



# PRODUCT BULLETIN

## Universal Accumulator Charging Valve

### DESCRIPTION

The Single ACV Valve is used in an open center hydraulic system with one pressure accumulator, and the Dual ACV Valve is used in a system with two separate pressure accumulators. The function of the valve is to isolate pressure, monitor pressure, and direct flow to charge the pressure in the hydraulic circuits. It maintains that pressure between the upper and lower pressure limits.

The Universal ACV Valve is positioned in the hydraulic system between the hydraulic supply and other hydraulic devices. Whenever pressure in an accumulator circuit is below the lower set limit, the accumulator sends a load sense signal to the hydraulic supply to command flow. If the hydraulic supply is not a load sensing design, or if the hydraulic supply is unable to satisfy the load sense command, the priority valve function restricts flow to downstream devices as needed to charge the accumulator circuit(s).

The Universal ACV Valve does not limit pressure in the accumulator circuit(s) when pressure at the downstream devices exceeds the upper limit of the accumulator charging valve. It is the responsibility of the designer of the hydraulic system to provide a means to limit the maximum pressure in the hydraulic system to a safe level.

### BENEFITS

- Cost efficient for low and mid volume machine production
- Integrates easily into the hydraulic braking system
- Improves efficiency by having no continuous drain of oil to reservoir

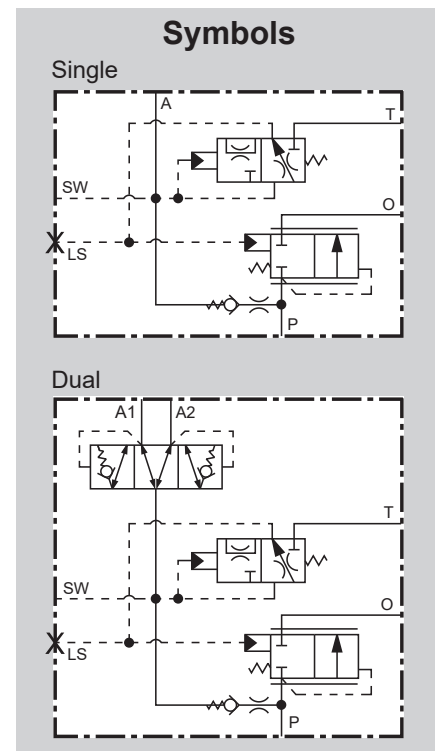
### FEATURES

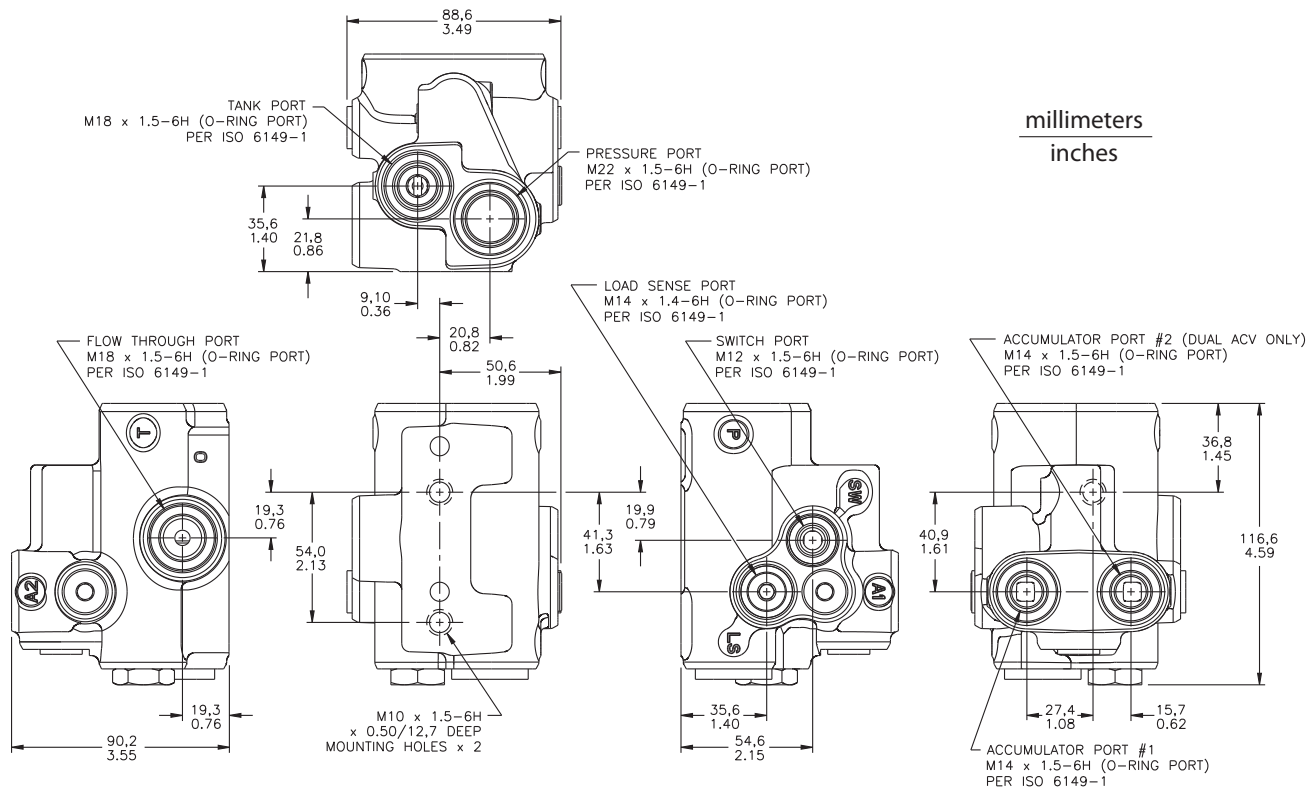
- Various upper and lower limit pressure ranges available
- Easily configured as open center, load sensing, or priority load sensing valve
- Pressure switch port on the dual valve senses the lower pressure of the two accumulators

### SPECIFICATIONS

System pressure.....	to 208 bar (3000 PSI)
Recommended maximum flow .....	60.0 LPM (15.8 GPM)
Charge rate.....	17.0 ± 2.0 LPM (4.5 ± 0.5)
Standby pressure.....	3.0 bar (43.5 PSI)
Pressure drop at rated flow.....	7 bar (100 PSI)
Approximate weight .....	4.08 Kg (9 lb)
System filtration .....	10 micron or better is required

Accumulator capacity is determined from brake line pressure, displacement, and number of power-off emergency brake applications.





Model Number	ACV Description	Nominal High Limit (cut out)		Nominal Low Limit (cut in)	
		bar	(PSI)	bar	(PSI)
407 102 036 0	Dual	120 ±3.5	(1750 ±50)	100 ±3.5	(1450 ±50)
407 102 037 0	Dual	140 ±3.5	(2030 ±50)	114 ±3.5	(1650 ±50)
407 102 038 0	Dual	160 ±3.5	(2320 ±50)	135 ±3.5	(1950 ±50)
407 102 039 0	Dual	170 ±3.5	(2460 ±50)	140 ±3.5	(2045 ±50)
407 102 040 0	Single	120 ±3.5	(1750 ±50)	100 ±3.5	(1450 ±50)
407 102 041 0	Single	140 ±3.5	(2030 ±50)	114 ±3.5	(1650 ±50)
407 102 042 0	Single	160 ±3.5	(2320 ±50)	135 ±3.5	(1950 ±50)
407 102 043 0	Single	170 ±3.5	(2460 ±50)	140 ±3.5	(2045 ±50)

Contact ZF Off-Highway Solutions Minnesota Inc. for technical information

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