

Liquip SLV5 Emergency Valve

Cross-Sectional Flow Area And Pressure Drop

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Tech Talk No: **T004**
Product: **Emergency Valve**
Part Number: **SLV5**

SLV5 has the lowest pressure drop of any equivalent valve on the market.

It is designed as a nominal 4 inch valve, but the poppet size is 5 inch (126 mm) diameter.

All emergency valves incorporate a 90° bend (elbow) and the pressure drop due to this is inevitable but small.

The major influence on pressure drop is the poppet. Liquip attacked this problem in two ways.

- i) A simple, direct and practical way to minimise loss is to make the orifice 5 inches diameter, with the elbow gradually tapering back to the nominal 4 inch diameter. This reduces the pressure drop by an amazing 66%.
- ii) A more subtle improvement in pressure drop is by using a hinged flap poppet instead of the old-fashioned mushroom poppet. The flap is curved internally to streamline flow, but more importantly the geometry totally prevents vortexing.

Conversely the mushroom-poppet style can actually encourage vortexing which is one of the most common reasons for high losses through an emergency valve.

Tankers equipped with Liquip API 403 adaptors and SLV5 emergency valves are regularly loaded at up to 2,500 litres per minute and are capable of 3,000 litres per minute and discharge through 100 mm diameter gravity hoses at up to 1,800 litres per minute.