



KEYSTONE SLURRY CONTROL VALVES

FIGURE 635 ASME CLASS 150

The F635 is a light/medium duty slurry control valve with a wafer style body



FEATURES

- Fully cast wafer style body for less weight.
- Bi-directional control valve rated up to 1400 kPa.
- Swing through disc for minimum clearance.
- Adjustable high temperature graphite packing.
- Hard wearing materials of construction offering up to 420 Brinell hardness.
- Standardized mounting and drive adaptor connection allowing direct mounting of Keystone actuators and allowing for in-line actuator removal.
- Direct mounting for actuation eliminates the need for mounting brackets.
- Extensive size range available.
- Optional 5 degree angle seat for minimum leakage.

GENERAL APPLICATION

Especially developed for the mining and mineral processing industries for the control of light to medium density slurries.

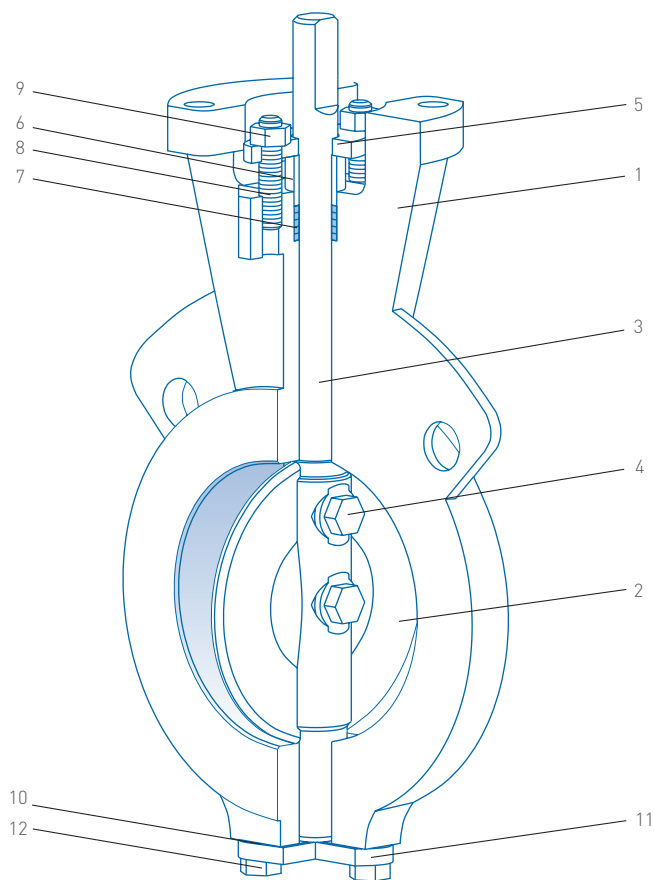
TECHNICAL DATA

Size range:	DN 50 - 500
Temperature rating:	Up to 540°C
Pressure rating:	ASME B16.34 Class 150
Max ΔP :	1400 kPa
Standard flange drilling:	ASME B16.5 Class 150 F.F



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PARTS LIST

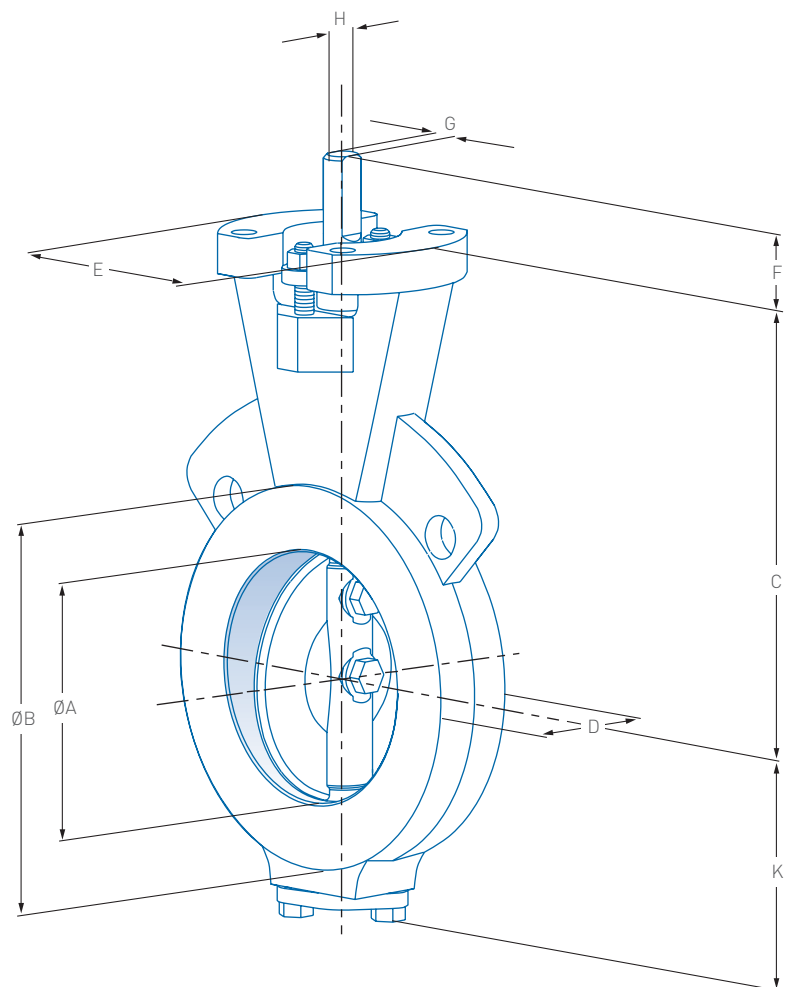
No.	Description	Material
1	Body	Air hardened S.G. iron
2	Disc	Air hardened S.G. iron
3	Shaft	431 S/S
4	Disc screw	316 S/S
5	Gland follower plate	Carbon steel
6	Gland follower collar	431 S/S
7	Gland packing	Graphite
8	Gland follower stud	Carbon steel plated
9	Gland follower nut	Carbon steel plated
10	Gasket	Graphite
11	End cover	Carbon steel
12	End cover bolt	Carbon steel plated

OPTIONS

- F79U Hard anodized aluminium pneumatic actuator, double acting or spring return.
- F79S Stainless steel pneumatic actuator, double acting or spring return.
- F79B Ductile iron pneumatic actuator, double acting or spring return.
- Icon 2000 Electric actuators.
- F427 Manual gear operators.
- F793 Positioners.
- F792 Switch boxes.
- F791 Solenoid valves.

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DIMENSIONS (mm)

Valve size DN	Stem code	Shaft dia inches	ØA	ØB	C	D	E	F	K	Q	Stem conn H x G / ØH inches	Keyway inches	Top plate			Mass (kg)	K _v at full open
													PCD mm	No. holes	Hole dia mm		
50	BAB	5/16	50	96	140	35	105	32	62	36	5/16 x 3/8	-	83	4	11	4	190
65	BAB	5/16	63	106	152	35	105	32	69	53	5/16 x 3/8	-	83	4	11	5	280
80	BAB	5/16	76	127	159	38	105	32	79	66	5/16 x 3/8	-	83	4	11	6	430
100	BAC	5/8	101	157	178	38	105	32	92	94	5/8 x 7/16	-	83	4	11	8	710
125	BAD	3/4	127	186	190	38	105	32	106	120	3/4 x 1/2	-	83	4	11	9	1120
150	BAD	3/4	149	216	203	38	105	32	122	143	3/4 x 1/2	-	83	4	11	10	1630
200	BAD	7/8	200	270	230	48	105	32	152	194	3/4 x 1/2	-	83	4	11	16	2840
250	BAD	1 1/8	251	324	262	64	105	32	178	244	3/4 x 1/2	-	83	4	11	26	4640
300	BAD	1 1/8	302	374	300	70	105	32	203	293	3/4 x 1/2	-	83	4	11	40	6880
350	CAG	1 3/8	332	444	390	111	182	76	267	312	1 3/8	5/16 x 3/16	127	4	14	92	8600
400	CAH	1 3/8	382	495	427	111	182	76	304	365	1 3/8	3/8 x 3/8	127	4	14	120	11200
450	DAJ	1 7/8	432	540	457	127	200	108	338	412	1 7/8	1/2 x 3/8	165	4	21	140	15500
500	DAJ	2 1/8	482	595	492	133	200	108	377	462	1 7/8	1/2 x 3/8	165	4	21	160	18900

NOTES:

Q = The chordal dimension at face of valve for disc clearance into pipe or flange.

H = The dimension of the stem connection.

ØH = Drive dog connection changes to a round shaft on valve sizes DN 350 - 500

G = The dimension across the stem flats.

K_v = The flow rate of water in m³/hr that will pass through a valve with a pressure drop of 1 bar (100 kPa) at 20°C

C_v = 1.155 K_v

Dimensions are nominal ± 1 mm.

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ANTICIPATED SEATING AND UNSEATING TORQUE VALUES - Nm

Valve size DN	Shut-off pressure kPa									
	Normal service					Severe service				
	0	350	700	1000	1400	0	350	700	1000	1400
50	25	26	27	28	29	37	38	40	41	42
65	30	32	33	34	35	45	46	47	49	50
80	36	38	41	43	45	54	56	59	61	63
100	54	58	61	64	68	81	85	88	92	95
150	102	113	124	136	147	152	164	175	186	198
200	169	192	215	237	260	254	277	299	322	345
250	260	294	328	362	395	390	424	458	492	525
300	350	407	463	520	576	525	582	638	695	751
350	486	576	667	757	847	729	819	910	1000	1090
400	621	757	893	1028	1164	932	1068	1203	1339	1475
450	780	983	1186	1390	1593	1170	1373	1576	1780	1977
500	960	1243	1525	1808	2090	1441	1723	2006	2288	2570

K_v VALUES/FLOW RATE CO-EFFICIENTS

Size DN	Angle of disc opening									
	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	3.4	5.1	10	19	29	46	69	110	170	190
65	4.2	6.8	14	26	42	64	95	160	250	280
80	5.1	8.5	19	38	62	100	150	240	370	430
100	6.8	12.0	32	61	102	157	240	400	620	710
125	8.5	17.0	46	94	168	248	390	640	950	1120
150	10.0	25.0	62	130	230	350	550	950	1380	1630
200	16.0	37.0	111	236	396	606	950	1550	2410	2840
250	20.0	53.0	175	360	630	970	1550	2580	3960	4640
300	24.0	73.0	244	534	884	1484	2320	3780	5850	6880

DUTY DEFINITIONS

NORMAL

- Liquid service to 3 m/s
- Gases - Non-abrasive
 - Natural gas
 - Hot air
 - Exhausts-flues
 - Coke ovens gas
 - Oxygen-nitrogen, etc
- Light to medium abrasion
 - Pneumatic conveying 3-4000 fpm - 20 m/s
 - Crystallising liquors low velocity.
 - 5-10% fine solids low velocity.

SEVERE

- Medium abrasion
 - Pneumatic conveying dense phase, average velocities.
 - Magnetite slurries
 - Cement slurries
 - Bauxite slurries
 - Ore slurries

TYPICAL SPECIFYING SEQUENCE

ATTACHED TO AIR FINS SEQUENCE						
100		F635		029		ASME 150
Valve size		Figure number		Trim code		End connections
Trim code	Body	Disc	Shaft	Seat	Bearings	Packing
029	Air hardened	Air hardened	431 S/S	Air hardened	PTFE/Glass	Graphite
	S.G. iron	S.G. iron		S.G. iron (swing through)		

End connections (to suit) • ASME B 16.5 Class 150 F.F (std). • Others available on request.

GUIDELINES

Operating torques for these valves are generated from bearing/packing friction, component weight, hydro-dynamic and contaminant forces etc. There are no hard and fast rules which can accurately and practically determine the sum total of all these forces. (Refer Emerson valve manual for further information).

The following guidelines are considered to be conservative and can confidently be used for routine duties. If you have any doubts consult a Emerson sales representative.

Other considerations -

- All "angle seated" valves need travel limit stops to prevent the disc from being jammed into the bore.
- High temperature applications need a "heat shield" (RHS box section) between the valve and actuator.

NOTES:

This data is based on calculated theoretical figures.

K_v = The volume of water in m³/hr that will pass through a given valve opening at a pressure drop of 1 bar (100 kPa) at 20°C.

C_v = 1.155 K_v