

Neles™ trunnion mounted ball valves ASME Class 600

Series XV

The XV Series provides a unique solution for demanding control valve applications. Its lugged-body design enables a compact face-to-face dimension while ensuring safe and secure piping installation through direct bolting into the valve body.

The XV comes standard with our proprietary Q-Trim™ technology, delivering effective noise reduction and cavitation control while maximizing flow capacity (Cv). Its unique design stages the pressure drop and divides the flow into multiple smaller streams, helping reduce turbulence, noise, and vibration. The self-cleaning design also helps keep critical flow passages clear for reliable and consistent performance.



Applications

- Oil and gas production.
- Natural gas.
- Crude oil.
- Hydrocarbons.
- Liquids, gas and steam.
- Control service

Trunnion mounted features

- Q-trim as standard
- Non-tight / high-capacity seat
- Quick operations.
- High cycle capability.
- Reduced bore
- Maximum Cv per nominal size.
- Equal Percentage flow characteristic

Pressure classes

- ASME Class 600 fully rated

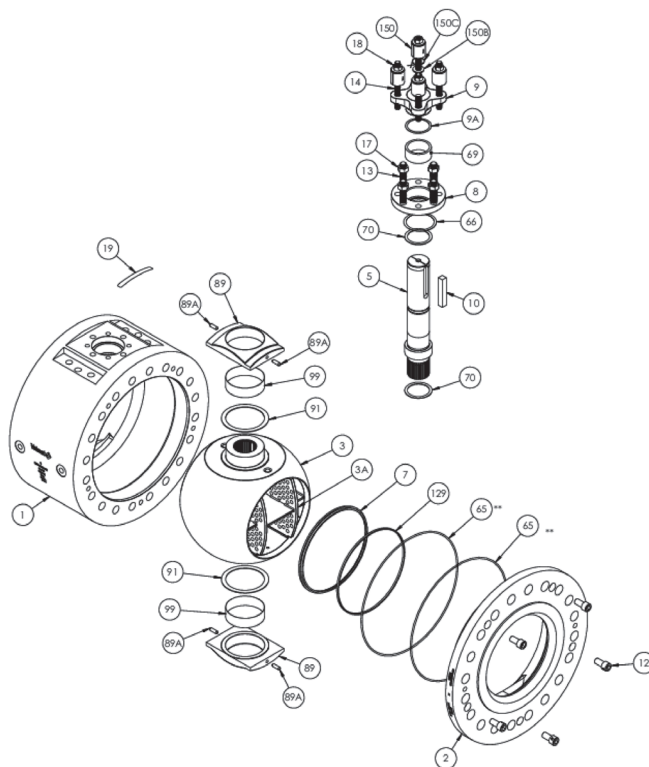
Increased safety

- Live-loaded construction as standard.
- Spiral wound body joint gasket / O-ring design
- Anti-blowout shaft.

Minimized emissions

- Live-loaded gland PTFE packing.
- Side entry, two-piece bolted body.
- No bending forces to gland packing

Exploded view



Parts list

Item	Part description	Materials
1	Body	Carbon Steel LF2
2	Body cap	Carbon Steel LF2
3	Ball	Stainless Steel AISI F316
3a	Attenuator plate	Inconel 718
5	Shaft	Stainless Steel 17-4PH
7	Non-contact seat	Stainless steel AISI 316
8	Bonnet	Carbon Steel LF2
9	Gland	Stainless Steel CF8M
9A	Anti-extrusion ring	Stainless Steel AISI 316
10	Key	Stainless Steel AISI 329 / UNS S31803
12	Socket head cap screws	ASTM A 320 gr. L7M
13	Stud	ASTM A 320 gr. L7M
14	Stud	ASTM A 320 gr. L7M
17	Hexagon nut	ASTM A 320 gr. 7M
18	Hexagon nut	ASTM A 320 gr. 7M
19	Identification plate	AISI 316
65	Body seal	Spiral Wound AISI 316 + PTFE (12") , Viton O-ring (16", 20", 24")
66	Sheet ring	PTFE
69	Packing ring/v-ring set	PTFE
70	Thrust bearing	AISI 316 + PTFE
89	Trunnion plate	Stainless steel CA15
89A	Pin	A564 gr. 630 H1150D / ASTM A479 gr. XM-19
91	Thrust bearing	AISI 316 + PTFE
99	Trunnion bearing	AISI 316 + PTFE
129	Support ring	AISI 316
150	Disc spring set	AISI 303 / 50CrV4 + ENP
150B	Washer	AISI 304
150C	Anti-static spring	DIN 17224-1.4310

Technical specifications

Product type

Reduced bore trunnion mounted ball valve. Side entry, two-piece bolted body.
Lugged flange connection.

Pressure ratings

ASME Class 600

Size range

12", 16", 20", 24".

Standard temperature range

-46 ...+200°C.

Material and test certification

EN10204-3.1 material certificates for body and bonnet.

Design standard

Valve body	ASME B16.34.
Valve lugged flanges	ASME B16.5.
Face-to-face	12" - 16" ISA 75.08.02 Table 1.
20" and 24" according to manufacturer	
Actuator mounting	ISO 5211.

Standard Materials

Body	ASTM A350 gr. LF2
Ball	AISI 316
Bearings	RPTFE
Seats	AISI 316
Seals/gaskets	PTFE
Body gaskets	Spiral wound PTFE or Viton O-ring
Gland packing	PTFE with live loaded construction.
Bolting	L7M/7M with carbon steel body.

Standard options

NACE MR0103 and MR0175

Valve testing

Each valve is tested for body integrity.
The body test pressure is 1.5 x pressure rating.
Non-contact seat design, not for shut-off service.

Actuator selection

XV series valve can be equipped with the following Neles brand actuator types:

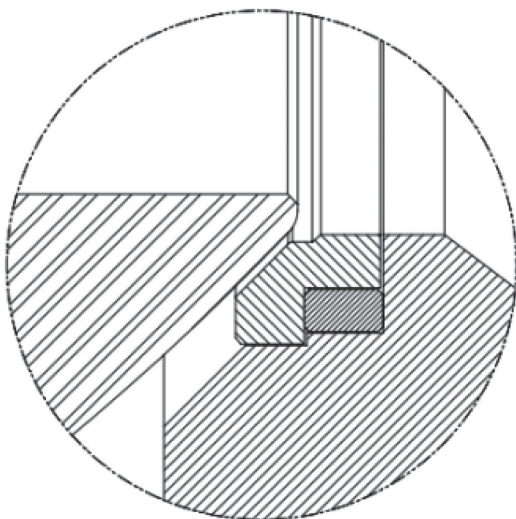
B1C/B1J Pneumatic double acting or spring return actuator with ISO 5211 mounting face.

N1 Spring return scotch yoke actuator with ISO 5211 mounting face.

When selecting other actuators, please contact your local Valmet representative.

Standard seat constructions and materials

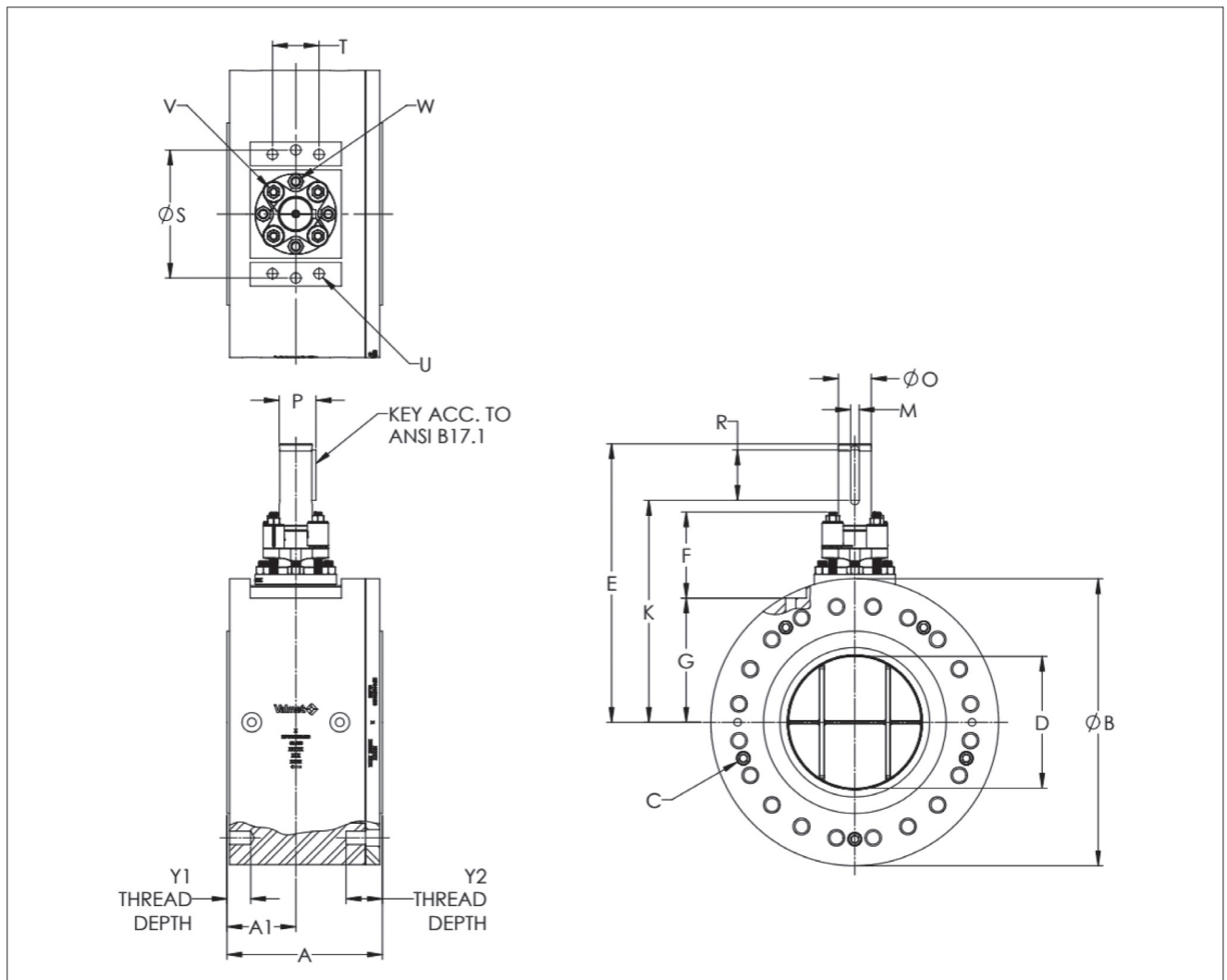
FR Non-Contact Flow Ring



Ball Seat:
Temp. range:
Note:

Stainless Steel
-46 °C... +200 °C
Seat welded in place to
maintain .5 – 1 mm gap
between ball and seat.

Dimensions and weights



Size		Dimensions in mm														U	V	W	C	Weight kg
NPS	DN	ØD	A	A1	ØB	E	K	M	ØO	P	S	T	Y1	Y2						
12	300	271	338	148	572	556	444	15.9	65	71.6	247	90	50	100	M30	M16	M20	7/8 - 9	482	
16	400	348	400	177	740	718	572	22.2	85	94.6	330	120	54	87	M30	M20	M24	7/8 - 9	974	
20	500	436	533	255	900	949	744	31.7	120	134	500	210	68	90	M42	M24	M33	1 1/8-8	1867	
24	600	495	679	308	1016	1003	798	31.7	120	134	500	210	74	128	M42	M24	M33	1 1/4-8	3067	

Size		Dimensions in inch													U	V	W	C	Weight lbs
NPS	DN	ØD	A	A1	ØB	E	K	M	ØO	P	S	T	Y1	Y2					
12	300	10.68	13.3	5.84	22.5	21.9	17.5	0.63	2.56	2.82	9.72	3.54	1.96	3.96	M30	M16	M20	7/8 - 9	1063
16	400	13.7	15.8	6.97	29.13	28.3	22.5	0.88	3.35	3.73	13	4.72	2.15	3.43	M30	M20	M24	7/8 - 9	2147
20	500	17.17	21	10.02	35.43	37.4	29.3	1.25	4.72	5.27	19.7	8.27	2.71	3.57	M42	M24	M33	1 1/8-8	4116
24	600	19.49	26.7	12.13	40	39.5	31.4	1.25	4.72	5.27	19.7	8.27	3.08	5.05	M42	M24	M33	1 1/4-8	6761

Modular ball valves, series XV, trunnion valves

Trunnion mounted, Neles™ ball valve, series XV ASME class 600,											
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
XV	12	F	W	EQ	AB	PP	FR	A	F	A	D

1. sign	VALVE SERIES & STYLE & FACE-TO-FACE
	Lugged
XV	Reduced bore, trunnion mounted, Q-trim, ASME Class 600

2. sign	ASME VALVES, NPS Pressure class availability, Class 600
12	12"
16	16"
20	20"
24	24"

3. sign	PRESSURE CLASS
F	ASME class 600

4. sign	END CONNECTION STYLE
	ASME rated flanges:
W	Raised face, ASME B 16.5 (Ra 3.2-6.3), standard

5. sign	CONSTRUCTION & APPLICATION
EQ	Single seated. Q-Trim construction

6. sign	BODY MATERIALS, FORGINGS / CASTINGS
	STANDARD materials
AB	ASTM A350 gr LF2

7. sign	BALL / COATING & STEM MATERIAL
	STANDARD materials
PP	316SS Ball & 17-4PH Stem

8. sign	SEAT MATERIAL
	Seat type / material
FR	Flow ring / 316SS

9. sign	BEARING AND SEAL MATERIALS			
	Trunnion bearing	Packing	Body Seal	Thrust bearing
A	RPTFE	PTFE V-rings	PTFE Body Seal / Oring*	RPTFE

10. sign	BOLTING MATERIALS	
	Studs	Nuts
F	L7M	7M

11. sign	MODEL CODE
A	XV model code A

12. sign	Option / Modifier
D	Drain plug on the body

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