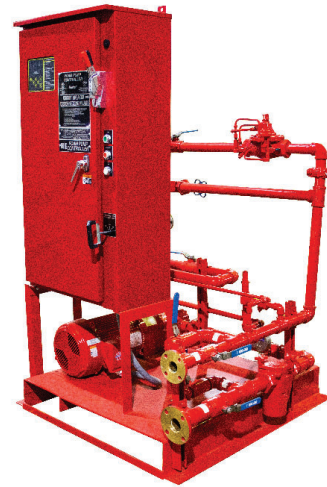


ILBP (In Line Balanced Pressure) PROPORTIONING SYSTEM PUMP SKID

NPR150

- Fully Integrated Foam Concentrate Supply Package
- Wide Range of Flow and Pressure Options
- Many Power Options (Electric Standard)
- Unlimited Control Options Available
- NFPA Compliant
- Suitable for Land Based and Marine Applications
- Approvals: UL Listed Proportioning Equipment, Motor Controller, and Motor NF Approved Foam Pump



Description

The In-Line Balanced Pressure (ILBP) Proportioning System Pump Skid supplies foam concentrate to remotely mounted ILBP Module(s) which then accurately inject foam concentrate into a water stream at a specified percentage. A typical ILBP pump skid shall be furnished completely assembled and ready for connection to customer field piping. The unit shall consist of a foam concentrate pump, pump controller, pressure sustaining valve and all necessary piping, valves and fittings assembled on a common steel base.

Features

- May be used with either fresh or salt water
- Compact design provides a small foot print
- Can add most options except standby pump without changing foot print
- Designed to easily accept a variety of options for custom configuration
- Assembled with grooved fittings and flush-in/flush-out connections for ease of service
- All foam concentrate valves, pipe and fittings are brass for compatibility with all types of foam concentrates, and superior corrosion resistance
- All manual valves are brass or bronze full port ball valves, which provide low loss characteristics. All manual

valves are the locking type, in accordance with NFPA requirements for valve supervision, have identification labels on the handles

- Foam concentrate supply can be replenished (Separate storage tank) while system is still in operation
- Pressure sustaining valve has bleed line on pressure regulating valve to prevent improper operation due to entrapment of air or concentrate drying in valve
- Thermal relief valve provided on discharge line to prevent pressure buildup in discharge line due to temperature fluctuations
- Skid mounted unit assures proper assembly of pump system and only requires field installation of piping from the foam concentrate tank to the skid and the discharge piping from the skid to the ILBP modules
- Pump valving designed to provide the ability to test relief valves and pump output with external equipment
- Optional jockey pump package features an integral test capability which allows users to test the jockey pump without discharging foam

Applications

- Closed Head Foam-Water Sprinkler Systems
- Aircraft Hangars
- Flammable Liquid Warehouses, Drum Storage Facilities

- Facilities Requiring Multiple Foam Injection Points or Risers
- Tank Farms and Dike Protection
- Warehouses, Offshore Drilling Rigs
- Docks, Piers
- High Expansion Systems
- Any application requiring choice of water or foam application at multiple points

Technical Specifications

The In-Line Balanced Pressure (ILBP) Proportioning System Pump Skid shall be a complete self-contained unit designed to supply foam concentrate to a remotely mounted ILBP Module(s) which accurately injects foam concentrate into a water stream at the proper percentage. All foam pumping components and piping shall be securely mounted on a steel base complete with foundation anchor bolt holes and provision for handling with a fork lift. Skid shall include all necessary piping, valves and fittings to comprise a complete, compact foam pump unit with a small foot print.

The foam pump package shall have a positive displacement, vane type foam concentrate pump with integral relief valve, gear reducer (if required) and 3/60/460V ODP motor mounted on a structural steel base. Pump shall have a cast iron body and rotor with Duravane vanes, carbon steel shaft, lip type seals and metalized carbon bearings. Motor shall be sized with sufficient horsepower

ILBP PROPORTIONING SYSTEM - PUMP SKID

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Technical Specifications (cont.)

to allow operation, with relief valve full open, without over-loading the motor. Each motor driven pump shall be provided with a UL Listed or FM Approved, NFPA 20 fire pump controller, mounted in a NEMA 2 enclosure. Pumps shall have a full voltage across the line start fire pump controller as standard. Controller shall be prewired to pump. All foam concentrate piping shall be brass for compatibility with all types of foam concentrates, and superior corrosion resistance. The suction piping shall contain a Y-type or basket strainer with stainless steel screen with 1/8" perforations. Also, a compound gauge shall be provided in the suction line downstream of the strainer, to monitor potential blockage during operation as well as pressure during flushing procedures. All manual valves shall be brass or bronze full port ball type, providing low friction loss characteristics and shall have locking handles in accordance with NFPA requirements for valve supervision. All manual valves shall have identification labels on the handles. A check valve shall be installed in the foam concentrate discharge line. The discharge line shall have a thermal relief valve installed down stream of the check valve with discharge piped to suction side of pump.

A pressure sustaining valve shall be provided to automatically maintain the foam concentrate discharge at the preset pressure. The pressure sustaining

valve shall have an epoxy coated iron body with brass trim. A bleed line shall be provided on the pressure regulating valve to prevent entrapment of air and prevent foam concentrate from drying in valve resulting in improper operation. Relief valve provided on discharge line to prevent pressure buildup in discharge line due to temperature fluctuations. Discharge pressure is maintained by adjusting the pressure sustaining valve opening to control the excess foam concentrate flow back to the concentrate storage tank. The pressure sustaining control valve shall be provided with a block valve and a bypass loop with manually operated valve which can be used to manually adjust the pressure in the event of pressure sustaining valve failure. A pressure gauge shall be provided to verify proper foam concentrate discharge pressure and also to allow the system pressure to be manually adjusted. Flush-in/flush-out connections (1-1/2" NH) shall be provided for ease of service. All field connections shall be 150 lb. F.F. flanged flush with the edge of the skid base.

Skid unit design shall allow a variety of options to be added for custom configuration without changing foot print of the package. This would include jockey pump, actuated discharge valves, etc. The only (standard) options which would change the foot print is an additional foam concentrate pump or a special pump driver such as a diesel engine or a water motor. See Options Chart on last page.

Technical Data with Approvals and Listings

Base:

Epoxy Coated Carbon Steel

Piping:

Brass, Schedule 40, Screwed and Grooved fittings

Manual Valves:

Ball valve with locking handle, bronze body, & brass or chrome plated brass ball, 400# WOG

Pump:

Positive displacement, vane type, with integral relief valve, cast iron body with Duravane vanes, carbon steel shaft, lip type seals and metalized carbon bearings

Motor:

UL Listed. ODP, 3/60/460V

Controller:

UL Listed. FM Approved NFPA 20 controller, full voltage across the line start, NEMA 2 enclosure

Pressure Sustaining Valve:

Epoxy coated cast iron body with brass trim. Brass pressure control valve shall be provided with bleed line

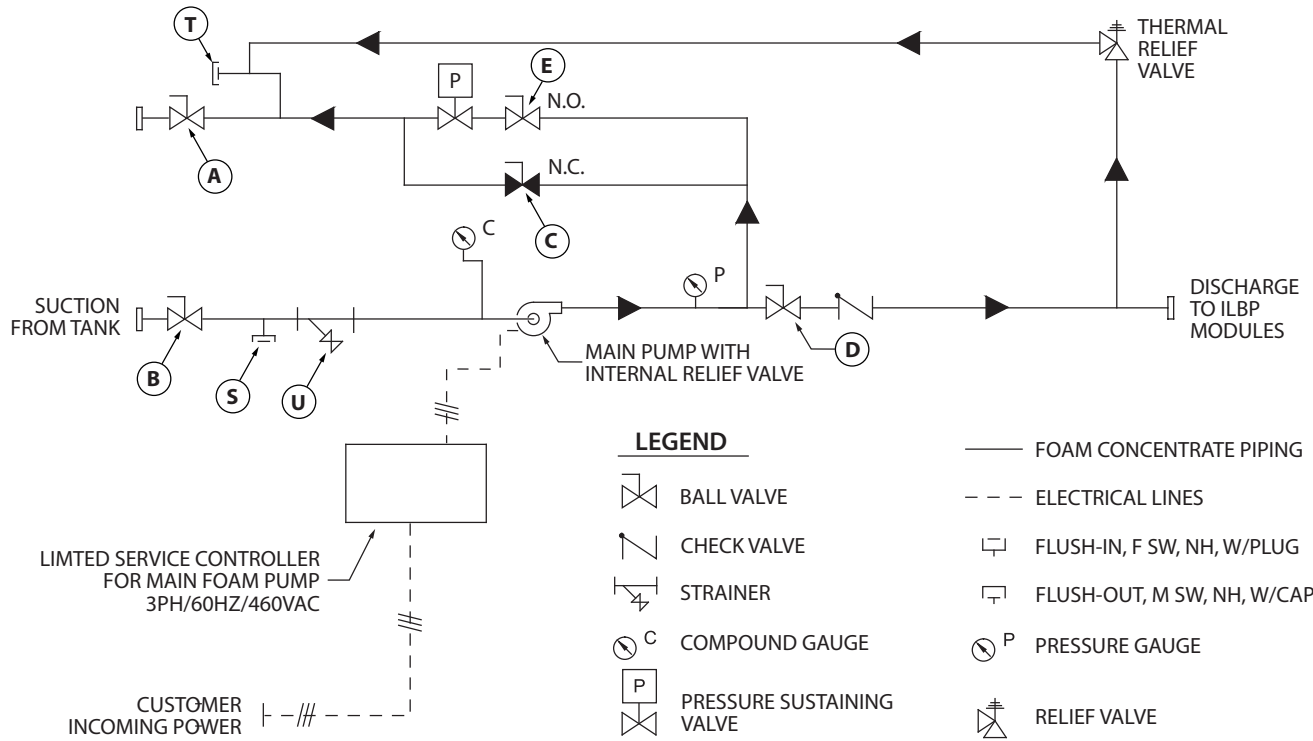
Working Pressure:

200 PSI (13.8 bars)

Finish:

Red high solids epoxy finish

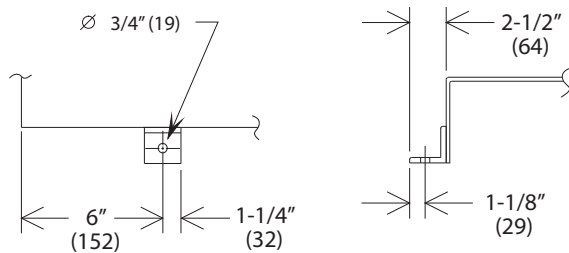
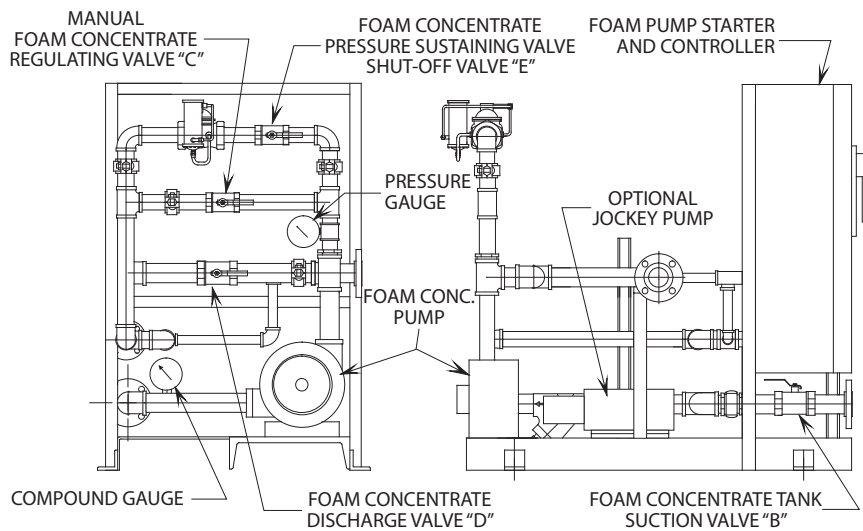
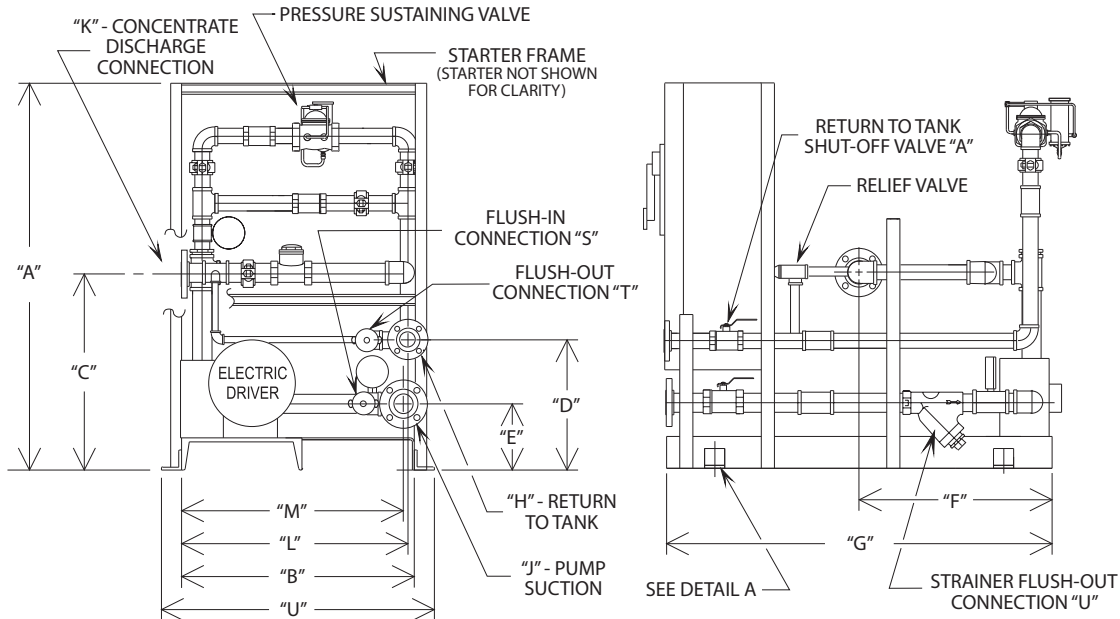
ILBP PROPORTIONING SYSTEM - PUMP SKID
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VALVE DESCRIPTION		
Ref:	Description:	Normal Position:
A	Foam Concentrate Tank Return	Open
B	Foam Concentrate Tank Suction	Open
C	Manual Foam Concentrate Regulating Valve	Closed
D	Foam Concentrate Discharge Valve	Open
E	Foam Concentrate Pressure Sustaining Valve Shut-Off	Open
S	Flush-In Connection	Closed
T	Flush-Out Connection	Closed
U	Strainer Flush-Out	Closed

ILBP PROPORTIONING SYSTEM - PUMP SKID

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PLAN
SKID ANCHORING LUG (TYPICAL 4 PLACES)

DETAIL A

SIDE

Notes:

1. National Foam, Inc. furnishes only those items on quote.
2. All field connections shall be flush with the edge of the baseplate.
3. NF recommends a clear distance of 2 ft. on the pump end and 3 ft. on the drive end be allowed by the installer, to facilitate service/removal of the pump and motor.
4. Nema 7 equipment will be suitable for use in area classified for Class 1, Division 1, Group D, per N. E. C.

IN-LINE BALANCED PRESSURE PROPORTIONING SKID PAK

ILBP PROPORTIONING SYSTEM - PUMP SKID

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FOAM CONCENTRATE PUMP SKID DIMENSIONS, CAPACITIES AND MOTOR HORSEPOWER CHART														
PUMP CAPACITY	MOTOR H.P.	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"	"U"
10 (38)	5	75 (1905)	35 (889)	25 (635)	18 (457)	8-3/4 (222)	20 (508)	40 (1016)	1-1/2 (38)	2 (51)	1-1/2 (38)	34-1/16 (865)	33-13/16 (859)	40 (1016)
20 (76)	7-1/2	75 (1905)	35 (889)	25 (635)	18 (457)	8-3/4 (222)	22 (559)	44 (1118)	1-1/2 (38)	2 (51)	1-1/2 (38)	34-1/16 (865)	33-13/16 (859)	40 (1016)
30 (114)	10	75 (1905)	35 (889)	25 (635)	18 (457)	8-3/4 (222)	22 (559)	44 (1118)	1-1/2 (38)	2 (51)	1-1/2 (38)	34-1/16 (865)	33-13/16 (859)	40 (1016)
40 (151)	10	75 (1905)	35 (889)	25 (635)	18 (457)	8-1/4 (210)	22 (559)	44 (1118)	1-1/2 (38)	2 (51)	1-1/2 (38)	34-1/16 (865)	33-13/16 (859)	40 (1016)
50 (189)	15	75 (1905)	35 (889)	25 (635)	18 (457)	8-1/4 (210)	24 (610)	48 (1219)	1-1/2 (38)	2 (51)	2 (51)	34-1/16 (865)	33-13/16 (859)	40 (1016)
60 (227)	15	75 (1905)	35 (889)	25 (635)	18 (457)	8-1/4 (210)	24 (610)	48 (1219)	1-1/2 (38)	2 (51)	2 (51)	34-1/16 (865)	33-13/16 (859)	40 (1016)
70 (265)	20	75 (1905)	35 (889)	27 (686)	18 (457)	8-1/2 (217)	24 (610)	48 (1219)	1-1/2 (38)	2 (51)	2 (51)	34-1/16 (865)	33-13/16 (859)	40 (1016)
80 (303)	20	75 (1905)	35 (889)	27 (686)	18 (457)	8-1/2 (217)	24 (610)	48 (1219)	1-1/2 (38)	2-1/2 (64)	2 (51)	34-1/16 (865)	33-9/16 (852)	40 (1016)
90 (341)	25	75 (1905)	47 (1194)	29 (737)	18 (457)	9-1/8 (232)	24 (610)	52 (1321)	1-1/2 (38)	2-1/2 (64)	2-1/2 (64)	46-1/16 (1170)	45-9/16 (1157)	52 (1321)
100 (379)	25	75 (1905)	47 (1194)	29 (737)	18 (457)	9-1/8 (232)	24 (610)	52 (1321)	1-1/2 (38)	2-1/2 (64)	2-1/2 (64)	46-1/16 (1170)	45-9/16 (1157)	52 (1321)
110 (416)	25	75 (1905)	47 (1194)	31 (787)	19 (483)	9-5/8 (245)	26 (660)	60 (1524)	1-1/2 (38)	3 (76)	2-1/2 (64)	46-1/16 (1170)	45-1/4 (1149)	52 (1321)
120 (454)	30	75 (1905)	47 (1194)	32 (813)	21 (533)	10 (254)	26 (660)	52 (1321)	1-1/2 (38)	3 (76)	2-1/2 (64)	46-1/16 (1170)	45-1/4 (1149)	52 (1321)
130 (492)	30	75 (1905)	47 (1194)	32 (813)	21 (533)	10 (254)	26 (660)	52 (1321)	2 (51)	3 (76)	3 (76)	45-13/16 (1164)	45-1/4 (1149)	52 (1321)
140 (530)	30	75 (1905)	47 (1194)	32 (813)	21 (533)	10 (254)	26 (660)	52 (1321)	2 (51)	3 (76)	3 (76)	45-13/16 (1164)	45-1/4 (1149)	52 (1321)
150 (568)	40	76 (1930)	50 (1270)	32 (813)	21 (533)	10-1/4 (260)	29-1/2 (749)	60 (1524)	2 (51)	3 (76)	3 (76)	48-13/16 (1240)	48-1/4 (1226)	55 (1397)
175 (662)	40	76 (1930)	50 (1270)	32 (813)	21 (533)	11-1/4 (286)	29-1/2 (749)	60 (1524)	2 (51)	3 (76)	3 (76)	48-13/16 (1240)	48-1/4 (1226)	55 (1397)
250 (946)	50	76 (1930)	50 (1270)	35 (889)	24 (610)	11-1/4 (286)	30 (1524)	60 (1524)	2-1/2 (64)	4 (102)	4 (102)	48-9/16 (1234)	47-3/4 (1213)	55 (1397)
275 (1041)	60	80 (2032)	60 (1524)	36 (914)	27 (686)	11-5/8 (295)	38-1/2 (978)	75 (1905)	2-1/2 (64)	4 (102)	4 (102)	58-9/16 (1487)	57-3/4 (1467)	65 (1651)
300 (1136)	60	80 (2032)	60 (1524)	36 (914)	27 (686)	11-5/8 (295)	38-1/2 (978)	75 (1905)	2-1/2 (64)	4 (102)	4 (102)	58-9/16 (1487)	57-3/4 (1467)	65 (1651)

ILBP PROPORTIONING SYSTEM - PUMP SKID

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OPTIONS CHART

Category:	Standard:	Optional Selection:
Working Pressure	200 psi	250 psi
Special Finishes	Epoxy Coated - Red	Epoxy Marine Finish, All Colors
Piping Materials	Brass	Stainless Steel 304 or 316, Carbon Steel, 90/10 CuNi
Customer Connection Points	All Flanged	Flanged/Grooved, Threaded
Pumps - Positive Displacement	Ductile Iron Vane w/Internal Relief Valve	Ductile Iron Bronze Lined Gear Pump, Bronze UL Listed Gear Pump
Pump Drivers	Electric Motor	Diesel Engine w/ Fuel Tank, Water Motor
Electric Motor Enclosures	ODP	TEFC, EX Proof, IEEE
Electric Motor Voltages	3/60/460 VAC	3/60/230 VAC, 3/50/380 VAC, 3/50/415 VAC
Pump Controller Types	Full Voltage	Full Voltage, Industrial Starter
Pump Controller Accessories	None	Transfer Switches, Purge Systems, Releasing Panels
Pump Controller Enclosures	Nema 2	Nema 4, Nema 4X, Ex Proof (Industrial Starters Only)
Reserve Pump - Any Style	No	Yes
Valve Types	Full Port Ball Valves w/ Lockable Handles	Globe, Gate, Butterfly
Valve Actuation	Manual	Electric, Pneumatic, Water Powered
Valve Supervision	Visual/Lockable	Tamper Switches
Performance Supervision	Yes (NFPA)	Pressure Switches, Flow Meters, Transducers
Inlet and Discharge Piping Spools	No	Yes
Integral Foam Concentrate Tank	No	Yes
Custom Design to Customer Specs	No	Yes
Jockey Pump	No	Yes-w/Relief Valve and Integral Test Capability
Additional Pumps	No	Yes
Additional Motor Controllers	No	Yes-w/Automatic Transfer and Lockout

NOTE: Available options may change skid dimensions and weights.

ASSOCIATED PRODUCTS

NPR155	ILBP Proportioning System
NPR160	RCW ILBP Modules w/ Check Valves
NPR170	RCW ILBP Modules
NPR180	RCT ILBP Modules w/ Check Valves
NPR190	RCT ILBP Modules
NPR200	Flanged ILBP Module