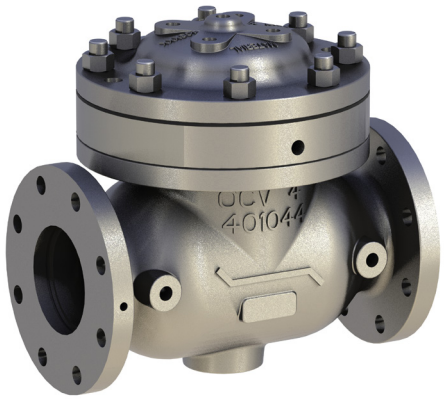
OCV Series 66/66A

Aquestia
Directing the Flow



General representation

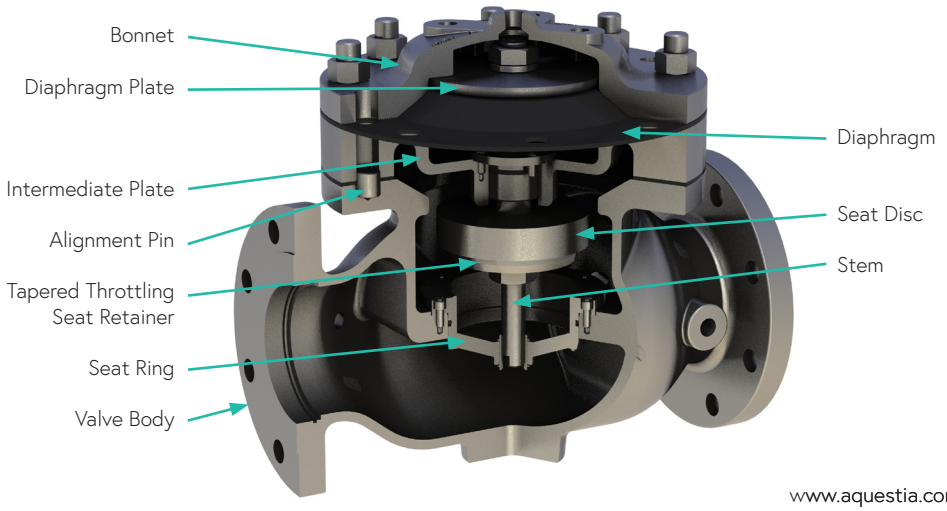
Mining

Diaphragm-Actuated, Double-Chambered, Rigid Sealing, Hydraulic Control Valve

OCV Series 66 control valves are automatic, hydraulically-actuated, double-chambered, diaphragm-operated, rigid sealing globe and angle pattern valves. The valves are reliable and robust, with a simple design that minimizes part wear and offers exceptional performance and long-term durability. Self-contained, the valves operate automatically using line pressure. When fitted with a variety of pilots, accessories, and materials, they can perform a wide range of automatic control functions, making them well suited for mining systems. The valves consist of four major components: the body, the bonnet, the diaphragm plate (partitian), and the internal diaphragm assembly.

Features & Benefits

Double-Chambered Actuator	Allows valve fully opening at any flow
	Minimizes the head loss across the valve
Designed for mining — built to perform in the harshest conditions	Engineered to minimize cavitation and extend service life
	Delivers consistent performance with high stability
	Optimized for high pressure and non-clean fluids applications
Single valve series covering a wide pressure range — up to 740 psi with a single body	Same body for low and high pressure applications
	No need to switch valve series — simplifies selection and maintenance
	Reduces spare parts inventory — lowers cost and streamlines logistics
Throttling seat retainer "Ultra" design	Ensures low-flow & pressure stability
Pin alignment mechanism between cover & body	Provides proper shaft alignment, assuring fast response and smooth, restriction-free closing



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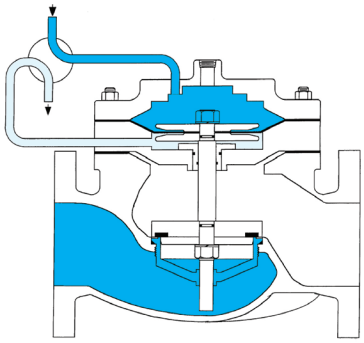
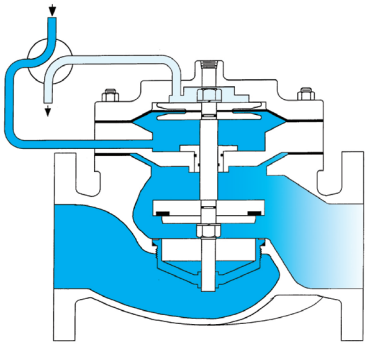
Operation

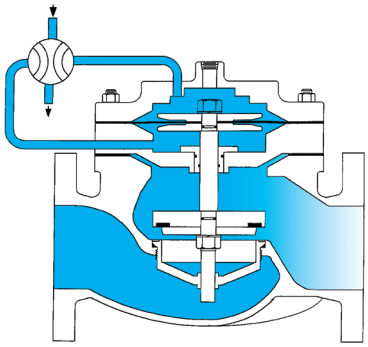
Valve Closed:
Applying pressure to the upper diaphragm chamber and simultaneously venting the lower chamber (typically to drain) causes the valve to go fully closed.



Valve Open:
Applying pressure to the lower diaphragm chamber and simultaneously venting the upper chamber (typically to drain) causes the valve to go fully open.



Valve Modulating:
Locking pressures in both the upper and lower diaphragm chamber simultaneously allows for holding the valve in a position other than full open or closed.



Available End Connections and Sizes

Globe Flanged Sizes

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

*Consult Factory

Angle Flanged Sizes

1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	16"
32mm	40mm	50mm	65mm	80mm	100mm	150mm	200mm	250mm	300mm	400mm

Globe/Angle Threaded Sizes

1 1/4"	1 1/2"	2"	2 1/2"	3"
32mm	40mm	50mm	65mm	80mm

Globe/Angle Grooved Sizes

1 1/2"	2"	2 1/2"	3"	4"	6"**
40mm	50mm	65mm	80mm	100mm	150mm**

**Globe Only

Maximum Working Pressure

FLANGED END CONNECTIONS						
Material	Ductile Iron		Cast Steel		Stainless Steel / Special Alloys	
Flange Standard	ANSI B16.42 / ISO 7005		ANSI B16.5 / ISO 7005		ANSI B16.5 / ISO 7005	
Flange Class	150#	300#	150#	300#	150#	300#
	PN 16	PN 25/40	PN 16	PN 25/40	PN 16	PN 25/40
Flange Face	Flat	Raised	Raised	Raised	Raised	Raised
Maximum Working Pressure	250psi	640psi	285psi	740psi	285psi	740psi
	16 bar	44 bar	18 bar	51 bar	18 bar	51 bar

THREADED END CONNECTIONS				GROOVED END CONNECTIONS			
Thread Standard	ANSI/ASME B1.20.1 (dimensions only)			Groove Standard	AWWA C606 (dimensions only)		
Material	Ductile Iron	Caste Steel	Stainless Steel	Material	Ductile Iron	Caste Steel	Stainless Steel
Maximum Working Pressure	640psi	740psi	740psi	Maximum Working Pressure	500psi	600psi	600psi
	44 bar	51 bar	51 bar		34 bar	41 bar	41 bar

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Flow Characteristics

DP = sg (Q/Cv or Kv)^2 where: Q = Flow rate in USGPM (Standard) or Q = Flow rate in cubic meters/sec (Metric)
Cv = Flow rate in USGPM @ 1 psi pressure drop (Standard) or
Kv = Flow rate in cubic meters/sec @ 1 bar pressure drop (Metric)
DP = Pressure drop in psi (Standard) or DP = Pressure drop in bar (Metric)
sg = Specific gravity of line fluid

Valve Size	Standard	1¼"	1½"	2"	2½"	3"	4"	6"	8"	10"	12"	14"	16"	24"
	Metric	DN32	DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN600
Globe Pattern	Cv	23	27	47	68	120	200	450	760	1250	1940	2200	2850	6900
	Kv	5.5	6.5	11.3	16.3	28.7	47.9	108	182	299	465	527	683	1653
Angle Pattern	Cv	30	35	65	87	160	270	550	1000	1600	2400	---	4000	---
	Kv	7.2	8.4	15.6	20.8	38.3	64.7	132	240	383	575	---	958	---

Specifications

VALVE BODY, BONNET, & DIAPHRAGM PLATE	Ductile Iron	Cast Steel	Stainless Steel	Special Alloys*
Material Specification	ASTM A536/65-45-12	ASTM A216/WCB	ALL GRADES	Super Duplex, Hastelloy
INTERNALS				
Stem	Stainless Steel			Super Duplex, Hastelloy
Spring	Stainless Steel			Super Duplex, Hastelloy
Spool	Ductile Iron (epoxy coated) / Optional - Stainless Steel		Stainless Steel	Super Duplex, Hastelloy
Seat Disc Retainer	Ductile Iron (epoxy coated) (10" & Larger)		Stainless Steel	Super Duplex, Hastelloy
	Stainless Steel (8" & Smaller / Optional - All Sizes)			
Seat Ring Trim	Stainless Steel / Optional - Low-Lead Bronze		Stainless Steel	Super Duplex, Hastelloy
Upper Stem Bushing	Bronze or PTFE		PTFE	
Lower Stem Bushing	Not applicable for Low-Lead Bronze Seat Rings / PTFE for Stainless Steel Seat Rings			PTFE
ELASTOMER PARTS (Rubber)				
Diaphragm/Seat Disc/O-Rings	EPDM / Optional Viton			Viton
Operating Temperature*	32°F to 230°F Max			
COATINGS	NSF-61 Epoxy Coating	Uncoated		Uncoated
ELECTRICAL SOLENOIDS				
Body	Brass / Stainless Steel		Stainless Steel	Stainless Steel / Super Duplex
Enclosures	Water Tight, NEMA 1, 3 , 4, 4X			
Power	AC, 60HZ - 120, 240, 480 Volts AC, 50HZ - In 110 Volt Multiples DC, 6, 12, 24, 240 Volts			
Operation	Energize to Open De-Energize to Open			
CONTROL PILOTS				
Body	Low-Lead Bronze / Stainless Steel		Stainless Steel	Super Duplex, Hastelloy, Monel
Internal	Stainless Steel			Super Duplex, Hastelloy, Monel
TUBING	Stainless Steel / Copper		Stainless Steel	Super Duplex, Hastelloy
FITTINGS	Low-Lead Brass / Stainless Steel		Stainless Steel	Super Duplex, Hastelloy

*Consult Factory when temperatures approach low or high temperature allowance. Consult Factory for additional available materials.

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General Arrangement & Dimensions

Standard Sizes													
DIM	End Connections	1 1/4 - 1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	24"
A	Threaded	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# Flanged	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# Flanged	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	62 3/4
B	Threaded	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	--	--	---	---	---	---	---
	150# Flanged	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# Flanged	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	Threaded	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# Flanged	4 1/4	4 3/4	6	6	7 1/2	10	12 11/16	14 7/8	17	---	20 13/16	---
	300# Flanged	4 3/8	5	6 3/8	6 3/8	7 3/16	10 1/2	13 3/16	15 9/16	17 3/4	---	21 5/8	---
D	Threaded	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# Flanged	3	3 7/8	4	4	5 1/2	6	8	11 3/8	11	---	15 11/16	---
	300# Flanged	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	7	7	8 1/2	7 3/4	9 3/4	11 3/4	14 5/8	19 1/8	20 3/4	22 1/4	24 1/4	33
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

Approximate Dimensions. *Grooved end not available in 1 1/4"

Metric Sizes													
DIM	End Connections	DN 32 - DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN600
A	Threaded	222	251	267	330	--	--	--	---	---	---	---	---
	Grooved	222	251	267	330	387	508	--	---	---	---	---	---
	150# Flanged	216	238	267	305	381	451	645	756	864	991	1026	1575
	300# Flanged	222	251	283	324	397	437	670	791	902	1029	1067	1619
B	Threaded	37	43	48	57	--	--	--	---	---	---	---	---
	Grooved	25*	30	37	44	57	--	--	---	---	---	---	---
	150# Flanged	59-64	76	89	95	114	140	171	203	241	270	298	406
	300# Flanged	67-78	83	95	105	127	159	191	222	260	292	324	457
C	Threaded	111	121	152	165	--	--	--	---	---	---	---	---
	Grooved	111*	121	152	165	194	--	--	---	---	---	---	---
	150# Flanged	108	121	152	152	191	254	322	378	432	---	529	---
	300# Flanged	111	127	162	162	198	267	335	395	451	---	549	---
D	Threaded	79	98	114	114	--	--	--	---	---	---	---	---
	Grooved	79*	98	114	114	143	--	--	---	---	---	---	---
	150# Flanged	76	98	102	102	140	152	203	289	279	---	398	---
	300# Flanged	79	105	111	111	148	165	216	306	298	---	419	---
E	All	177	177	215	196	203	298	356	482	527	565	615	838
F	All	98	98	98	98	98	98	162	162	162	162	162	203
G	All	152	171	222	222	298	356	533	711	794	794	876	1321
H	All	254	279	279	279	305	330	356	457	508	508	508	724

Approximate Dimensions. *Grooved end not available in DN32