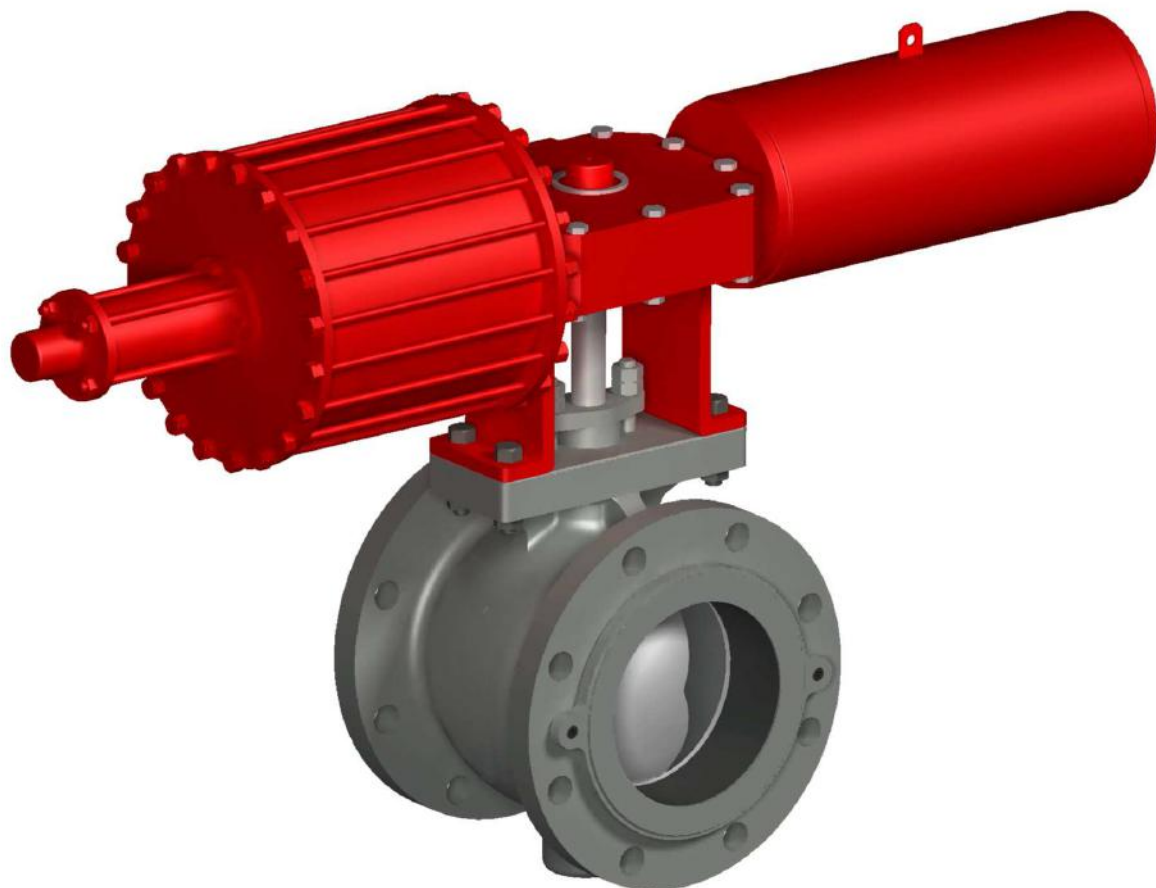


## MIL 35000 – V-Notch Segmental Ball Control Valve

Nominal Sizes	1" to 24" (DN 25 to DN 600)
Pressure Rating	ASME 150# - 2500#
End Connection	Wafer / Flanged
Temperature	-196°C to 550°C

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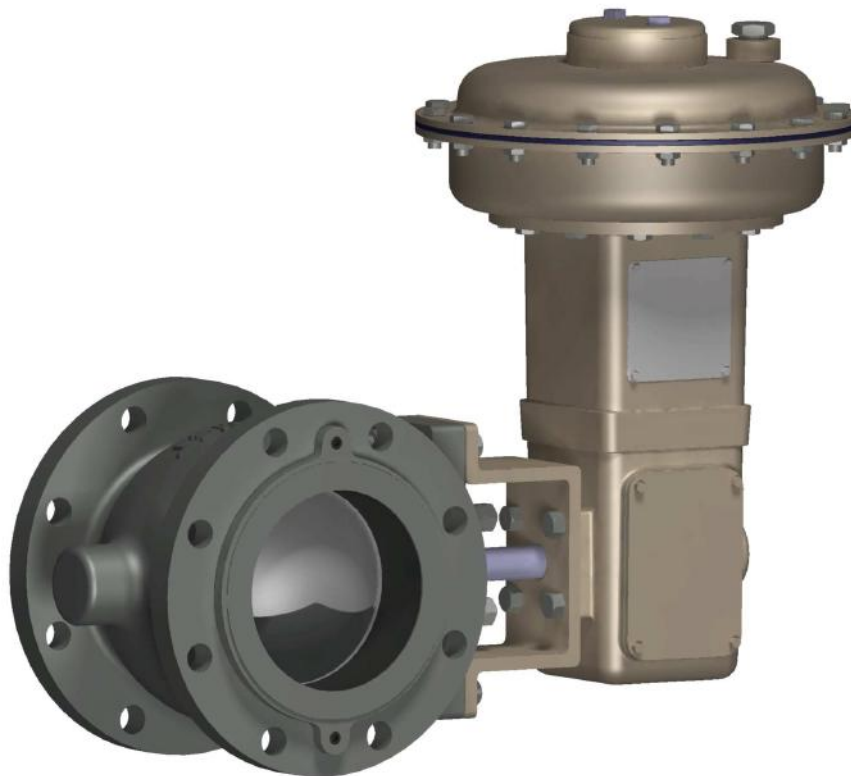
## MIL 35000

### V-Notch Segmental Ball Control Valves

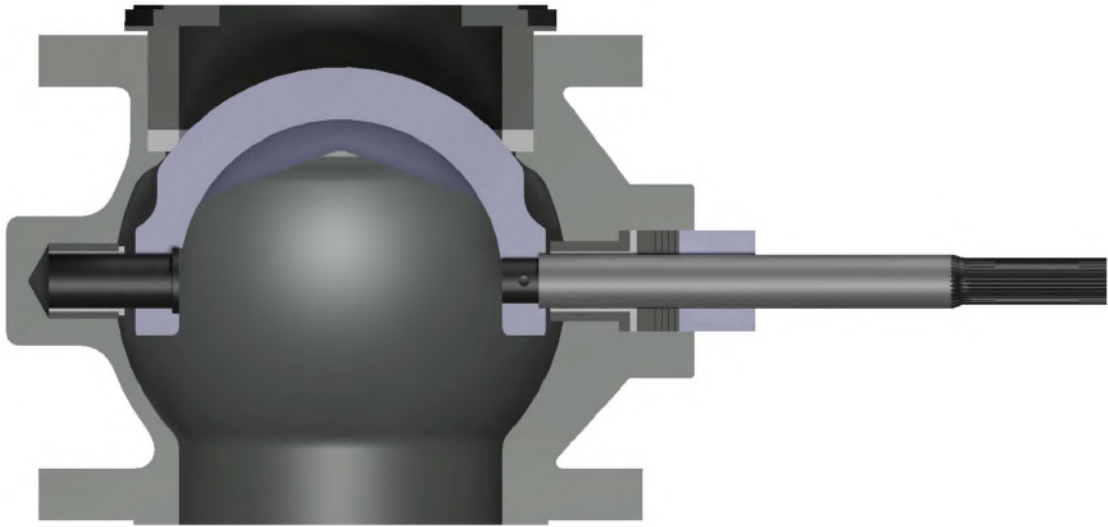
Nominal Sizes	1" to 24" (DN 25 to DN 600)
Pressure Rating	ASME 150# - 2500#
Temperature	-196°C to 550°C

MIL 35000 V-Notched segmental ball valves are designed for on/off and throttling applications. These valves have an unrestricted straight through flow design, and provide high capacity for gas, steam, fibrous slurries, or liquids. This Series is designed with a splined shaft valve body that matches with a variety of actuators to form a dependable high performance control valve ideal for many applications in various processing

industries. These valves are designed to overcome the problems of harsh, particle entrained processes, and they also provide accurate, reliable control in a broad range of applications, such as chemical, power and petroleum. They are available in sizes 2 inch to 24 inches, ANSI Classes 150, 300, 600, 900, 1500 and 2500 and in stainless steel, carbon steel and other alloys.



**MIL 35000 V-Notch Segmental Ball Valve with Diaphragm Actuator**



### MIL 35000 V-Notched Segmental Ball Valve Design

#### Specifications:

#### Available Configuration:

- Body assembly is wafer / flanged

#### Maximum Inlet Pressure:

- Consistent with ASME 150# to 2500# ratings

#### Flow Direction:

- Forward (normal) flow is into the convex side of the valve
- Flow ring – Class II as per ASME/FCI 70-2

**Flow Coefficients:** See table 1

**Flow Characteristics:** Modified equal percentage

**Inherent Rangeability:** 300 to 1

- PTFE/Metal seals and metal ring construction can be used for forward flow
- PTFE Seal and metal ring construction can be used for bi-directional flow

#### Shutoff Classification:

- Metal Seal, forward flow – Class IV as per ASME/FCI 70-2
- PTFE Seal – Class VI as per ASME/FCI 70-2

**Valve Rotation Maximum:** 90 degrees

**Construction Materials:** See tables 2 and 3

**Temperature Capabilities:** See tables 2 and 3

**Packing Constructions:**

- Graffoil (Standard)
- PTFE – Single
- PTFE – Double (Pressure Service)
- PTFE – Double (Vacuum Service)
- Graphite

**Options:**

- Anticavitation trim/bundles, Packing Lubricator

**Features and Advantages:-**

**V-Notch Segmental Ball:**

- Clogging reduced
- Exceeds 300:1 rangeability
- Excellent shearing action in fibrous fluid mediums

**Excellent Flow Control:**

- Provides a close equal percentage characteristics anti-cavitation trim/ball optionally available

**High Capacity:**

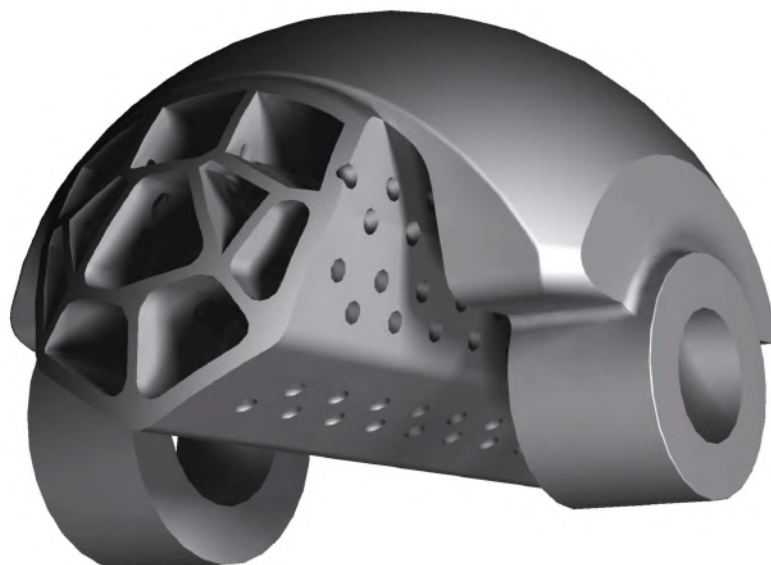
- Unrestricted straight through flow design provides a greater capacity

**Smooth Valve Operation:**

- Precision machined parts and seal designs allow smooth, precise movement of the ball

**Low and High Temperature Capability:**

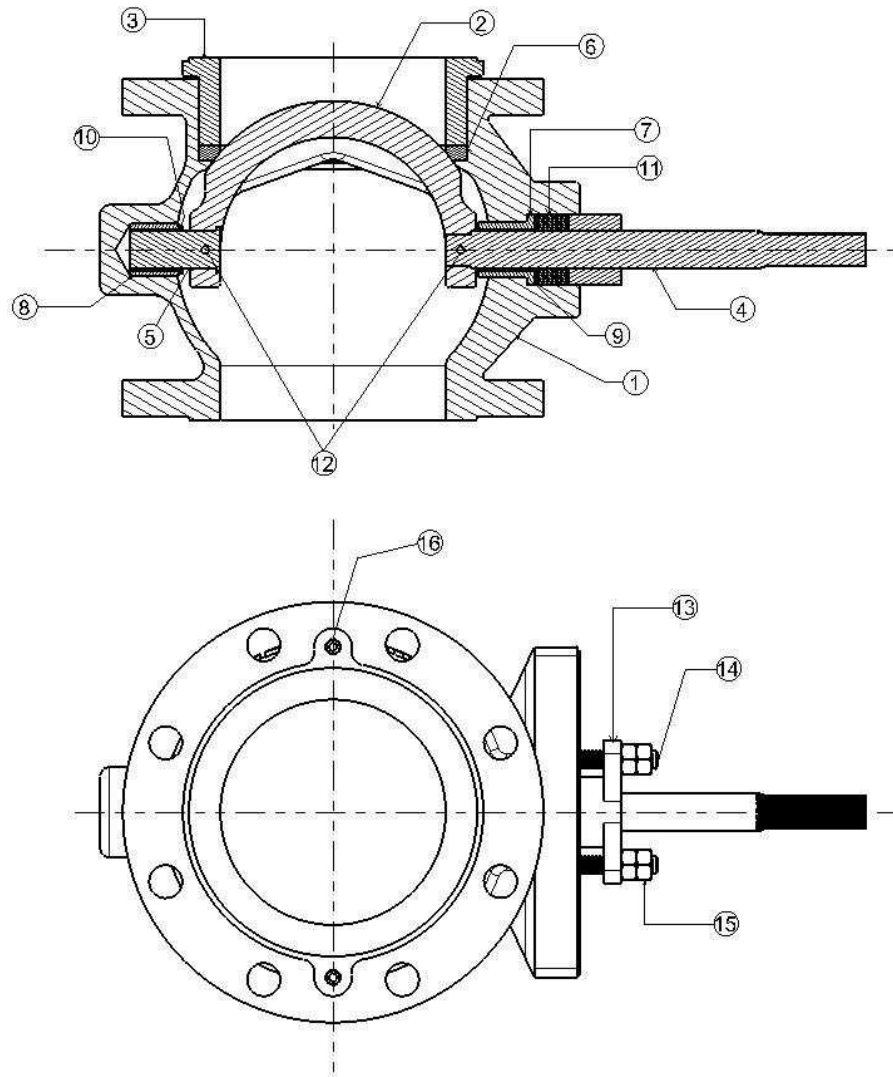
- Many construction materials and close tolerances give MIL 35000 valve design the versatility to be used for applications over a wide temperature range



**Anti-Cavitation/Low Noise V-Notch Segmental Ball Valve**

Flow Coefficient											
Coefficients	Valve Size,	Class	Valve Rotation, Degrees								
			10	20	30	40	50	60	70	80	90
Cv	1	150	0.00	0.3	2.3	5.4	9.5	14.4	20.7	29.1	31.5
Kv		150	0.00	0.30	1.96	4.64	8.17	12.46	17.91	25.17	27.25
Km		150		0.9	0.85	0.8	0.74	0.74	0.74	0.74	0.74
FL		150		0.95	0.92	0.89	0.86	0.86	0.86	0.86	0.86
XT		150		0.76	0.71	0.67	0.62	0.62	0.62	0.62	0.62
Cv	1.5	150	0.41	3.3	8.0	15.7	25.8	38	54.1	94.8	103
Kv		150	0.36	2.8	6.9	13.6	22.3	33	47	82	89
Km		150		0.88	0.87	0.83	0.78	0.72	0.65	0.6	0.55
FL		150		0.94	0.93	0.91	0.88	0.85	0.81	0.77	0.74
XT		150		0.74	0.73	0.70	0.66	0.60	0.55	0.50	0.46
Cv	2	150	0.33	4.7	12.7	23.3	39.0	58.2	81.5	112	163
Kv		150	0.28	4.1	11.0	20.2	33.7	50.3	70.5	97	141
Km		150		0.87	0.84	0.79	0.74	0.69	0.63	0.55	0.46
FL		150		0.93	0.92	0.89	0.86	0.83	0.79	0.74	0.68
XT		150		0.73	0.71	0.66	0.62	0.58	0.53	0.46	0.39
Cv	3	150	1.45	9.0	25.7	47.2	78.7	117	163	272	321
Kv		150	1.25	7.8	22.2	40.8	68.1	101	141	235	278
Km		150		0.88	0.83	0.78	0.73	0.69	0.66	0.61	0.56
FL		150		0.94	0.91	0.88	0.85	0.83	0.81	0.78	0.75
XT		150		0.74	0.70	0.66	0.61	0.58	0.55	0.51	0.47
Cv	4	150	2.26	14.1	38.4	76.8	125.0	181	275	428	565
Kv		150	1.96	12.2	33.2	66.4	108.1	157	238	370	489
Km		150		0.91	0.84	0.76	0.68	0.58	0.49	0.42	0.36
FL		150		0.95	0.92	0.87	0.82	0.76	0.70	0.65	0.60
XT		150		0.76	0.71	0.64	0.57	0.49	0.41	0.35	0.30
Cv	6	150	10.60	42.5	93.5	163.0	245.0	348	562	797	1180
Kv		150	9.17	36.8	80.9	141.0	211.9	301	486	689	1021
Km		150		0.75	0.75	0.74	0.70	0.63	0.52	0.41	0.31
FL		150		0.87	0.87	0.86	0.84	0.79	0.72	0.64	0.56
XT		150		0.63	0.63	0.62	0.59	0.53	0.44	0.34	0.26
Cv	8	150	15.90	53.5	127.0	226.0	348.0	511	719	1150	1980
Kv		150	13.75	46.3	109.9	195.5	301.0	442	622	995	1713
Km		150		0.84	0.81	0.78	0.74	0.68	0.58	0.43	0.25
FL		150		0.92	0.90	0.88	0.86	0.82	0.76	0.66	0.50
XT		150		0.71	0.68	0.66	0.62	0.57	0.49	0.36	0.21
Cv	10	150	23.50	100.0	245.0	430.0	662.0	963	1400	2120	3360
Kv		150	20.33	86.5	211.9	372.0	572.7	833	1211	1834	2907
Km		150		0.90	0.78	0.72	0.66	0.60	0.55	0.41	0.28
FL		150		0.95	0.88	0.85	0.81	0.77	0.74	0.64	0.53
XT		150		0.76	0.66	0.60	0.55	0.50	0.46	0.34	0.24
Cv	12	150	39.30	196.0	442.0	776.0	1210.0	1640	2370	3950	4910
Kv		150	34.00	169.6	382.4	671.3	1046.7	1419	2050	3417	4247
Km		150		0.82	0.83	0.73	0.67	0.60	0.52	0.43	0.33
FL		150		0.91	0.91	0.85	0.82	0.77	0.72	0.66	0.57
XT		150		0.69	0.70	0.61	0.56	0.50	0.44	0.36	0.28

Above values are for standard V-Notch Segmental Ball Trims. For higher sizes and pressure drop on pressure ratio applications Anti-cavitations, Low Noise V-Notch Ball Trim with special Cv values can be provided



<b>Table 2: CONSTRUCTION MATERIAL</b>		
<b>Sr. No.</b>	<b>Part Detail</b>	<b>Qty.</b>
1	VALVE BODY	1 No.
2	'V' NOTCH BALL	1 No.
3	SEAL PROTECTOR RING	1 No.
4	DRIVE SHAFT	1 No.
5	GUIDE SHAFT	1 No.
6	BALL SEAL	1 No.
7	DRIVE SHAFT BEARING	1 No.
8	GUIDE SHAFT BEARING	1 No.
9	PTFE BEARING 1	1 No.
10	PTFE BEARING 2	1 No.
11	PACKING SET	1 No.
12	SHAFT PIN	2 No.
13	GLAND	1 No.
14	GLAND STUD	2 Nos.
15	GLAND NUT	4 Nos.
16	ALLEN BOLT	2 Nos.

**Table 3**

VALVE PARTS		MATERIALS	MINIMUM AND MAXIMUM TEMPERATURE	
Body		WCB carbon steel 316 stainless steel (SS)	-20° F to 800° F	- 29° C to 427° C
			-325° F to 1000° F	-198° C to 538° C
Seal Ring, Protector & Flow Ring		WCB carbon steel 316 stainless steel (SS)	-20° F to 800° F	- 29° C to 427° C
			-325° F to 1000° F	-198° C to 538° C
Ball		317 Stainless steel, chrome-plated	-325° F to 1000° F	-198° C to 538° C
Stem		Hardened 17-4 PH stainless steel	-80° F to 800° F	-62° C to 427° C
Bearings		315 stainless steel with PTFE/ composition lining	50° F to 450° F	-46° C to 232° C
Ball Seal Metal	Metal	Sizes 1-10" 316 stainless steel	- 325° F to 1000° F	-198° C to 538° C
		size 12" full port 302 stainless Steel		
	Comp.	TCM (2)	-50° F to 450° F	-46° C to 232° C
Shims		316 stainless steel	-325° F to 1000° F	-198° C to 538° C
Packing		Graphite Jacketed Rope CW-2000	-325° F to 850° F	-198° C to 454° C
Gasket		Composition	-325° F to 450° F	-198° C to 232° C
O-ring		PTFE	-325° F to 450° F	-198° C to 232° C
Groove Pin		316 stainless steel	-325° F to 1000° F	-198° C to 538° C
Studs, Nuts & packing Follower		316 stainless steel	-325° F to 1000° F	-198° C to 538° C
Thrust Washer		17-7PH Hardened Stainless Steel	-325° F to 800° F	-198° C to 427° C
Lantern Ring		316 stainless steel	-325° F to 1000° F	-198° C to 538° C

\*The company's policy is one of continuous product improvement and the right is reserved to modify the specifications contained here in without notice



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