM) @ 100 PSI (6.9 Bar)
- Operates with pressures from 90 PSI to 200 PSI (6.2 Bar to 13.8 Bar), however optimum performance is with pressures above 125 PSI (8.6 Bar)

Applications

The portable line proportioner is ideally suited for hose line applications as well as any proportioning application requiring a single fixed discharge flow and relatively high, consistent water pressure. They are not suitable for use in applications requiring operation over a range of flows or pressures. They are not recommended for applications using sprinklers or other multiple small orifice discharge devices, where blockage of a portion of the discharge grid could increase the allowable back pressure sufficiently to cause proportioning failure.

Technical Specifications

The National Foam Portable Line Proportioner shall be a venturi type proportioning device designed to inject foam concentrate into the water stream at a controlled rate of either 3% or 6% and shall be designed to be portable or permanently installed in a fixed piping system. The proportioner shall be suitable for use with all foam concentrates.

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Technical Specifications (cont.)

Units are designed for operation from 75 PSI (5.2 Bar) to 200 PSI (13.8 Bar), however the model with the correct operating pressure range must be selected to insure proper injection. See chart for available flow and pressure ranges. The proportioner shall be designed to proportion properly with back pressures up to 65% of the inlet pressure.

The line proportioner shall consist of a cast brass body, a machined jet (venturi) and receiver (recovery section) and foam concentrate orifice. The jet shall be contoured to optimize water flow through the venturi thereby creating the negative pressure area. The receiver shall be shaped to minimize the unrecoverable pressure loss and increase the efficiency of the proportioner. The orifice shall be factory set for 3% or 6% foam injection at the design flow rate and shall proportion within acceptable limits over the operating pressure range. The proportioner shall have a

female swivel, National Hose thread, water inlet connection, a male National Hose thread foam solution discharge connection, and FNPT foam concentrate inlet connection. Proportioner shall be painted with a red fused polyurethane powder coat finish.

An optional pick-up tube assembly can be purchased for use in portable applications. For the SLP-6 & 9 line proportioners, the pick-up tube shall consist of a 3/4" OD stainless steel wand with strainer, 3/4" ID X 1-1/8" OD wire reinforced, clear PVC tubing and 1/2" MNPT brass connector. The pick-up tube shall have an overall length of approximately 60". For the SLP-12 to SLP-25 line proportioners, the pick-up tube shall consist of a 1" OD stainless steel wand, 1" ID X 1-3/8" OD wire reinforced, clear PVC tubing and 3/4" MNPT brass connector. The pick-up tube shall have an overall length of approximately 120". Each pick-up tube assembly shall include a check valve and pipe nipple of the appropriate size for connection to the line proportioner.

Materials of Construction

Material:

Body:Cast Brass
 Jet: Brass
 Foam Orifice: Brass
 Pick-up Tube Kit (Optional):
 WandStainless Steel
 Tube Wire Reinforced Clear PVC
 Thread connector Brass
 Check Valve: Brass
 Pipe Nipple: Brass

Finish:

Red fused polyurethane powdercoat finish

Flow Range:

45-250 gpm (170-946 lpm) @ 100 PSI (6.9 Bar)

Working Pressure:

75 PSI to 200 PSI (5.2 Bar to 13.8 Bar)

Max. ABP:

65% of inlet pressure

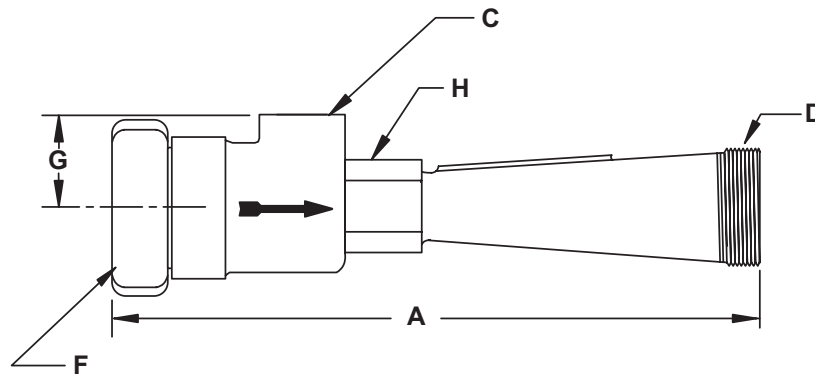
Options

- Pick-Up Tube Kits Available
- Special Hose Threads
- Special Flows

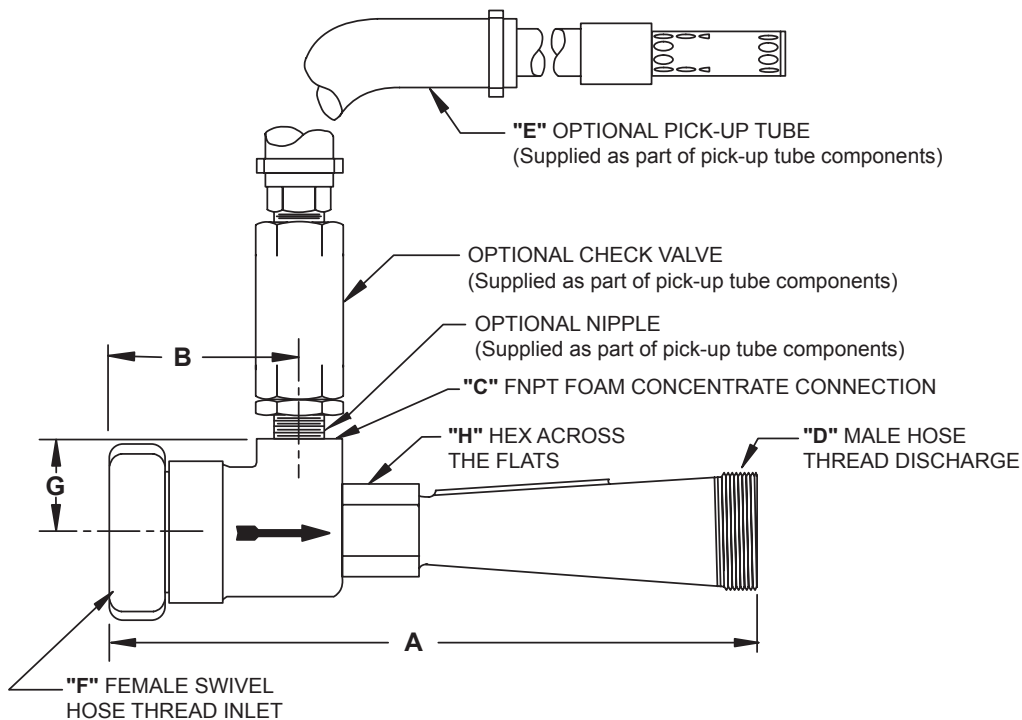
SLP LINE PROPORTIONER (See drawings on next page)									
TABLE OF DIMENSIONS - INCHES(MM)									
MODEL	A	B	C	D	E	F	G	H	WEIGHT LBS (KGS)
LP-6	10-5/8(270)	2-15/32(62.7)	1/2(12.7)	1-1/2(38.1)	1/2(12.7)	1-1/2(38.1)	1-7/8 (48)	1-1/4(31.8)	6(2.7)
LP-9	11(279)	2-5/8(66.8)	1/2(12.7)	1-1/2(38.1)	1/2(12.7)	1-1/2(38.1)	1-7/8 (48)	1-3/8(35.1)	14(6.4)
LP-12	15-5/8(384)	2-7/8(73.2)	1/2(12.7)	2-1/2(63.5)	1(25.4)	2-1/2(63.5)	2-3/8 (60)	2(50.8)	16(7.3)
LP-15	16-7/8(429)	4-1/4(108)	1(25.4)	2-1/2(63.5)	1(25.4)	2-1/2(63.5)	2-11/16 (68)	2-5/8(66.8)	20(9.1)
LP-17	16-7/8(429)	4-1/4(108)	1(25.4)	2-1/2(63.5)	1(25.4)	2-1/2(63.5)	2-11/16 (68)	2-5/8(66.8)	20(9.1)
LP-20	16-7/8(429)	4-1/4(108)	1(25.4)	2-1/2(63.5)	1(25.4)	2-1/2(63.5)	2-11/16 (68)	2-5/8(66.8)	20(9.1)
LP-25	16-7/8(429)	4-1/4(108)	1(25.4)	2-1/2(63.5)	1(25.4)	2-1/2(63.5)	2-11/16 (68)	2-5/8(66.8)	20(9.1)

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**SLP Line Proportioner
Semi-Fixes Application**



**SLP Line Proportioner
with Pick-Up Tube
Portable Application**

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LINE PROPORTIONER SOLUTION FLOW CHART													
MODEL	INLET ** PRESSURE		SOLUTION FLOW RATE *				MODEL	INLET ** PRESSURE		SOLUTION FLOW RATE *			
			3% (A SERIES)		6%					3% (A SERIES)		6%	
	PSI	BAR	GPM	LPM	GPM	LPM		PSI	BAR	GPM	LPM	GPM	LPM
SLP-6	90	6.2	44.3	168	45.7	173	SLP-17	90	6.2	167.5	634	172.9	654
	110	6.9	48.2	182	49.8	188		110	7.5	182.3	690	188.1	712
	135	9.3	52.8	200	54.5	206		135	9.3	199.4	755	205.7	779
	165	11.3	57.2	216	59.0	223		165	11.3	216.4	819	223.3	845
	200	13.8	63.0	238	65.0	246		200	13.8	238.0	901	246.0	931
SLP-9	90	6.2	65.1	246	67.2	254	SLP-20	90	6.2	197.1	746	203.4	770
	110	6.9	70.9	268	73.2	277		110	7.5	207.8	787	214.5	812
	135	9.3	77.5	293	80.0	303		135	9.3	234.6	888	242.1	916
	165	11.3	84.2	319	86.9	329		165	11.3	254.7	964	262.9	995
	200	13.8	92.7	351	95.6	362		200	13.8	280.5	1062	289.5	1096
SLP-12	90	6.2	89.5	339	92.3	349	SLP-25	90	6.2	246.9	935	254.8	964
	110	6.9	103.0	390	106.3	402		110	7.5	268.8	1017	277.3	1050
	135	9.3	106.5	403	109.9	416		135	9.3	293.9	1112	303.3	1148
	165	11.3	115.7	438	119.4	452		165	11.3	319.1	1208	329.3	1246
	200	13.8	127.3	482	131.4	497		200	13.8	351.3	1330	362.6	1372
SLP-15	90	6.2	148.4	562	153.1	579	* All figures are engineering values. Actual flows may vary plus or minus 4% of stated values. ** Pressure range for each model number is as follows: LP-X-90 75 PSI.....TO..... 90 PSI..... (5.2 BAR TO 6.2 BAR) LP-X-110 91 PSI.....TO..... 110 PSI..... (6.3 BAR TO 7.5 BAR) LP-X-135 111 PSI.....TO..... 135 PSI..... (7.6 BAR TO 9.3 BAR) LP-X-165 136 PSI.....TO..... 165 PSI..... (9.4 BAR TO 11.3 BAR) LP-X-200 166 PSI.....TO..... 200 PSI..... (11.4 BAR TO 13.8 BAR)						
	110	7.5	161.4	611	166.6	631							
	135	9.3	176.6	668	182.2	690							
	165	11.3	191.8	726	197.9	749							
	200	13.8	211.0	799	217.8	824							

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ORDERING INFORMATION							
PART NUMBER	MODEL #	%	DESCRIPTION	PART NUMBER	MODEL #	%	DESCRIPTION
1233-1100-3	SLP-6-90	(6%)	Line Proportioner, NH	1233-2600-3	SLP-15-90	(6%)	Line Proportioner, NH
1233-1110-3	SLP-6-110	(6%)	Line Proportioner, NH	1233-2610-3	SLP-15-110	(6%)	Line Proportioner, NH
1233-1120-3	SLP-6-135	(6%)	Line Proportioner, NH	1233-2620-3	SLP-15-135	(6%)	Line Proportioner, NH
1233-1130-3	SLP-6-165	(6%)	Line Proportioner, NH	1233-2630-3	SLP-15-165	(6%)	Line Proportioner, NH
1233-1140-3	SLP-6-200	(6%)	Line Proportioner, NH	1233-2640-3	SLP-15-200	(6%)	Line Proportioner, NH
1233-1150-3	SLP-6A-90	(3%)	Line Proportioner, NH	1233-2650-3	SLP-15A-90	(3%)	Line Proportioner, NH
1233-1160-3	SLP-6A-110	(3%)	Line Proportioner, NH	1233-2660-3	SLP-15A-110	(3%)	Line Proportioner, NH
1233-1170-3	SLP-6A-135	(3%)	Line Proportioner, NH	1233-2670-3	SLP-15A-135	(3%)	Line Proportioner, NH
1233-1180-3	SLP-6A-165	(3%)	Line Proportioner, NH	1233-2680-3	SLP-15A-165	(3%)	Line Proportioner, NH
1233-1190-3	SLP-6A-200	(3%)	Line Proportioner, NH	1233-2690-3	SLP-15A-200	(3%)	Line Proportioner, NH
1233-1300-3	SLP-6-90	(6%)	Line Proportioner, NPSH	1233-3100-3	SLP-17-90	(6%)	Line Proportioner, NH
1233-1305-3	SLP-6-110	(6%)	Line Proportioner, NPSH	1233-3110-3	SLP-17-110	(6%)	Line Proportioner, NH
1233-1310-3	SLP-6-135	(6%)	Line Proportioner, NPSH	1233-3120-3	SLP-17-135	(6%)	Line Proportioner, NH
1233-1315-3	SLP-6-165	(6%)	Line Proportioner, NPSH	1233-3130-3	SLP-17-165	(6%)	Line Proportioner, NH
1233-1320-3	SLP-6-200	(6%)	Line Proportioner, NPSH	1233-3140-3	SLP-17-200	(6%)	Line Proportioner, NH
1233-1350-3	SLP-6A-90	(3%)	Line Proportioner, NPSH	1233-3150-3	SLP-17A-90	(3%)	Line Proportioner, NH
1233-1355-3	SLP-6A-110	(3%)	Line Proportioner, NPSH	1233-3160-3	SLP-17A-110	(3%)	Line Proportioner, NH
1233-1360-3	SLP-6A-135	(3%)	Line Proportioner, NPSH	1233-3170-3	SLP-17A-135	(3%)	Line Proportioner, NH
1233-1365-3	SLP-6A-165	(3%)	Line Proportioner, NPSH	1233-3180-3	SLP-17A-165	(3%)	Line Proportioner, NH
1233-1370-3	SLP-6A-200	(3%)	Line Proportioner, NPSH	1233-3190-3	SLP-17A-200	(3%)	Line Proportioner, NH
1233-1500-3	SLP-9-90	(6%)	Line Proportioner, NH	1233-4100-3	SLP-20-90	(6%)	Line Proportioner, NH
1233-1510-3	SLP-9-110	(6%)	Line Proportioner, NH	1233-4110-3	SLP-20-110	(6%)	Line Proportioner, NH
1233-1520-3	SLP-9-135	(6%)	Line Proportioner, NH	1233-4120-3	SLP-20-135	(6%)	Line Proportioner, NH
1233-1530-3	SLP-9-165	(6%)	Line Proportioner, NH	1233-4130-3	SLP-20-165	(6%)	Line Proportioner, NH
1233-1540-3	SLP-9-200	(6%)	Line Proportioner, NH	1233-4140-3	SLP-30-200	(6%)	Line Proportioner, NH
1233-1550-3	SLP-9A-90	(3%)	Line Proportioner, NH	1233-4150-3	SLP-20A-90	(3%)	Line Proportioner, NH
1233-1560-3	SLP-9A-110	(3%)	Line Proportioner, NH	1233-4160-3	SLP-20A-110	(3%)	Line Proportioner, NH
1233-1570-3	SLP-9A-135	(3%)	Line Proportioner, NH	1233-4170-3	SLP-20A-135	(3%)	Line Proportioner, NH
1233-1580-3	SLP-9A-165	(3%)	Line Proportioner, NH	1233-4180-3	SLP-20A-165	(3%)	Line Proportioner, NH
1233-1590-3	SLP-9A-200	(3%)	Line Proportioner, NH	1233-4190-3	SLP-20A-200	(3%)	Line Proportioner, NH
1233-1700-4	SLP-9-90	(6%)	Line Proportioner, NPSH	1233-4600-3	SLP-25-90	(6%)	Line Proportioner, NH
1233-1710-3	SLP-9-110	(6%)	Line Proportioner, NPSH	1233-4610-3	SLP-25-110	(6%)	Line Proportioner, NH
1233-1720-4	SLP-9-135	(6%)	Line Proportioner, NPSH	1233-4620-3	SLP-25-135	(6%)	Line Proportioner, NH
1233-1730-3	SLP-9-165	(6%)	Line Proportioner, NPSH	1233-4630-3	SLP-25-165	(6%)	Line Proportioner, NH
1233-1740-4	SLP-9-200	(6%)	Line Proportioner, NPSH	1233-4640-3	SLP-25-200	(6%)	Line Proportioner, NH
1233-1750-3	SLP-9A-90	(3%)	Line Proportioner, NPSH	1233-4650-3	SLP-25A-90	(3%)	Line Proportioner, NH
1233-1760-3	SLP-9A-110	(3%)	Line Proportioner, NPSH	1233-4660-3	SLP-25A-110	(3%)	Line Proportioner, NH
1233-1770-3	SLP-9A-135	(3%)	Line Proportioner, NPSH	1233-4670-3	SLP-25A-135	(3%)	Line Proportioner, NH
1233-1780-3	SLP-9A-165	(3%)	Line Proportioner, NPSH	1233-4680-3	SLP-25A-165	(3%)	Line Proportioner, NH
1233-1790-4	SLP-9A-200	(3%)	Line Proportioner, NPSH	1233-4690-3	SLP-25A-200	(3%)	Line Proportioner, NH
1233-2100-3	SLP-12-90	(6%)	Line Proportioner, NH	Pick-Up Tube Components: SLP-6, SLP-9 & SLP-12			
1233-2110-3	SLP-12-110	(6%)	Line Proportioner, NH	1231-1152-6	1/2" Check Valve		
1233-2120-3	SLP-12-135	(6%)	Line Proportioner, NH	9228-8341-5	1/2" Nipple		
1233-2130-3	SLP-12-165	(6%)	Line Proportioner, NH	1247-1020-3	PT-2A Pick-Up Tube		
1233-2140-3	SLP-12-200	(6%)	Line Proportioner, NH				
1233-2150-3	SLP-12A-90	(3%)	Line Proportioner, NH	Pick-Up Tube Components: SLP-15 TO SLP-25			
1233-2160-3	SLP-12A-110	(3%)	Line Proportioner, NH	1231-1155-1	1" Check Valve		
1233-2170-3	SLP-12A-135	(3%)	Line Proportioner, NH	9228-8342-2	1" Nipple		
1233-2180-3	SLP-12A-165	(3%)	Line Proportioner, NH	1247-1020-7	PT-3A Pick-Up Tube		
1233-2190-3	SLP-12A-200	(3%)	Line Proportioner, NH				

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National Foam

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National Foam operates a continuous program of product development. The right is therefore reserved to modify any specification without prior notice and National Foam should be contacted to ensure that the current issues of all technical data sheets are used.

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