

▲ **Model 8104**  
(Typically 8" and larger)

The Model 8104 is applicable anywhere it is necessary to automatically maintain an essentially constant level in storage tanks or reservoirs. Such applications occur in:

- Municipal water
- Rural water
- Water treatment facilities
- Fuel storage tanks
- Fire protection systems

## SERIES FEATURES

- ▶ Maintains tank level within narrow limits
- ▶ Can also be used for high level shut-off
- ▶ Remote-mounted float pilot
- ▶ Single field-installed line between valve and float pilot
- ▶ Can be maintained without removal from the line
- ▶ Adjustable response speed
- ▶ Factory tested

## OPERATION

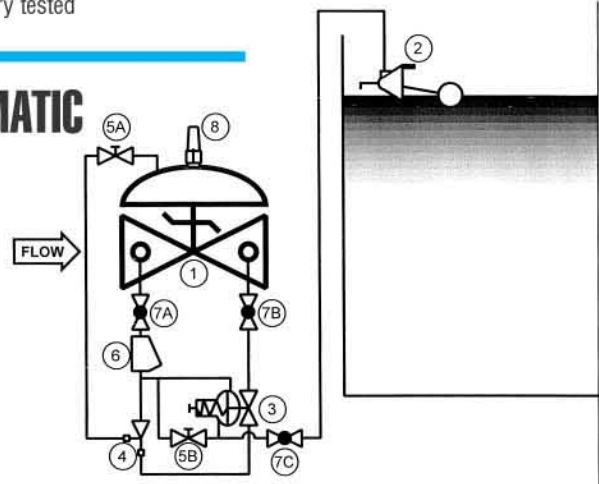
The Model 8104 is designed for tank fill only. A rotary, float-activated pilot controls the position of a relay pilot, which in turn controls the position of the main valve. With the float in the full down position, the pilot is wide open, as are the relay and the main valve. As the float begins to rise, the pilot begins to restrict flow, causing the main valve to throttle further closed. When fluid level raises the float to the full up position, flow is blocked and the main valve is closed.

## COMPONENTS

The Model 8104 consists of the following components, arranged as shown on the schematic diagram:

- 1.) Model 65 Basic Control Valve
- 2.) Model 812 Two-way Float Pilot
- 3.) Model 1356 Differential Control Pilot
- 4.) Model 126 Ejector  
Fixed orifice pilot system supply restrictor
- 5.) Model 141-2 Needle Valve  
Adjustable response speed
- 6.) Model 159 Y-Strainer  
Protects pilot system from dirt/debris
- 7.) Model 141-4 Isolation Ball Valves
- 8.) Model 155 Visual Indicator (Optional)

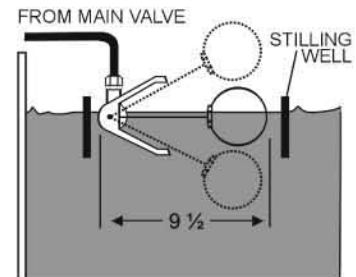
## SCHEMATIC



## RECOMMENDED INSTALLATION

After the main valve is installed the pilot sense line must be connected to the float pilot. The proper installation of the pilot line is critical to the efficient operation of the float valve. Minimum recommended size for the sense line is 1/2" OD tubing or 3/8" pipe. The pilot supply port is 3/8" NPT.

In any float pilot installation where there is periodic or continuous turbulence within the tank, consideration must be given to shielding the float from such turbulence with a stilling well. Failure to do so can result in erratic valve control.



## SIZING

While most Model 8100 Float Valves are line size, there are two factors to check. To keep from using a valve that is too small, flow rate should be limited to a maximum of 25 ft/sec velocity. Too large a valve can result in loss of inlet pressure, which is needed to close the valve on high level.

Definitive sizing information can be found in the OCV Catalog, Series 8100 section and Engineering section Performance Charts. Consult the factory for assistance and a copy of the OCV ValveMaster Sizing program.

SIZE	8"	10"	12"	14"	16"	24"
MIN. FLOW GPM	780	1225	1750	2100	2750	6250
MAX. FLOW GPM	3900	6150	8700	10500	13800	31300

For smaller sizes, refer to Model 8101.

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

**Global** performance. **Personal** touch.

## SIZES

GLOBE 8" - 24"

ANGLE 8" - 16"

## MAX. PRESSURE

Limited by float pilot to 250 psi maximum, all materials and end connections.

## TEMPERATURE RANGE

(Valve Elastomers)

Buna-N -40° F - 180°F

Viton 0° F - 400°F

EPDM 0° F - 300°F

**MATERIALS** - Consult factory for others.

**Body/Bonnet:** Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, B61 Bronze

-Others available (consult factory)

**Seat Ring:** Bronze B61, Stainless Steel

**Stem:** Stainless Steel, Monel

**Spring:** Stainless Steel

**Diaphragm:** Nylon Reinforced, Buna-N, Viton, EPDM

**Seat Disc:** Buna-N, Viton, EPDM

**Pilot:** Bronze, Stainless Steel

*Other pilot system components:*

Bronze/Brass, All Stainless Steel

**Tubing & Fittings:** Copper/Brass, Stainless Steel

## SPECIFICATIONS (Typical Water Application)

The modulating float valve shall be installed on the inlet line to the tank and shall modulate to hold a constant level in the tank, thus balancing inflow and outflow levels. The modulating float valve shall include a simple, two-way, non-adjustable float pilot to be installed in the tank at the desired tank level and be connected to the main valve by a single, customer-installed sense line.

## DESIGN

The modulating float 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 include a speed control, Y-strainer and isolation ball valves. The float pilot shall be furnished separately for remote mounting in the tank. The modulating float valve shall be operationally and hydrostatically tested prior to shipment.

## MATERIALS OF CONSTRUCTION

The main valve body and bonnet shall be ductile iron per ASTM A536, Grade 65-45-12. All ferrous surfaces shall be coated with 4 mils of epoxy. The main valve seat ring shall be bronze per ASTM B61. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. The float pilot and relay pilot shall be bronze per ASTM B61 with stainless steel internals. The 5" spherical float shall be stainless steel, as well as the float rod. The isolation ball valves shall be brass and control line tubing shall be copper.

## OPERATING CONDITIONS

The modulating float valve shall be suitable for a maximum flow rate of <X> gpm at inlet pressures ranging from <X> psi.

## ACCEPTABLE PRODUCTS

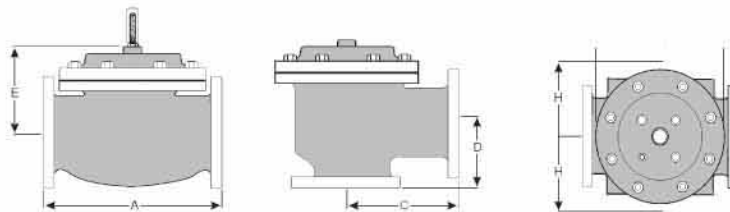
The modulating float valve shall be a <size> Model 8104, <globe pattern>, angle with <150# flanged, 300# flanged> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

U.S. DIMENSIONS - INCHES

DIM	END CONN.	1 1/4-1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	24
A	SCREWED	8 3/4	9 7/8	10 1/2	13	--	--	--	--	--	--	--	--
	GROOVED	8 3/4	9 7/8	10 1/2	13	15 1/4	20	--	--	--	--	--	--
	150# FLGD	8 1/2	9 3/8	10 1/2	12	15	17 3/4	25 3/8	29 3/4	34	39	40 3/8	62
	300# FLGD	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8	26 3/8	31 1/8	35 1/2	40 1/2	42	63 3/4
C ANGLE	SCREWED	4 3/8	4 3/4	6	6 1/2	--	--	--	--	--	--	--	--
	GROOVED	4 3/8*	4 3/4	6	6 1/2	7 5/8	--	--	--	--	--	--	--
	150# FLGD	4 1/4	4 3/4	6	6	7 1/2	10	12 11/16	14 7/8	17	--	20 13/16	--
	300# FLGD	4 3/8	5	6 3/8	6 3/8	7 13/16	10 1/2	13 3/16	15 9/16	17 3/4	--	21 5/8	--
D ANGLE	SCREWED	3 1/8	3 7/8	4	4 1/2	--	--	--	--	--	--	--	--
	GROOVED	3 1/8*	3 7/8	4	4 1/2	5 5/8	--	--	--	--	--	--	--
	150# FLGD	3	3 7/8	4	4	5 1/2	6	8	11 3/8	11	--	15 11/16	--
E	300# FLGD	3 1/8	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2	8 1/2	12 1/16	11 3/4	--	16 1/2	--
	ALL	6	6	7	6 1/2	8	10	11 7/8	15 3/8	17	18	19	27
H	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

\*GROOVED END NOT AVAILABLE IN 1 1/4"

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" 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.



QUALITY SYSTEM  
REGISTERED TO  
ISO 9001

Represented by:

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 8104 valve

When Ordering please provide:

Fluid to be controlled -Model Number -Size

Globe or Angle -End Connection -Body Material

Trim Material -Pilot Options -Special

Requirements / Installation Requirements

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