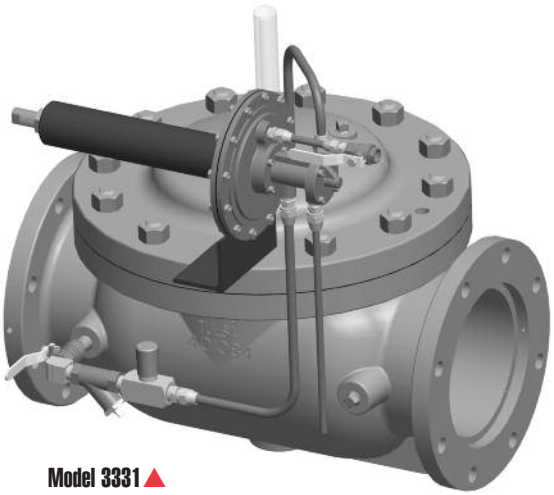


Model 3331 ▲

The Model 3331 is applicable anywhere it is necessary to automatically maintain the water level in elevated storage tanks or reservoirs. Such applications occur in:

- Fire protection systems
- Municipal water
- Rural water
- Industrial plants

SERIES FEATURES

- ▶Automatic tank fill and shut-off without the use of floats or sensors
- ▶Accurate shut-off to within millimeters of set point
- ▶High level point adjustable with single screw
- ▶Exhaust-to-atmosphere operation allows minimum pressure loss
- ▶Can be maintained without removal from the line
- ▶Adjustable response speed
- ▶Factory tested and can be pre-set to your requirements

OPERATION

The model 3331 is designed for tank fill only, with discharge from the tank by a separate line or by-pass. Tank head (pressure) is sensed under the diaphragm of the altitude pilot. When tank head falls below the set point (spring setting), the pilot shifts to vent water from the diaphragm chamber of the main valve. This allows the valve to open and fill the tank. When the tank level reaches the set point, the altitude pilot shifts to apply full inlet pressure to the diaphragm of the main valve, forcing the valve fully closed.

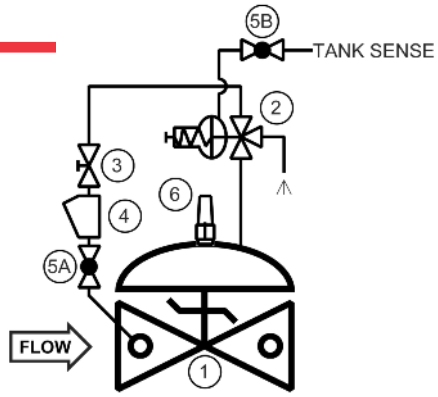
On 8" (DN200) and smaller valves, the altitude pilot operates the main valve directly. On 10" (DN250) and larger valves, the altitude pilot operates the main valve through a high-capacity three-way auxiliary pilot for more positive response.

COMPONENTS

The Model 3331 consists of the following components, arranged as shown on the schematic diagram:

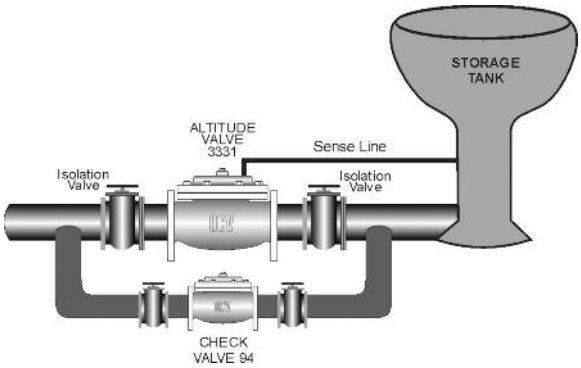
1.) Model 65 Basic Control Valve
2.) Model 3300 Altitude Pilot
3.) Model 141-2 Needle Valve
4.) Model 159 Y-strainer
Protects pilot system from dirt/debris
5.) Model 141-4 Isolation Ball Valves
6.) Model 155 Visual Indicator

SCHEMATIC



RECOMMENDED INSTALLATION

A sense line must be connected within 40 pipe diameters of the tank wall or riser, minimum size of 1/2" O.D. tubing or 3/8" pipe. In order to prevent accumulation of air, the sense line should slope upwards to the tank. As the 3331 exhausts its diaphragm chamber to atmosphere, the volume varying according to valve size, as shown below. Provisions should be made to drain or otherwise dispose of this water.



1.25" (DN32) & 1.5" (DN40)	0.08 LITERS	8" (DN200)	3.8 LITERS
2" (DN50)	0.19 LITERS	10" (DN250)	9.5 LITERS
2.5" (DN65)	0.23 LITERS	12 " (DN300)	15.2 LITERS
3" (DN80)	0.4 LITERS	14" (DN350)	24.7 LITERS
4" (DN100)	0.8 LITERS	16" (DN400)	36.48 LITERS
6" (DN150)	2.28 LITERS	24" (DN600)	106.4 LITERS

SIZING

While most Model 3331 Altitude Valves are line size, definitive sizing information can be found in the OCV Catalog, Series 3330 section and Engineering section Performance Charts. Consult the factory for assistance and a copy of the OCV ValveMaster Sizing program.

MAX. PRESSURE (The pressures listed here are maximum pressures at 37.78°C.)

END CONNECTIONS	DUCTILE IRON	STEEL/STN STL	BRONZE
Threaded	44.1 bar	44.1 bar	34.4 bar
Grooved	20.6 bar	20.6 bar	20.6 bar
150# Flanged	17.2 bar	19.6 bar	15.5 bar
300# Flanged	44.1 bar	51.0 bar	34.4 bar

TOLL FREE 1.888.628.8258 ● **phone:** (918)627.1942 ● **fax:** (918)622.8916 ● 7400 East 42nd Place, Tulsa, Ok 74145
email: sales@controlvalves.com ● **website:** www.controlvalves.com

Model 3331 One-Way Altitude Valve METRIC

Model 3331 METRIC

SIZES GLOBE/ANGLE
Screwed Ends - 2" - 3" (DN50 thru DN80)
Grooved Ends - 2" - 6" (globe) (DN50 thru DN150)
2" - 6" (angle) (DN50 thru DN150)
Flanged Ends - 2" - 24" (globe); (DN50 thru DN600)
2" - 16" (angle) (DN50 thru DN400)

FLUID OPERATING TEMPERATURE RANGE
(Valve Elastomers)
Buna-N 0°C to 82.22°C*
EPDM 0°C to 110°C*

MATERIALS Consult factory for others.
Body/Bonnet: Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, Bronze
Others available (consult factory)
Seat Ring: Bronze, Stainless Steel
Stem: Stainless Steel, Monel
Spring: Stainless Steel
Diaphragm: Nylon Reinforced Buna-N, EPDM*
Seat Disc: Buna-N, EPDM*
Pilot: Bronze, Stainless Steel
Other pilot system components: Bronze/Brass, All Stainless Steel
Tubing & Fittings: Copper/Brass, Stainless Steel
Adjustment Ranges:
Altitude Pilot (High Level Closing Point)
1.5-9m (Green/Blue), 6-15m (Green), 12-24m (Blue), 21-42m (Red), 39-70m (Yellow)

*Others available upon request

SPECIFICATIONS

The altitude valve shall function to control the level in the tank without the use of floats or probes in the tank itself. It shall be a one-way flow (single-acting) type, designed to open fully to fill the tank and close completely when the predetermined high level is reached. Sensing of the altitude pilot shall be by means of a field-installed sense line between the pilot and the base of the tank. The altitude valve shall be equipped with a visual indicator assembly.

DESIGN
The altitude valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot controlled globe valve. The valve shall seal by means of a corrosion-resistant seat and a resilient, rectangular seat disc. These, and other parts, shall be replaceable without removing the valve from the line. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall the pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include the altitude pilot, a needle valve, Y-strainer and isolation ball valves. The altitude valve shall be operationally and hydrostatically tested prior to shipment.

MATERIALS OF CONSTRUCTION
The main valve body and bonnet shall be ductile iron. All ferrous surfaces shall be coated with 4 mils of epoxy. The main valve seat ring shall be bronze. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. The altitude pilot shall be bronze. The needle valve and isolation ball valves shall be brass and control line tubing shall be copper.

OPERATING CONDITIONS
The altitude valve shall be suitable for a flow of <X> M^3/HR, a maximum pressure of <X> bar, and a full tank level of <X> meters.

ACCEPTABLE PRODUCTS
The altitude valve shall be a <size> Model 3331, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

METRIC CONVERSION - MM

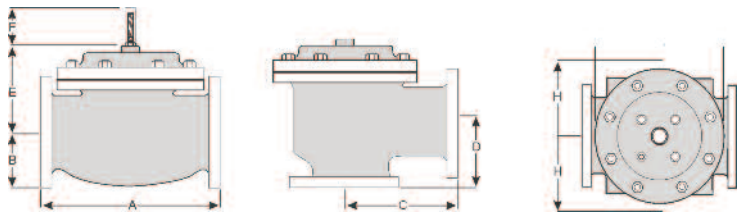
DIM	END CONN	DN32 - DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN600
	SCREWED	222	251	267	330								
A	GROOVED	222	251	267	330	387	508						
	150# FLGD	216	238	267	305	381	451	645	756	864	991	1026	1575
	300# FLGD	222	251	283	324	397	473	670	791	902	1029	1067	1619
	SCREWED	111	121	152	165								
C	GROOVED	111*	121	152	165	194							
ANGLE	150# FLGD	108	121	152	152	191	254	322	378	432		529	
	300# FLGD	111	127	162	162	198	267	335	395	451		549	
	SCREWED	79	98	102	114								
D	GROOVED	79	98	102	114	143							
ANGLE	150# FLGD	76	98	102	102	140	152	203	289	279		398	
	300# FLGD	79	105	111	111	148	165	216	306	298		419	
E	ALL	152	152	178	165	203	254	302	391	432	457	483	686
F	ALL	98	98	98	98	98	98	162	162	162	162	162	203
H	ALL	254	279	279	279	305	330	356	432	457	508	508	724

***GROOVED END NOT AVAILABLE IN DN32**

For maximum efficiency, the OCV control valve should be mounted in a piping system so that the valve bonnet (cover) is in the top position. Other positions are acceptable but may not allow the valve to function to its fullest and safest potential. In particular, please consult the factory before installing 8" (DN200) and larger valves, or any valves with a limit switch, in positions other than described. Space should be taken into consideration when mounting valves and their pilot systems.

A routine inspection & maintenance program should be established and conducted yearly by a qualified technician. Consult our factory @ **1-888-628-8258** for parts and service.

How to order your Model 3331 valve
When Ordering please provide:
Fluid to be controlled -Model Number -Size -Globe or Angle -End Connection -Body Material -Trim Material Pilot Options -High level Setting or Spring Range Special Requirements / Installation Requirements



Represented by:

QUALITY SYSTEM REGISTERED TO ISO 9001

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