

ARMSTRONG

Series 4300F



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*Vertical In-Line Fire Pumps
and Packaged Systems*

Armstrong Vertical Fire Pumps

Armstrong Vertical In-Line Fire Pumps are UL listed and FM approved. ULC listed fire pumps are also available. A full range of optional accessories as well as complete packages are available to complement the fire pumps. Capacities range from 50 to 1500 USgpm, with pressure boosts from 40 to 135 psi.

High Working Pressure

Casing is high grade cast iron suitable for 250 psi maximum working pressure and 400 psi hydrostatic test.

Minimum Axial Thrust

Impeller is bronze enclosed type, hydraulically balanced.

Vibration-Free Operation

Impeller is dynamically balanced according to UL/FM requirements.

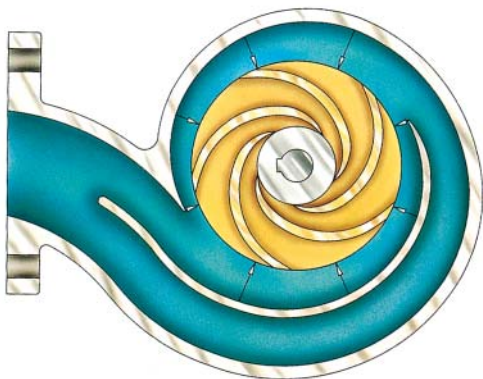
Low Cost Maintenance

Replaceable bronze wearing rings.

Corrosion Resistant Protection at Stuffing Box

Non-corrosive shaft sleeve is heated and shrunk-fit on motor shaft for lifetime fitting.

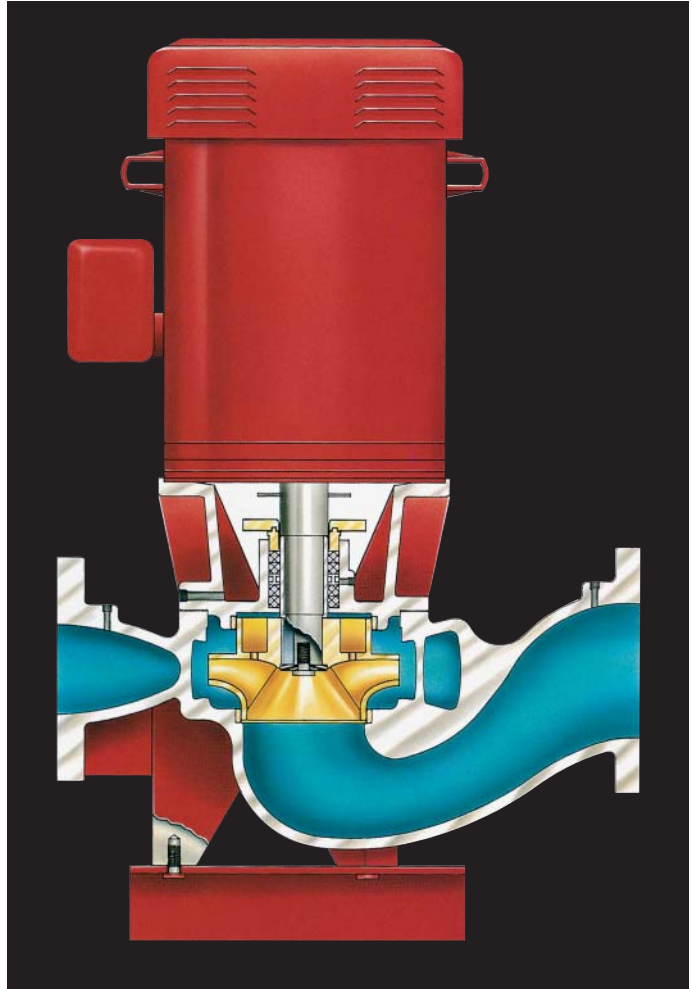
- UL/FM pumps are furnished with packed gland complete with an external flush line to the lantern ring
- ULC pumps are furnished with a mechanical seal



Double Volute Casing

Minimum Shaft Deflection

4" x 3", 6" x 4", 6" x 5" and 8" x 8" pumps have a double volute to reduce shaft deflection and prolong seal life.



Minimum Fittings

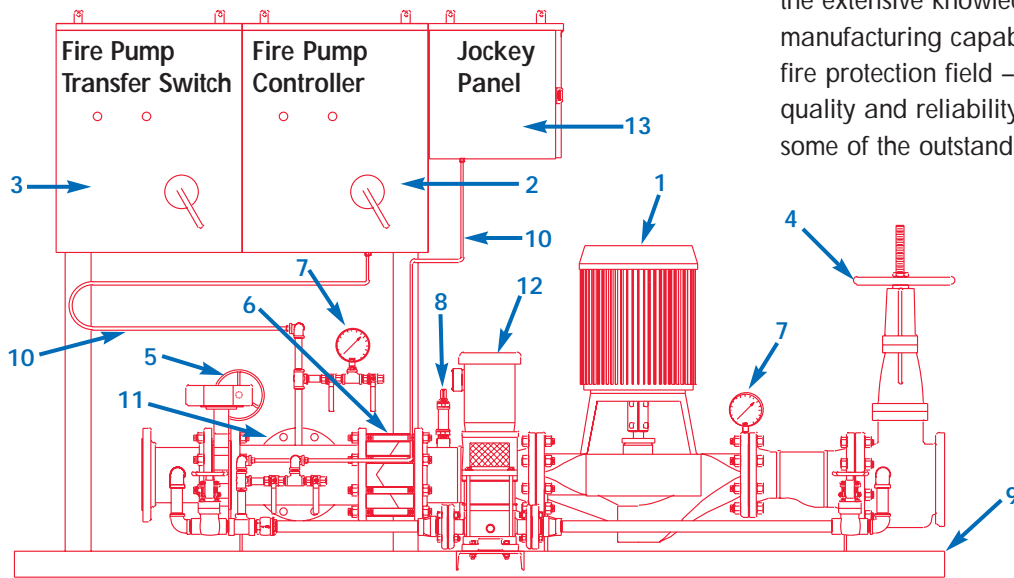
- 3.5" (89 mm) compound Suction Gauge with isolating valve
- 3.5" (89 mm) Discharge Pressure Gauge with isolating valve
- Casing Relief Valve

Optional Fittings and Accessories

- Concentric Discharge Increaser
- Eccentric Suction Reducer
- Fire Pump Controller
- Automatic Transfer Switch
- Jockey Pump
- Jockey Pump Controller
- Flow Meter
- Test Header, Hose Valves & Ball Drip Valve
- Main Relief Valve with Waste Cone
- Supervisory Valve Switches

FirePak Systems

The introduction of these packages is the result of the extensive knowledge, experience and manufacturing capabilities of Armstrong in the fire protection field – your assurance of high quality and reliability. The following describes some of the outstanding features of these units:



Space Saving

- Valuable savings in floor space
- Ideal when space is at a premium
- Fits through a standard door
- Ideal for retrofit installations
- Fits in spaces not normally accessible to other fire pumps
- Alignment problems eliminated

Cost Saving

- Less installation time
- Simplified piping design
- Foundations not required
- Inertia base not required
- Flexible connections not required
- Single source responsibility

FirePak System Number

Type	Econo	Ultra	Econo Plus	Ultra Plus
Series	F4010	F4510	F4015	F4516

FirePak System Content

FirePak Econo Series F4010	FirePak Ultra Series F4510	FirePak Econo Plus Series F4015	FirePak Pump Controllers
<ol style="list-style-type: none"> Vertical In-Line Fire Pump Fire Pump Controller Automatic Transfer Switch (optional) Suction & Discharge Pressure Gauges Casing Relief Valve Common Structural Steel Base <ul style="list-style-type: none"> • Factory Wiring 	<ol style="list-style-type: none"> Vertical In-Line Fire Pump Fire Pump Controller Automatic Transfer Switch (optional) Suction OS&Y Gate Valve Discharge Butterfly Valve Check Valve Suction & Discharge Pressure Gauges Casing Relief Valve Common Structural Steel Base Sensing Line Test Tee <ul style="list-style-type: none"> • All mounted, piped & wired 	<p>Same as FirePak Econo with the addition of:</p> <ol style="list-style-type: none"> Jockey Pump Jockey Pump Controller <ul style="list-style-type: none"> • All mounted & wired 	<ul style="list-style-type: none"> • Limited Service (to 30 hp) • Full Service – Full Voltage • Full Service – Reduced Voltage • Auto Transfer Switch • Jockey Pump Controllers • Other options available
		<h3>FirePak Ultra Plus Series F4516</h3> <p>Same as FirePak Ultra with the addition of:</p> <ol style="list-style-type: none"> Jockey Pump Jockey Pump Controller <ul style="list-style-type: none"> • All mounted, piped & wired 	<h3>Optional Accessories</h3> <ul style="list-style-type: none"> • Hose Valve System • Flow Meter • Remote Alarm Panel

Charts



UL/ULC/FM Listed Pumps

Flow	Total Head		Pump Size	Electric Motor		Total Ship. Wt.
	USgpm	psi (kPa)		feet (m)	hp	ODP Frame
50	47 (324.1)	108 (32.9)	2 x 1-1/2 LA-F 3565 rpm 200 psi	7.5	184JP	319 (145)
	50 (344.7)	116 (35.4)				319 (145)
	55 (379.2)	127 (38.7)				319 (145)
	60 (413.7)	139 (42.4)		10	215JP	374 (170)
	65 (448.2)	150 (45.7)				374 (170)
	70 (482.6)	162 (49.4)				374 (170)
	75 (517.1)	173 (52.7)				374 (170)
	80 (551.6)	185 (56.4)				374 (170)
	85 (586.1)	196 (59.7)				374 (170)
	90 (620.5)	208 (63.4)		15	215JP	400 (182)
	95 (655.0)	219 (66.8)				400 (182)
	100 (689.5)	231 (70.4)				400 (182)
	105 (723.9)	243 (74.1)		20	254JP	505 (230)
	110 (758.4)	254 (77.4)				505 (230)
	115 (792.9)	266 (81.1)				505 (230)
120 (827.4)	277 (84.4)	505 (230)				
125 (861.8)	289 (88.1)	505 (230)				
130 (896.3)	300 (91.4)	505 (230)				
135 (930.8)	312 (95.1)	25	256JP	605 (275)		
75	45 (310.3)	104 (31.7)	2 x 1-1/2 LA-F 3565 rpm 200 psi	7.5	184JP	319 (145)
	50 (344.7)	116 (35.4)				319 (145)
	55 (379.2)	127 (38.7)				319 (145)
	60 (413.7)	139 (42.4)		10	215JP	374 (170)
	65 (448.2)	150 (45.7)				374 (170)
	70 (482.6)	162 (49.4)				374 (170)
	75 (517.1)	173 (52.7)				374 (170)
	80 (551.6)	185 (56.4)				374 (170)
	85 (586.1)	196 (59.7)				374 (170)
	90 (620.5)	208 (63.4)		15	215JP	400 (182)
	95 (655.0)	219 (66.8)				400 (182)
	100 (689.5)	231 (70.4)				400 (182)
	105 (723.9)	243 (74.1)		20	254JP	505 (230)
	110 (758.4)	254 (77.4)				505 (230)
	115 (792.9)	266 (81.1)				505 (230)
120 (827.4)	277 (84.4)	505 (230)				
125 (861.8)	289 (88.1)	505 (230)				
130 (896.3)	300 (91.4)	505 (230)				
135 (930.8)	312 (95.1)	25	256JP	605 (275)		
100	40 (275.8)	92 (28.0)	2 x 1-1/2 LA-F 3565 rpm 200 psi	7.5	184JP	319 (145)
	45 (310.3)	104 (31.7)				319 (145)
	50 (344.7)	116 (35.4)				319 (145)
	55 (379.2)	127 (38.7)		10	215JP	374 (170)
	60 (413.7)	139 (42.4)				374 (170)
	65 (448.2)	150 (45.7)				374 (170)
	70 (482.6)	162 (49.4)				374 (170)
	75 (517.1)	173 (52.7)				374 (170)
	80 (551.6)	185 (56.4)				374 (170)
	85 (586.1)	196 (59.7)		15	215JP	400 (182)
	90 (620.5)	208 (63.4)				400 (182)
	95 (655.0)	219 (66.8)				400 (182)
	100 (689.5)	231 (70.4)		20	254JP	505 (230)
	105 (723.9)	243 (74.1)				505 (230)
	110 (758.4)	254 (77.4)				505 (230)
115 (792.9)	266 (81.1)	505 (230)				
120 (827.4)	277 (84.4)	505 (230)				
125 (861.8)	289 (88.1)	505 (230)				
130 (896.3)	300 (91.4)	25	256JP	605 (275)		

Flow	Total Head		Pump Size	Electric Motor		Total Ship. Wt.
	USgpm	psi (kPa)		feet (m)	hp	ODP Frame
150	40 (275.8)	92 (28.0)	*3 x 2 LA-F 3550 rpm 250 psi	7.5	184JP	347 (158)
	45 (310.3)	104 (31.7)		10	215JP	402 (183)
	50 (344.7)	116 (35.4)		15	215JP	402 (183)
	55 (379.2)	127 (38.7)				428 (195)
	60 (413.7)	139 (42.4)				428 (195)
	65 (448.2)	150 (45.7)				428 (195)
	70 (482.6)	162 (49.4)				428 (195)
	75 (517.1)	173 (52.7)				428 (195)
	80 (551.6)	185 (56.4)		20	254JP	428 (195)
	85 (586.1)	196 (59.7)				428 (195)
	90 (620.5)	208 (63.4)				533 (242)
	95 (655.0)	219 (66.8)		25	256JP	533 (242)
	100 (689.5)	231 (70.4)				533 (242)
	105 (723.9)	243 (74.1)				633 (288)
	110 (758.4)	254 (77.4)		30	284JP	680 (309)
115 (792.9)	266 (81.1)	680 (309)				
120 (827.4)	277 (84.4)	680 (309)				
200	45 (310.3)	104 (31.7)	4 x 3 LA-F 3570 rpm 250 psi	15	215JP	592 (269)
	50 (344.7)	116 (35.4)				592 (269)
	55 (379.2)	127 (38.7)				592 (269)
	60 (413.7)	139 (42.4)		20	254JP	697 (317)
	65 (448.2)	150 (45.7)				697 (317)
	70 (482.6)	162 (49.4)				697 (317)
	75 (517.1)	173 (52.7)				697 (317)
	80 (551.6)	185 (56.4)				697 (317)
	85 (586.1)	196 (59.7)				697 (317)
	90 (620.5)	208 (63.4)		25	256JP	797 (362)
	95 (655.0)	219 (66.8)				844 (383)
	100 (689.5)	231 (70.4)				844 (383)
	105 (723.9)	243 (74.1)		30	284JP	844 (383)
	110 (758.4)	254 (77.4)				844 (383)
	115 (792.9)	266 (81.1)				844 (383)
120 (827.4)	277 (84.4)	872 (396)				
125 (861.8)	289 (88.1)	872 (396)				
130 (896.3)	300 (91.4)	872 (396)				
135 (930.8)	312 (95.1)	50	324JP	942 (428)		
250	40 (275.8)	92 (28.0)	4 x 3 LA-F 3570 rpm 250 psi	15	215JP	592 (269)
	45 (310.3)	104 (31.7)				592 (269)
	50 (344.7)	116 (35.4)				592 (269)
	55 (379.2)	127 (38.7)		20	254JP	697 (317)
	60 (413.7)	139 (42.4)				697 (317)
	65 (448.2)	150 (45.7)				697 (317)
	70 (482.6)	162 (49.4)				697 (317)
	75 (517.1)	173 (52.7)				697 (317)
	80 (551.6)	185 (56.4)				697 (317)
	85 (586.1)	196 (59.7)		25	256JP	797 (362)
	90 (620.5)	208 (63.4)				844 (383)
	95 (655.0)	219 (66.8)				844 (383)
	100 (689.5)	231 (70.4)		30	284JP	844 (383)
	105 (723.9)	243 (74.1)				844 (383)
	110 (758.4)	254 (77.4)				844 (383)
115 (792.9)	266 (81.1)	872 (396)				
120 (827.4)	277 (84.4)	872 (396)				
125 (861.8)	289 (88.1)	872 (396)				
130 (896.3)	300 (91.4)	40	286JP	872 (396)		
135 (930.8)	312 (95.1)	50	324JP	942 (428)		
300	45 (310.3)	104 (31.7)	4 x 3 LA-F 3570 rpm 250 psi	15	215JP	592 (269)
	50 (344.7)	116 (35.4)				592 (269)
	55 (379.2)	127 (38.7)				592 (269)
	60 (413.7)	139 (42.4)		20	254JP	697 (317)
	65 (448.2)	150 (45.7)				697 (317)
	70 (482.6)	162 (49.4)				697 (317)
	75 (517.1)	173 (52.7)				697 (317)
	80 (551.6)	185 (56.4)				697 (317)
	85 (586.1)	196 (59.7)				697 (317)
	90 (620.5)	208 (63.4)		25	256JP	797 (362)
	95 (655.0)	219 (66.8)				844 (383)
	100 (689.5)	231 (70.4)				844 (383)
	105 (723.9)	243 (74.1)		30	284JP	844 (383)
	110 (758.4)	254 (77.4)				844 (383)
	115 (792.9)	266 (81.1)				844 (383)
120 (827.4)	277 (84.4)	872 (396)				
125 (861.8)	289 (88.1)	872 (396)				
130 (896.3)	300 (91.4)	872 (396)				
135 (930.8)	312 (95.1)	40	286JP	872 (396)		
140 (965.3)	324 (99.1)	50	324JP	942 (428)		

*3 x 2 LA-F is UL/ULC approved only.

Charts



UL/ULC/FM Listed Pumps

Flow	Total Head		Pump Size	Electric Motor		Total Ship. Wt.
	USgpm	psi (kPa)		feet (m)	hp	ODP Frame
400	40 (275.8)	92 (28.0)	6 x 4 LA-F 3550 rpm 250 psi	20	254JP	760 (345)
	45 (310.3)	104 (31.7)				760 (345)
	50 (344.7)	116 (35.4)		25	256JP	860 (391)
	55 (379.2)	127 (38.7)				860 (391)
	60 (413.7)	139 (42.4)		30	284JP	907 (412)
	65 (448.2)	150 (45.7)				907 (412)
	70 (482.6)	162 (49.4)		40	286JP	935 (425)
	75 (517.1)	173 (52.7)				935 (425)
	80 (551.6)	185 (56.4)				935 (425)
	85 (586.1)	196 (59.7)				935 (425)
	90 (620.5)	208 (63.4)		50	324JP	1008 (458)
	95 (655.0)	219 (66.8)				1008 (458)
	100 (689.5)	231 (70.4)				1008 (458)
	105 (723.9)	243 (74.1)				1008 (458)
110 (758.4)	254 (77.4)	60	326JP	1122 (510)		
115 (792.9)	266 (81.1)			1122 (510)		
120 (827.4)	277 (84.4)			1122 (510)		
125 (861.8)	289 (88.1)			1122 (510)		
130 (896.3)	300 (91.4)	75	364JP	1232 (559)		
133 (917.0)	307 (93.6)			1232 (559)		
450	40 (275.8)	92 (28.0)	6 x 4 LA-F 3550 rpm 250 psi	20	254JP	760 (345)
	43 (296.5)	99 (30.2)				760 (345)
	45 (310.3)	104 (31.7)		25	256JP	860 (391)
	50 (344.7)	116 (35.4)				860 (391)
	55 (379.2)	127 (38.7)		30	284JP	907 (412)
	60 (413.7)	139 (42.4)				907 (412)
	65 (448.2)	150 (45.7)		40	286JP	935 (425)
	70 (482.6)	162 (49.4)				935 (425)
	75 (517.1)	173 (52.7)				935 (425)
	80 (551.6)	185 (56.4)				935 (425)
	85 (586.1)	196 (59.7)		50	324JP	935 (425)
	90 (620.5)	208 (63.4)				1008 (458)
	95 (655.0)	219 (66.8)				1008 (458)
	100 (689.5)	231 (70.4)				1008 (458)
105 (723.9)	243 (74.1)	60	326JP	1122 (510)		
110 (758.4)	254 (77.4)			1122 (510)		
115 (792.9)	266 (81.1)			1122 (510)		
120 (827.4)	277 (84.4)			1122 (510)		
125 (861.8)	289 (88.1)	75	364JP	1232 (559)		
130 (896.3)	300 (91.4)			1232 (559)		
132 (910.1)	304 (92.7)			1232 (559)		
500	40 (275.8)	92 (28.0)	6 x 4 LA-F 3550 rpm 250 psi	20	254JP	760 (345)
	45 (310.3)	104 (31.7)				760 (345)
	50 (344.7)	116 (35.4)		25	256JP	860 (391)
	55 (379.2)	127 (38.7)				860 (391)
	60 (413.7)	139 (42.4)		30	284JP	907 (412)
	65 (448.2)	150 (45.7)				907 (412)
	70 (482.6)	162 (49.4)		40	286JP	935 (425)
	75 (517.1)	173 (52.7)				935 (425)
	80 (551.6)	185 (56.4)				935 (425)
	85 (586.1)	196 (59.7)				935 (425)
	90 (620.5)	208 (63.4)		50	324JP	1008 (458)
	95 (655.0)	219 (66.8)				1008 (458)
	100 (689.5)	231 (70.4)				1008 (458)
	105 (723.9)	243 (74.1)				1008 (458)
110 (758.4)	254 (77.4)	60	326JP	1122 (510)		
115 (792.9)	266 (81.1)			1122 (510)		
120 (827.4)	277 (84.4)			1122 (510)		
125 (861.8)	289 (88.1)			1122 (510)		
130 (896.3)	300 (91.4)	75	364JP	1232 (559)		
131 (903.2)	300 (91.4)			1232 (559)		

Flow	Total Head		Pump Size	Electric Motor		Total Ship. Wt.
	USgpm	psi (kPa)		feet (m)	hp	ODP Frame
750	40 (275.8)	92 (28.0)	6 x 5 LY-F 1780 rpm 200 psi	30	286JP	783 (356)
	45 (310.3)	104 (31.7)				783 (356)
	50 (344.7)	116 (35.4)		40	324JP	863 (392)
	55 (379.2)	127 (38.7)				863 (392)
	60 (413.7)	139 (42.4)		50	326JP	863 (392)
	65 (448.2)	150 (45.7)				943 (428)
	69 (475.7)	160 (48.8)		60	326JP	943 (428)
	80 (551.6)	185 (56.4)				1122 (510)
	85 (586.1)	196 (59.7)				1122 (510)
	90 (620.5)	208 (63.4)				1122 (510)
	95 (655.0)	219 (66.8)		75	364JP	1122 (510)
	100 (689.5)	231 (70.4)				1232 (559)
	105 (723.9)	243 (74.1)				1232 (559)
	110 (758.4)	254 (77.4)				1232 (559)
115 (792.9)	266 (81.1)			1232 (559)		
1000	40 (275.8)	92 (28.0)	8 x 8 x 13 1775 rpm 250 psi	40	324-16	877 (398)
	45 (310.3)	104 (31.7)				877 (398)
	50 (344.7)	116 (35.4)		50	326-16	977 (444)
	55 (379.2)	127 (38.7)				977 (444)
	60 (413.7)	139 (42.4)		60	364-16	1017 (462)
	65 (448.2)	150 (45.7)				1017 (462)
1250	73 (503.3)	169 (51.5)	8 x 8 x 15 FM 1780 rpm 250 psi	75	365-16	1520 (690)
	75 (517.1)	173 (52.7)				1520 (690)
	80 (551.6)	185 (56.4)		100	404-16	1780 (808)
	85 (586.1)	196 (59.7)				1780 (808)
	90 (620.5)	208 (63.4)		100	404-16	1780 (808)
	95 (655.0)	219 (66.8)				1780 (808)
	100 (689.5)	231 (70.4)		100	404-16	1780 (808)
	106 (730.8)	245 (74.7)				1780 (808)
1500	70 (482.6)	162 (49.4)	8 x 8 x 15 FM 1780 rpm 400 psi	75	365-16	1520 (690)
	71 (489.5)	164 (50.0)				1520 (690)
	75 (517.1)	173 (52.7)		100	404-16	1780 (808)
	80 (551.6)	185 (56.4)				1780 (808)
	85 (586.1)	196 (59.7)		100	404-16	1780 (808)
	90 (620.5)	208 (63.4)				1780 (808)
	95 (655.0)	219 (66.8)		125	405-16	1980 (899)
	100 (689.5)	231 (70.4)				1980 (899)
104 (717.1)	240 (73.2)			1980 (899)		
1500	67 (461.9)	155 (47.2)	8 x 8 x 15 FM 1780 rpm 400 psi	100	404-16	1780 (808)
	70 (482.6)	162 (49.4)				1780 (808)
	75 (517.1)	173 (52.7)		100	404-16	1780 (808)
	80 (551.6)	185 (56.4)				1780 (808)
	85 (586.1)	196 (59.7)		125	405-16	1980 (899)
	90 (620.5)	208 (63.4)				1980 (899)
	95 (655.0)	219 (66.8)		125	405-16	1980 (899)
	100 (689.5)	231 (70.4)				1980 (899)
102 (703.3)	236 (71.9)			1980 (899)		

Typical Specifications

Supply and install as indicated on plans one Armstrong fire pumping system consisting of:

Fire Pump

One Armstrong Model: _____, Vertical In-Line Pump listed and labeled by (Underwriters Laboratories Inc., Factory Mutual), having a capacity of _____ USgpm for a pressure boost of _____ psig (suction pressure _____ psig, discharge pressure _____ psig).

The pump shall have bronze impeller, non-corrosive shaft sleeve, packed gland with external flush line to the lantern ring suitable for 125 psig suction pressure. Pumps are supplied with cast iron casings incorporating a double volute design for sizes 4" x 3", 6" x 4", 6" x 5".

The pump shall furnish not less than 150% of rated capacity at a pressure not less than 65% of rated head. The shut-off total head of the pump should not exceed 140% of rated total head. Pump to be hydrostatically tested to meet or exceed NFPA 20 requirements.

Electric Motor

The pump shall be driven by _____ hp, _____ rpm, _____ Volt, 3 phase, 60 cycle vertical open drip-proof motor with 1.15 service factor. The motor shall be listed for fire pump service.

Fire Pump Controller and Automatic Transfer Switch Combination

The Automatic Transfer Switch and the Fire Pump Controller combination shall be listed and labeled by (Underwriters Laboratories Inc., Factory Mutual) Make: _____ Model: _____, and each shall be mounted in separate enclosures, mechanically attached to form one unit and provide for protected interlock wiring.

The Automatic Transfer Switch shall be capable of automatic power transfer from normal to alternate (generator) (second utility) emergency power source in case of voltage drop to 90% or normal, phase failure or phase reversal and automatic retransfer after restoration of normal power conditions.

The Automatic Transfer Switch shall incorporate an externally operated main isolating switch, a manual operating handle, indicators, contacts or remote alarms, voltage frequency and phase reversal sensing, time delays and memory circuit.

The Fire Pump Controller shall be of the combined manual and automatic: (Full Voltage Limited Service), (Full Voltage Full Service), (Reduced Voltage Auto-Transformer), (Reduced Voltage Wye-Delta) type.

Testing

The Fire Pump shall be subjected to an operation test at rated speed. Performance curves are to be plotted showing the efficiency, brake-horsepower and total head developed at shut-off, at rated capacity and at 150% of rated capacity. Certified curves shall be supplied to the purchaser.

Minimum Fittings

The Fire Pump shall be complete with 3-1/2" dial suction and discharge gauges, and casing relief valve.

Jockey Pump

The Jockey Pump shall be Armstrong Model No. _____ having a capacity of _____ USgpm for a pressure boost of _____ psig. The Jockey Pump shall be driven by a _____ hp, _____ rpm, _____ Volt, _____ Phase, 60 cycle standard open drip-proof horizontal motor.

Jockey Pump Controller

The Jockey Pump shall be controlled by an automatic Jockey Pump Controller Model: _____ with full voltage starter.

System Operation

Upon system pressure drop, the Jockey Pump will start up automatically and pressurize the system to the set pressure and then stop. If the system pressure continues to decrease below the range of the Jockey Pump, the main Fire Pump will start automatically.

FirePak Packaged Fire Pump System

Supply and install one Armstrong FirePak Type _____ Series F _____ Packaged fire pumping system with all the components specified above, assembled on a common base. The unit shall be completely assembled, wired, factory tested and shipped ready for customer's system inlet, outlet and power source (Econo).

Including check, butterfly valve and test tee on the pump discharge, OS&Y gate valve on the pump suction, and non-corrosive sensing line as per NFPA 20 (Ultra).

The jockey pump and jockey pump controller described above will be mounted and wired (Econo Plus), and piped (Ultra Plus) on the same base as the FirePak.

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