

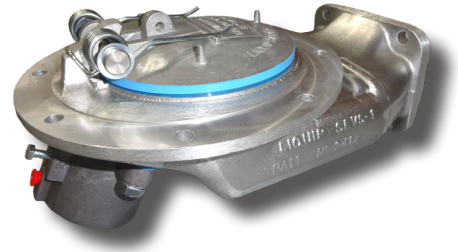
LIQUIP SLV5-ARO Emergency Footvalve Recommended Inspection Schedule and Manual

Features & Benefits

The Liquip bottom valve leads the industry with its low profile, low splash and vortex free design enabling faster tanker unloading than traditional mushroom poppet valves.

Used globally by road tankers that carry fuels, the Liquip SLV5 has become a benchmark for the industry. Easy to maintain because of its simplicity and low profile, excellent for both loading and discharge, this valve also reduces static created during flow by reducing splash and vortex.

The valve is operated with a pneumatic actuator, which lifts the hinged poppet (which also acts as a splash deflector).



- Incorporates the latest technical advancements to ensure fast and safe loading and discharge of road tankers.
- A unique hinged poppet design has a concave design which operates as a splash deflector, eliminating vortexing and reducing splash, surge and static build up during loading and unloading.
- The valve is installed in the compartment floor and controls the flow of product from each compartment.
- Incorporates a shear groove that is designed to retain the compartment contents in the event of accidental damage to the outlet piping or API adaptors.
- Minimal pressure drop across the system.
- Can be operated pneumatically or manually.
- Faster flow rates and a reduction in static electricity for improved and safer operation.
- Hinged poppet design gives minimum height, so valve requires very little clearance to drop out for servicing.
- Specially bonded lip seal design for superior sealing and extended life.
- Conforms with AS2809 requirements.
- ARO (air operator assembly) is easily removed and replaced.
- ARO supplied with a jacking screw to allow manual partial opening in the event of air pressure loss.

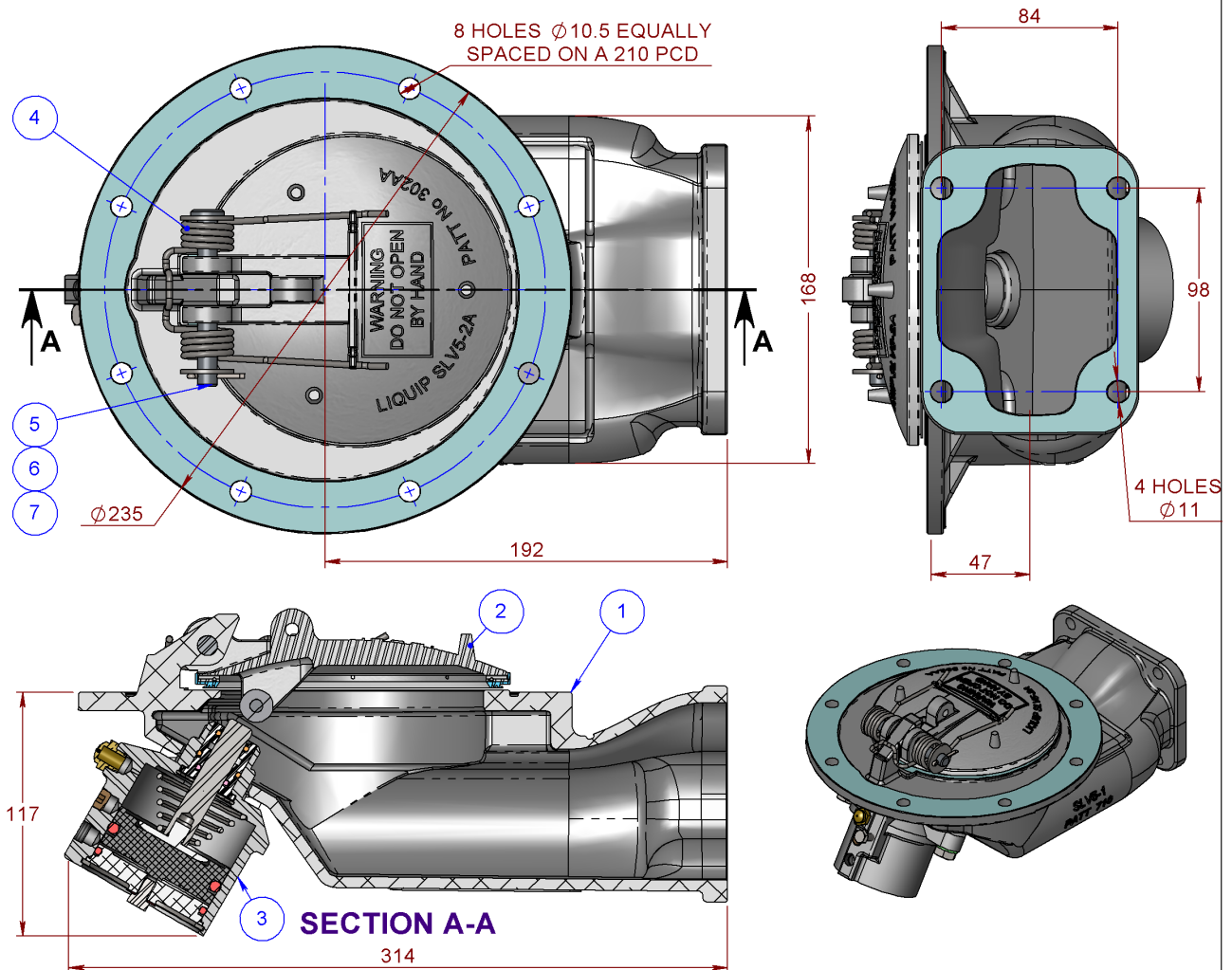
Selection Guide

| Item | Description |
|-------------|---|
| SLV5-ARO | Air Operated Internal Valve with Bonded Viton A seals (suits aviation fuels). |
| SLV5-AROVG | Air Operated Internal Valve with Bonded Viton GFLT seal. |
| SLV5-AROZ | SLV5-ARO with Cork Gaskets (tank and pipe flange). |
| SLV5-AROVZ | SLV5-ARO with Viton A Gaskets (tank [3mm] and pipe [3mm] flange). |
| SLV5-AROTVZ | SLV5-ARO with Viton A Gaskets (tank [1.6mm] and pipe [3mm] flange). |
| SLV5-AROVGZ | SLV5-AROVG with Klinger Gaskets (tank and pipe flange). |

Specifications

| | |
|----------------------|--|
| Periodic Service | No routine maintenance required. Check sealing of valve as required by authorities. |
| Dismantle | Air operator assembly is easily removable & replaceable, being a self-contained externally mounted assembly. To use jacking screw, remove from stored position & screw into base of the ARO100. |
| Pressure Rating | Nominal Ø100mm flow area except poppet is Ø125mm bore for minimal pressure drop. Needs a minimum of 350kPa of air pressure. |
| Air Consumption | Consumption 1.0L free air per stroke. |
| Mounting | Bolted to sump or tank flange at the bottom of tank 8 holes Ø9.5 on a 210 PCD. Outlet adaptor from rectangular to round is available in aluminium or steel. |
| Associated Equipment | Al/FFKM (Chemical): SLV5-AROC, Cable operated: SLV5CO, Manual operated: SLV5M, |
| Weight | 3.6 kg |
| Materials | Aluminium body. Stainless steel main spindle/springs. Viton main seal bonded to aluminium poppet. Aluminium air ram body with acetal piston and Viton seals. |

SLV5-ARO EMERGENCY VALVE



| ITEM | PART No | DESCRIPTION | SLV5-ARO | SLV5-AROVG | SLV5-AROC | MATERIAL |
|------|------------|--------------------------------|----------|------------|-----------|-------------|
| 1 | SLV5-1 | FOOTVALVE ELBOW BODY SLV5-1 | 1 | 1 | 1 | ALUMINIUM |
| 2 | SLV5-2AS | LID & ROLLER ASSY | 1 | - | - | ALUM / FKM |
| | SLV5-2ASVG | LID & ROLLER ASSY | - | 1 | - | ALUM / FKM |
| | SLV5-2ASK | LID & ROLLER ASSY - CHEMICAL | - | - | 1 | ALUM / FFKM |
| 3 | ARO100 | AIR RAM FOR FOOT VALVES (STD) | 1 | - | - | ALUMINIUM |
| | ARO100VG | AIR RAM FOR FOOT VALVES (GFLT) | - | 1 | - | ALUMINIUM |
| | ARO100C | AIR RAM FOR FOOT VALVES (CHEM) | - | - | 1 | ALUMINIUM |
| 4 | 6154 | SPRING DOUBLE TORSION | 1 | 1 | 1 | ST STEEL |
| 5 | SLV5-8 | PIN PIVOT OPERATING | 1 | 1 | 1 | ST STEEL |
| 6 | 0812 | WASHER FLAT LARGE | 2 | 2 | 2 | ST STEEL |
| 7 | 0764 | SPLIT PIN | 1 | 1 | 1 | ST STEEL |

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METERS - VALVES - VENTS - MANHOLES - HOSEREELS - OVERFILL PROTECTION - LOADING ARMS - ELECTRONIC DIPSTICKS



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Sheet 1 of 1
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Attention:

The Steps Outlined In This Document Must Be Performed By Authorized and Competent Personnel Only.

The Steps Outlined In This Document Are Not Intended To Replace Dangerous Goods Regulations, The Australian Code For The Transport Of Dangerous Goods By Road, SLP, AS2809 Requirements Or Other Relevant Standards Or Regulations. Instead, They Are Intended To Supplement Them. For Further Explanation Please Contact Your Liquip Representative.

1. Suggested Inspection And Maintenance Schedule

Recommended inspection and maintenance schedule for SLV5-ARO series Air Operated Emergency Valves

Suggested Inspection And Maintenance Interval Number

| Vehicle Inspection to determine safety of the road tanker vehicle | Inspection Frequency | | |
|--|----------------------|----------------|----------------------|
| | Weekly ⁴ | 30 months | 5 years ¹ |
| Visually inspect the emergency valve for seal damage, replace if required ² | ✓ | ✓ | ✓ |
| Visually inspected gaskets for weeping or dirt stains, replace if required ^{2 3} . | ✓ | ✓ | ✓ |
| Visually inspect polyamide (nylon) tubing and fittings for damage, replace if required. | ✓ | ✓ | ✓ |
| Visually inspect to ensure emergency override screw is still in stowage position, replace if required. | ✓ | ✓ | ✓ |
| Visually inspect air filter is free from dirt or debris, replace if required. | ✓ | ✓ | ✓ |
| Inspect the emergency valve closes against discharge flow if its actuating means fails or is disconnected ^{5 6 7} . | | ✓ | ✓ |
| If a lifting wire is fitted, visually inspect lifting wire is securely connected between the camlift operators and emergency valve and allows the emergency valve to fully close, adjust or replace if required ⁶ . | | ✓ ¹ | ✓ ¹ |
| Check all tank flange studs are torqued to 10-12Nm, torque if required ⁷ . | | | ✓ ¹ |
| Replace SLV5-2ASxx (seat valve) and 6154 (spring double torsion) as part of preventative maintenance schedule ^{2 6 8} . | | | ✓ ¹ |
| Replace ARO100xx (air ram) as part of preventative maintenance schedule ^{6 8} . | | | ✓ ¹ |
| Visually inspect all gaskets and replace if required ^{2 6 7} . | | | ✓ ¹ |



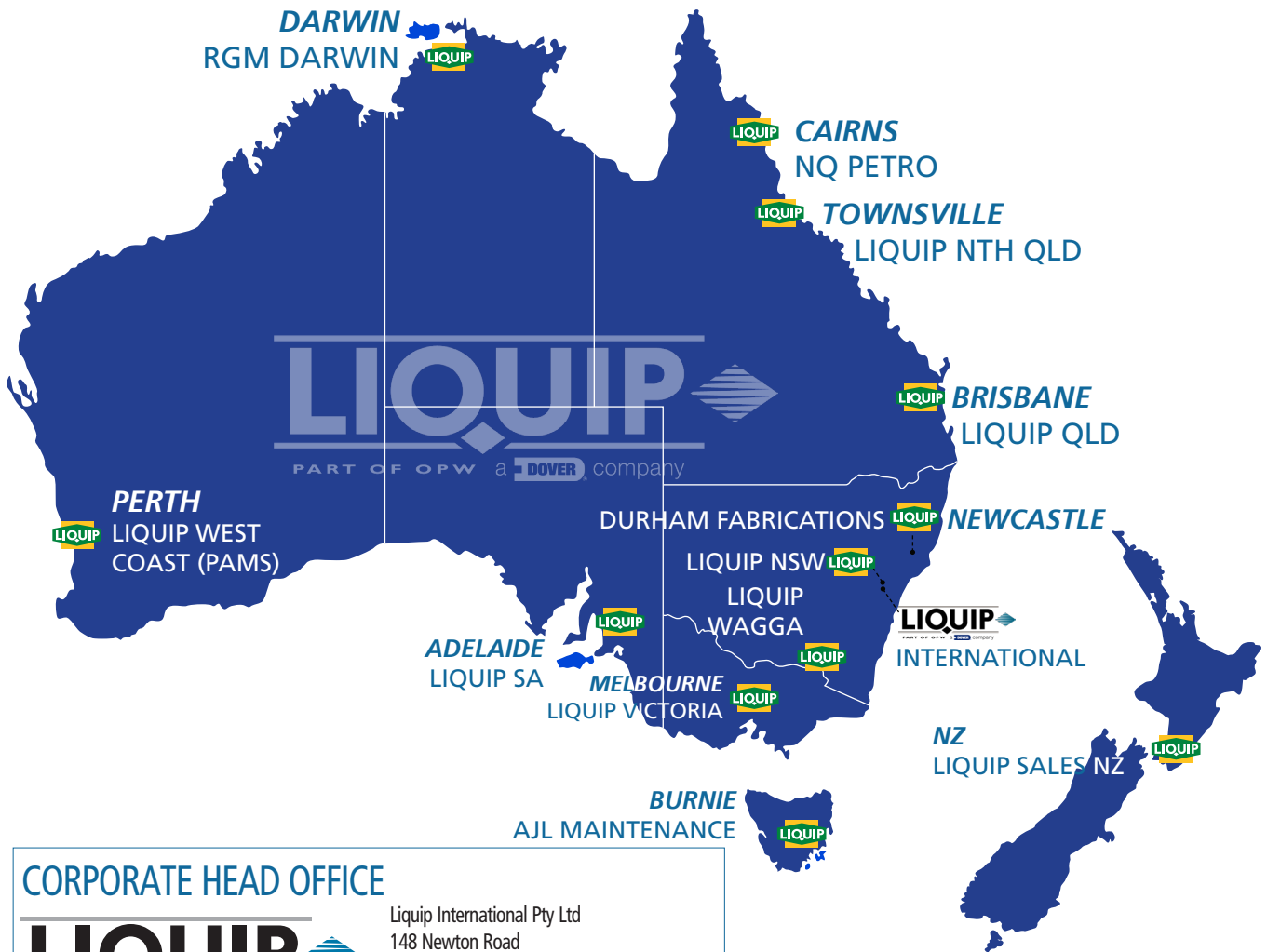
NOTES:

- 1: Inspections to be carried out after tanker degassing.
- 2: Emergency valve sealing faces shall be within 0.5mm
- 3: Product build-up (other than small amounts of residue from pipework) in a sight glass of an empty compartment likely indicates a leaking foot valve. If this is noticed there should be further investigation and possible removal (and refurbishment) of the foot valve.
- 4: If an operator notices excessive unloading times, further inspection is recommended to ensure the valve is fully opening as required (inspection frequency 30 months) and the vapour recovery system is operating as per normal.
- 5: Liquip suggests operating the emergency valve from the open to the closed position via the pneumatic control box to visually inspect that the emergency valve has closed.
- 6: Hydrotesting is required after completion of inspection.
- 7: Liquip recommend emergency valves are torqued to 10-12Nm.
- 8: Ensure there is sufficient clearance all-round the seat valve and air ram to prevent clashing with tanker components e.g. turn tables, chassis & landing legs and to ensure clear access in the event of an emergency.

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