



DEFENSE

HIGH PRESSURE MULTIWAY VALVES

Pyroalliance designs and manufactures complex high pressure valves for missile applications.

Those pyro-mechanisms are designed to perform a tailored sequence of actions among which circuit opening, circuit closing, mechanical actuation... Based on onboard available pneumatic pressure, a series of pyrotechnic orders successively triggers the required functions, thus combining several pyro-mechanisms in one single equipment.

More generally, Pyroalliance delivers complete pyrotechnic chains adapted to its customers' needs. They are designed and manufactured under Pyroalliance's design authority.

HIGH PRESSURE MULTIWAY VALVE

Operating mode

This valve, constituted of several ways, operates as a pyrotechnically triggered pneumatic distributor allowing the supply of pneumatic pressure to each of its ways.

Upon reception of electrical order, the powder contained inside the cartridge is ignited. The pressure generated by the combustion allows the movement of internal parts leading to the opening or closing of channels between a general upstream pressure tank and the downstream pneumatic actuators to be supplied.

The opening/closing times of the circuits are on the range of 5 to 10 milliseconds.

Such operation is successively repeated on each way so as to activate each function of the multiway valve. The different ways are operated according to the predefined firing sequence.

Benefits

- Several functions on a single valve,
- Sealing before and after operation,
- Very quick functioning time,
- Low energy for ignition of initiator,
- Energy stored onboard (energetic material)

Applications

- Various complex missile actuation sequences

Classification

- Number UN: UN0288
- Storage class: 1.4S
- Not restricted by ITAR regulations

For more information

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Typical performances and features

Operating time	< 10ms for each way
Firing current	5A – 10 ms
Non fire current	1A / 1W - 5 min @ 100°C
Pressure	Up to 500 bars
Internal diameter	> from 1 mm to 10 mm
Size, Weight and Power (SWaP)	Adapted to the mission and life profile
Operating temperature	Typically [-55°C;+85°C] adapted to airborne military environment
Storage life time	3 years
Operational life time	10 to 15 years
Reliability	~1-1.10 ⁻⁶

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