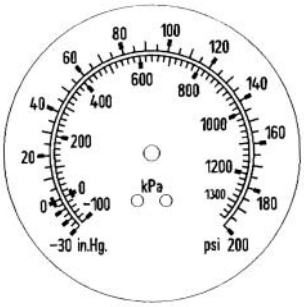
FILE NO.:	F43.430
DATE:	Mar. 7, 2006
SUPERSEDES:	F43.430
DATE:	Jan. 30, 2001

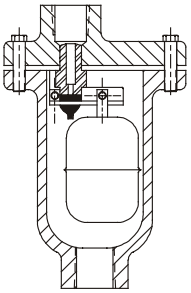
APPLICATION DATA - FIRE PUMP FITTINGS



Minimum Fitting System

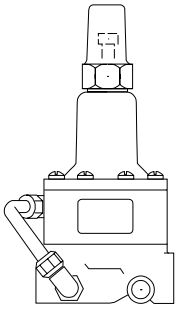
1) SUCTION AND DISCHARGE GAUGES, File F43.450

Gauges are required to measure both suction and discharge pressures, and must be supplied with all fire pumps. Gauges consist of combination pressure and vacuum suction gauge, discharge pressure gauge, and ¼" cocks with lever handle.



2) AUTOMATIC AIR RELEASE VALVE, File F43.450

Air release valve is required on all automatically controlled units, and is located at the high point on the pump casing for releasing entrapped air.

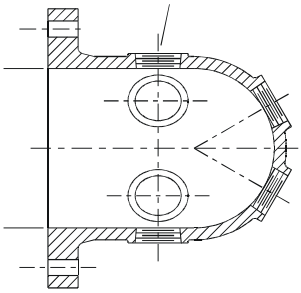


3) PRESSURE RELIEF VALVE, File F43.450

This valve prevents over-heating of automatically controlled pumps when operating at shut-off or no discharge. The pressure relief valve is located at the casing discharge. It should be set, in the field, just below the lowest expected suction pressure plus the shutoff pressure of the unit. The circulation relief valve should be piped to drain.

Casing relief valve is not required for engine driven pumps for which engine cooling water is taken from the pump discharge.

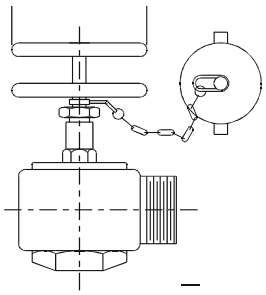
Hose Valve System



4) HOSE VALVE HEADER, File F43.451

This provides the necessary outlet for the required number of hose valves. The hose valve header is generally intended for installation outside the pump room and is used for hose valve connection. Headers and valves are required not only for pump testing but in many cases for actual fire fighting purposes. If a water measuring device is used the hose valve header may be omitted when its main function is to provide a method of testing the pump.

The connection point should be between the discharge check valve and discharge isolation valve.



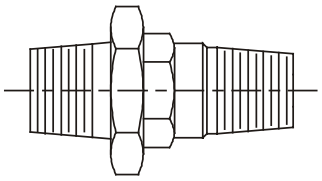
5) HOSE VALVE SET, File F43.451

Quantity of hose valves required is specified by NFPA-20, table 5.25. Valves shall be approved. Hose valves are supplied with caps and chains to prevent damage to the hose valve threads. It is important to specify the thread standard required for the installation since the number of threads per inch may vary depending on the city.

APPLICATION DATA - FIRE PUMP FITTINGS

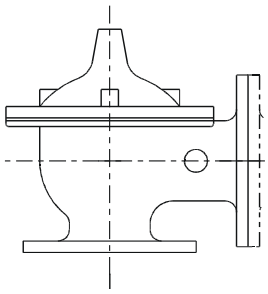
Relief System

6) BALL DRIP VALVE, File F43.451



The ball drip valve shall be installed in the line leading to the outside hose valve header. When there is no pressure in the line, the ball drip valve will open and drain the line to prevent freezing.

7) MAIN RELIEF VALVE, File F43.452

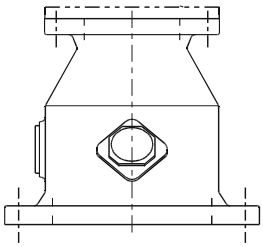


Pumps connected to adjustable-speed drivers such as a diesel engine shall be equipped with a listed relief valve. Required sizes are specified by NFPA20, table 5.25. It is designed to open on runaway diesels, at approximately a 20% increase above the rated speed.

The valve shall be installed between the pump and the pump discharge check valve. The relief valve should be set approximately 10 psi over the shutoff pressure of the pump plus the static suction pressure.

When pumps are driven by electric motors and controlled by a variable speed pressure limiting control driver a main relief valve is required and should be set below the pressure for which the system components are rated.

8) OVERFLOW CONE, File F43.452

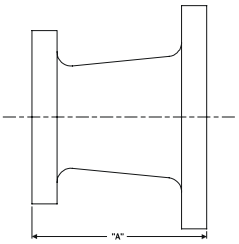


The enclosed type cones are used when the waste connection from the main relief valve is to a sewer or other waste disposal whose elevation is above the pump and where back pressure exists. It is provided with a sight glass for detecting motion of water through the cone.

The open type cones are used when the waste connection from the main relief valve is readily visible or easily detectable by the pump operator, with use of the open cone and where back pressure does not exist. It is not provided with a sight glass.

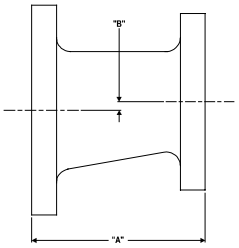
Suction & Discharge Sizes

9) CONCENTRIC DISCHARGE INCREASERS, File F43.453



Will need to be installed on all systems where the pump discharge is smaller than the discharge pipe size recommended per NFPA-20. table 5.25.

10) ECCENTRIC SUCTION REDUCERS, File F43.453



Will need to be installed to all systems where the pump suction is smaller than the suction pipe size recommended per NFPA-20, table 5.25.

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 Holden Brooke Pullen
Wenlock Way
Manchester
United Kingdom, M12 5JL
T: +44 (0) 161 223 2223
F: +44 (0) 161 220 9660