

## GACHOT

**Three-piece ball valve featuring a unique design for easy and fast maintenance.**

These products have been designed, manufactured and tested under the supervision of an ISO 9001-2000 certified Quality Assurance system complying with:

- module H (categories I, II and III) of annex 3 of European Directive 97/23/EC concerning pressure equipment,
- module H (categories 1, 2) of European Directive 1999/36/EC concerning transportable pressure equipment;

and ensuring the products meet the safety and health essential requirements for the design and manufacturing of equipment intended for use in potentially explosive atmospheres according to the ATEX Directive 94/9/EC.

### Features

- Forged body and connectors.
- Designed to international and European standards.
- Suitable for ON-OFF and control service.
- ISO 5211 top plate flange allows the mounting of 1/4 turn actuators without removing the valve body.
- Antistatic device to ISO 7121 and BS-5351.
- Guided blow-out proof stem.
- Fully adjustable packing gland.
- Fugitive emission free packing- TA-LUFT certified available upon request.
- Tightness to ISO 5208: Cat. A bubble tight.
- Standard DIN 50049-3.1.B certificate available.
- Modular "V16 SYSTEM" for check valve, strainer, sight-glass.
- A wide range of seating materials available. (PTFE, TFM, PVG, PEEK, etc.).
- Large range of options and special applications (3-way valves, tank bottom valve, cryogenic application, dead volume free design, very high temperature operation. etc.).
- Various agreements and certifications.



### Applications

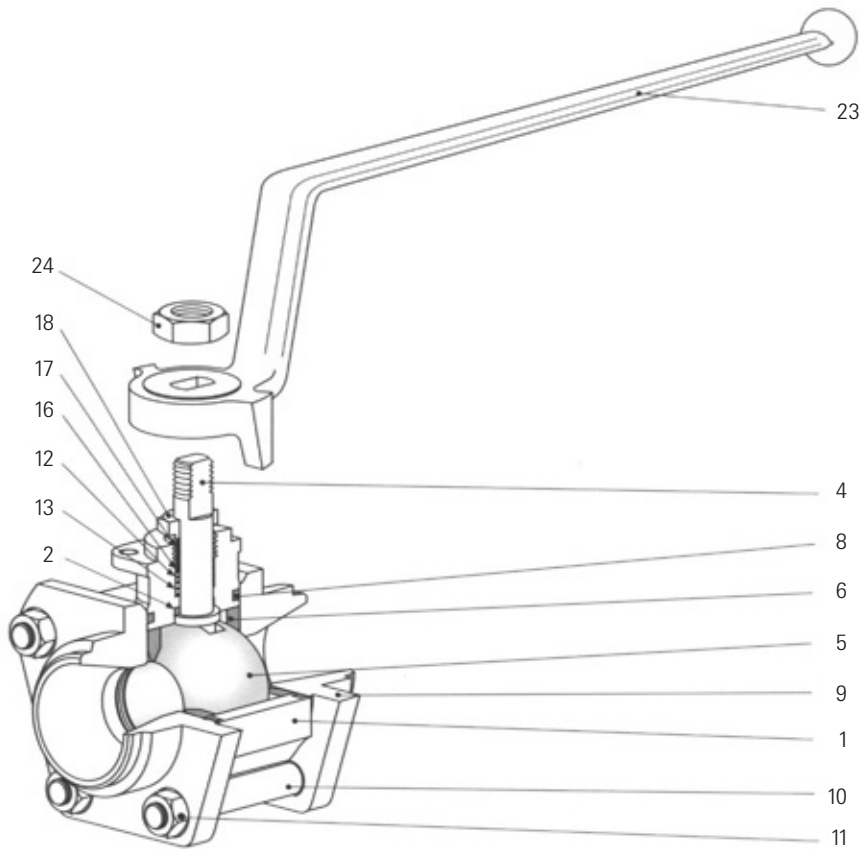
- Saturated steam.
- Ammonia, natural gas, propane and utilities.
- Whenever safety and reliability are important issues.

### Technical data

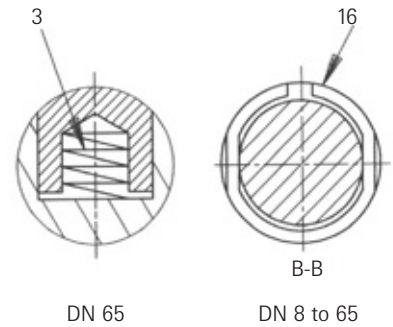
Sizes (mm)	: 8 - 200
Temperature (°C)	: -60 to +225
Pressure (bar)	: PN10 - PN100
Connections	: butt weld ends, socket weld ends, threaded ends BSP and NPT, forged or screwed-on flanges, face to face dimension to ISO 5752 series 1 and EN 558-1, special connections on request.

# Ball Valve Type V16

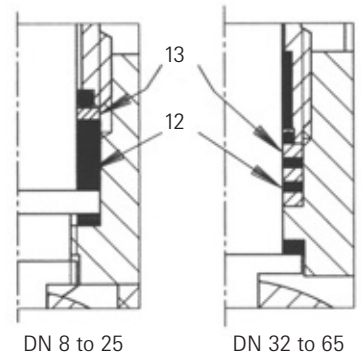
materials reduced bore / DN 8 to DN 65



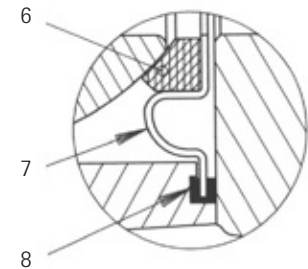
## Antistatic device



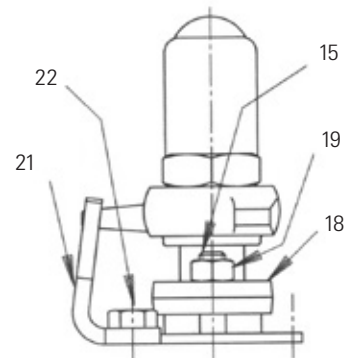
## Packing and anti blow-out stem



## Metal seat support for DN 65



## Bolted gland for DN 65



### Parts list

Item	Qty	Description	Material
1	1	Body	ASTM A 105 (forged)
2	1	Friction washer	PTFE
3	1	Antistatic spring DN 65	AISI 316
4	1	Stem	AISI 316L
5	1	Ball DN 08 to DN 25	AISI 316L *1
		DN 32 to DN 65	AISI 410
6	2	Seat DN 08 to DN 50	PTFE/Glass *2
		DN 65	PTFE
7	2	Seat support DN 65	AISI 316L
8	2	Body gasket	PTFE *2
9	2	Flanged end connector	
9A	2	End connector	ASTM A105 (forged)
9B	2	Flange support	AFNOR BF 42 (forged)
10	4	Tie bolt	5.6 - 2 ISO 898-1
11	8	Nut DN 08 to DN 50	AISI 304
		DN 65	Cl. 8 steel, cadmium pl.
12	1/2	Soft gland washer	PTFE *3
13	1/3	Metallic gland washer	AISI 316L *3
15	2	Gland stud DN 65	AISI 316L
16	1	Spring wire	AISI 316
17	1	Gland ring DN 32 to 65	PTFE
18	1	Gland DN 08 to DN 20	AISI 316L
		DN 25 to DN 50	ANSI 1146
		DN 65	A 105
19	2	Gland nut DN 65	AISI 304
20	1	Stop screw DN 08 to DN 50	AISI 304
21	1	Travel stop DN 65	C. steel
22	2	Stop screw DN 65	Cl. 8 steel, cadmium pl.
23	1	Lever	Malleable iron
24	1	Lever nut	ANSI 304

\* 1) Ball on AISI 316L for DN 32 to DN 65 upon request

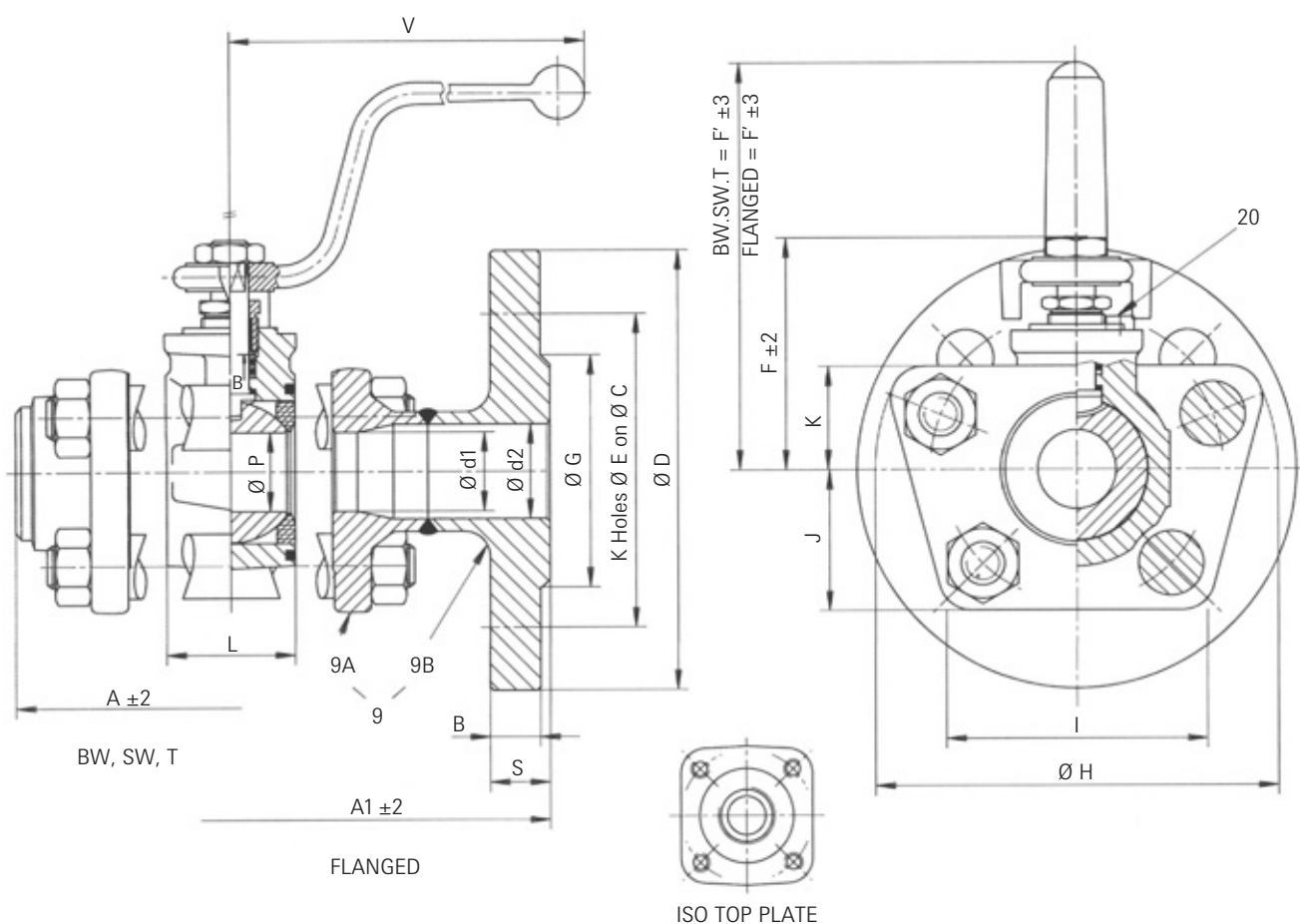
\* 2) Other materials upon request

\* 3) x/. for DN 08 to DN 25 ./y for DN 32to DN 65

All indicated materials are equivalent standard designations.

# Ball Valve Type V16

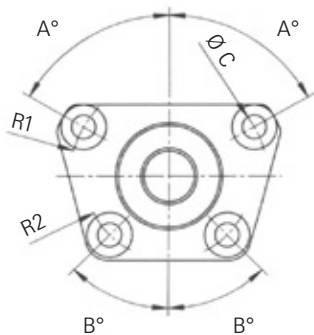
dimensions reduced bore / DN 8 to DN 65



## Valve dimensions (mm)

DN	ISO	A	A1	B	C	d1	d2	D	E	F	F'	F''	G	H	I	J	K	L	P	S	V	Weight (Kg)	
																						Flanged	BW
08	F03	67					8			57	77	109		74	48	26	19	22	11	18	160		0.9
10/12	F03	67	130	14	60	90	11	11	14	57	77	109	40	74	48	26	19	22	11	18	160	1.8	0.9
15	F03	67	130	14	65	95	11	16	14	57	77	109	45	74	48	26	19	22	11	18	160	2.4	0.9
20	F03	80	150	16	75	105	14	21.6	14	60	80	112	58	82	55	30	21	25	14	20	160	3.2	1.25
25	F04	90	160	16	85	115	18	28.5	14	70	123	123	68	100	64	34	26	31	17	20	210	4.6	2
32	F04	100	180	16	100	140	25	37.2	18	72	127	127	78	114	72	38	32.5	41	25	20	210	6.12	2.7
40	F05	109	200	15	110	150	30	43.1	18	81	132	132	88	134	83	44	38	48	30	20	210	8.6	3.68
50	F05	130	230	17	125	165	40	54.5	18	97	140	140	102	154	96	50	45	60	40	22	260	9.62	6.5
65	F07	195	290	15	145	185	50	70.3	18	119	161	161	122	188	113	60	60	75	50	20	315	15.2	11.7

**Note:** Standard carbon steel flanges Ra 6.3 facing, PN 25/40 for DN 15 to DN 50 and PN 16 for DN 65.  
Upon request: carbon steel PN 20 (ANSI 150) and PN 40 - PN 50 (ANSI 300).



## V-shaped connectors dimensions

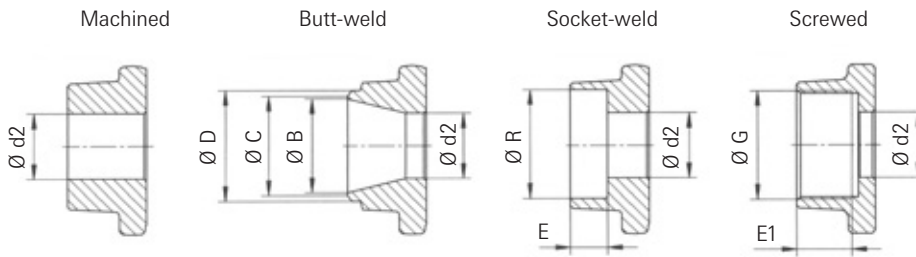
DN	A°	R1	B°	R2	C
8	68	27	45	24.5	8.5
10/12	68	27	45	24.5	8.5
15	68	27	45	24.5	8.5
20	68	30.5	45	28	8.5
25	68	37.5	45	34	10.5
32	61°30'	45.5	45	38.9	10.5
40	61°30'	53	45	43	12.5
50	61°30'	61	45	51.3	14.5
65	55	78.5	45	63	17

The V-shaped connectors feature the easiest and fastest maintenance.

# Ball Valve Type V16

end connections and ratings reduced bore / DN 8 to DN 65

## End connections SW, T, BW



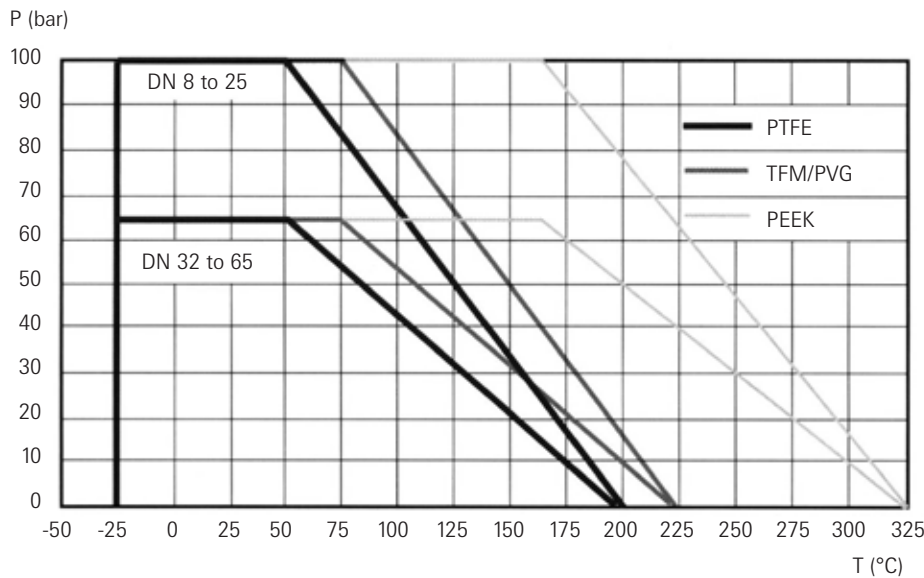
### Notes

All the end connections are machined from the basic unmachined forged connectors. This technology allows quick response to the customers demand and a large variety of special connections.

### End connections - main dimensions mm

V16 Type	Unmachined				Butt-weld			Socket-Weld			Screwed			
	DN	H	d 2	T	C	D	F	d2	E	R	BSP G	E 1	NPT G	E1
8	8		8	8	10	13.5	8	8	9.5	13.7	1/4"	11	1/4"	10.5
10	11													
12	11		11	11	13.5	17.2	11	11	9.5	17.5	3/8"	11.5	3/8"	10.5
15	11		16	17	17	21.3	11	11	9.5	21.6	1/2"	15	1/2"	13.5
20	14		21.6	23	23	26.9	14	14	11	27.2	3/4"	16.5	3/4"	14
25	18		27.2	30	30	33.7	18	18	12.5	34	1"	19	1"	17.5
32	25		35.9	39	39	42.4	25	25	14.5	42.8	1 1/4"	21.5	1 1/4"	18
40	30		41.8	45	45	48.3	30	30	16	48.8	1 1/2"	21.5	1 1/2"	18.5
50	40		53	56	56	60.3	40	40	17.5	60.8	2"	26	2"	19.5
65	50		68.8	72	72	76.1	50	50	19	76.6	2 1/2"	30.5	2 1/2"	29

## Pressure - temperature rating



### Notes

#### Standards seats:

- 25% glass reinforced PTFE DN 8 to DN 50. PTFE : DN 65.

#### Optional seats:

- TFM/PVG (carbon reinforced PTFE)
- PEEK (carbon reinforced)

Other seat materials (on request):

- PE Cryogenic and nuclear application
- Expanded graphite - high temperature applications

Other seat designs (on request):

Pressure relieving seats: TFM and PVG

### Standard packing and body gasket

- Temp. < 200°C  
Packing : PTFE  
Gasket : PTFE
- Temp. ≥ 200°C  
Packing : Graphite  
Gasket : Stainless steel reinforced PTFE (≤ 250°C) or graphite.
- Other packing and gasket materials upon request

### Flow coefficient Cv/Kv

#### Welded or screwed ends

DN	8-15	20	25	32	40	50	65
Cv	11	19	25	52	81	166	212
Kv	9	16	22	45	70	143	183

#### Flanged (to NFE 29-312)

DN	8-15	20	25	32	40	50	65
Cv	10	16	24	61	78	139	228
Kv	8.6	14	21	52	67	120	196

**Testing**

- All our valves are standard tested according to the Gachot quality assurance manual: 100% for the flanged and threaded valves, 10% for the welded end valves.

**Acceptance criteria**

NFE-29311 - ISO 5208 - DIN 3230

- Hydrostatic shell test: 1.5 x Pressure rating (ambient temperature). No visible leakage.
- Air seat test: 6 bar air (air in the valve body). No bubbles accepted.

**Modular system**

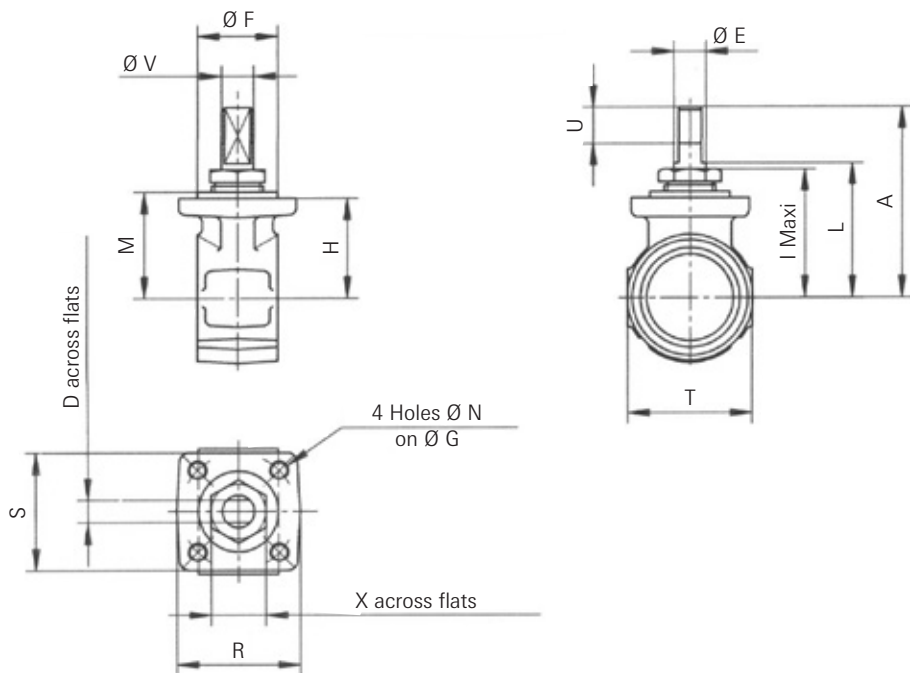
Between the same flanges can be mounted:

- V16 check valve
- V16 strainer
- V16 sight glass
- V16 3-way valve (L or T port)

**Options**

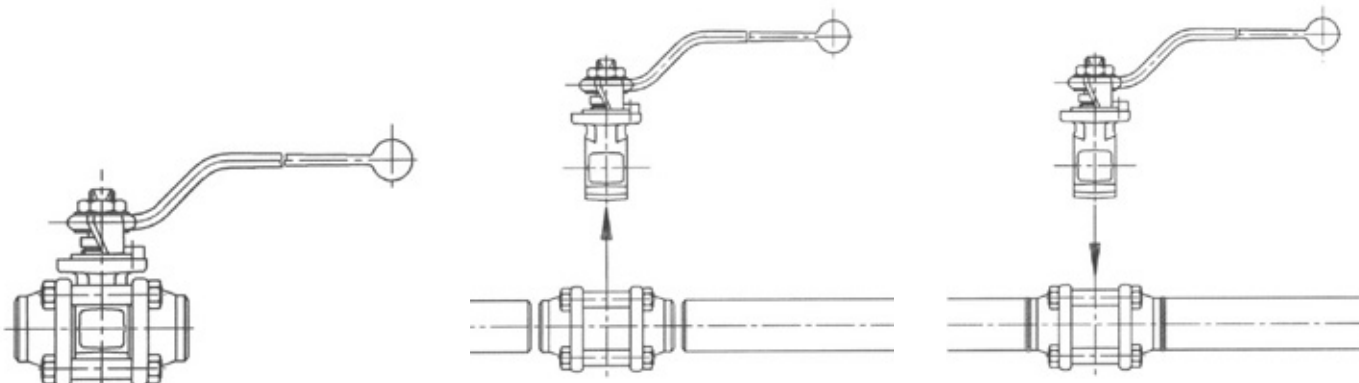
- Heating jacketed V16
- Limit switch kit
- Tank bottom V16 valve
- Cryogenic V16
- Other connections and levers
- Padlocking kit

DN 8 to 65



**Dimensions for bracket and coupling**

DN	ISO	A	D	E	F	G	H	I	L	M	N	R	S	T	U	V	X
8	F03	57	7	10.1	25	36	28.5	38.5	39.5	30.5	M6	36.5	36.5	36.5	11	M10	17
10/12	F03	57	7	10.1	25	36	28.5	38.5	39.5	30.5	M6	36.5	36.5	36.5	11	M10	17
15	F03	57	7	10.1	25	36	28.5	38.5	39.5	30.5	M6	36.5	36.5	36.5	11	M10	17
20	F03	59.5	7	10.1	25	36	31	41	42	33	M6	36.5	36.5	42.9	11	M10	17
25	F04	69.5	7	12.1	30	42	38.5	48.5	51.5	40.5	M6	42	42	51.4	11	M12	19
32	F04	72	7	12.1	30	42	44	54.5	56	46	M6	42	42	61.9	9	M12	19
40	F05	81	7	13.8	35	50	50.5	62	64	53.5	M6	50	50	70	10	M14	24
50	F05	96.5	7	15.8	35	50	63	75.5	76.5	66	M6	50	50	88.5	12	M16	30
65	F07	118.5	12	19.75	55	70	60.5	81	90.5	63.5	M8	67	71.5	103.5	16	M20	/



**Welded connections V16 - Piping installation**

- When the ball valve body has been removed (by just loosening the bolt nuts), the flanges set up a rigid cage easy to weld.
- Once the welding is finished, just pull the two flanges apart, insert the body between the flanges and tighten back the nuts.
- The V16 is ready to operate.

# Ball Valve Type V16

actuator selection reduced bore / DN 8 to DN 65

## Torque values for standard seats/Nm

DN	Standard seats			Pressure relieving seats			Stem limiting torque (Nm)
	7	16	25	7	16	25	
08 - 15	8	9	12	8	9	12	45
20	9	10	15	9	10	15	45
25	10	12	16	10	12	16	66
32	14	17	20	14	17	20	66
40	20	25	30	20	25	30	94
50	35	40	45	30	38	45	138
65	40	50	65	35	45	65	309

Torques measured with water 1cPo viscosity at 20°C

Other seats: TFM/Carbon PTFE: +20%; PEEK DN10 to 40: +40%, DN 50 to 65: +30%

Other packing gland: graphite packing: +10%

## Selection of pneumatic actuators series 79/D for standard seats

DN	Air supply (bar)	Double Acting Actuator ΔP (bar)				Single Acting Actuator ΔP (bar)			
		7	16	25	50	7	16	25	50
<b>Application I</b>									
10	4	003	003	003	003	006S-2.7	006S-2.7	006S-2.7	012S-2.7
	6	003	003	003	003	003S-5.5	003S-3.4	006S-3.4	006S-5.5
	8	003	003	003	003	003S-5.5	003S-5.5	003S-6.9	006S-5.5
15	4	003	003	003	003	006S-2.7	003S-2.7	006S-2.7	012S-2.7
	6	003	003	003	003	003S-5.5	003S-5.5	006S-3.4	006S-5.5
	8	003	003	003	003	003S-5.5	003S-5.5	003S-6.9	006S-5.5
20	4	003	003	003	006	006S-2.7	006S-2.7	012S-2.7	012S-2.7
	6	003	003	003	003	003S-5.5	003S-5.5	006S-5.5	006S-5.5
	8	003	003	003	003	003S-5.5	003S-5.5	006S-5.5	006S-5.5
25	4	003	003	003	006	006S-2.7	006S-2.7	012S-2.7	012S-3.4
	6	003	003	003	003	003S-5.5	006S-3.4	006S-5.5	012S-3.4
	8	003	003	003	003	003S-5.5	003S-6.9	006S-5.5	006S-6.9
32	4	003	003	006	006	012S-2.7	012S-2.7	012S-3.4	024S-2.7
	6	003	003	003	003	006S-3.4	006S-5.5	006S-5.5	012S-4.1
	8	003	003	003	003	006S-3.4	006S-5.5	006S-5.5	012S-4.1
40	4	006	006	006	012	012S-3.4	012S-2.7	024S-2.7	024S-2.7
	6	003	003	006	006	006S-5.5	012S-2.7	012S-4.1	012S-5.5
	8	003	003	003	006	006S-5.5	006S-6.9	012S-4.1	012S-5.5
50	4	006	012	012	012	024S-2.7	024S-2.7	024S-3.4	036S-3.4
	6	006	006	006	012	012S-5.5	012S-5.5	024S-3.4	024S-4.1
	8	003	006	006	006	012S-5.5	012S-5.5	012S-6.9	024S-4.1
65	4	012	012	012	024	024S-2.7	024S-3.4	036S-3.4	065S-2.7
	6	006	006	012	012	012S-5.5	024S-3.4	024S-4.1	036S-5.5
	8	006	006	006	012	012S-5.5	012S-6.9	024S-4.1	024S-6.9
<b>Application II</b>									
10	4	003	003	003	006	006S-2.7	006S-2.7	012S-2.7	012S-2.7
	6	003	003	003	003	003S-5.5	006S-2.7	006S-5.5	006S-5.5
	8	003	003	003	003	003S-5.5	003S-6.9	006S-5.5	006S-5.5
15	4	003	003	003	006	006S-2.7	006S-2.7	012S-2.7	012S-2.7
	6	003	003	003	003	003S-5.5	006S-2.7	006S-5.5	006S-5.5
	8	003	003	003	003	003S-5.5	003S-6.9	006S-5.5	006S-5.5
20	4	003	003	003	006	006S-2.7	006S-2.7	012S-2.7	012S-2.7
	6	003	003	003	003	006S-2.7	006S-3.4	006S-5.5	012S-2.7
	8	003	003	003	003	003S-6.9	003S-6.9	006S-5.5	006S-6.9
25	4	003	003	003	006	006S-2.7	012S-2.7	012S-2.7	024S-2.7
	6	003	003	003	003	006S-3.4	006S-5.5	006S-5.5	012S-4.1
	8	003	003	003	003	003S-6.9	006S-5.5	006S-5.5	006S-8.2
32	4	003	006	006	006	012S-2.7	012S-3.4	012S-3.4	024S-2.7
	6	003	003	003	006	006S-5.5	006S-5.5	012S-3.4	012S-5.5
	8	003	003	003	003	006S-5.5	006S-5.5	006S-6.9	012S-5.5
40	4	006	006	006	012	012S-3.4	024S-2.7	024S-2.7	024S-3.4
	6	003	006	006	006	012S-3.4	012S-4.1	012S-5.5	024S-3.4
	8	003	003	003	006	006S-6.9	012S-4.1	012S-5.5	012S-6.9
50	4	012	012	012	012	024S-3.4	024S-3.4	036S-3.4	065S-2.7
	6	006	006	006	012	012S-5.5	024S-3.4	024S-4.1	036S-4.2
	8	006	006	006	006	012S-5.5	012S-6.9	012S-6.9	024S-5.5
65	4	012	012	024	024	024S-3.4	036S-3.4	065S-2.7	065S-2.7
	6	006	012	012	024	024S-3.4	024S-4.1	036S-4.2	065S-2.7
	8	006	006	012	012	012S-6.9	024S-4.1	024S-5.5	036S-6.9

## Notes

**Application I:** Water and waterlike fluids, temperature 20°C to 120°C standard service. Seat material DN 10 to 40: PTFE + 25% glass, DN 50: PTFE.

**Application II:** Dry fluids, high viscosity liquids, steam, oxygen service, heavy duty service or safety service, high temperature service > 120°C.

Seat material DN 10 to 50: PTFE + 25% glass, DN 65: PTFE

## Actuation and control

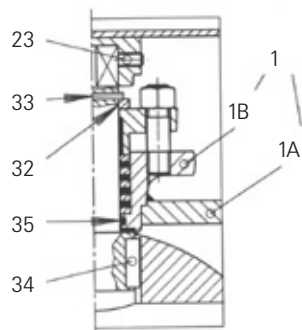
### Actuation

- Pneumatic double acting and single acting actuators.
- Electric actuators.
- Electric actuators for special applications.

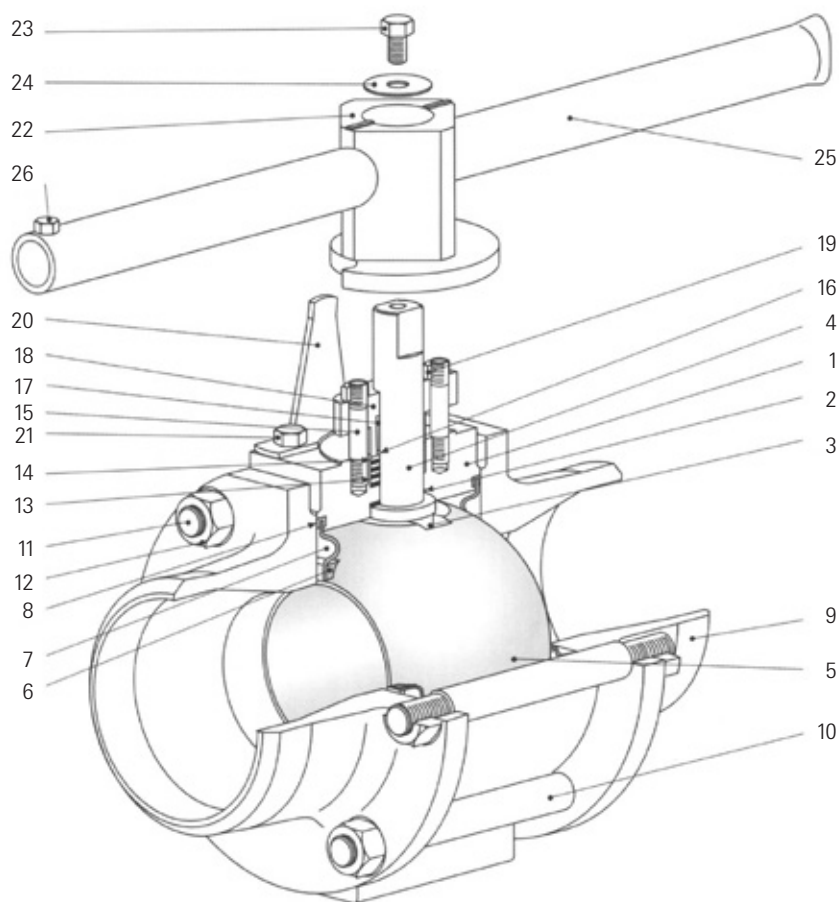
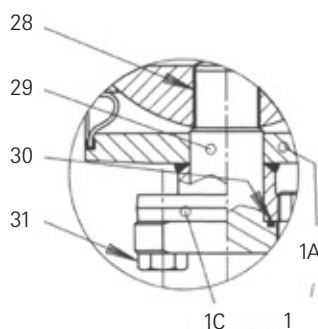
### Control

- Various control devices (spool valves, limit switch box).
- Pneumatic, electro-pneumatic and intelligent positioners.

**Stem guide design for DN 200**



**Lower shaft for DN 200**



**Parts list**

Item	Qty	Description	Material
1	1	Body	
1A	1	Body DN 80 to DN 150 DN 200	ASTM A 182-F 316L (forged) AFNOR A 37
1B	1	Gland support DN 200	AISI 1023
1C	1	Ball guide support DN 200	AISI 1023
2	1	Friction washer	PTFE
3	1	Antistatic spring DN 80 to 150	AISI 316
4	1	Stem	AISI 316L
5	1	Ball	AISI 410 *1
6	2	Seat	PTFE *2
7	2	Seat support DN 80 to DN 150 DN 200	AISI 316L AFNOR A 37
8	2	Body gasket	PTFE *2
9	2	Flanged end connector	
9A	2	End connector	ASTM A 105 (forged)
9B	2	Flange	ASTM A 105 (forged)
10	4/8	Shouldered tie bolt	5.6 ISO 898-1 *3
11	2/0	Tie bolt	5.6 ISO 898-1 *3
12	12/16	Nut	*3 cl.8 steel yellow zinc plated *2
13	3/4	Soft gland washer	PTFE *3
14	4/5	Metallic gland washer	AISI 316L *3
15	2	Gland stud	AISI 316L
16	1	Spring wire DN 80 to DN 150	AISI 316
17	1	Gland ring	PTFE
18	1	Gland	ASTM A 105 (forged)
19	2	Gland nut	AISI 304

Item	Qty	Description	Material
20	1	Travel stop	Steel
21	2	Stop screw	Steel yellow zinc plated
22	1	Lever cap	Malleable iron
23	1	Screw lever	Yellow zinc plated
24	1	Washer DN 80 to DN 150	Yellow zinc plated
25	1	Lever	Steel
26	1	Screw DN 80 to DN 150	White zinc plated
27	1	Stop Washer DN 200	AISI 316L
28	1	Guide ball ring DN 200	PTFE
29	1	Ball guide DN 200	AISI 316L
30	1	Gasket DN 200	PTFE
31	2	Screw DN 200	AISI 304
32	1	Washer DN 200	AISI 316L
33	1	Pin DN 200	AISI 302/304
34	1	Key DN 200	AISI 316L
35	1	Gasket DN 200	Viton

All indicated material are equivalent standard designations.

\* 1) Ball of 316L upon request

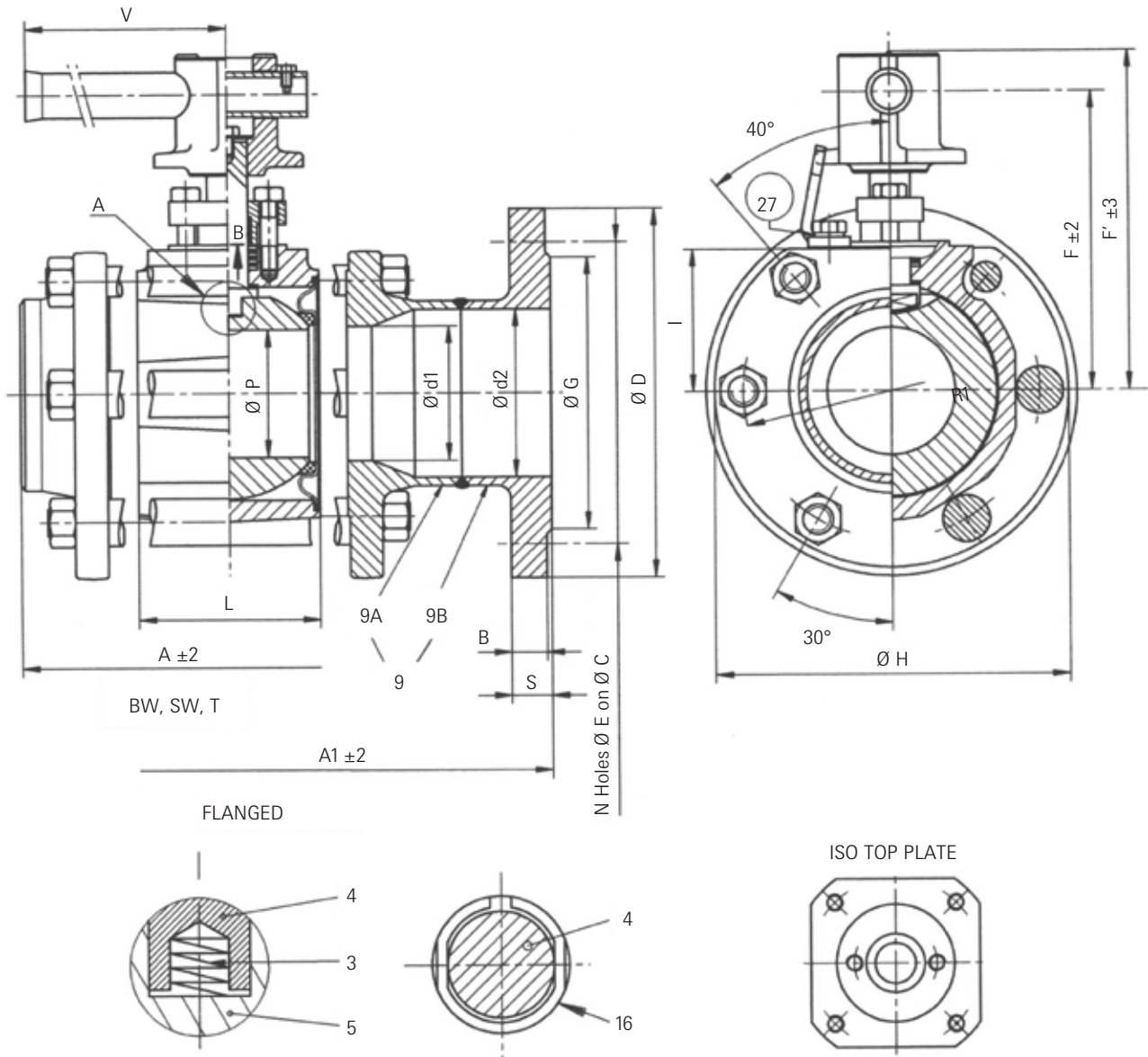
\* 2) Other materials upon request

\* 3) x/. for DN 80 to DN 150

.y for DN 200

# Ball Valve Type V16

dimensions reduced bore / DN 80 to DN 200



## Valve dimensions (mm)

DN	ISO	A	A1	B	C	D	d1	d2	E	F	F'	G	H	I	L	N	P	R1	S	V	Weight (Kg)	
																					Flanged	BW
80	F10	230	310	17	160	200	65	82,5	18	173	197	138	190	80	100	8	65	79,5	22	500	28.9	21.1
100	F10	245	350	17	180	220	80	107,1	18	178	202	158	210	85	107,5	8	76	88	22	500	37	25
125	F10	258	400	19	210	250	100	131,1	18	199	223	188	278	/	134,5	8	101	115	24	500	66	53
150	F10	258	480	19	240	285	100	159,3	22	299	223	212	278	/	134,5	8	101	115	24	500	68.5	53
200	F12	419	600	29	320	375	150	207	30	253	287	285	340		192	12	150	150	32	1170		100

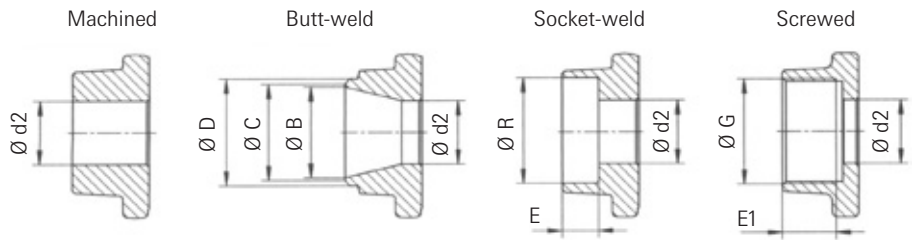
**Note:** standard flanges to PN 16, Ra 6.3 facing. On request: flanges ANSI 150, ANSI 300, PN 25-PN40.



**Notes**

All the end connections are machined from the basic unmachined forged connectors. This technology allows quick response to the customers demand and a large variety of special connections.

**End connections SW, T, BW**



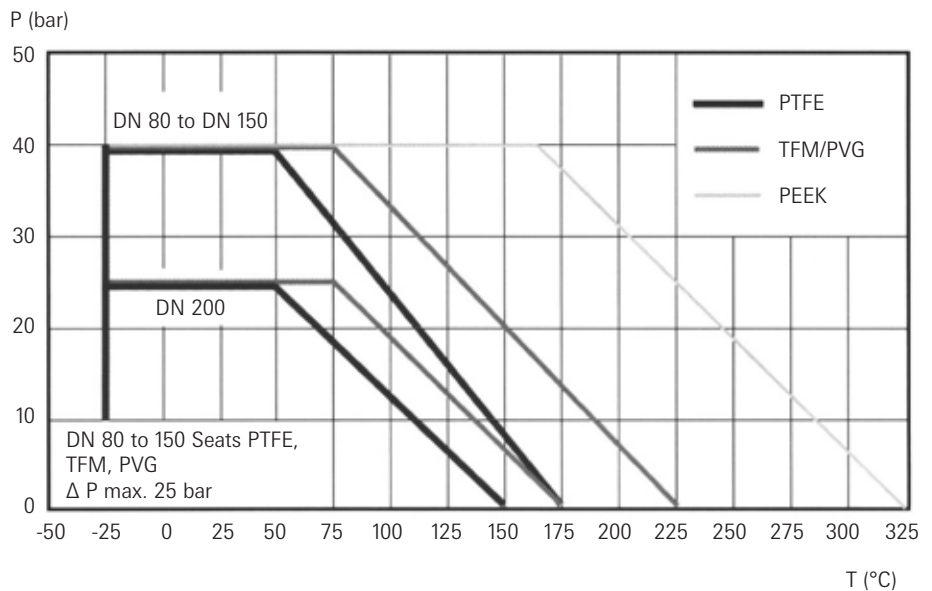
**End connections - main dimensions mm**

V16 Type	Unmachined		Butt-weld			Socket-Weld		Screwed		NPT	
	H	T	B	C	D	F	R	BSP	E 1	G	E1
DN	d 2					E		G			
80	65		82.5	84.5	88.9	20.5	89.5	3"	33.5	3"	30.5
100	80		105.3	107.5	114.3	20.5	14.9	4"	39.5	4"	33
125	100		131.7	134	139.7	20.5	140.3				
150	100		159.3	161.5	168.3	20.5	168.9				
200	150		207.2	209.5	219.1						

**Standard packing and body gasket**

- Temp. < 200°C  
Packing : PTFE  
Gasket : PTFE
- Temp. ≥ 200°C  
Packing : Graphite  
Gasket : Stainless steel reinforced PTFE (≤ 250°C) or graphite.
- Other packing and gasket materials upon request

**Pressure - temperature rating**



**Flow coefficient Cv/Kv**

**Welded or screwed ends**

DN	80	100	150
Cv	795	810	1412
Kv	530	698	1217

**Flanged (to NFE 29-312)**

DN	80	100	150
Cv	545	665	1317
Kv	470	573	1135

**Notes**

**Standards seats:**

- PTFE

**Optional seats:**

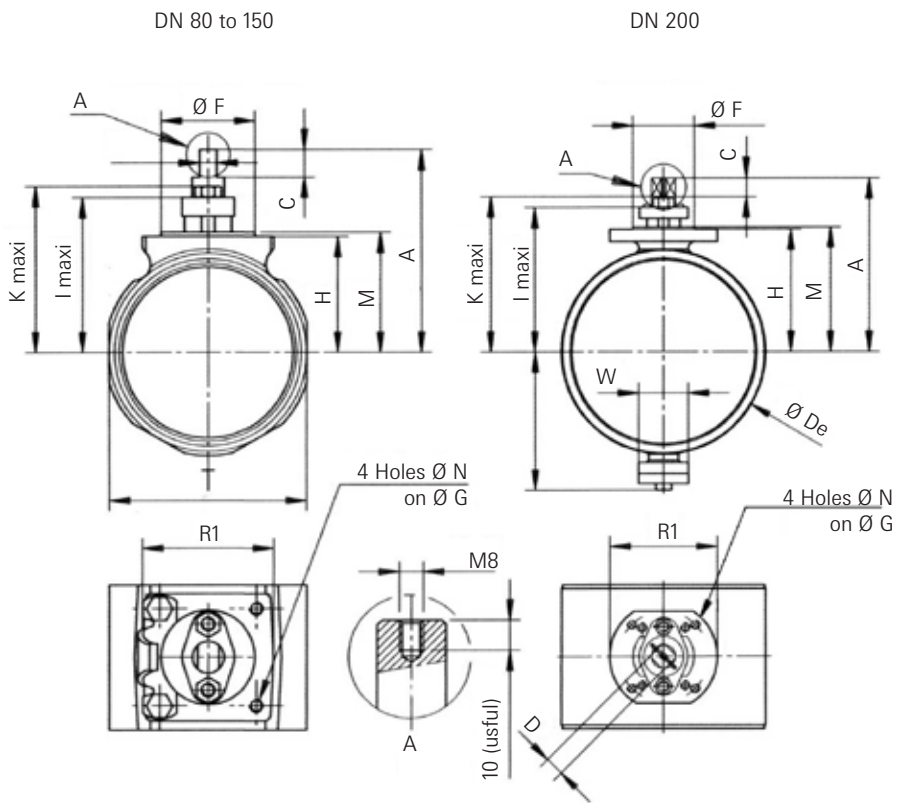
- TFM/PVG (carbon reinforced PTFE)
  - PEEK (carbon reinforced)
- Other seat materials (on request):
- PE Cryogenic and nuclear application
  - Expanded graphite - high temperature applications

Other seat designs (on request):

Pressure relieving seats: TFM and PVG

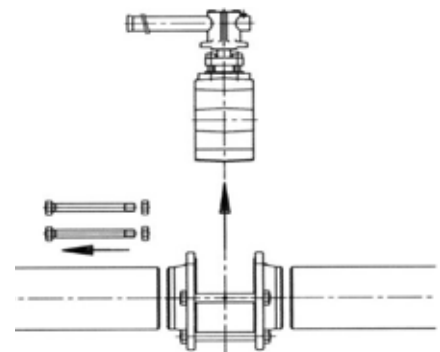
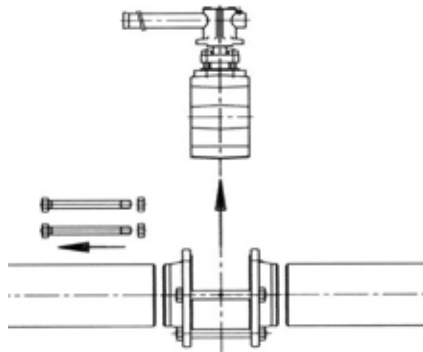
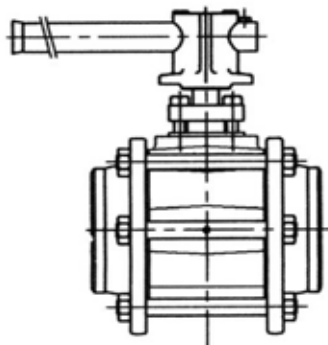
# Ball Valve Type V16

brackets and coupling reduced bore / DN 80 to DN 200



## Dimensions for bracket and coupling

DN	ISO	A	C	D	De	F	G	H	H1	I	K	M	N	R1	T	W
80	F10	145	20	16	/	70	102	82.5	/	112	121	85.5	M10	94.5	136	/
100	F10	150	20	16	/	70	102	86	/	116	125	89	M10	94.5	147	/
125/150	F10	170.5	20	16	/	70	102	108	/	137	146	111	M10	93	191	/
200	F12	233	25	26	275	85	125	165	186	194	208	168	M12	150	/	65



## Welded connections V16 - Piping installation

- When the ball valve body has been removed (by just loosening the bolt nuts and removing the two upper stud bolts or the four upper stud bolts for DN 150), the flanges set up a rigid cage easy to weld.
- Once the welding is finished, just pull the two flanges apart, insert the body between the flanges, refit the upper stud bolts and tighten back the nuts.
- The V16 is ready to operate.

## Testing

- All our valves are standard tested according to the Gachot quality assurance manual: 100% for the flanged and threaded valves, 10% for the welded end valves.

## Acceptance criteria

According to:

NFE-29311 - ISO 5208 - DIN 3230

- Hydrostatic shell test: 1.5 x Pressure rating (ambient temperature). No visible leakage.
- Air seat test: 6 bar air (air in the valve body). No bubbles accepted.

## Modular system

Between the same flanges can be mounted:

- V16 check valve
- V16 strainer
- V16 sight glass
- V16 3-way valve (L or T port)

## Options

- Heating jacketed V16
- Limit switch kit
- Tank bottom V16 valve
- Cryogenic V16
- Other connections and levers
- Padlocking kit

**Torque values for standard seats/Nm**

DN	ΔP	Standard seats			Pressure relieving seats			Stem limiting torque (Nm)
		7	16	25	7	16	25	
80		90	105	130	78	105	130	615
100		105	130	160	95	130	160	615
150		140	190	230	120	190	230	615
200		-	-	-	-	-	-	-

Torques measured with water 1cPo viscosity at 20°C

Other seats: TFM/Carbon PTFE: +20%; PEEK +30%

Other packing gland: graphite packing: +10%

**Actuation and control**

**Actuation**

- Pneumatic double acting and single acting actuators.
- Electric actuators. Double acting and single acting spring return.
- Electric actuators for special applications.

**Control**

- Various control devices (spool valves, limit switch box).
- Pneumatic, electro-pneumatic and intelligent positioners.

**Selection of pneumatic actuators series 79/D for standard seats**

DN	Air supply (bar)	Double Acting Actuator ΔP (bar)			Single Acting Actuator ΔP (bar)		
		7	16	25	7	16	25
<b>Application I</b>							
80	4	024	024	024	065S-2.7	065S-2.7	065S-2.7
	6	012	012	024	036S-5.5	036S-5.5	065S-2.7
	8	012	012	012	024S-5.5	024S-6.9	036S-6.9
100	4	024	024	036	065S-2.7	065S-2.7	090S-3.4
	6	012	024	024	036S-5.5	065S-2.7	065S-5.5
	8	012	012	024	024S-6.9	036S-6.9	065S-5.5
150	4	024	036	065	090S-3.4	090S-3.4	090S-4.1
	6	024	024	036	065S-4.1	090S-3.4	090S-5.5
	8	012	024	024	036S-6.9	065S-5.5	065S-6.9
<b>Application II</b>							
80	4	024	024	036	065S-2.7	065S-2.7	090S-3.4
	6	012	024	024	036S-5.5	036S-2.7	065S-4.1
	8	012	012	024	036S-5.5	036S-6.9	065S-4.1
100	4	024	036	036	065S-2.7	090S-3.4	090S-4.1
	6	024	024	024	065S-2.7	065S-4.1	090S-3.4
	8	012	024	024	036S-6.9	065S-4.1	065S-5.5
150	4	036	065	065	090S-3.4	090S-4.1	*****
	6	024	036	036	090S-3.4	090S-5.5	*****
	8	024	024	024	065S-5.5	065S-6.9	090S-3.4

**Notes**

**Application I:** Water and waterlike fluids, temperature 20°C to 120°C standard service.  
Seat material PTFE.

**Application II:** Dry fluids, high viscosity liquids, steam, oxygen service, heavy duty service, high temperature service > 120°C.  
Seat material PTFE.