Models 106-A-Type 3 / 206-A-Type 3 Two-Way Flow Altitude Control Valve with Differential Control

106-A-Type 3 Globe

KEY FEATURES

- No overflows
- Superior repeatability while operating within close limits
- Positive shut-off

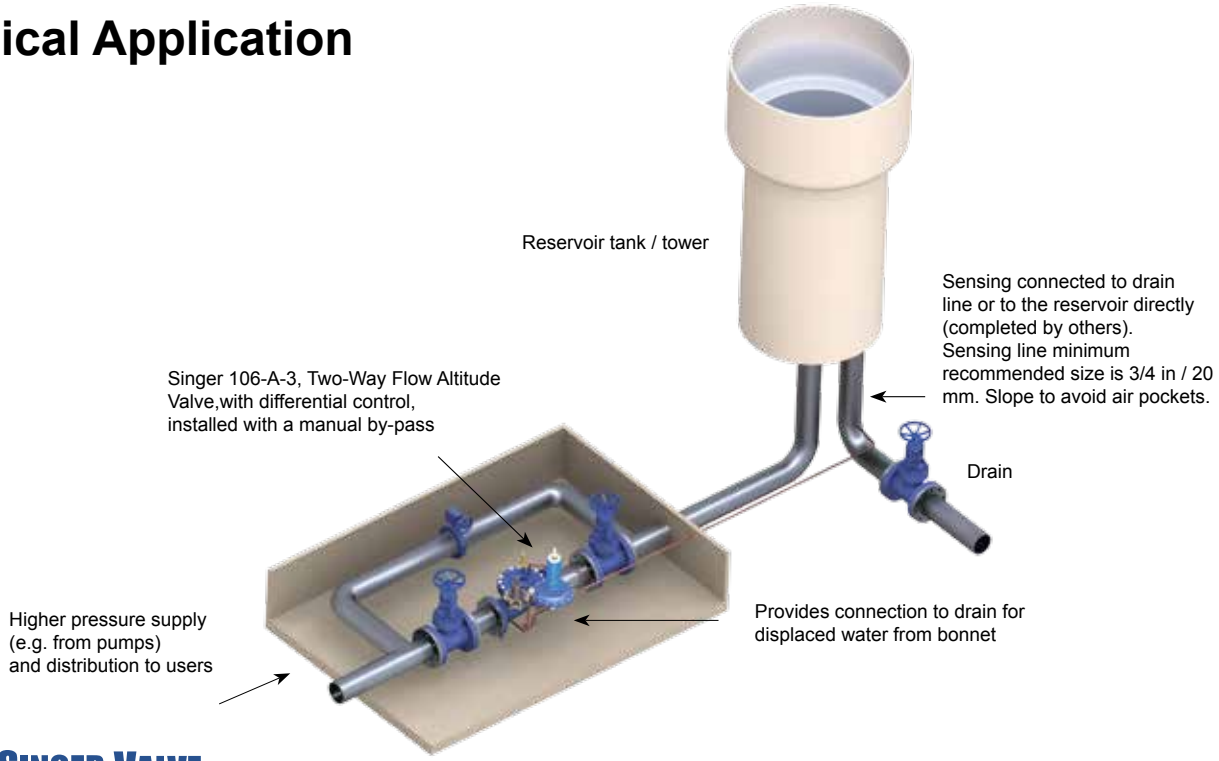
Product Overview

The 106-A-Type 3 and 206-A-Type 3 altitude control valves are based on the 106-PG or 206-PG main valve, and are ideal for maintaining preset maximum level.

The Type 3 allows normal forward flow to fill the reservoir to the maximum level, then closes drip-tight at the set-point. The valve opens to permit reverse flow through the valve when the supply pressure drops an adjustable amount below the reservoir head.

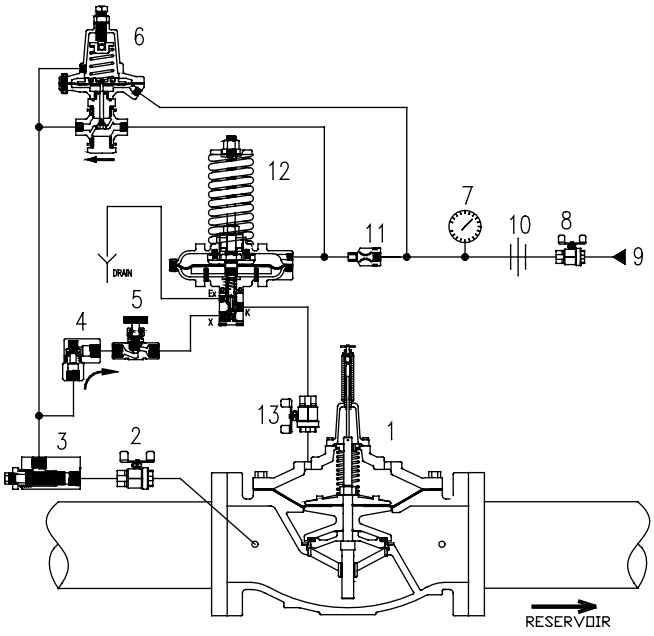
The Type 3 will then allow normal forward flow to refill the tank to the maximum level, when a higher supply pressure is restored.

Typical Application



Models 106-A-Type 3 / 206-A-Type 3 Two-Way Flow Altitude Control Valve with Differential Control

Schematic Drawing



Schematic A-0414D

1. Main Valve - 106-PG or 206-PG - with X107 position indicator
2. Isolation Valve
3. Strainer - 40 mesh stainless steel screen
4. Model 10 Check Valve
5. Closing Speed Control
6. Model 625-RPD Differential Relief Pilot
7. Altitude Gauge
8. Isolation Valve
9. Sensing connection to reservoir - complete in field
10. Union
11. Fixed Restriction - 1/8 in / 3.2 mm
12. Model 301-4 Altitude Pilot;
13. Isolation Valve

Standard Materials

Standard materials for pilot system components are:

- Ductile Iron
- Stainless Steel

Specifications

- The valve shall be a Singer Valve model 106-A-Type 3 / 206-A-Type 3, size "_____", ANSI Class 150 (ANSI 300, ANSI flanges drilled to ISO PN 10 / 16/ 25 or 40) pressure rating / flange standard, globe (angle), style valve. The Model 301-4 Altitude Pilot spring range (elevation) shall be "___ to ___" feet / meters, with set-point preset at Singer Valve to "___" feet / meters. The Model 625-RPD differential (delayed opening) range shall be "___" to "___" feet / meters, with set-point preset at Singer Valve to "___" feet / meters. Assembly shall be according to Schematic A-0414D.
- The valve allows normal forward flow to fill the reservoir to the maximum level then closes drip-tight at the set-point It opens to allow reverse flow through the valve to distribute to users when the supply pressure drops an adjustable amount below the reservoir head. When a higher supply pressure is restored the A-Type 3 will then allow normal forward flow to refill the tank to the maximum level.
- Refer to Main Valve section, see page 11, 106-PG (or 206-PG) and "Main Valve Options" section, Model X107 Position Indicator for detailed information pertaining to valve sizes and materials, selection criteria and specifications.

Models 106-A-Type 3 / 206-A-Type 3 Two-Way Flow Altitude Control Valve with Differential Control

- Refer to Pilot and Accessories section, see page 266, Model 301-4 Altitude Pilot for detailed information pertaining to materials and specifications. Model 625-RPD Pilot specification information, is available from Singer Valve only at this time.

Selection Summary

1. Generally select line size to minimize losses during normal forward flow.
2. Use the performance curves to determine the pressure drop across the valve.
3. Limit maximum continuous flow velocity to less than 20 ft/s / 6 m/s for 106 and less than 16 ft/s / 5 m/s for 206.
4. The pilot system exhausts to atmosphere ensuring the valve opens fully; requires that the displaced volume of water be taken to drain with each opening - refer to section 106-PG or 206-PG, page 11, for displaced volume
5. Select pilot spring range. Standard (301-4) is 10 to 60 ft / 3 to 18 m. Specify for 301-4 ranges 4 to 20 ft / 1 to 6 m, 40 to 125 ft / 12 to 38 m, 60 to 220 ft / 18 to 67 m.
6. Select the adjustable differential pilot spring range. Standard is 5 to 15 ft / 2 to 5 m. Specify for 12 to 30 ft / 3.7 to 9.1 m or 25 to 50 / 8 to 15 m. The total differential includes the non-adjustable differential of the altitude pilot.

Ordering Instructions

Refer to page 293 for the order form and ordering instructions.

Additionally, include the following information for this product:

1. Full port (106) and reduced port (206)
2. Pilot ranges

Models 106-A-Type 3 / 206-A-Type 3
Two-Way Flow Altitude Control Valve with Differential Control

106-A-Type3	Flow Coefficient C_v (See 106-PG in Main Valve section for other valve data)			
Size (inches)	3 in	4 in	6 in	8 in
Size (mm)	80 mm	100 mm	150 mm	200 mm
C_v[1]	110	200	460	800
K_v[2]	26	47	110	190

106-A-Type3	Flow Coefficient C_v (See 106-PG in Main Valve section for other valve data)						
Size (in)	10 in	12 in	14 in	16 in	20 in	24 in	36 in
Size (mm)	250 mm	300 mm	350 mm	400 mm	500 mm	600 mm	900 mm
C_v[1]	1300	2100	2575	3300	5100	7600	16340
K_v[2]	310	500	610	780	1210	1800	3875

206-A-Type 3	Flow Coefficient C_v (See 206-PG in Main Valve section for other valve data)			
Size (inches)	3 in	4 in	6 in	8 in
Size (mm)	80 mm	100 mm	150 mm	200 mm
C_v[1]	60	150	250	505
K_v[2]	14	36	60	120

206-A-Type 3	Flow Coefficient C_v (See 206-PG in Main Valve section for other valve data)											
Size (in)	10 in	12 in	16 in	18 in	20 in	24 x 16 in	24 x 20 in	28 in	30 in	32 in	36 in	40 in
Size (mm)	250 mm	300 mm	400 mm	450 mm	500 mm	600 x 400 mm	600 x 500 mm	700 mm	750 mm	800 mm	900 mm	1000 mm
C_v[1]	985	1550	2200	3300	3400	3500	5100	7800	7800	7900	8000	18000
K_v[2]	230	370	520	780	810	830	1210	1850	1850	1870	1900	4265

*C_V = USGPM at 1 psi pressure drop
**K_V = L / s at 1 bar pressure drop

Note: based on fully open valve $(Q=C_V \sqrt{\Delta P})$