

▲ Model 94 Shown

The OCV Series 94 check valve is a simple on-off valve that opens to allow forward flow when inlet pressure exceeds outlet and closes tightly to prevent backflow when outlet pressure exceeds inlet pressure.

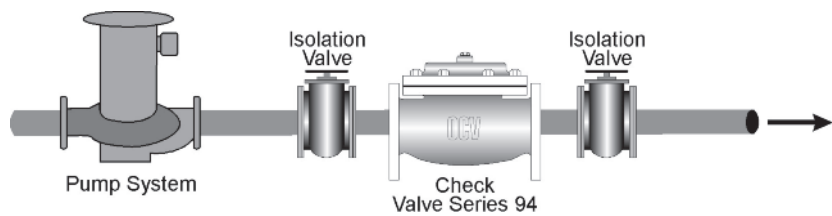
## SERIES FEATURES

- ▶ Non-surge opening and/or closing when equipped with adjustable opening and/or closing speed controls.
- ▶ Equipped with valve position indicator on all models.

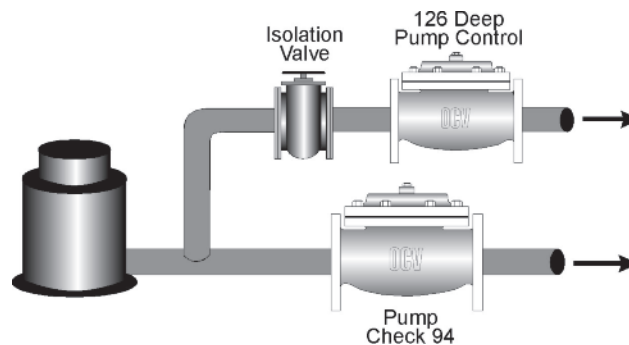
## VALVE FEATURES

- ▶ Operates automatically off line pressure.
- ▶ Heavy-duty, nylon-reinforced diaphragm isolates top chamber operating pressure from bottom chamber line pressure.
- ▶ Rectangular-shaped, soft seat seal provides drip-tight Class VI closure.
- ▶ Diaphragm assembly guided top and bottom.
- ▶ Throttling seat retainer for flow and pressure stability.
- ▶ Easily maintained without removal from the line.
- ▶ Diaphragm replaced without removing internal stem assembly.
- ▶ Replaceable seat ring.
- ▶ Alignment pins assure proper reassembly after maintenance.
- ▶ Center-tapped bonnet facilitates installation of position indicator or valve-actuated switches.
- ▶ Ductile iron and steel valves are epoxy-coated inside and out, for maximum corrosion protection.
- ▶ Valves are factory tested.
- ▶ Valves are serial numbered and registered to facilitate replacement parts and factory support.

## TYPICAL APPLICATION



Equipped with controlled opening speed pump discharge pressure is gradually introduced to the system. Pump is protected from reverse flow.



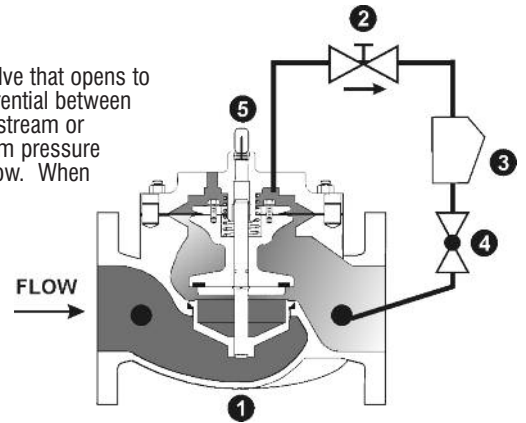
Used in conjunction with the Model 126, the Series 94 provides start up and shut-down surge protection for deep well pumps.

## VALVE OPERATION

The OCV Model 94-1 check valve, with adjustable opening speed, is a simple on-off valve that opens to allow forward flow and closes tightly to prevent backflow. The 94 operates on the differential between two pressures: upstream or inlet pressure acting under the seat of the valve, and downstream or discharge pressure acting on the diaphragm via the single hydraulic line. When upstream pressure is the greater of the two (forward flow), the valve opens at an adjustable rate to allow flow. When downstream pressure is greater (backflow), the valve is forced fully closed.

The Model 94-1 consists of the following:

1. Model 65 Basic Valve,
2. Model 141-3 Opening Speed Control
3. Model 159 Y-Strainer
4. Model 141-4 Ball Valve
5. Model 155 Valve Position Indicator,



## SIZING CONSIDERATIONS

For the most comprehensive procedure in sizing Series 94 control valves, it is best to use our ValveMaster software or the guidelines shown here in conjunction with the Performance Charts in the Engineering Section of the OCV catalog.

Check valves are nearly always line sized, however there are some limitations. Model 94, with no speed controls, should be used only where flow velocities will not exceed 6 ft/sec. Check valves with speed controls (94-1, 94-2, etc.) may be used at flow velocities up to 15 ft/sec.

SIZE	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	24"
Flow @ 6 ft/sec (USGPM)	28	38	60	90	140	240	540	940	1470	2100	2500	3300	7500
Flow @ 15 ft/sec (USGPM)	70	95	150	225	345	600	1350	2350	3675	5250	6300	8250	18750

## VALVE SELECTION GUIDE

Series 94 check Valves are available with various combinations of speed controls. Select the desired features and then the model number.

This chart shows only a sample of those most often specified valves. Consult the factory for specific data on the model you selected.

Feature	94	94-1	94-2	94-3	94-17	Definition
Check Valve	X	X	X	X	X	Closes valve on pressure reversal
Opening Speed Control		X		X	X	Adjustable Opening Speed
Closing Speed Control			X	X		Adjustable Closing Speed
Lift check					X	Internal assembly closes valve immediately on pressure reversal

## ABOUT YOUR VALVE

OCV Control Valves was founded more than 60 years ago with a vision and commitment to quality and reliability. From modest beginnings, the company has grown to be a global leader just a half century later. In fact, OCV Valves can be found in some capacity in nearly every country around the world from fire protection systems in Malaysia to aircraft fueling systems in Africa and from oil refineries in Russia to water supply systems in the USA and Canada. You will also find our valves in irrigation systems in Europe, South America and the Middle East.

The original foundation on which the company was built allows our team of professionals to not only provide the service required to be a worldwide supplier, but more importantly the opportunity to afford the personal touch necessary to be each of our customers' best partner. Simply stated, we take pride in all that we do.

Committed to the work they do, our employees average over 15 years of service. This wealth of knowledge allows us to provide quality engineering, expert support, exacting control and the know-how to create valves known for their long life.

Being ISO 9001 certified means we are committed to a quality assurance program. Our policy is to supply each customer with consistent quality products and ensure that the process is right every time. Our valves meet and exceed industry standards around the world. Including approvals by:



Check individual models for availability.

All valves are not created equal. OCV Control Valves proves that day in and day out. We stand behind our valves and are ready to serve your needs.

**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



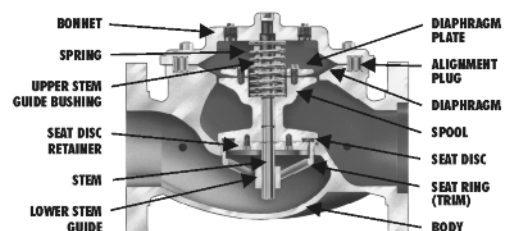
Certified to NSF/ANSI 61-G & 372

## SPECIFICATIONS

NOTE: ALL waterworks valves meet the Low-Lead laws of the United States, including individual state laws, as of March 2014.  
 \*Valves 1-1/4" through 24" are certified to NSF/ANSI 372. Valves 4" through 24" are also certified to NSF/ANSI 61-G.

VALVE BODY & BONNET		DUCTILE IRON		CAST STEEL		STAINLESS STEEL	
<b>Material Specification</b>		ASTM A536/65-45-12 (epoxy coated)		ASTM A216/WCB (epoxy coated)		ALL GRADES	
<b>END CONNECTIONS</b>							
<b>Flange Standard</b> (also available in metric)		ANSI B16.42		ANSI B16.5		ANSI B16.5	
<b>Flange Class</b>		150#	300#	150#	300#	150#	300#
<b>Flange Face</b>		Flat	Raised	Raised	Raised	Raised	Raised
<b>Maximum Working Pressure</b>		250 psi	640 psi	285 psi	740 psi	285 psi	740 psi
Screwed Working Pressure: ANSI B1.20.1 640 psi				Grooved End Working Pressure: 300 psi			
<b>INTERNALS</b>							
<b>Stem</b>		STAINLESS STEEL					
<b>Spring</b>		STAINLESS STEEL					
<b>Spool</b>		DUCTILE IRON (epoxy coated) / OPTIONAL - STN. STL.				STAINLESS STEEL	
<b>Seat Disc Retainer</b>		DUCTILE IRON (epoxy coated) (10" & LARGER) STN. STL. (8" & SMALLER / OPTIONAL - ALL SIZES)				STAINLESS STEEL	
<b>Diaphragm Plate</b>		DUCTILE IRON (epoxy coated) / OPTIONAL - STN. STL.				STAINLESS STEEL	
<b>Seat Ring (Trim)</b>		LOW-LEAD BRONZE OR STN. STL.				STN. STL.	
<b>Upper Stem Bushing</b>		BRONZE OR TEFLON®				TEFLON®	
<b>Lower Stem Bushing</b>		NOT APPLICABLE FOR LOW-LEAD BROZE SEAT RINGS / TEFLON FOR FOR STN. STL. SEAT RINGS					
<b>ELASTOMER PARTS (Rubber)</b>							
<b>Diaphragm/Seat Disc/O-Rings</b>		EPDM					
<b>Operating Temperature*</b>		32°F to 230°F					
*Consult factory when temperatures approach low or high temperature allowance.							
<b>COATINGS</b> NSF-61 EPOXY COATING							
<b>ELECTRICAL SOLENOIDS</b>							
<b>Bodies</b>		BRASS / OPTIONAL - STAINLESS STEEL					
<b>Enclosures</b>		WATER TIGHT, NEMA 1, 3, 4, & 4X					
<b>Power</b>		AC, 60HZ - 24, 120, 240, 480 VOLTS		AC, 50HZ - In 110 VOLT MULTIPLES		DC, 6 12, 24, 240 VOLTS	
<b>Operation</b>		ENERGIZE TO OPEN (NORMALLY CLOSED)				DE-ENERGIZE TO OPEN (NORMALLY OPEN)	
<b>CONTROL PILOTS</b>							
<b>Bodies</b>		LOW-LEAD BRONZE		STN. STL.			
<b>Internal</b>		STAINLESS STEEL		STAINLESS STEEL			
<b>Tubing</b>		COPPER		STAINLESS STEEL			
<b>Fittings</b>		LOW-LEAD BRASS		STAINLESS STEEL			

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### Globe Flanged Sizes

1.25"	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18 <sup>1/2</sup> "*	20 <sup>1/2</sup> "*	24"
32mm	40mm	50mm	65mm	80mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm*	500mm*	600mm

\*CONSULT FACTORY



### Angle Flanged Sizes

1.25"	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	16"
32mm	40mm	50mm	65mm	80mm	100mm	150mm	200mm	250mm	300mm	400mm



### Globe/Angle Screwed Sizes

1.25"	1.5"	2"	2.5"	3"
32mm	40mm	50mm	65mm	80mm



### Globe/Angle Grooved Sizes

1.5"	2"	2.5"	3"	4"	6 <sup>3/4</sup> "*
32mm	50mm	65mm	80mm	100mm	150mm*

\*GLOBE ONLY

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 email: sales@controlvalves.com • website: www.controlvalves.com

## DIMENSIONS

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
B	SCREWED	1 7/16	1 11/16	1 7/8	2 1/4	--	--	--	--	--	--	--	--
	GROOVED	1*	1 3/16	1 7/16	1 3/4	2 1/4	3 5/16	--	--	--	--	--	--
	150# FLGD	2 5/16-2 1/2	3	3 1/2	3 3/4	4 1/2	5 1/2	6 3/4	8	9 1/2	10 5/8	11 3/4	16
	300# FLGD	2 5/8-3 1/16	3 1/4	3 3/4	4 1/8	5	6 1/4	7 1/2	8 3/4	10 1/4	11 1/2	12 3/4	18
C	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	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	--
	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	--
E	ALL	6	6	7	6 1/2	8	10	11 7/8	15 3/8	17	18	19	27
F	ALL	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	6 3/8	6 3/8	6 3/8	6 3/8	6 3/8	8
G	ALL	6	6 3/4	7 11/16	8 3/4	11 3/4	14	21	24 1/2	28	31 1/4	34 1/2	52
H	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

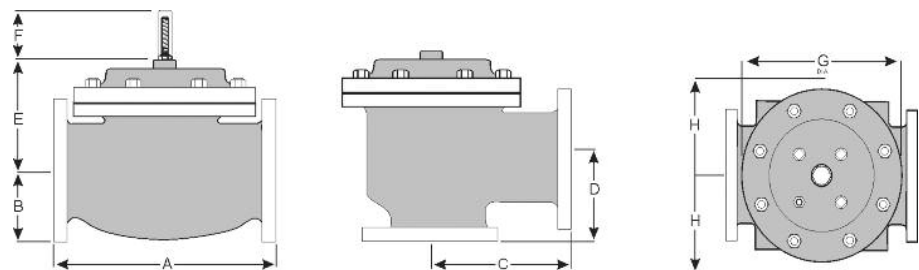
\*GROOVED END NOT AVAILABLE IN 1 1/4"

METRIC DIMENSIONS - M.M.

DIM	END CONN.	DN32-DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN600
A	SCREWED	222	251	267	330	--	--	--	--	--	--	--	--
	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
B	SCREWED	37	43	48	57	--	--	--	--	--	--	--	--
	GROOVED	25*	30	37	44	57	84	--	--	--	--	--	--
	150# FLGD	59-64	76	89	95	114	140	171	203	241	270	298	406
	300# FLGD	67-78	83	95	105	127	159	191	222	260	292	324	457
C	SCREWED	111	121	152	165	--	--	--	--	--	--	--	--
	GROOVED	111*	121	152	165	194	--	--	--	--	--	--	--
	150# FLGD	108	121	152	152	191	254	322	378	432	--	529	--
	300# FLGD	111	127	162	162	198	267	335	395	451	--	549	--
D	SCREWED	79	98	102	114	--	--	--	--	--	--	--	--
	GROOVED	79*	98	102	114	143	--	--	--	--	--	--	--
	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
G	ALL	152	171	195	222	298	356	533	622	711	794	876	1321
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" 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.

Represented by:

### How to order your valve

When Ordering please provide:  
 Series Number - Valve size - Globe or Angle -  
 Pressure Class - Screwed, Flanged, Grooved -  
 Trim Material - Adjustment Range - Pilot  
 Options - Special needs / or installation  
 requirements.

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