

Figures 705-D, 745-D, 705-U, 745-U Rotovalve® Cone Valve

Description

The GA Industries Rotovalve® Cone Valve has direct lineage to the original S. Morgan Smith cone valve and has the largest waterworks installed base, some in service for over 60 years. These are highly dependable quarter-turn, full ported valves ideally suited for pump control service as well as precise flow or pressure control under extreme operating conditions.

The valve's electrically fused, Monel to Monel seating and unique "lift and turn" operation that eliminates seat contact during opening and closing ensure long term tight shut off. When used as a pump control valve, it's linear operating cycle coupled with a smooth, circular, full port waterway provide excellent surge control and extremely low head loss.

The Rotovalve® cone valve is standard with two seats on opposite sides of the plug for tight shutoff in the closed position. An optional four seat arrangement also seats the plug in the open position precluding flow from passing behind the plug, highly desirable when the fluid contains solids.

Rotovalve® Cone Valves for pump control operated by a water cylinder are furnished with normal and emergency solenoid pilots, speed controls and limit switch. The valves can also be actuated by an oil cylinder. Multi-turn electric motor or manual gear operators are available for on/off or throttling service.

Product Features

- One-piece, top entry iron body and fully skirted plug with upstream and downstream Monel body seats
- Bi-directional tight shutoff when closed
- Virtually zero head loss when fully open
- Trunnion mounted design ensures proper alignment
- Unique "lift and turn" operation lifts plug prior to rotation to eliminate seat contact and wear
- All moving parts totally enclosed in a lubricated housing
- Cylinder, electric motor or manual gear actuation

Standard Materials

- Body, Cover, Plug Standard Cast Iron, ASTM A126 Class B
Optional Ductile Iron, ASTM A536 Gr 65-45-12
- Body & Plug Seats Electrically Fused Monel
- Valve Shaft Stainless Steel
- Shaft Bearings Lead-free Bronze and Stainless Steel
- External Fasteners Steel, A307, Zinc Plated

Corrosion Protection

- Standard: Internal and External Carboline 891
NSF-61 Certified Epoxy, min 6 mil DFT

Options/Accessories

- With Water Cylinder Operator
- With Oil Cylinder Operator
- With Electric Motor Operator
- With Manual Gear Operator
- With Pump Director Pre-wired Control Panel

Data Sheet 705.01B



Non-Shock Working Water Pressure Up to 125F (52C)				
Figure Number	705-D	745-D	705-U	745-U
Number of Seats	2	4	2	4
Flanges	ANSI B16.1 Class 125		ANSI B16.1 Class 250	
Size	6" – 48"		6" – 48"	
Max Inlet	150 PSI		250 PSI	
Hydro Test	225 PSI		375 PSI	

Optional Model 7700A Pump Director



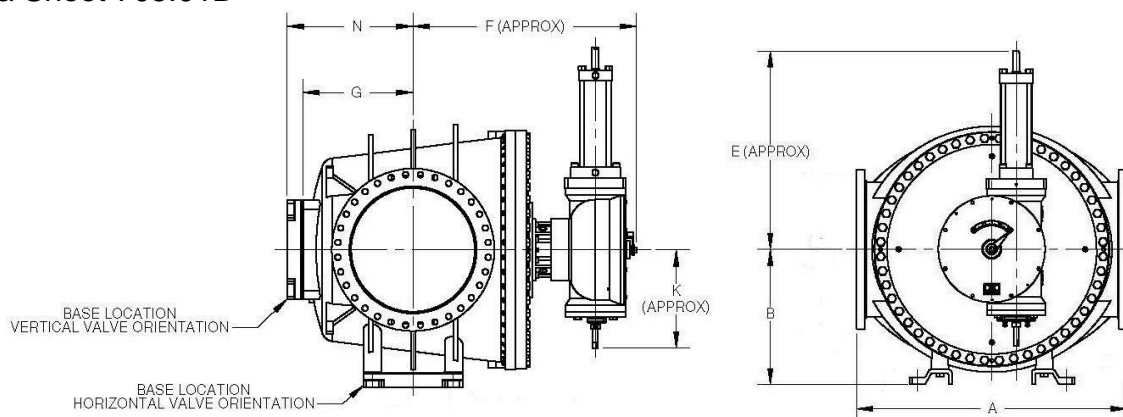
The operation of the GA Industries Rotovalve® Cone Valve for pump control and the pump motor must be sequenced for proper surge control. The optional GA Industries Model 7700A is a user friendly and SCADA compatible PLC based control panel that interfaces between the Motor Control Center and the pump control valve to provide the necessary electrical logic.

See Data Sheet 7700A.01 for more information.

Ordering Data

- Figure Number (705-D, 745-D, 705-U, 745-U)
- Size
- Installation Orientation (horizontal or vertical shaft)
- Options and/or Accessories

Data Sheet 705.01B



Installation Dimensions (Cylinder Operated)

Dimension		6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"	48"
A	CL150	23⅝	23½	28⅞	31	35½	39	41¾	47	56	64	78	83¼	93
	CL250	24	24½	29½	32½	37	40⅞	43⅞	48⅞	57¾	65¾	80	90	99½
B		8½	10	12	14	15½	17½	19¼	22¼	26¼	34½	39	45¾	48¾
E		27	27	27	37	37	37	37	49	49	56½	56½	67¼	67¼
F		26½	27½	28½	34½	35½	36½	37½	47¾	50½	58¾	61¼	70	92
G		6¾	8¼	9¾	13¼	14¼	16½	18⅞	20¾	22⅞	29½	31⅞	38	43
N		9⅞	10¾	12¾	15¾	16¾	19	20⅞	24¾	26⅞	34	35⅞	40¼	45¼
K		10	10	10	15½	15½	15½	15½	21	21	29¾	29¾	40½	40½
WGT	CL150	730	890	1,235	2,260	2,520	3,170	3,515	5,840	8,320	13,520	19,400	34,700	43,900
	CL250	775	945	1,325	2,370	2,675	3,385	3,845	6,210	8,900	14,250	20,300	36,000	45,250

1. Dimensions in inches, weight in pounds and are approximate. Request certified drawings if critical.
2. Class 250 flanges supplied flat face unless otherwise specified. Dimension A does not include raised face.
3. Dimensions E, F and K may differ from the dimensions shown based on the application.
4. Actuator can be rotated in 90 degree increments about the valve centerline.
5. Water or oil cylinder operated valve depicted. Consult factory for information manual or electric motor actuated valves

K-Factor and Cv vs. Plug Angle)

Plug Angle, Degrees from Closed		90 (Full Open)	80	70	60	50	40	30	20	10
K-factor		0.03	0.27	1.32	3.9	10.6	27.6	74	203	1,303
Flow Coefficient, Cv	6"	3,658	2,067	935	544	330	205	125	75	30
	8"	7,705	3,674	1,662	967	586	364	222	134	53
	10"	12,708	5,741	2,596	1,511	916	568	347	209	83
	12"	19,446	8,267	3,739	2,175	1,319	818	499	302	119
	14"	27,232	11,252	5,089	2,961	1,796	1,164	680	410	162
	16"	36,828	14,697	6,647	3,867	2,346	1,454	888	536	212
	18"	48,447	18,601	8,412	4,894	2,969	1,841	1,124	678	268
	20"	60,038	22,964	10,386	6,042	3,665	2,273	1,387	838	331
	24"	88,731	33,068	14,956	8,701	5,278	3,272	1,998	1,206	476
	30"	148,242	51,559	23,368	13,595	8,246	5,113	1,321	1,885	744
	36"	227,417	74,403	33,650	19,577	11,875	7,363	4,495	2,714	1,071
	42"	335,504	101,271	45,801	26,646	16,163	10,022	6,118	3,694	1,458
	48"	447,397	132,273	59,822	34,803	21,110	13,090	7,991	4,825	1,904