



QUICK RESPONSE

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

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DRY PIPE VALVE – ACCELERATOR

NFPA 13 (2002 edition) requires dry pipe systems to deliver water to the inspector's test connection within certain time limits. That basic time limit is sixty seconds. The system volume or gallon capacity is the basis for this requirement. Some larger dry systems can only meet this requirement with the aid of a **quick-opening device**.

For systems up to 500 gallons of capacity, there is no sixty second delivery requirement and therefore no need for such a device. For systems up to a 750 gallon capacity, the water must be delivered to the inspector's test within sixty seconds, **or a quick-opening device must be installed**. For systems that exceed 750 gallons of capacity, the water must be delivered to the test connection within sixty seconds. That usually requires the installation of one or both types of **quick-opening devices**. The two types are known as **accelerators** and **exhausters**. The most common type of **quick-opening device** is the **accelerator**.

Since most dry pipe valves are the differential-type (where the air pressure side of the clapper is four-to-five times larger than the water pressure side), one way to cause the dry valve to trip faster than it takes for air to escape out of just a single sprinkler is to neutralize the differential at the clapper. The **accelerator** does this by sensing a drop in system air pressure and transferring system pressure to the intermediate chamber of the clapper, thus making the differential ratio 1:1 rather than the normal 4 or 5:1.

Older **accelerators** (Figure 1) operate on a strictly mechanical basis, but are historically high maintenance items. Newer **accelerators** (Figure 2) incorporate electronic-assisted components, are more sensitive and responsive.

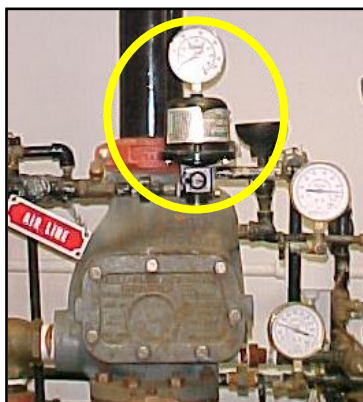


Fig. 1 Mechanically operated Accelerator



Fig. 2 Electronically operated Accelerator