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*Valtek Control Products
Survivor Control Valves*

Valtek Survivor Control Valves

Construction

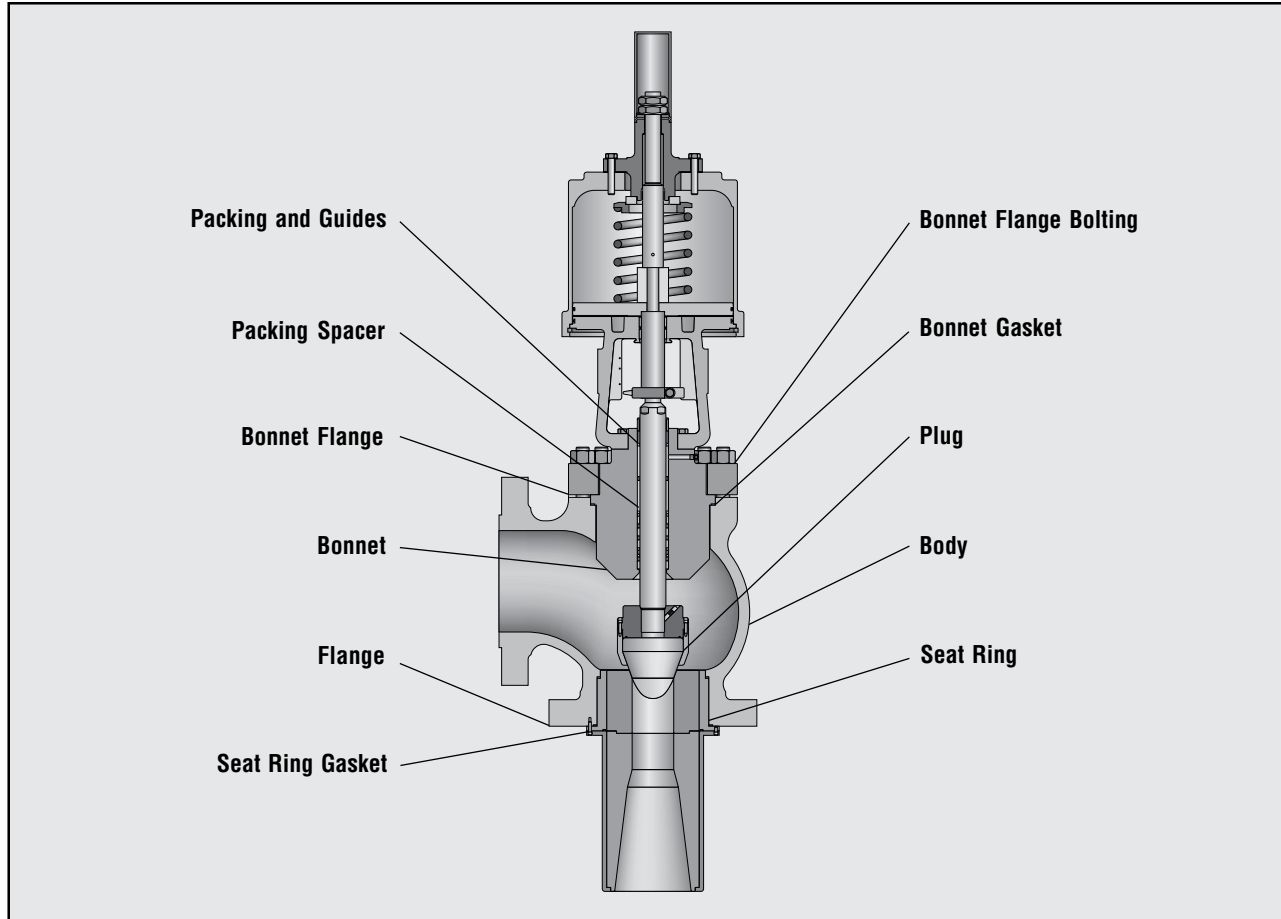


Figure 1: Valtek Survivor Control Valve

Introduction

The Valtek® Survivor™ control valve is a unique severe service control valve specifically designed for use in the harshest erosion, corrosion and flashing applications.

Survivor's unique design allows a wide variety of materials to meet virtually every need. For erosive applications, such as abrasive slurry, the Survivor is available with ceramic trim for maximum life in services that would quickly erode any other material. For corrosive applications, the Survivor offers a wide range of material options from stainless steels to titanium.

The sweep angle design allows the process fluid to flow cleanly, without sharp turns or stagnant points. The unique design of the Survivor directs the energy of flashing process fluids away from critical equipment.

Unlike competing erosive service valves, the Valtek Survivor control valve offers a unique wiper ring design which provides longer packing life by cleaning the stem and protecting the pack-

ing from the harmful effects of the fluid. The exceptionally deep packing box prevents the fluid from contacting the upper guide and provides an extensive variety of packing configurations. Increased flow and superior erosion resistance are realized through the use of a clamped seat design. The clamped seat eliminates both seat retainers and cage guiding.

The Valtek Survivor provides the same high performance, reliable service and simplified maintenance as the Valtek Mark One control valve by incorporating many of the time proven features of the Mark One. These features include such things as top entry for ease of maintenance, heavy-duty double top stem guiding for reliability and high-thrust actuation for superior control.

The Valtek Survivor control valve has proven effective in erosive slurry applications where competitor's valves have lasted only days.

Valtek Survivor Control Valves

Features and Advantages

Features	Advantages
Optional ceramic trim	Provides durable control in corrosive, flashing, slurry, high-velocity or other erosive applications
Exceptionally deep packing box	Allows a wide variety of packing box configurations
Tailor-engineered	Valves are specifically targeted to each application; custom contours and materials are available
Sweep angle design	Provides high flow capacity and minimizes impingement of particles on body
Oversize gallery	Decreases fluid velocity, minimizing erosion
Wiper rings	Prevents particles suspended in fluids from entering the bonnet, reducing damage to guides and surfaces, minimizing packing wear and stem seizure
Clamped seat design	Minimizes erosion, simplifies maintenance, provides higher flow capacities
Extended-venturi seat design	Safely channels the slurry into flash vessels; protects valve body from erosive damage caused by high velocities
Mature technology	Shares the basic design of the time-tested Valtek Mark One control valve

Table I: Materials* of Construction

Body	Titanium, INCONEL®, Hastelloy®, UNS 2507, carbon steel, stainless steel, other castable alloys on request.
Trim	Tungsten Carbide, Silicon Carbide, PSZ, Alloy 6
Wiper rings	Alloy 6, PSZ, INCONEL

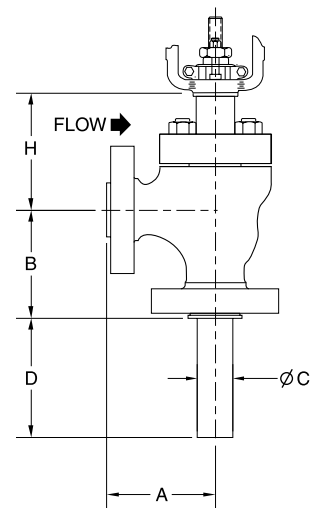
*Contact factory for other available materials.

Table II: Specifications

Sizes	1 to 14 inch
Body form	Sweep Angle
ANSI rating	150 through 1500
End Connections	Separable and integral flanges, RTJ
Packing	PTFE, graphite, AFPI, SafeGuard, SureGuard, customs available
Actuator types	Double-acting cylinder with fail-safe spring (25, 50, 100, 200, 300 square-inch cylinder); Electro-hydraulic
Positioners	Four-way Valtek Beta positioner, Valtek XL series positioner and Logix 1000 and 2000 series digital positioners

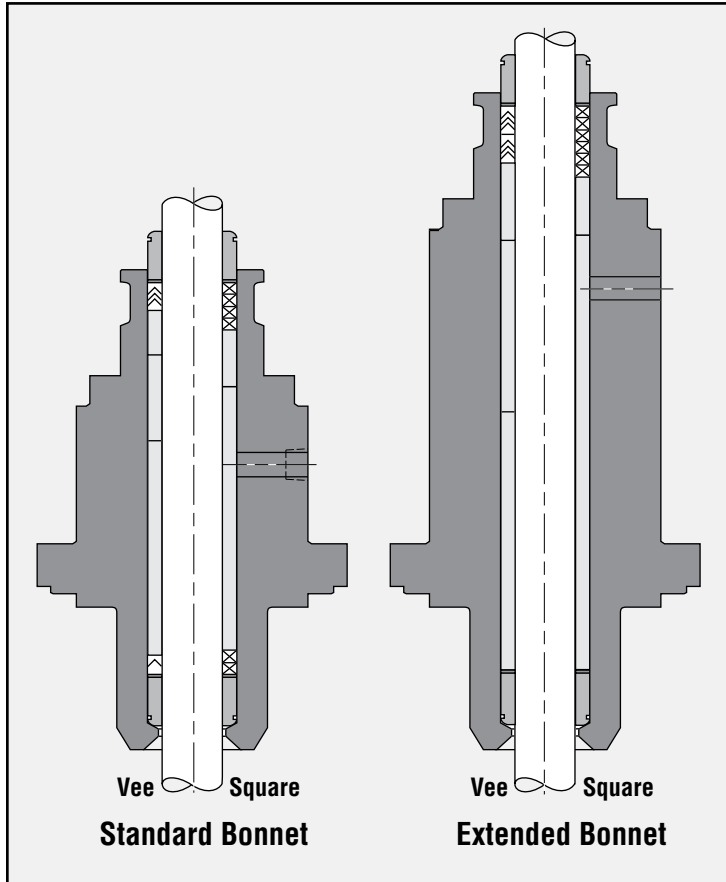
Table III: Body Dimensions (inch / mm)

Body Size (inch)	Body Rating Class	A		B		C Maximum		D Maximum		H				Clearance Required for Disassembly	
		Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std. Bonnet	Ext. Bonnet	Std.	Ext.		
1	150-600	4.3	109	4.3	109	0.88	22	4.50	114	3.3	84	7.8	198	2.5	64
1.5	150-600	4.8	122	4.8	122	1.38	35	7.50	191	3.9	99	8.4	213	4.0	102
2	150-600	5.8	147	5.8	147	1.88	48	9.50	241	3.9	99	8.4	213	4.5	114
3	150-600	7.0	178	7.0	178	2.88	73	14.50	368	5.8	147	11.3	287	5.8	147
4	150-600	8.8	224	7.8	198	3.88	99	19.40	493	7.6	193	13.1	333	7.5	191
6	150	12.8	325	12.8	325	5.88	149	17.75	451	7.6	193	13.1	333	10.0	254
	300-600	12.8	325	10.9	277	5.88	149	17.75	451	8.2	208	13.7	348	10.0	254
8	150	15.5	394	15.5	394	7.75	197	19.31	491	10.8	274	16.3	414	13.8	351
	300-600	15.5	394	15.5	394	7.75	197	19.31	491	10.8	274	16.3	414	13.8	351
10	150	14.8	376	14.8	376	9.63	245	19.25	489	11.7	297	17.2	437	20.0	508
	300-600	14.8	376	14.8	376	9.63	245	19.25	489	12.7	323	19.3	490	20.0	508
12	150	16.1	409	16.1	409	11.63	295	16.88	429	12.8	325	18.3	465	17.5	445
	300-600	16.1	409	16.1	409	11.63	295	16.88	429	12.8	325	19.3	490	17.5	445
14	150	17.5	445	17.5	445	12.75	324	15.75	400	12.8	325	18.3	465	18.9	480
1	900, 1500	5.5	140	5.5	140	0.75	19	3.75	95	4.7	119	9.2	234	3.6	90
1.5	900, 1500	6.5	165	6.5	165	1.25	32	6.25	159	6.5	165	11.0	279	5.6	142
2	900, 1500	7.3	185	7.3	185	1.75	44	8.75	222	7.8	198	12.3	312	6.1	155
3	900, 1500	9.3	236	9.3	236	2.63	67	13.15	334	10.0	254	17.0	432	8.4	213
4	900, 1500	12.5	318	12.5	318	3.5	89	14.7	373	10.4	264	17.4	442	9.7	246
6	900, 1500	13.9	353	13.9	353	5.25	133	14.75	375	13.3	338	20.3	516	12.2	310
8	900, 1500	16.4	417	16.4	417	6.88	175	14.63	372	14.5	368	21.5	547	16.7	424
10	900, 1500	19.5	495	19.5	495	8.63	219	14.65	370	14.4	366	21.4	544	18.3	465



Valtek Survivor Control Valves

Packing Configurations



NOTE: Valtek Survivor control valves offer a proprietary wiper design. Contact your local Flowserve representative for complete details.

Ordering Information

The following information must be provided when ordering a Valtek Survivor control valve:

1. Preferred body size and critical dimensions
2. Inlet/outlet pressures; temperature, flow rate, fluid specific gravity/molecular weight, vapor pressure or gas compressibility; percent of entrained solids
3. Maximum operating temperatures and pressures
4. Body pressure rating
5. Materials required for: body, seat insert, seat housing, plug head, plug stem/housing
6. Line size and schedule
7. Seat extension length (where applicable) and inside diameter of mating pipe
8. Actuator requirements: type (pneumatic or electro-hydraulic), failure position, size and minimum air supply
9. Accessories required
10. Limit Close — Limit stop is required for ceramic trim

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INCONEL is a registered trademark of Huntington Alloy. Hastelloy is a registered trademark of Cabot Corporation.

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