MINNESOTA PUBLIC SAFETY
STATE FIRE MARSHAL
EST. 1905

QUICK RESPONSE

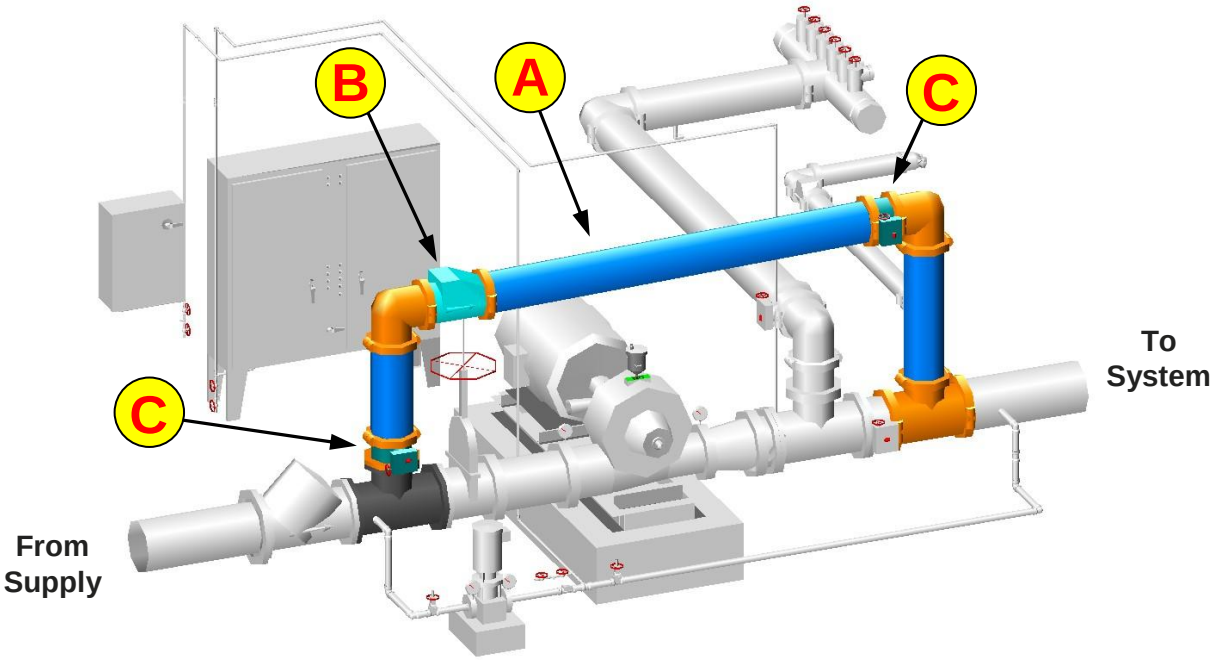
Saving life and property through effective licensing, plan review, and inspection of fire protection systems.

July 2008

FIRE PUMPS – BYPASS

The function of the fire pump bypass is to supply water to the fire protection system if the pump is taken out of service, does not start or something gets lodged in the pump. The bypass needs to be arranged in a manner that allows water to flow through the bypass while the fire pump suction and discharge control valves are closed.

The bypass line is to be installed when the water supply pressure is considered to have material value to the fire protection system without the pump (**NFPA 20 (2003 edition), Section 5.14.4.1**). The water available does not need to supply the entire demand of the system without the pump. This requirement is obviously subjective. As a general rule, a bypass is usually installed when the supply is a public or private main. When supplied by storage tanks or reservoirs, the bypass may have a reduced material value.



A = **Bypass Pipe – NFPA 20, Section 5.14.4.2**, *"The size of the bypass shall be at least as large as the pipe size required for discharge pipe as specified in Section 5.25."*

B = **Check Valve –** This check valve is installed to prevent the discharge water from the fire pump from recirculating back to the pump suction.

C = **Control Valve –** Since a check valve is installed, control valves need to be installed on either side of the check valve. This allows the check valve to be isolated for maintenance purposes. These valves may be OS&Y or butterfly type.

Quick Response is presented monthly by the
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