

# ARMSTRONG



## Vertical In-Line Fire Pumps and Packaged Systems

FILE NO:	F43.10
DATE:	Sept. 17, 2010
SUPERSEDES:	F43.10
DATE:	July 3, 2008

# 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

## ► 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

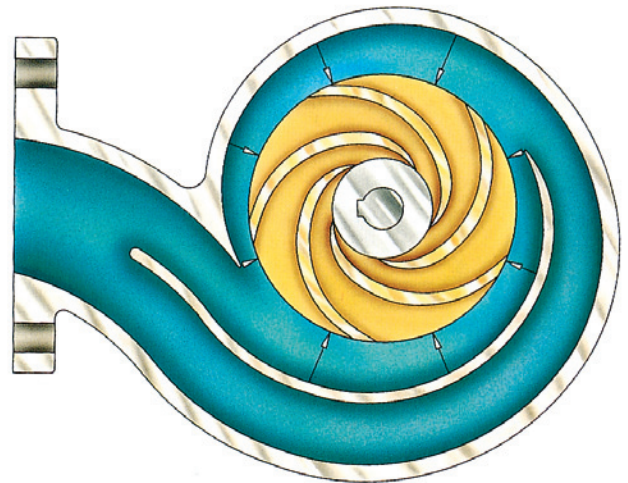
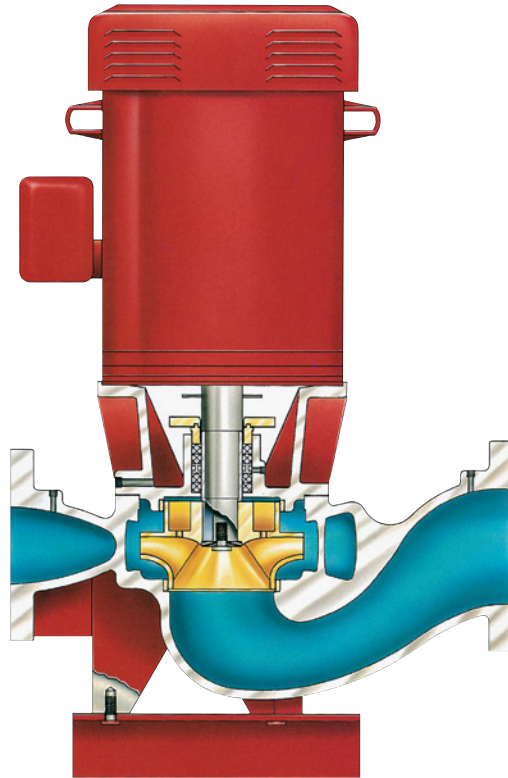
## ► Optional Fittings and Accessories

- 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

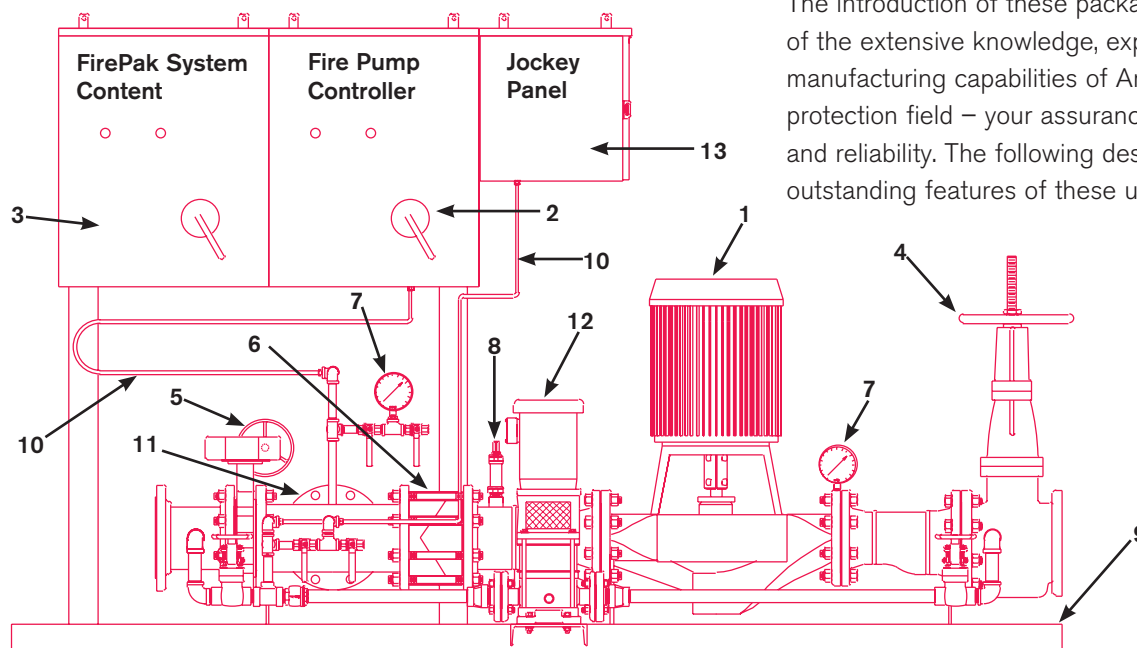
## ► Double Volute Casing

Minimum Shaft Deflection

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



# Vertical In-Line Fire Pumps and Packaged Systems 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
- Inertia base 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
1. Vertical In-Line Fire Pump 2. Fire Pump Controller 3. Automatic Transfer Switch (optional) 7. Suction & Discharge Pressure Gauges 8. Casing Relief Valve 9. Common Structural Steel Base • Factory Wiring	1. Vertical In-Line Fire Pump 2. Fire Pump Controller 3. Automatic Transfer Switch (optional) 4. Suction OS&Y Gate Valve 5. Discharge Butterfly Valve 6. Check Valve 7. Suction & Discharge Pressure Gauges 8. Casing Relief Valve 9. Common Structural Steel Base 10. Sensing Line 11. Test Tee • All mounted, piped & wired	Same as FirePak Econo with the addition of:  12. Jockey Pump 13. Jockey Pump Controller • All mounted & wired	• Limited Service (to 30 hp) • Full Service – Full Voltage • Full Service – Reduced Voltage • Auto Transfer Switch • Jockey Pump Controllers • Other options available
		FirePak Ultra Plus Series F4516	Optional Accessories
		Same as FirePak Ultra with the addition of:  12. Jockey Pump 13. Jockey Pump Controller • All mounted, piped & wired	• Hose Valve System • Flow Meter • Remote Alarm Panel

## ► 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 6" x 4", 6" x 5", 8" x 8".

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 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), (Primary Resistor), (Soft-Start), (Part Winding), (Wye-Delta Closed Transition), (Wye-Delta Open Transition).

### 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 a Vertical Multi-Stage by 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, \_\_\_\_\_ cycle standard open drip-proof 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 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 (F4010).

Including check, butterfly valve and test tee on the pump discharge, OS&Y gate valve on the pump suction, and noncorrosive sensing line as per NFPA 20 (F4510).

The jockey pump and jockey pump controller described above will be mounted and wired (F4015), and piped (F4516) on the same base as the FirePak.

EXPERIENCE BUILDING...

S. A. Armstrong Limited  
23 Bertrand Avenue  
Toronto, Ontario  
Canada, M1L 2P3  
T: (416) 755-2291  
F (Main): (416) 759-9101

Armstrong Pumps Inc.  
93 East Avenue  
North Tonawanda, New York  
U.S.A., 14120-6594  
T: (716) 693-8813  
F: (716) 693-8970

Armstrong Integrated Limited  
Wenlock Way  
Manchester  
United Kingdom, M12 5JL  
T: +44 (0) 8444 145 145  
F: +44 (0) 8444 145 146



© S.A. Armstrong Limited 2010

For Armstrong locations worldwide, please visit [www.armstrongintegrated.com](http://www.armstrongintegrated.com)