

## GACHOT BALL VALVE

TYPE V16 - STAINLESS STEEL / REDUCED BORE

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



### 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 ¼ 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

- Perfect valve for heavy duty working conditions in chemical corrosive fluids.
- Liquids, steam, gas and oil for process and utilities.
- Whenever safety and reliability are important issues.

### TECHNICAL DATA

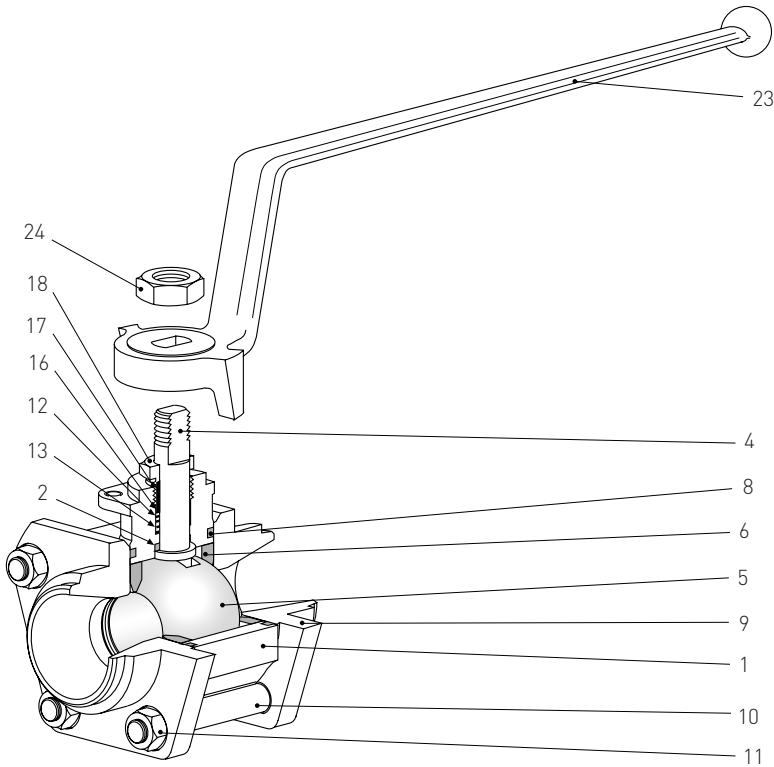
Sizes:	DN 8 - 200
Temperature (°C):	-60 to +225
Pressure (bar):	PN10 - PN100
Connections:	butt weld ends, socket weld ends, threaded ends BSPP and NPT, screwed on flanges face to face dimension to ISO 5752 series 1 and EN 558-1, special connections on request.

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

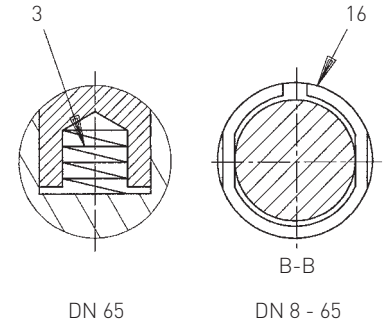
- module H (categories I, II and III) of annex 3 of European Directive 97/23/EC concerning pressure equipment,
  - module H (categories 1, 2) of European Directive 1999/36/EC concerning transportable pressure equipment;
- and ensuring the products meet the safety and health essential requirements for the design and manufacturing of equipment intended for use in potentially explosive atmospheres according to the ATEX Directive 94/9/EC.

# GACHOT BALL VALVE

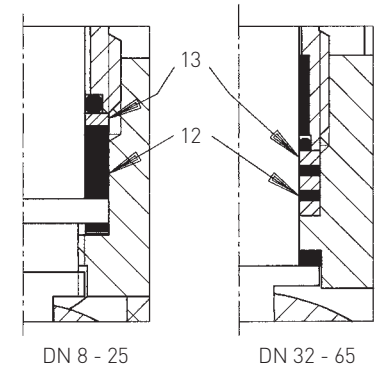
TYPE V16 - MATERIALS REDUCED BORE / DN 8 - 65



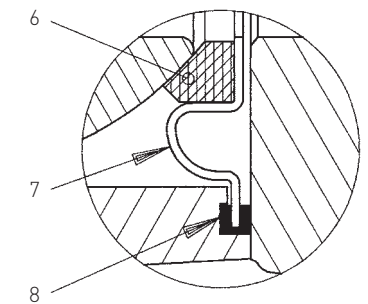
## ANTISTATIC DEVICE



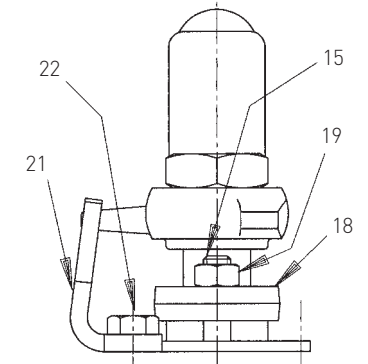
## PACKING AND ANTI BLOW-OUT STEM



## METAL SEAT SUPPORT FOR DN 65



## BOLTED GLAND FOR DN 65



## PARTS LIST

Item	Qty	Description	Material
1	1	Body	ASTM A 182-F 316L (forged)
2	1	Friction washer	PTFE
3	1	Antistatic spring DN 65	AISI 316
4	1	Stem	AISI 316L
5	1	Ball	AISI 316L
6	2	Seat DN 08 to DN 50 DN 65	PTFE/Glass <sup>(1)</sup> PTFE
7	2	Seat support DN 65	AISI 316L
8	2	Body gasket	PTFE <sup>(1)</sup>
9	2	Flanged end connector	
9A	2	End connector	ASTM A 182-F 316L (forged)
9B	2	Flange support	AISI 316L
10	4	Tie bolt	A 2 - 70 ISO 3506
11	8	Nut	AISI 304
12	1/2	Soft gland washer	PTFE <sup>(1)(2)</sup>
13	1/3	Metallic gland washer	AISI 316L <sup>(2)</sup>
15	2	Gland stud DN 65	AISI 316L
16	1	Spring wire	AISI 316
17	1	Gland ring DN 32 to DN 65	PTFE
18	1	Gland	AISI 316L
19	2	Gland nut DN 65	AISI 304
20	1	Stop screw DN 8 to DN 50	AISI 304
21	1	Travel stop DN 65	AISI 304
22	2	Stop screw DN 65	AISI 304
23	1	Lever	Malleable iron
24	1	Nut	ANSI 304
25	2	Flange	AFNOR A 37 (forged) <sup>(1)</sup>

All indicated materials are equivalent standard designations.

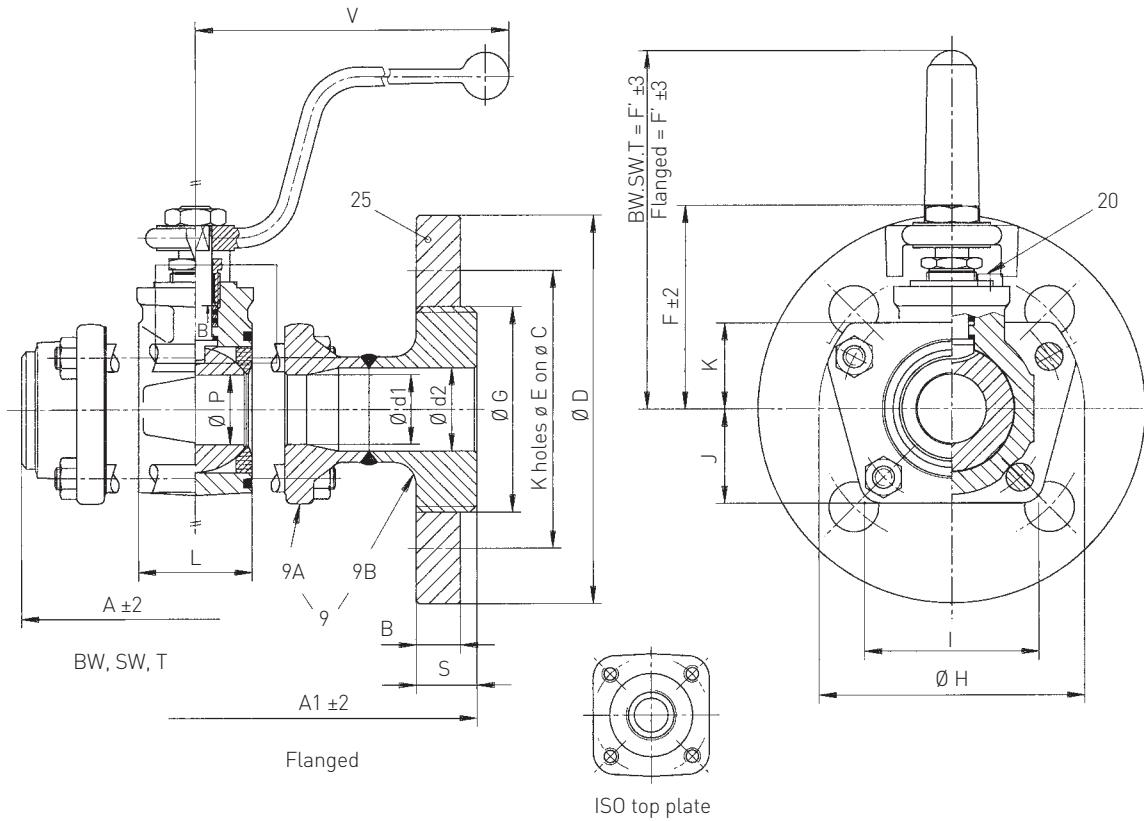
1. Other materials upon request

2. x/. for DN 08 to DN 25

.ly for DN 32 to DN 65

# GACHOT BALL VALVE

TYPE V16 - DIMENSIONS REDUCED BORE / DN 8 - 65



## VALVE DIMENSIONS (mm)

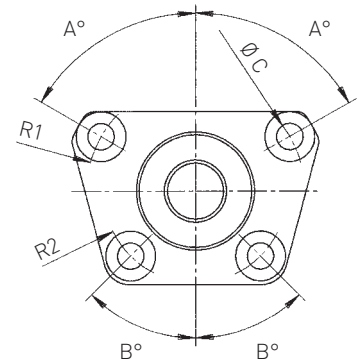
DN	ISO	A	A1	B	C	D	d1	d2	E	F	F'	F''	G	H	I	J	K	L	P	S	V	Weight (kg)	
																						Flanged	BW
08	F03	65					8			57	77	109		64	38	21.5	18.5	22	11		160		0.700
10/12	F03	65	130	14	60	90	11	11	14	57	77	109	M42x2.5	64	38	21.5	18.5	22	11	18	160	1.80	0.700
15	F03	65	130	14	65	95	11	16	14	57	77	109	M48x2.5	64	38	21.5	18.5	22	11	18	160	2.40	0.700
20	F03	70	150	16	75	105	14	20	14	60	80	112	M58x2.5	73	44	23.5	20.5	25	14	20	160	3.30	0.866
25	F04	85	160	16	85	115	18	25	14	70	123	123	M65x2.5	86	55	30.0	25.5	31	17	20	210	4.20	1.664
32	F04	100	180	16	100	140	25	30	18	72	127	127	M74x2.5	96	63	34.0	31.0	41	25	22	210	6.13	2.200
40	F05	110	200	16	110	150	30	40	18	81	132	132	M85x2.5	111	68	36.0	34.5	48	30	22	210	7.46	2.930
50	F05	125	230	18	125	165	40	51	18	97	140	140	M95x2.5	131	83	44.0	42.5	60	40	22	260	8.50	6.000
65	F07	150	290	18	145	185	50	65	18	119	161	161	M119x2.5	166	102	53.0	54.5	75	50	22	315	15.20	8.500

Standard carbon steel screwed-on flanges to PN16, Ra 6.3 facing.

On request: carbon steel screwed-on flanges ANSI 150, ANSI 300, PN 25, PN 40 or stainless steel screwed-on flanges PN 16 to PN 40, ANSI 150 and 300.

## V-SHAPED CONNECTORS DIMENSIONS

DN	A°	R1	B°	R2	C
8	60	24.7	45	20.2	6.5
10/12	60	24.7	45	20.2	6.5
15	60	24.7	45	20.2	6.5
20	60	27.6	45	23.3	6.5
25	60	35.0	45	29.5	8.5
32	62	39.9	45	34.9	8.5
40	60	47.0	45	39.0	8.5
50	62	54.8	45	47.8	10.5
65	55	71.5	45	58.0	12.5

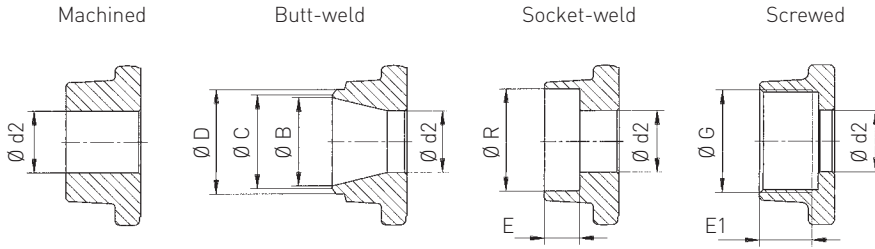


The V-shaped connectors feature the easiest and fastest maintenance.

# GACHOT BALL VALVE

## TYPE V16 - END CONNECTIONS AND RATINGS REDUCED BORE / DN 8 - 65

### END CONNECTIONS SW, T, BW



### NOTES

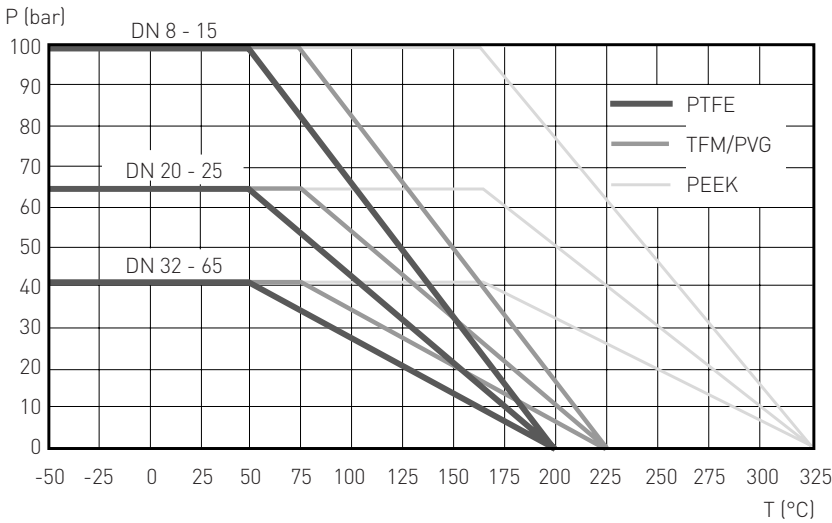
All the end connections are machined from the basic unmachined forged connectors.

This technology allows quick response to the customers demand and a large variety of special connections.

### END CONNECTIONS - MAIN DIMENSIONS mm

V16 Type DN	Unmachined H d2	Butt-weld									Socket-weld				Screwed						
		U			V			T			W			H		F		BSP		NPT	
		B	C	D	B	C	D	B	C	D	B	C	D	E	R	E	R	G	E1	G	E1
8	8							8.0	10.0	13.5				9.5	10.2	9.5	13.7	¼"	11.0	¼"	10.5
10	11				10	11	15							9.5	12.2						
12	11				10	11	15	11.0	13.5	17.2	14.0	15.0	18.2	9.5	14.2	9.5	17.5	⅜"	11.5	⅜"	10.5
15	11	14.2	15.2	18.2	15	16	20	16.0	17.0	21.3	18.1	19.1	21.3	9.5	18.2	9.5	21.6	½"	15.0	½"	13.5
20	14	18.1	19.0	22.3	20	21	25	21.6	23.0	26.9	23.7	24.7	26.9	11.0	23.2	11.0	27.2	¾"	16.5	¾"	14.0
25	18	23.7	25.0	28.0	25	26	30	27.2	30.0	33.7	30.5	31.5	33.7	12.5	28.2	12.5	34.0	1"	19.0	1"	17.5
32	25	30.5	32.0	35.0	30	31	35	35.9	39.0	42.4	39.2	40.2	42.4	14.5	33.4	14.5	42.8	1¼"	21.5	1¼"	18.0
40	30	39.2	40.5	43.5	40	41	45	41.8	45.0	48.3	45.1	46.1	48.3	16.0	43.5	16.0	48.8	1½"	21.5	1½"	18.5
50	40	45.1	46.5	49.5	50	51	55	53.0	56.0	60.3	57.1	58.1	60.3	17.5	53.5	17.5	60.8	2"	26.0	2"	19.5
65	50	57.1	58.5	61.5	65	66	70	68.8	72.0	76.1	72.1	73.1	76.1	19.0	64.5	19.0	76.6	2½"	30.0	2½"	29.0

### 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

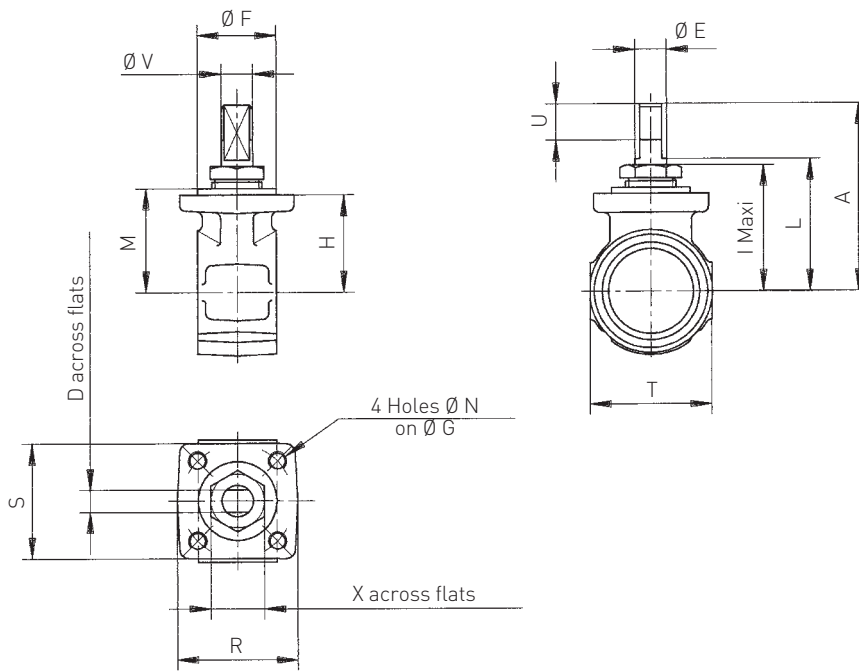
- T° < 200°C  
Packing : PTFE  
Gasket : PTFE
- T° ≥ 200°C  
Packing : Graphite  
Gasket : Stainless steel reinforced PTFE (≤ 250°C) or graphite.
- Other packing and gasket materials upon request

### FLOW COEFFICIENT C<sub>v</sub>/K<sub>v</sub>

Welded or screwed ends							
DN	8-15	20	25	32	40	50	65
C <sub>v</sub>	11	19	25	52	81	166	212
K <sub>v</sub>	9	16	22	45	70	143	183
Flanged (to NFE 29-312)							
DN	8-15	20	25	32	40	50	65
C <sub>v</sub>	10.0	16	24	61	78	139	228
K <sub>v</sub>	8.6	14	21	52	67	120	196

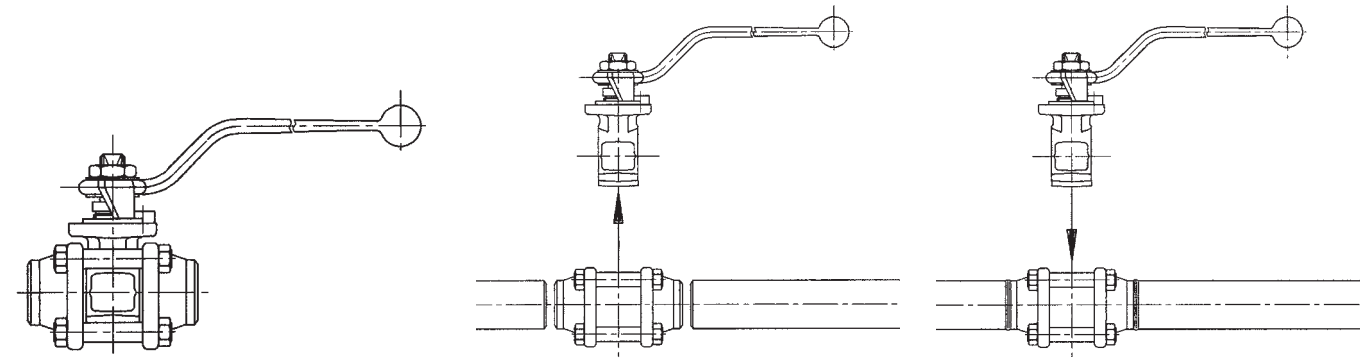
# GACHOT BALL VALVE

TYPE V16 - BRACKETS AND COUPLING REDUCED BORE / DN 8 - 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	57.0	7	10.10	25	36	28.5	38.5	39.5	30.5	M6	36.5	36.5	32.8	11	M10	17
10/12	F03	57.0	7	10.10	25	36	28.5	38.5	39.5	30.5	M6	36.5	36.5	32.8	11	M10	17
15	F03	57.0	7	10.10	25	36	28.5	38.5	39.5	30.5	M6	36.5	36.5	32.8	11	M10	17
20	F03	59.5	7	10.10	25	36	31.0	41.0	42.0	33.0	M6	36.5	36.5	38.8	11	M10	17
25	F04	69.5	7	12.10	30	42	38.5	48.5	51.5	40.5	M6	42.0	42.0	48.6	11	M12	19
32	F04	72.0	7	12.10	30	42	44.0	54.5	56.0	46.0	M6	42.0	42.0	59.2	9	M12	19
40	F05	81.0	7	13.80	35	50	50.5	62.0	64.0	53.5	M6	50.0	50.0	69.0	10	M14	24
50	F05	96.5	7	15.80	35	50	63.0	75.5	76.5	66.0	M6	50.0	50.0	82.8	12	M16	30
65	F07	118.5	12	19.75	55	70	60.5	81.0	90.5	63.5	M8	67.0	71.5	101.5	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.

### 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

# GACHOT BALL VALVE

## TYPE V16 - ACTUATOR SELECTION REDUCED BORE / DN 8 - 65

### TORQUE VALUES FOR STANDARD SEATS/Nm

DN	Standard seats ΔP			Pressure relieving seats ΔP			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	35	40	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 DN 10 to 40: +40%, DN 50 to 65: +30%

Other packing gland: graphite packing: +10%

### 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.

### SELECTION OF PNEUMATIC ACTUATORS SERIES 79/D FOR STANDARD SEATS (APPLICATION I)

DN	Air supply (bar)	Double Acting Actuator ΔP (bar)				Single Acting Actuator ΔP (bar)			
		7	16	25	50	7	16	25	50
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	006S-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

**Application I:** Water and low viscosity liquids, temperature 20°C to 120°C standard service. Seat material DN 10 to 50: PTFE + 25% glass, DN 65: PTFE.

# GACHOT BALL VALVE

TYPE V16 - ACTUATOR SELECTION REDUCED BORE / DN 8 - 65

## SELECTION OF PNEUMATIC ACTUATORS SERIES 79/D FOR STANDARD SEATS (APPLICATION II)

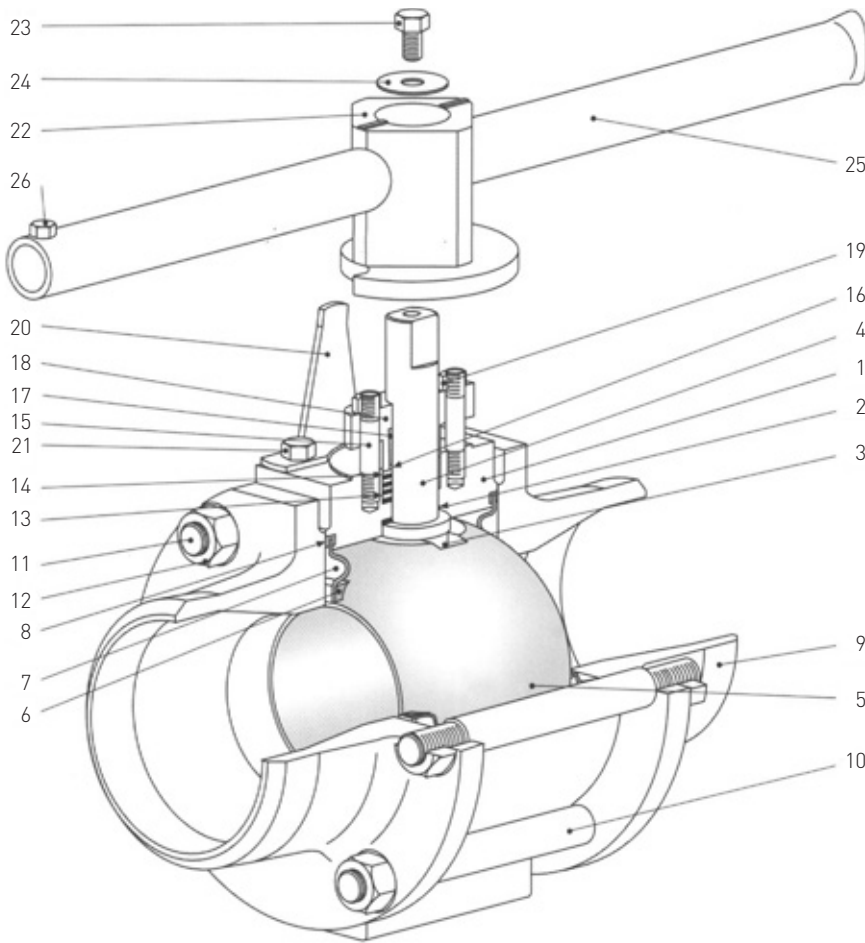
DN	Air supply (bar)	Double Acting Actuator ΔP (bar)				Single Acting Actuator ΔP (bar)			
		7	16	25	50	7	16	25	50
10	4	003	003	003	006	006S-2.7	006S-2.7	012S-2.7	012S-2.7
	6	003	003	003	003	003S-5.5	006S-2.7	006S-5.5	006S-5.5
	8	003	003	003	003	003S-5.5	003S-6.9	006S-5.5	006S-5.5
15	4	003	003	003	006	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

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

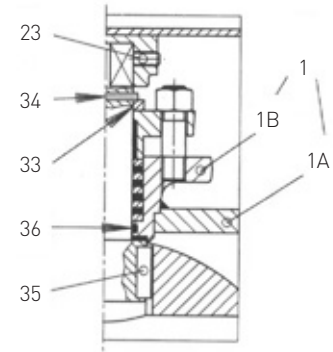
Seat material DN 10 to 50: PTFE + 25% glass, DN 65: PTFE

# GACHOT BALL VALVE

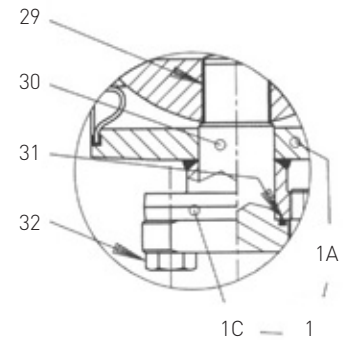
TYPE V16 - MATERIALS REDUCED BORE / DN 80 - 200



STEM GUIDE DESIGN FOR DN 200



LOWER SHAFT FOR DN 200



## PARTS LIST

Item	Qty	Description	Material	Item	Qty	Description	Material
1	1	Body		18	1	Gland	AISI 316L
1A	1	Body	ASTM A 182-F 316L (forged)	19	2	Gland nut	AISI 304
1B	1	Gland support DN 200	AISI 316L	20	1	Travel stop DN 80 to DN150	AISI 304
1C	1	Ball guide support DN 200	AISI 316L			DN 200	AFNOR E24-2
2	1	Friction washer	PTFE	21	2	Stop screw DN80 to DN 150	AISI 304
3	1	Antistatic spring DN 80 to DN 150	AISI 316			DN 200	Steel
4	1	Stem	AISI 316L	22	1	Lever cap	Malleable iron
5	1	Ball	AISI 316L (forged)	23	1	Screw lever	Cadmium plated steel
6	2	Seat	PTFE <sup>[1]</sup>	24	1	Washer DN 80 to DN 150	Cadmium plated steel
7	2	Seat support	AISI 316L	25	1	Lever	Steel
8	2	Body gasket	PTFE <sup>[1]</sup>	26	1	Screw DN 80 to DN 150	Cadmium plated steel
9	2	Flanged end connector		27	2	Flange	AFNOR A 37 (forged)
9A	2	End connector	ASTM A 182-F316L (forged)	28	2	Stop washer DN 200	AISI 316L
9B	2	Flange support	AISI 316L	29	1	Guide ball ring DN 200	PTFE
10	4	Shouldered tie bolt	A 2-70 ISO 3506	30	1	Ball guide DN 200	AISI 316L
11	2/4	Tie bolt	A 2-70 ISO 3506 <sup>[2]</sup>	31	1	Gasket DN 200	PTFE
12	12/16	Nut	AISI 304 <sup>[2]</sup>	32	2	Screw DN 200	AISI 304
13	3/4	Soft gland washer	PTFE <sup>[1][2]</sup>	33	1	Washer DN 200	AISI 316L
14	4/5	Metallc gland washer	AISI 316L	34	1	Pin DN 200	AISI 302/304
15	2	Gland stud	AISI 316L	35	1	Key DN 200	AISI 316L
16	1	Spring wire DN 80 to DN 150	AISI 316	36	1	Gasket DN 200	Viton
17	1	Gland ring	PTFE				

All indicated material are equivalent standard designations.

1. Other materials upon request

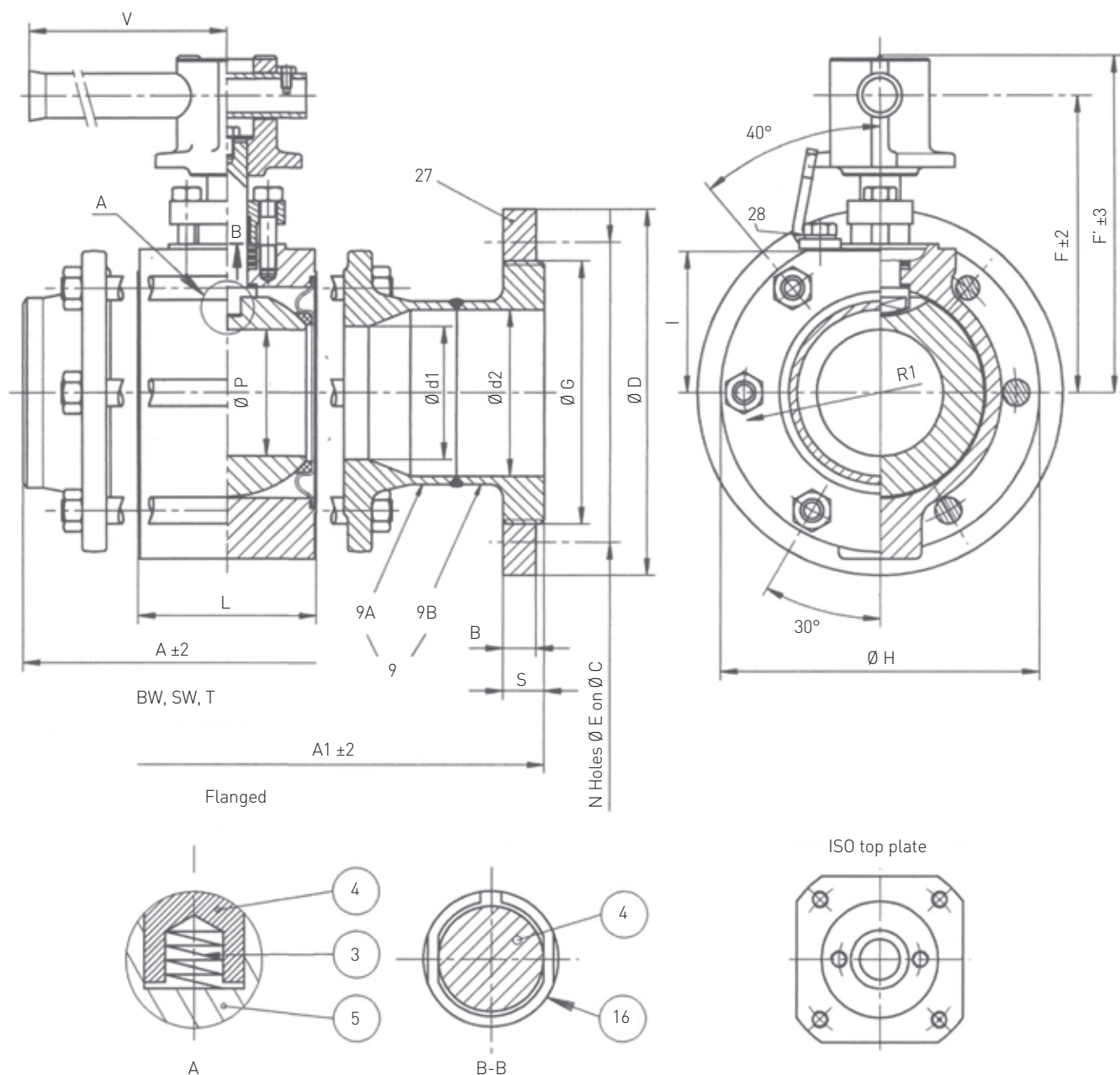
2. x/. for DN 80 to DN 150

/y for DN 200



# GACHOT BALL VALVE

TYPE V16 - DIMENSIONS REDUCED BORE / DN 80 - 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	180	10	20	160	200	65	80	18	173	197	M130 x 2,5	175	80	100.0	8	65	75.5	23	500	21.4	16.8
100	F10	210	350	20	180	220	80	100	18	178	202	M158 x 3	192	85	107.5	8	76	82.0	25	500	28.1	21.4
125	F10	244	400	22	210	250	100	125	18	199	223	M185 x 3	246	/	134.5	8	101	107.5	25	500	51.0	41.0
150	F10	244	480	22	240	285	100	150	22	199	223	M212 x 3	246	/	134.5	8	101	107.5	25	500	54.0	41.0
200	F12	419	600	24	295	340	150	200	22	253	287	M268 x 3	340	/	193.0	12	150	150.0	26	1170	88.0	88.0

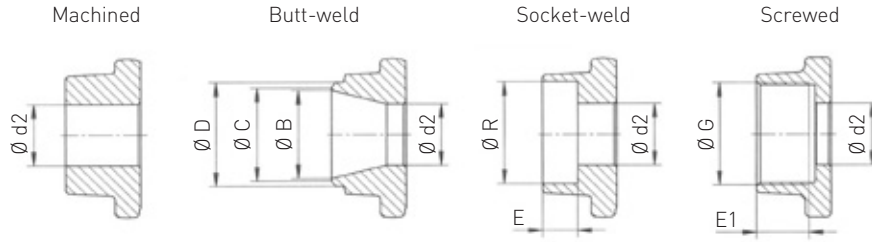
Standard carbon steel screwed-on flanges to PN16, Ra 6.3 facing.

On request: carbon steel screwed-on flanges ANSI 150, ANSI 300, PN 25 PN 40 or stainless steel screwed-on flanges PN 16 to PN 40, ANSI 150 and 300.

# GACHOT BALL VALVE

## TYPE V16 - END CONNECTIONS AND RATINGS REDUCED BORE / DN 80 - 200

### END CONNECTIONS SW, T, BW



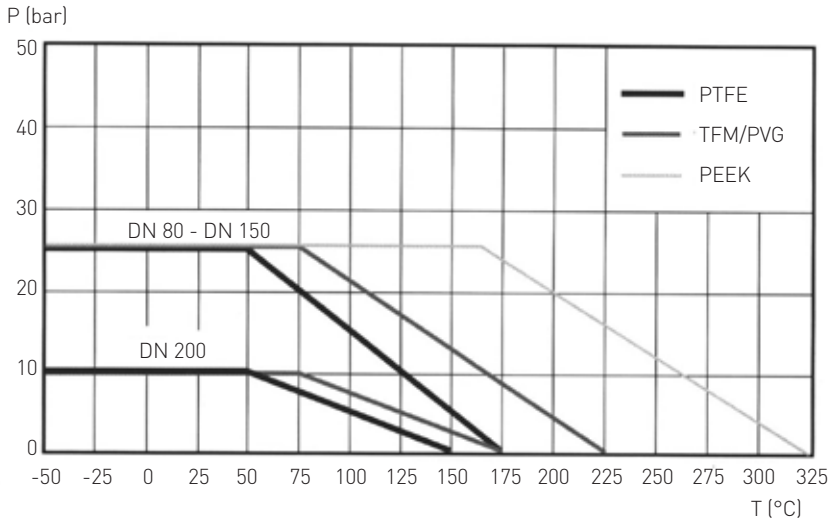
### NOTES

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 DN	Unmachined H d 2	Butt-weld									Socket-Weld				Screwed						
		U			V			T			W			H		F		BSP		NPT	
		B	C	D	B	C	D	B	C	D	B	C	D	E	R	E	R	G	E 1	G	E 1
80	65	72.1	73.1	76.61	80	81	85	82.5	84.5	88.9	84.9	86.0	88.9	20.5	84.5	20.5	89.5	3"	33.5	3"	30.5
100	80	84.9	85.9	88.90	100	101	105	105.3	107.5	114.3	110.3	111.3	114.3	20.5	104.5	20.5	114.9	4"	39.5	4"	33.0
125	100				125	126	130	131.7	134.0	139.7	134.5	135.5	139.7	20.5	129.5	20.5	140.3				
150	100	110.3	111.3	114.30	150	151	155	159.3	161.5	168.3	163.1	164.1	168.3	20.5	154.5	20.5	168.9				
200	150							207.2	209.5	219.1											

### PRESSURE - TEMPERATURE RATING



### STANDARD PACKING AND BODY GASKET

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

### 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):

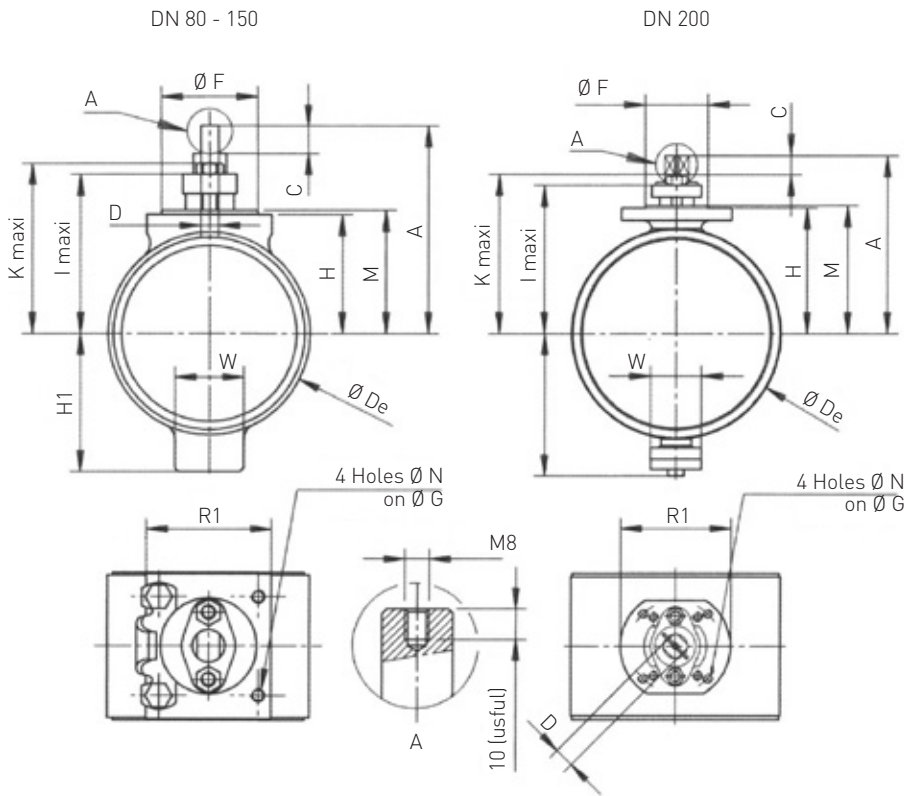
Pressure relieving seats: TFM and PVG

### FLOW COEFFICIENT C<sub>v</sub>/K<sub>v</sub>

Welded or screwed ends			
DN	80	100	150
C <sub>v</sub>	545	665	1317
K <sub>v</sub>	470	573	1135
Flanged (to NFE 29-312)			
DN	80	100	150
C <sub>v</sub>	615	810	1412
K <sub>v</sub>	530	698	1217

# GACHOT BALL VALVE

## TYPE V16 - BRACKETS AND COUPLING REDUCED BORE / DN 80 - 200



### DIMENSIONS FOR BRACKET AND COUPLING

DN	ISO	A	C	D	De	F	G	H	H1	I	K	M	N	R1	W
80	F10	145.0	20	16	135.5	70	102	82.5	90	112	121	85.5	M10	99.0	50
100	F10	150.0	20	16	146.5	70	102	86.0	100	116	125	89.0	M10	106.5	50
125/150	F10	170.5	20	16	190.5	70	102	108.0	115	137	146	111.0	M10	133.5	75
200	F12	233.0	25	26	275.0	85	125	165.0	186	194	208	168.0	M12	150.0	65

### 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

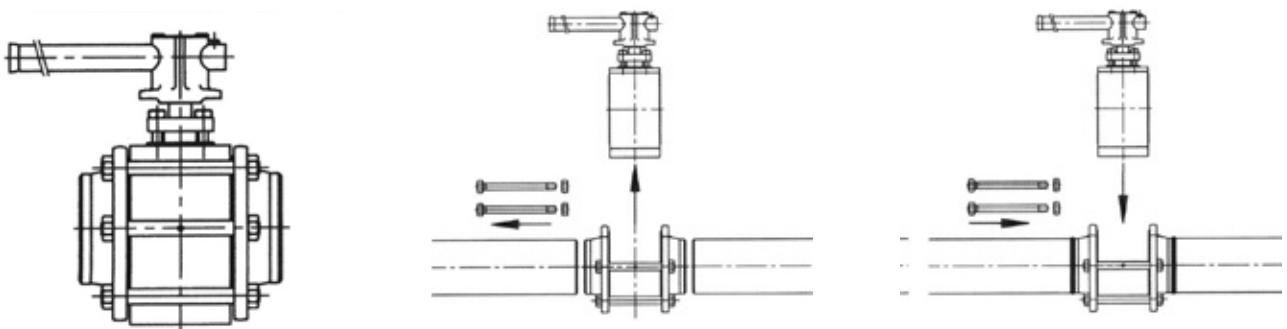
- According to:  
NFE-29311 - ISO 5208 - DIN 3230
- Hydrostatic shell test: 1.5 x Pressure rating (ambient temperature). No visible leakage.
  - Air seat test: 6 bar air (air in the valve body). No bubbles accepted.

### 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



### 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.

# GACHOT BALL VALVE

## TYPE V16 ACTUATOR SELECTION REDUCED BORE / DN 80 - 200

### TORQUE VALUES FOR STANDARD SEATS/Nm

DN	Standard seats ΔP			Pressure relieving seats ΔP			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>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>II*</b>							
80	4	024	024	036	065S-2.7	065S-2.7	090S-3.4
	6	012	024	024	036S-5.5	065S-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.

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