



OMEX

General valves

Your worldwide partner for industrial valves & fittings

Omeax Project References List

Country	Project	Product	Brand
Vietnam	Royal city, Hanoi	Butterfly valves with electric actuator	OMEAX
Vietnam	Vinpearl Cua Hoi - Nghe An	Butterfly valves with electric actuator	OMEAX
Vietnam	Vinpearl Hoi An - Nghe An	Butterfly valves with electric actuator,	OMEAX
Vietnam	Vincom HaTinh	Butterfly valves with electric actuator,	OMEAX
Vietnam	Saigonres	Butterfly valves with electric actuator,	OMEAX
Vietnam	Vinpearl Land Nha Trang	Butterfly valve, Check valve for sea water	OMEAX
Vietnam	Condotel Nha Trang	Butterfly valves with electric actuator,	OMEAX
Vietnam	Casino Phu Quoc	Butterfly valves with electric actuator,	OMEAX
Vietnam	Royal city, Hanoi	Butterfly valves with electric actuator,	OMEAX
Thailand	Rayong Industriel zone, replacement	Buttefly valves	OMEAX
Indonesia	Building,	HVAC Electric actuator	OMEAX
Hongkong	City plaza south	2 way proportional control valves	OMEAX
China	Agriculture farm Hospital QI QI HA ER	Butterfly valves	OMEAX
China	Aviation University Changchun	Butterfly valves	OMEAX
China	Science and technology university, Changchun	Butterfly valves	OMEAX
China	North west university	Butterfly valves	OMEAX
China	Harbin medical university	Butterfly valves	OMEAX
China	CBD New Zhujiang Pearl city, Guangzhou	Butterfly valves	OMEAX
China	Arrow candy Co.,Ltd, Guangzhou	Butterfly valves	OMEAX
China	Fengshun holiday Resort, Guangdong	Butterfly valves	OMEAX
China	Data center, Sanshui, Guangdong	Butterfly valves	OMEAX
China	Jinhai Pulp & Paper, Hainan	Butterfly valves	OMEAX
China	Royal international scene,Jiuquan,Gansu	Butterfly valves, PRV, check valves, motorised valves	OMEAX
China	Zhong Tian Jian Ye,Jiuquan,Gansu	Butterfly valves, PRV, check valves, motorised valves	OMEAX
China	Ju Xin Yuan District,Jiuquan,Gansu	Butterfly valves, PRV, check valves, motorised valves	OMEAX
China	DunHuang Jia He,Jiuquan,Gansu	Butterfly valves, PRV, check valves, motorised valves	OMEAX
China	Red flag Xin Cun District,Jiuquan,Gansu	Butterfly valves, PRV, check valves, motorised valves	OMEAX
China	Fu Ze Hua Ting District,Jiuquan,Gansu	Butterfly valves, PRV, check valves, motorised valves	OMEAX
China	Fu Cun Garden District,Jiuquan,Gansu	Butterfly valves, PRV, check valves, motorised valves	OMEAX
China	Double happiness cigarette factory, Guangzhou	Butterfly valves	OMEAX
China	Cigarette factory, Meizhou	Butterfly valves	OMEAX
China	HaoLai chemical industry,Zhongshan,Guangdong	Butterfly valves	OMEAX
China	People hospital,Shunde,Guangdong	Butterfly valves	OMEAX
China	NATFONAL	Butterfly valves	OMEAX
China	Colgate (Guangzhou)	Butterfly valves	OMEAX
China	New world real estate Lin He Xi project	Butterfly valves	OMEAX
China	Heat energy,Shenyang	Butterfly valves	OMEAX
China	Shougang Corporation Industry	Butterfly valves	OMEAX
China	Southern power grid,Guangdong	Butterfly valves	OMEAX

CBD Zhujiang
Pearl City

The Hawley & Hazel Chemical
(Zhongshan) Co. Ltd

City Plaza

Royal City



Vietnam



China



Hongkong



China

Omeax, your valve partner

Professional team

We are a professional sales team with more than 10 years of sales experiences in valves and fittings.

Our sales network covers Asia and Europe.

We provide professional sales assistance in each step of sales :

- Before sales : product prescription, product selection
- During sales : commercial/technical support
- After sales : warranty, customer services

We are specialized in international business with experiences to handle export from Europe and from Asia.

Wide product range

The products cover different fluid circuit market: **building, fire protection, water supplier, HVAC, general industry, water works...**

Shut-off valves: butterfly valves, globe valves, gate valves, knife gate valves, pneumatic/electric actuator.

Check ,foot valves

Accessories: rubber joint, strainer.

Hydraulic control valve: pressure reducing valves, pressure relief valve, float valve, hydraulic check valve.

Attractive price

We provide good ratio of price and quality.

Reliable product

Omeax production is assured by experienced production manager and his team; With qualified engineer, designer and latest software, we are able to develop new product.

Complete approvals

ISO9001:2008, CE, WRAS, ACS, BUREAU VERITAS, RoHS, SA, ATEX, UL, FM



SUMMARY



I. SHUT OFF VALVES

BUTTERFLY VALVES - Z100 SERIES.....	P1
BUTTERFLY VALVES - Z300 SERIES	P2-P8
BUTTERFLY VALVES - Z500/Z700 SERIES	P8
GATE AND GLOBE VALVES- G100/GL100 SERIES.....	P9-P10
ELECTRIC ACTUATOR.....	P11



II. NON RETURN VALVES

DOUBLE DOOR CHECK VALVES-C100 SERIES.....	P12-13
DISCO CHECK VALVES-C200/C500 SERIES.....	P14-P15
SILENT CHECK VALVES-C300 SERIES	P16-P17
BALL CHECK VALVES-C400 SERIES	P18-P19



III. HYDRAULIC CONTROL VALVES

PRESSURE REDUCING VALVES-HCV100A.....	P20-21
PRESSURE RELIEF VALVES/PRESSURE SUSTAIN VALVES-HCV100B.....	P21
FLOAT VALVES-HCV100C.....	P21
HYDRAULIC CHECK VALVES-HCV100D	P21
DIRECT ACTING PRESSURE REDUCING VALVES-RM01.....	P22
WATER HAMMER ARRESTOR 4510/4520.....	P22
WATER SUPPLY SYSTEM	P23
FIRE PROTECTION SYSTEM.....	P24



IV. OTHERS

Y-STRAINER-Y300.....	P25
RUBBER JOINT- R300.....	P26
BRASS BALL VALVES-B1001.....	P27
BRASS GATE VALVES-B4030.....	P28
BRASS SWING CHECK VALVES-B5007.....	P29
BRASS STRAINER-B5005.....	P30

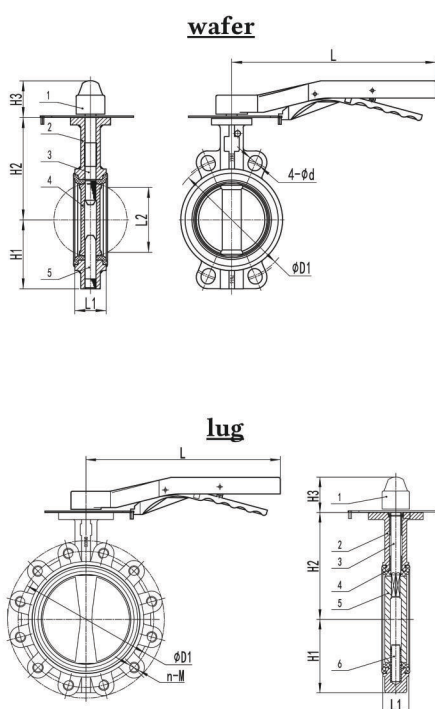


Butterfly Valves – Z100

2 pressure ranges :	10/16 bars;
2 type of body :	wafer and lug;
1 material of body :	Cast iron GJL250;
2 material of disk :	Ductile iron and SS316;
2 type of seal :	EPDM/NBR;
Wide range :	DN50 to DN300;
Temperature :	-20°C to +100°C ;
Flange connection :	PN10/16, ASA150, JIK5K/10K/16K;
Epoxy Coated :	Thickness 150µm (standard), other thickness on request;
Application :	Water supplier, HVAC, general service;



- 1. Hand Lever – GJL250
- 2. Body – GJL250
- 3. Upper Stem – Carbon steel
- 4. Liner – Vulcanized EPDM/NBR
- 5. Disk – GGG40/SS316
- 6. Down Stem – Carbon steel

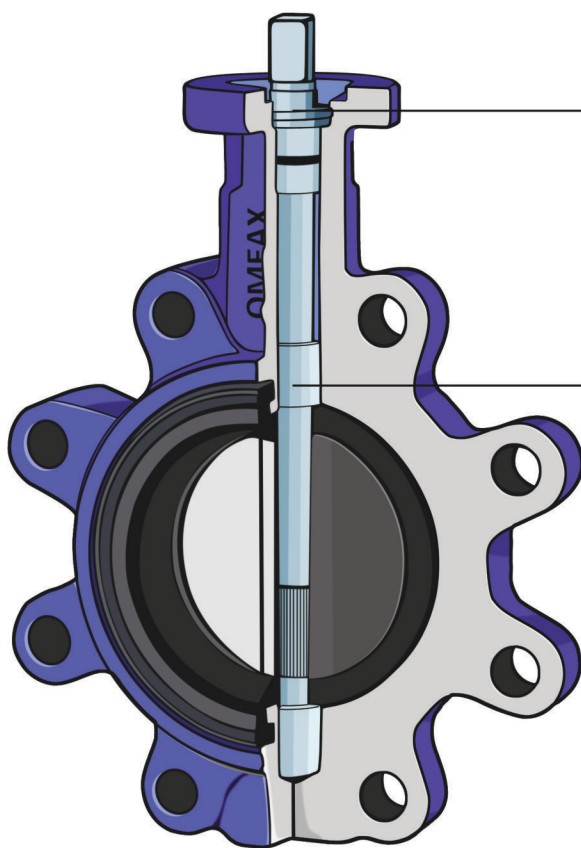


DN	H1	H2	H3	L	L1	L2	øD1	4-ød
50	61	127	64	170	42	34	114	4-ø19
65	69	137	64	170	45	49	127	4-ø18
80	89	147	64	170	45	66	150	4-ø30
100	104	160	70	200	52	90	175	4-ø19
125	120	178	75	260	55	115	210	4-ø24
150	132	195	75	260	56	142	235	4-ø24
200	167	228	64	355	61	193	292	4-ø24
250	202	265	64	355	66	245	350	4-ø26
300	233	295	69	505	77	293	400	4-ø26

DN	H1	H2	H3	L	L1	L2	øD1	n-M
50	70	130	64	170	42.6	32	125	4-M16
65	76	143	64	170	45.6	47	145	4-M16
80	89	155	64	170	45.6	65	160	8-M16
100	104	170	70	200	51.6	91	180	8-M16
125	120	190	74	260	55.6	112	210	8-M16
150	132	210	74	260	55.6	146	240	8-M20
200	167	243	64	355	59.6		295	8-M20/12-M20
250	202	282	64	355	67.6		305/355	12-M20/M24
300	239	310	69	505	77.6		400/410	12-M20/M24

Butterfly Valves – Z300

2 pressure ranges:	10/16 bars;
3 type of body:	Wafer, Lug, double flange;
4 materials of body:	Cast Iron, Ductile Iron, A216, SS316;
4 materials of disc:	DI, A216, SS316, Alu-Bronze;
4 type of seal:	EPDM, NBR, VITON, PTFE;
Wide range:	DN50 to DN600;
Flange Connections:	PN10/16/25, ASA150/300, JIK5K/10K/16K;
Epoxy Coated:	Thickness 150µm (standard), other thickness on request;



Perfect tightness

- Equipped an anti-blowout circlip to maintain the shaft in his safe position and allow easy maintenance.
- Double watertightness design allow a perfect tightness

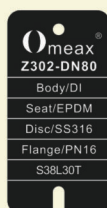
Energy saving

- One piece shaft
- Spline driven disc and shaft
- Floating disc
- Tongue and groove design

Better torque transmission to save energy and optimize electric or pneumatic actuator selection



Special designed handle lever for insulation piping application.

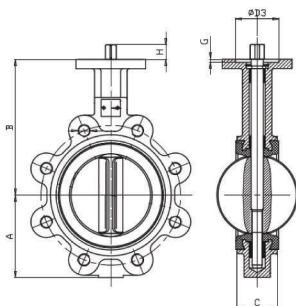


Laser engraved riveted metal tag on valve body allow a simple traceability.

Butterfly Valves – Z300

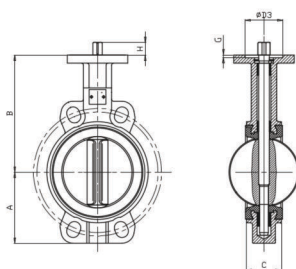
Dimensions

lug



DN	A	B	C	H
DN50(2")	72	126	43	16
DN65(2.5")	78	141	46	16
DN80(3")	90	146	46	16
DN100(4")	102	166	52	19
DN125(5")	119.5	180.5	55.5	19
DN150(6")	146	187	55.5	19
DN200(8")	165	227	62	24
DN250(10")	197	260	68	24
DN300(12")	232	305	78	24

wafer



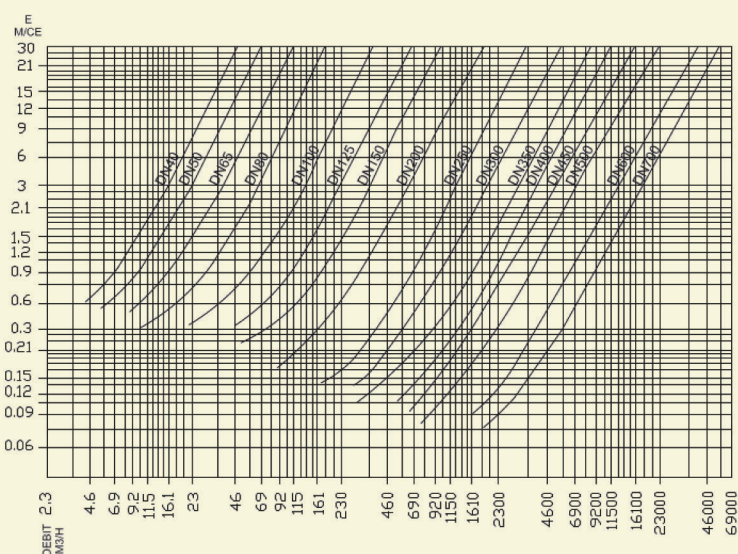
DN	A	B	C	H
DN50(2")	72	126	43	16
DN65(2.5")	78	141	46	16
DN80(3")	90	146	46	16
DN100(4")	102	166	52	19
DN125(5")	119.5	180.5	55.5	19
DN150(6")	146	187	55.5	19
DN200(8")	165	227	62	24
DN250(10")	197	260	68	24
DN300(12")	232	305	78	24

PART NAME	MATERIAL
Body	CI/DI/A216WCB/SS316
Disc	DI/A216WCB/Alu-bronze/SS316
Stem	SS416
Seat	EPDM/NBR
Down Bushing	AL-B
Long Bushing	AL-B
Short Bushing	AL-B
O Ring	EPDM/NBR
Bisect Ring	1Cr13
Retainer Ring	65Mn
Plate rivet	Aluminium
Name Plate	Aluminium

Headloss Chart

DN (mm)	Flow (m³/h)	Headloss (m)	Pressure Drop (Pa)
40	23	3.20	32000
50	23	3.20	32000
65	35	2.70	27000
80	54	2.10	21000
100	92	1.70	17000
125	140	1.40	14000
150	208	1.10	11000
200	350	0.90	9000
250	575	0.70	7000
300	805	0.60	6000
350	1010	0.40	5000
400	1260	1.43	4300
450	1840	0.40	4000
500	2030	0.37	3700
600	3450	0.30	3000
700	4650	0.28	2800

Headloss



Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Wafer
Body	: Cast iron GJL 250, Ductile iron GJS 400, A216WCB
Disc	: Ductile iron GJS400
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, HVAC general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Wafer
Body	: Cast iron GJL250, Ductile iron GJS 400, A216WCB
Disc	: A216 WCB
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, HVAC, general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Wafer
Body	: Cast iron GJL 250, Ductile iron GJS 400, A216WCB
Disc	: Stainless steel 316
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Wafer
Body	: Cast iron GJL250, Ductile iron GJS 400, A216WCB
Disc	: Alu-bronze
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Sea water, shipyard



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Lug
Body	: Cast iron GJL250, Ductile iron GJS 400, A216WCB
Disc	: Ductile iron GJS400
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, HVAC general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Lug
Body	: Cast iron GJL250, Ductile iron GJS 400, A216WCB
Disc	: A216 WCB
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, HVAC, general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Lug
Body	: Cast iron GJL250, Ductile iron GJS 400, A216WCB
Disc	: Stainless steel 316
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Lug
Body	: Cast iron GJL250, Ductile iron GJS 400, A216WCB
Disc	: Alu-bronze
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Sea water, shipyard



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Wafer
Body	: Stainless steel 316
Disc	: Stainless steel 316
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Wafer
Body	: Stainless steel 316
Disc	: Alu-bronze
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Sea water, shipyard



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Lug
Body	: Stainless steel 316
Disc	: Stainless steel 316
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, general service



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Lug
Body	: Stainless steel 316
Disc	: Alu-bronze
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Sea water, shipyard



DN	PFA	Liner
40	16	EPDM/NBR
50	16	EPDM/NBR
65	16	EPDM/NBR
80	16	EPDM/NBR
100	16	EPDM/NBR
125	16	EPDM/NBR
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Double flange
Body	: Ductile Iron GJS400, A216WCB
Disc	: Ductile iron GJS400
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, HVAC general service



DN	PFA	Liner
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Double flange
Body	: Ductile Iron GJS400, A216WCB
Disc	: A216 WCB
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, HVAC, general service



DN	PFA	Liner
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Double flange
Body	: Ductile Iron GJS400, A216WCB
Disc	: Stainless steel 316
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Clear water, building, general service



DN	PFA	Liner
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR)
Type	: Double flange
Body	: Ductile Iron GJS400, A216WCB
Disc	: Alu-bronze
Flange rating	: PN10/PN16/ANSI125/ANSI150/JIS 10K
Actuation	: Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator
Application	: Sea water, shipyard



DN	PFA	Liner
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T : -10°C to +100°C (EPDM)
-10°C to 80°C (NBR)

Type : Double flange

Body : Stainless Steel 316

Disc : Stainless steel 316

Flange rating : PN10/PN16/ANSI125/ANSI150/JIS 10K

Actuation : Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator

Application : Clear water, building, general service



DN	PFA	Liner
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Concentric butterfly valves— Z300 series

T : -10°C to +100°C (EPDM)
-10°C to 80°C (NBR)

Type : A216 WCB

Body : Stainless Steel 316

Disc : Alu-bronze

Flange rating : PN10/PN16/ANSI125/ANSI150/JIS 10K

Actuation : Handlever, Gearbox, Electric actuator, Pneumatic actuator, Hydraulic actuator

Application : Sea water, shipyard



DN	PFA	Liner
150	16	EPDM/NBR
200	16	EPDM/NBR
250	16	EPDM/NBR
300	16	EPDM/NBR
350	10	EPDM/NBR
400	10	EPDM/NBR
450	10	EPDM/NBR
500	10	EPDM/NBR
600	10	EPDM/NBR

Double ECCENTRIC butterfly valves— Z500/Z700 series

T : -10°C to +100°C (EPDM)
-10°C to 80°C (NBR)

Sizes : DN100 to DN3600

Body : Cast/Ductile iron

Connection : Wafer/Double flanges

Flange rating : PN10/16/25/40

Application : Industrial process, Steam, Mining, Ship building, Oil, Gas, General Services, smoke, Water distribution and treatment



DN	PFA	Liner
100	10/16/25	EPDM/metal
150	10/16/25	EPDM/metal
200	10/16/25	EPDM/metal
250	10/16/25	EPDM/metal
300	10/16/25	EPDM/metal
350	10/16/25	EPDM/metal
400	10/16/25	EPDM/metal
450	10/16/25	EPDM/metal
500	10/16/25	EPDM/metal
600	10/16/25	EPDM/metal
700	10/16/25	EPDM/metal
800	10/16/25	EPDM/metal
900	10/16/25	EPDM/metal
1000	10/16/25	EPDM/metal
1200	10/16/25	EPDM/metal
1400	10/16/25	EPDM/metal
1600	10/16/25	EPDM/metal



Gate Valves — G100

2 pressure ranges :	10/16 bars;
Design standard :	EN1171, EN1074-2;
Face to face :	EN1092-2 (DINF4, F5), ASMEB16.1;
Epoxy :	Thickness 150µm (standard), other thickness on request;
Wide range :	DN50-DN1000;
Application :	Clear water, HVAC, general service;

Internal and External high Environmental Protection Fusion Bond Epoxy Coating.

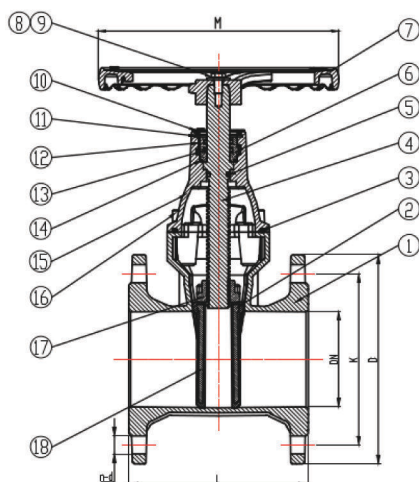
Disc: Fully vulcanized with EPDM internally & externally. 100% water tightness in both directions.
* **Linear sealing** provides a better sealing performance and lower close torque.

Nylon guide shoe: ensures the disc not to stick to the body when under high pressure, thereby get a lower opening torque.

* **3 NBR O-rings** prevent galvanic corrosion.
* **U-RING**, good self-sealing performance under high pressure.

Stem, made by rolling machine get a smooth surface and lower torque.

Full bore, self clearing, Minimum pressure loss.



ITEM	PART NAME	MATERIAL	STANDARD
1	Body	GGG50	DIN 1693
2	Disc	EPDM-GGG50	DIN 1693
3	Bonnet Gasket	NBR	ISO 4633
4	Stem	SS420	ASTM A959
5	O Ring	NBR	ISO 4633
6	Locating Sleeve	CuZn40	EN 12167
7	Handwheel	GGG50	DIN 1693
8	Bolts	A2-70	ASTM A959
9	Washers	A2-70	ASTM A959
10	Dust Cover	PTFE	ASTM D1457
11	Clip Spring	C15	ASTM A29
12	Positioning Block	CuZn10	EN 12167
13	O Ring	NBR	ISO 4633
14	O Ring	NBR	ISO 4633
15	Bonnet	GGG50	DIN 1693
16	Screw	C15	ASTM A29
17	Stem Nut	CuZn40	EN 12167
18	Iron Core	GGG50	DIN 1693

DN	Outline mm					End Flange PN10/16-CL125/150 mm								
	BS5163	DIN-F4	DIN-F5	ASME B16.10	AS2638	EN1092-2			ASME B16.1/B16.42			AS4087		
	L					D	K	n-d	D	K	n-d	D	K	n-d
40	165	140	240	—	—	150	110	4-ø19	127	98.5	4-ø16	—	—	—
50	178	150	250	178	—	165	125	4-ø19	152	120.5	4-ø19	—	—	—
50	190	170	270	190	—	185	145	4-ø19	178	139.5	4-ø19	—	—	—
80	203	180	280	203	203	200	160	8-ø19	191	152.5	4-ø19	185	146	4-ø18
100	229	190	300	229	229	220	180	8-ø19	229	190.5	8-ø19	215	178	4-ø18
125	254	200	325	254	—	250	210	8-ø19	254	216.0	8-ø22	—	—	—
150	267	210	350	267	267	285	240	8-ø23	279	241.5	8-ø22	280	235	8-ø18
200	292	230	400	292	292	340	295	8-ø23/12ø23	343	298.5	8-ø22	335	292	8-ø18
250	330	250	450	330	330	395/405	350/355	12-ø23/12ø28	406	362.0	12-ø25	405	356	8-ø22
300	356	270	500	356	356	445/460	400/410	12-ø23/12ø28	483	432.0	12-ø25	455	406	12-ø22

Resilient seated gate valve, non-rising stem G101

T	: -10°C to +100°C (EPDM) ; -10°C to 80°C (NBR)
Body	: Ductile iron GJS500
Gate	: EPDM/NBR with ductile iron GJS500
Flange connection	: PN16, groove end
Actuation	: Hand wheel, square cap
Application	: Clear water



DN	PFA
50	16
65	16
80	16
100	16
125	16
150	16
200	16
250	16
300	16
400	16
500	16
600	16

Possible till DN2000, consult us

Metal seated gate valve, rising stem G102

T	: -20°C to +300°C
Body	: Carbon steel A216WCB
Gate	: Carbon steel A216WCB
Flange connection	: PN16/PN25
Actuation	: Hand wheel
Application	: Water, steam, industrial process



DN	PFA
50	16
65	16
80	16
100	16
125	16
150	16
200	16
250	16
300	16
400	16
500	16
600	16

Gate valve G103FM

T	: -10°C to +100°C (EPDM), -10°C to 80°C (NBR)
Body	: Ductile iron GJS500
Gate	: EPDM/NBR with ductile iron GJS500
Flange connection	: PN16
Actuation	: Hand wheel, square cap
Application	: Fire protection system



DN	PFA
50	16
65	16
80	16
100	16
125	16
150	16
200	16
250	16
300	16

Globe valve GL100

T	: -20°C to +300°C
Body	: Carbon steel A216WCB
Gate	: Carbon steel A216WCB
Flange connection	: PN16/PN25
Actuation	: Hand wheel
Application	: Water, steam, industrial process

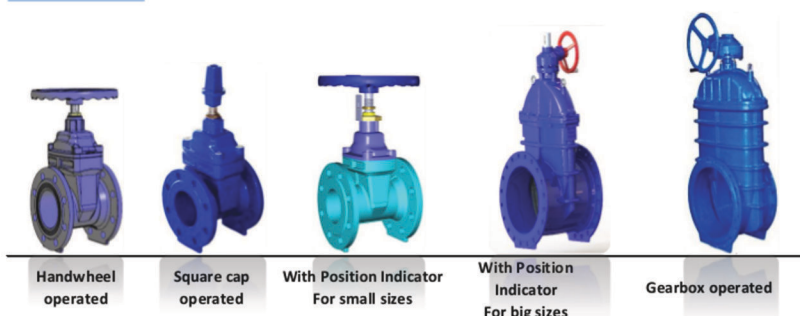


DN	PFA
50	16
65	16
80	16
100	16
125	16
150	16
200	16
250	16
300	16

Connection types:



Operation types:



Handwheel operated

Square cap operated

With Position Indicator For small sizes

With Position Indicator For big sizes

Gearbox operated

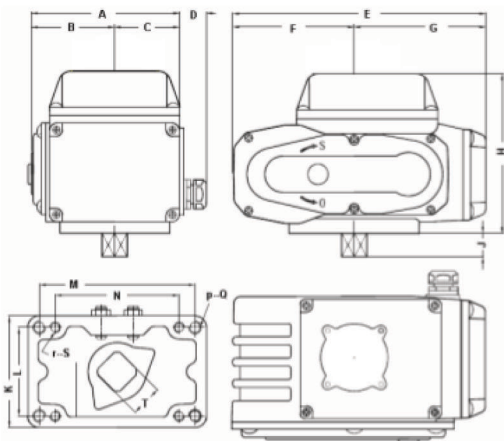
Electric Actuator ME-MER/GE-GER

Torque :	20Nm to 6000Nm;
IP protection :	IP68;
Duty rating :	50%;
Temperature :	0°C to 80°C;
Actuator type :	Rotary 90°, 180°, 270° ; Linear type ; On-off ; modulation type;
Voltage :	AC 24V/110V/220V/380V ; DC 24V;
Application :	Butterfly valves (till DN700/800) ; Ball valves (till DN200/300) ; Globe valves;
Option :	H class ; Over torque limiter ; Anti-condensation heater ; Fail safe ; Potentiometer: 1K, 3K, 5K ; DC 4 to 20mA / DC 1 to 5V position feedback;



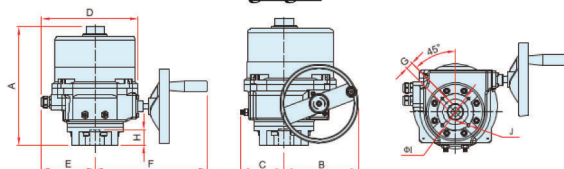
- Multiple functions: on-off, modulating, explosion proof, fire safe.
- Multiple voltage: AC 24V/110V/220V/380V, DC24V.
- Multiple travel time: 5/10/30/60 sec.
- High quality of integrated worm gear allows high torque transmission, low backlash for longer life.
- Guaranteed 50000 actuation during 2 years.
- Secured manual override.
- Compact design.
- Easy for installation: male type (Mounting kits is requested) and female type (Direct mounting).
- Any direction installation.

me-mer



Product type	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S
ME-2	95	33	62	20	133	72	61	87	8	72	46	80	68	4	M6	4	M8	12
ME/MER-5	101	56	45	20	155	86	69	113	12	72	60	80	68	4	M6	4	M8	12
ME/MER-10/20	120	52	68	20	204	96	108	121	15	86	71	98	82	4	M6	4	M8	15
ME/MER-50/60	153	90	63	20	256	123	133	146	22	106	84	135	118	4	M10	4	M10	23
ME/MER-100/200	156	95	61	20	280	128	152	158	26	106	84	170	148	4	M12	4	M10	30
ME/MER-400/600	261	150	111	20	408	183	225	172	?	212				4	M20	4	M10	52

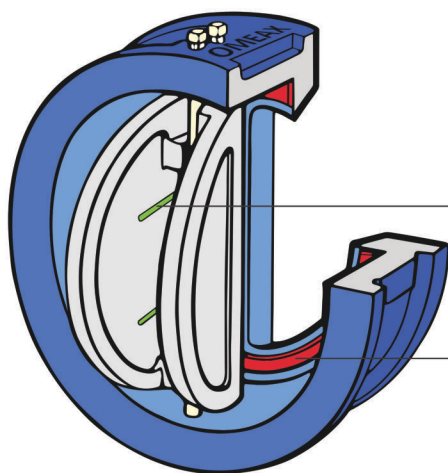
ge-ger



Product	A	B	C	D	E	F	G	H	ØI	J
GE2	265	123	79	216	120	240	14×14	35	70	4-M8
GE3	265	123	79	262	120	240	17×17	35	70	4-M8
GE4	321	187	103	262	150	297	22×22	55	102	4-M10
GE5	321	187	103	262	150	297	22×22	55	102	4-M10
GE6	321	187	103	262	150	297	27×27	55	125	4-M12
GE7	321	187	103	262	150	297	27×27	55	125	4-M12
GE8	378	241	119	293	161	346	27×27	65	125	4-M12
GE9	378	241	119	293	161	346	36×36	65	125	4-M12

C100 – Check Valves

2 pressure ranges:	16bar, 25bar;
4 materials of body:	CI, DI, A216, SS316;
4 materials of disc:	DI, A216, SS316, Alu-Bronze;
3 type of seal:	EPDM, NBR, Viton;
Wide range:	DN50 to DN800;
Flange Connections:	PN10/16/25, ASA150/300, JIK5K/10K/16K;
Epoxy Coated:	Thickness 150µm (standard), other thickness on request;

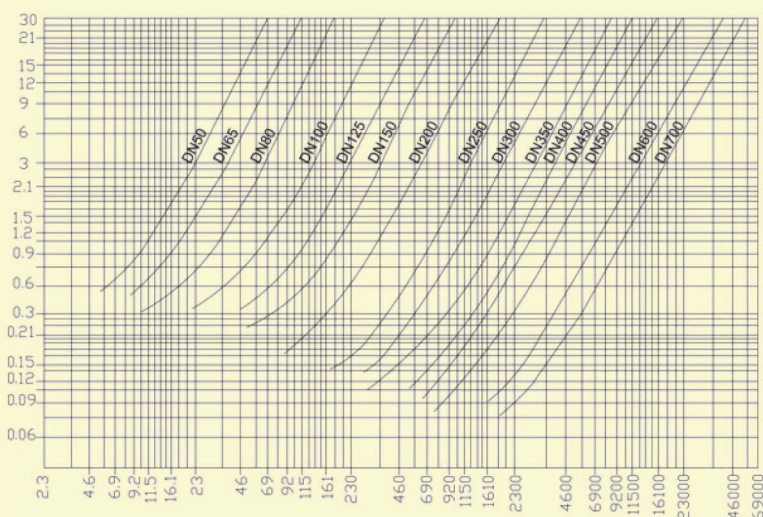


- Excellent hydraulic performance
- Compact
- Little energy loss
- Gradual opening controlled by double contact spring
- Horizontal or Vertical installation, facing upward

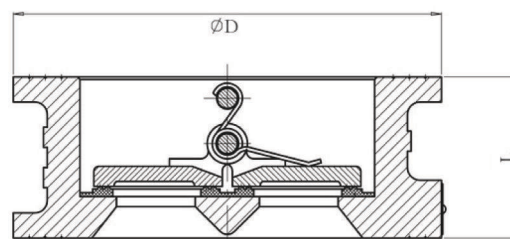
The stainless steel spring pushes against the two plates, to maintain pressure on the valve seat seal

Vulcanised seal on the valve seat to ensure watertightness

Headloss Chart



Dimensions



Size	ØD	L	Size	ØD	L
DN50	101	43	DN250	327	114
DN65	121	46	DN300	375	114
DN80	129	64	DN350	420	127
DN100	156	64	DN400	483	140
DN125	187	70	DN450	537	152
DN150	213	76	DN500	592	152
DN200	267	89	DN600	695	178

Double door check valves — C100_series

PS	: 10/16/25 bar
T	: 10°C to +100°C (EPDM) -10°C to 80°C (NBR) -20°C to 150°C (Viton)
Body	: Cast Iron GJL250, Ductile iron GLS400, A216WCB
Plate	: Ductile iron GJL250, Ductile iron GLS400
Seal	: EPDM/NBR/VITON
Flange	: PN10/16/25, ASA150/300, JIK5K/10K/16K
Application	: Water, general industry, pumping



DN	PFA
50	10/16/25
65	10/16/25
80	10/16/25
100	10/16/25
150	10/16/25
200	10/16/25
250	10/16/25
300	10/16/25
350	10/16/25
400	10/16/25
500	10/16/25
600	10/16/25
700	10/16
800	10/16

Double door check valves — C100_series

PS	: 10/16/25 bar
T	: 10°C to +100°C (EPDM) -10°C to 80°C (NBR) -20°C to 150°C (Viton)
Body	: Cast Iron GJL250, Ductile iron GLS400, A216WCB
Plate	: Cast steel A216 WCB/SS316
Seal	: EPDM/NBR/VITON
Flange	: PN10/16/25, ASA150/300, JIK5K/10K/16K
Application	: Water, general industry, process, hydrocarbons



DN	PFA
50	10/16/25
65	10/16/25
80	10/16/25
100	10/16/25
150	10/16/25
200	10/16/25
250	10/16/25
300	10/16/25
350	10/16/25
400	10/16/25
500	10/16/25
600	10/16/25
700	10/16
800	10/16

Double door check valves — C100_series

PS	: 10/16/25 bar
T	: 10°C to +100°C (EPDM) -10°C to 80°C (NBR) -20°C to 150°C (Viton)
Body	: Stainless steel 316
Plate	: Cast steel A216 WCB/ Stainless steel 316
Seal	: EPDM/NBR/VITON
Flange	: PN10/16/25, ASA150/300, JIK5K/10K/16K
Application	: Process, general industry water



DN	PFA
50	10/16/25
65	10/16/25
80	10/16/25
100	10/16/25
150	10/16/25
200	10/16/25
250	10/16/25
300	10/16/25
350	10/16/25
400	10/16/25
500	10/16/25
600	10/16/25
700	10/16
800	10/16

Double door check valves — C100_series

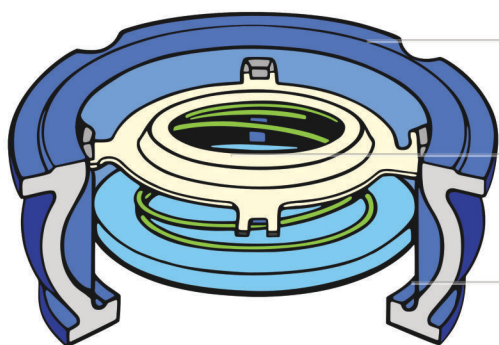
PS	: 10/16 bars
T	: -10°C to +100°C (EPDM) -10°C to 80°C (NBR) -20°C to 150°C (Viton)
Body	: Cast Iron GJL250, Ductile iron GLS400, A216WCB
Plate	: Alu-bronze, A216WCB
Seal	: EPDM/NBR/VITON
Flange	: PN10/16/25, ASA150/300, JIK5K/10K/16K
Application	: Sea water, general industry, process, water



DN	PFA
50	10/16/25
65	10/16/25
80	10/16/25
100	10/16/25
150	10/16/25
200	10/16/25
250	10/16/25
300	10/16/25
350	10/16/25
400	10/16/25
500	10/16/25
600	10/16/25
700	10/16
800	10/16

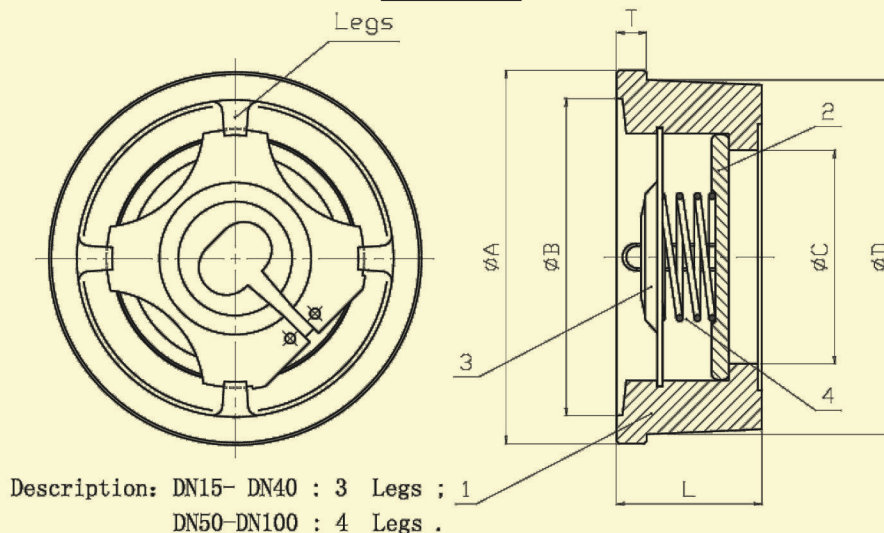
C200 – Disco Check Valves

2 pressure ranges:	25bar, 40bar;
2 materials of body:	SS304, SS316;
2 materials of disc:	SS304, SS316;
Wide range:	DN15 to DN100;
Flange Connections:	PN10/16/25, ASA150/300, JIK5K/10K/16K;
Epoxy Coated:	Thickness 150µm (standard), other thickness on request;



- Operates in any position
- Compact design
- Little energy loss
- Closing system with back axial guiding and return spring
- Machined trim metal to metal seal
- Steam, heating, industrial process application

Dimensions



Size	øA	øB	øC	L	T	øD
DN15	38.8	28.5	15	16.1	7	34.8
DN20	46	35.6	20	19.1	7	42.6
DN25	54	43	25.3	22.1	7	50
DN32	68.5	52.6	31	27.1	7	62.3
DN40	78	63.4	39.2	30.5	7	74.9
DN50	90	74.6	48.1	39.3	7	87
DN65	111	95.5	61.5	45.3	7	107
DN80	128	108.5	75	47.8	9.3	126
DN100	148.5	126.2	85	57.9	12	141

Disco check valves — C200_SS30440

PS	: 40 bars
T	: -20°C to +200°C
Body	: Stainless steel CF8
Disco	: Stainless steel 304
Spring	: Stainless steel 304
Flange	: PN10/16/25, ASA150/300
Application	: General industry, Corrosive fluids, High temperature and pressure



DN	PFA
15	40
20	40
25	40
32	40
40	40
50	40
65	40
80	40
100	40

Disco check valves — C200_SS31640

PS	: 40 bars
T	: -20°C to +200°C
Body	: Stainless steel CF8M
Disco	: Stainless steel 316
Spring	: Stainless steel 316
Flange	: PN10/16/25, ASA150/300
Application	: General industry, Corrosive fluids, High temperature and pressure



DN	PFA
15	40
20	40
25	40
32	40
40	40
50	40
65	40
80	40
100	40

Swing check valves — C500FM

PS	: 10/16 bar
T	: 10°C to +100°C (EPDM)
Body	: Ductile iron GLS400
Plate	: Ductile iron GLS400 EPDM coated
Seat	: SS316
Flange	: PN10/16
Application	: Water, Raw water



DN	PFA
15	16
20	16
25	16
32	16
40	16
50	16
65	16
80	16
100	16
150	16
200	16
250	16
300	16

Swing check valves — C500

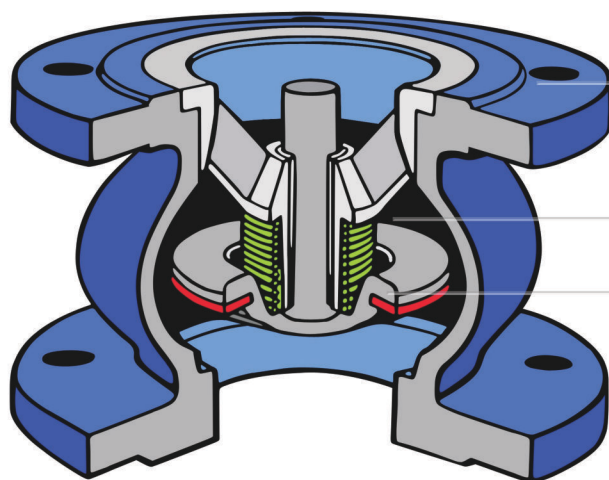
PS	: 10/16/25/50 bar
T	: 10°C to +80°C (EPDM) -15°C to +300°C (Metal seat)
Body	: Ductile iron GLS400
Plate	: Ductile iron GLS400 EPDM coated/SS316
Seat	: SS316
Face to face	: ANSI B16.1
Flange	: PN10/16/25/JIS/ ANSI class 125/250
Connection	: Threaded, flanged, spiral groove flange
Options	: Pass unit, lever and weight, lever and spring, proximity switch, air cushioned, hydraulic cylinder, protection guard.
Application	: Water, waster water, general service



DN	PFA
15	16
20	16
25	16
32	16
40	16
50	16
65	16
80	16
100	16
150	16
200	16
250	16
300	16
400	16
500	16
600	16

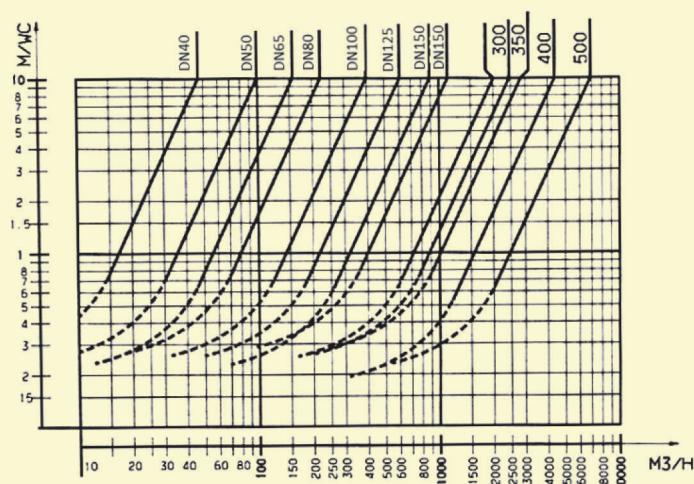
C300 – Silent Check Valves

Pressure ranges:	16bar;
Materials of body:	Cast Iron GJL250;
Materials of closing system:	Bronze;
Sizes:	DN50 to DN500;
Flange Connections:	PN10/16;
Epoxy Coated:	Thickness 150µm (standard), other thickness on request;

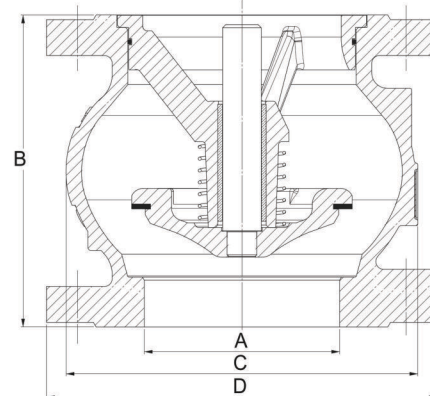


- Any position installation.
- Hydraulic design to reduce head loss and water hammer.
- Robust closing system design (ductile iron EPDM coating).
- Silent, reliable sealing, compact.
- Closing system with long back axial guiding for reduced displacement.
- Excellent tightness guaranteed by a flat seal.
- Stainless steel spring to assure frequent opening/closing operation.
- Notch provided for cable to submerged pumps.

Headloss Chart



Dimensions



A	B	C	D	A	B
DN40	85	80	150	DN150	230
DN50	100	97	165	DN200	289
DN60	120	125	185	DN250	354
DN65	120	125	185	DN300	396
DN80	140	150	200	DN350	473
DN100	170	187	220	DN400	560
DN125	150	220	250	DN500	750

Silent check valves — C300

PS	: 16 bars
T	: -10°C to +120°C
Body	: Cast iron GJL250
Closing system	: Ductile iron GJS400
Spring	: Stainless steel 316
Flange	: PN10/16
Application	: Water supply, Water distribution, Pumping



DN	PFA
50	16
65	16
80	16
100	16
125	16
150	16
200	16
250	16
300	16

Foot valves — C300F

PS	: 16 bars
T	: -10°C to +120°C
Body	: Cast iron GJL250
Closing system	: Ductile iron GJS400
Spring	: Stainless steel 316
Strainer	: Galvanised steel
Flange	: PN10/16
Application	: Water supply, Water distribution, Pumping



DN	PFA
50	16
65	16
80	16
100	16
125	16
150	16
200	16
250	16
300	16

CAVITATION

Cavitation is the formation and then immediate implosion of cavities in a liquid – i.e. small liquid-free zones ("bubbles") – that are the consequence of forces acting upon the liquid. It usually occurs when a liquid is subjected to rapid changes of pressure that cause the formation of cavities where the pressure is relatively low. Cavitation is a significant cause of wear in some engineering contexts. When entering high pressure areas, cavitation bubbles that implode on a metal surface cause cyclic stress through repeated implosion. This results in surface fatigue of the metal causing a type of wear also called "cavitation". The most common examples of this kind of wear are pump impellers and bends when a sudden change in the direction of liquid occurs. In order to minimise this problem of cavitation, large pressure differences between upstream and downstream should be avoided. If there is a risk of cavitation (eg 10 bars - 1 bar), two valves should be fitted in succession (eg 10 bars - 3 bars then 3 bars - 1 bar)

HEAD LOSS

Head Loss is the measure of the reduction in the total head of the liquid as it moves through a system. The total head is the sum of the elevation head, velocity head and pressure head. Head loss is unavoidable and is present because of the friction between the fluid and the walls of the pipe and is also present between adjacent fluid particles as they flow along the pipe. Head loss is a measure of the reduction in the total head (sum of elevation head, velocity head and pressure head) of the fluid as it moves through a fluid system.

This is unavoidable in real fluids. Energy losses are proportional to the square of the speed of the fluid (and therefore to the square of the flow rate) and inversely proportional to the diameter of the pipework:

if $d \nearrow$ then $\Delta H \searrow$
if $v \nearrow$ then $\Delta H \nearrow$

$$\Delta H = \lambda \times \frac{l}{d} \times \frac{v^2}{2g}$$

WATER HAMMER

Water hammer is a pressure surge or wave caused when a fluid (usually a liquid but sometimes also a gas) in motion is forced to stop or change direction suddenly (momentum change). Water hammer commonly occurs when a valve closes suddenly at an end of a pipeline system, and a pressure wave propagates in the pipe. It's also called hydraulic shock. This pressure wave can cause major problems, from noise and vibration to pipe collapse.

Allievi's formula allows the speed of propagation of the wave to be calculated :

$$V_p = \frac{1420}{\sqrt{1 + \frac{k}{E} \times \frac{d}{e}}} \text{ ms}$$

k: modulus of compression of the fluid
E: modulus of elasticity of the material of the pipes
d: diameter of the conduit (m)
e: thickness of the sides (m)

$$\Delta P = m \times V_p \times (V_0 - V_1)$$

m: density of the fluid (kg/m³)
V₀: speed of flow of the fluid before conduit (m)
e: thickness of the sides (m)
V₁: speed of flow of the fluid

C400 – Ball Check Valves

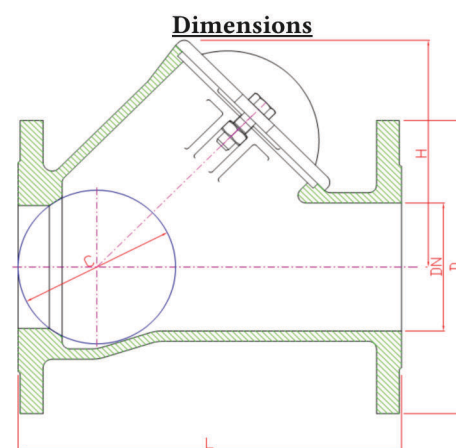
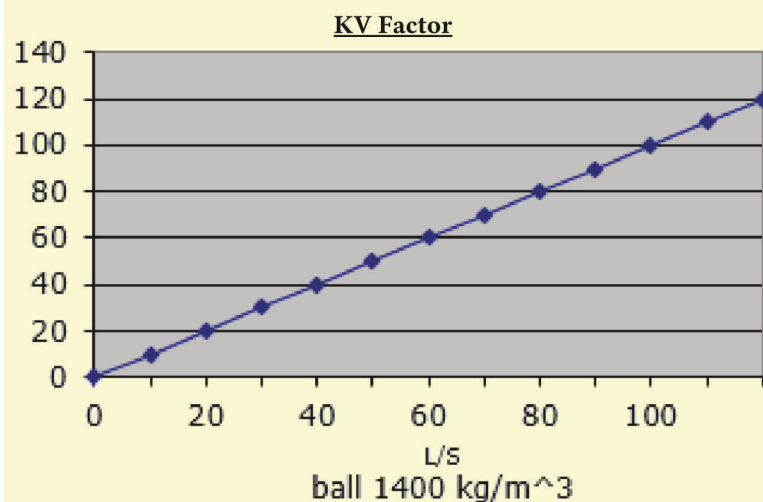
Pressure ranges:	16bar;
Materials of body:	Ductile iron GJS400 ; Stainless steel 316;
Materials of ball:	Alu-NBR coated;
Sizes:	DN50 to DN600;
Flange Connections:	PN10/16;
Epoxy Coated:	Thickness 150µm (standard), other thickness on request;



- Vertical ascending and horizontal position.
- The cover shall be placed above the axis of the pipe
- Very low headloss.
- Silent and robust design.

- Excellent sealing guaranteed by the coated ball

- Self cleaning design to avoid incrustating.
- Carefully designed ball closing system to ensure opening and closing of the valves



Size	L	H	kg	PN
DN40	180	80	4.2	16
DN50	200	98	5.5	16
DN65	230	143	13	16
DN80	260	143	13	16
DN100	300	210	18	16
DN125	350	250	37	16
DN150	400	250	37	16
DN200	500	328	68	10
DN250	600	400	112	10
DN300	700	472	163	10
DN350	800	568	289	10
DN400	900	690	416	10

Ball check valves — C400_DI2000

PS : 16 bars
T : -10°C to +80°C
Body : Ductile iron GGG40
Ball : Alu-NBR Coated
Seal : NBR
Threaded : PN10
Application : Water supply, Waste water, Water distribution, Pumping



DN	PFA
25	16
32	16
40	16
50	16
65	16
80	16

Ball check valves — C400_DI4000

PS : 16 bars
T : -10°C to +80°C
Body : Ductile iron GGG40
Ball : Alu-NBR Coated
Seal : NBR
Flanged : PN10/16
Application : Water supply, Waste water, Water distribution, Pumping



DN	PFA
40	16
50	16
65	16
80	16
100	16
125	16
150	16
200	10
250	10
300	10
350	10
400	10
500	10
600	10

Ball check valves — C400_S2000

PS : 16 bars
T : -10°C to +80°C
Body : Stainless Steel 316
Ball : Alu-NBR Coated
Seal : NBR
Threaded : PN10
Application : Water supply, Waste water, Water distribution, Pumping



DN	PFA
32	16
40	16
50	16
65	16
80	16

Ball check valves — C400_S4000

PS : 16 bars
T : -10°C to +80°C
Body : Stainless Steel 316
Ball : Alu-NBR Coated
Seal : NBR
Flanged : PN10/16
Application : Water supply, Waste water, Water distribution, Pumping

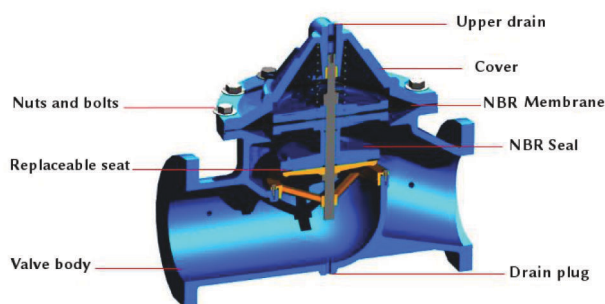


DN	PFA
50	16
65	16
80	16
100	16
125	16
150	16
200	10
300	10

How to select check valves ?

1. Make sure the valve is tight.
 2. Low pressure drop to achieve energy saving.
 3. Low water hammering, noiseless operation.
 4. Pay attention to operating positions
 5. Should know the working conditions.
- Pressure (bar)
 - Temperature (C°)
 - Type of Fluid (PH)
 - Fluid speed (M/SEC)
 - Flow (M3/H)
 - Viscosity (cPO)

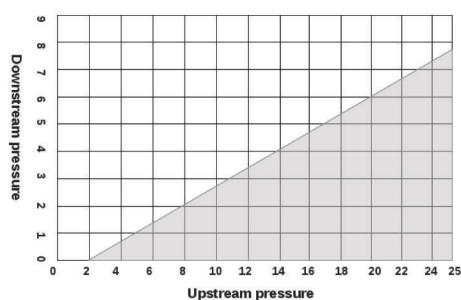
Design and Technical Advice



1. Specially designed for building market.
2. Compact and robust design
3. Epoxy powder coating.
4. Easy installation and maintenance.
5. Installation: horizontal or vertical.
6. Multiple options.
7. Traceability and identification ensured by riveted metal tag

Control Valve Selection

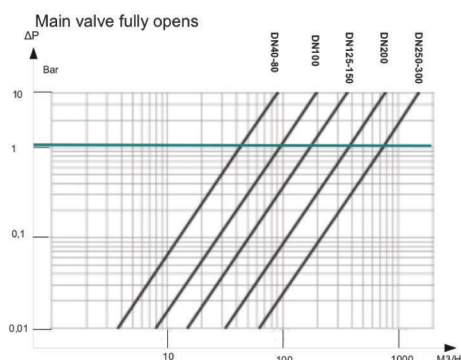
Cavitation Chart



It is important to size the control valve correctly, in order to avoid cavitation phenomenons. Please refer to the diagram, if needed, 2 or 3 control valves could be installed one after another in order to reduce the differential pressure.

*see page 18

Headloss Chart



Head Loss is the measure of the reduction in the total head of the liquid as it moves through a system. The total head is the sum of the elevation head, velocity head and pressure head. Head loss is unavoidable and is present because of the friction between the fluid and the walls of the pipe and is also present between adjacent fluid particles as they flow along the pipe. Head loss is a measure of the reduction in the total head (sum of elevation head, velocity head and pressure head) of the fluid as it moves through a fluid system.

*see page 18

KV Factor Chart

DN mm	Min flow m ³ /h	Max flow m ³ /h	KV factor m ³ /h
50	0,45	32,78	45,56
65	0,79	39,98	45,56
80	1,14	49,78	45,56
100	1,49	79,67	94,49
125	2,98	99,89	169,87
150	4,49	149,99	169,87
200	9,99	299,57	372,98
250	14,89	549,78	739,78
300	24,89	849,99	739,78

It is important to size the control valve correctly, in order

to avoid undesirable characteristics. Such as noises, excessive wear, vibrations etc...

1. For a throttling valve application, 2 stages installation should be used.
2. The maximum flow rates are calculated by using a velocity of 4.5m/s

Pressure reducing valves — HCV100A

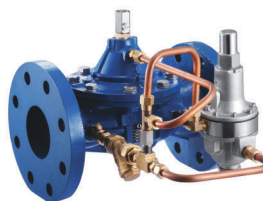
PS : 10/16 bars
T : +1°C to +80°C
Body : Cast iron GJL
Seat : Removable streamlined stainless steel
Flanged : PN10/16
Application : Clear water, building, irrigation
 HCV100A reduces delivery pressure when water distribution is done by gravity.
 HCV100A reduces pressure to a preset value within a given area.
 HCV100A reduces working pressure in pipeline when the pump discharge is too high.



DN	PFA	Weight
40	16	13.0kg
50	16	13.0kg
65	16	15.0kg
80	16	15.0kg
100	16	29.0kg
125	16	46.0kg
150	16	50.0kg
200	16	95.0kg
250	16	360.0kg
300	16	360.0kg

Pressure relief valves — HCV100B

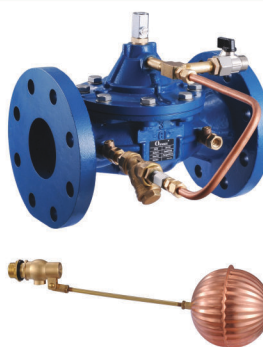
PS : 10/16 bars
T : +1°C to +80°C
Body : Cast iron GJL
Seat : Removable streamlined stainless steel
Flanged : PN10/16
Application : Clear water, building, irrigation
 Pressure relief valves controls and maintains a preset upstream pressure regardless of downstream pressure and flow rate.



DN	PFA	Weight
40	16	13.0kg
50	16	13.0kg
65	16	15.0kg
80	16	15.0kg
100	16	29.0kg
125	16	46.0kg
150	16	50.0kg
200	16	95.0kg
250	16	360.0kg
300	16	360.0kg

Float valves — HCV100C

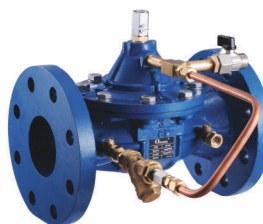
PS : 10/16 bars
T : +1°C to +80°C
Body : Cast iron GJL
Seat : Removable streamlined stainless steel
Flanged : PN10/16
Application : Clear water, building, irrigation
 Float valves is used to control a constant water level in a water tank.
 HCV100C avoids overflow to the water tank.
 HCV100C assures progressive opening and closing of the valves.



DN	PFA	Weight
40	16	13.0kg
50	16	13.0kg
65	16	15.0kg
80	16	15.0kg
100	16	29.0kg
125	16	46.0kg
150	16	50.0kg
200	16	95.0kg
250	16	360.0kg
300	16	360.0kg

Hydraulic check valves — HCV100D

PS : 10/16 bars
T : +1°C to +80°C
Body : Cast iron GJL
Seat : Removable streamlined stainless steel
Flanged : PN10/16
Application : Clear water, building, irrigation
 HCV100D works as a check valve, whose opening speed can be adjusted to avoid water hammer while pump starts.



DN	PFA	Weight
40	16	13.0kg
50	16	13.0kg
65	16	15.0kg
80	16	15.0kg
100	16	29.0kg
125	16	46.0kg
150	16	50.0kg
200	16	95.0kg
250	16	360.0kg
300	16	360.0kg

Direct acting pressure reducer — RM01

PS : 15 bars
T : +1°C to +80°C
Body : Brass
Setting : Preset 3 bar, adjustable between 1 and 4 bar
Threaded : 15 bar
Application : Clear water, building, pressure compensation system



DN	PFA	Weight
10	15	-
15	15	-
20	15	-

Direct acting pressure reducer — RM02

PS : 25 bars
T : +1°C to +80°C
Body : Brass
Setting : Preset 3 bar, adjustable between 0,5 and 6 bar
Threaded : 25 bar
Application : Clear water, building, pressure compensation system



DN	PFA	Weight
15	25	-
20	25	-
25	25	-
32	25	-
40	25	-
50	25	-

Water hammer arrestor — 4510

PS : 21 bars
T : -15°C to +80°C
Body : Bronze
Chamber pressure : 2,5 bar, peak hour at 21 bar
Threaded : 25 bar
Application : Clear water, building



DN	PFA	Weight
15	-	-
20	-	-
25	-	-
40	-	-
50	-	-

Water hammer arrestor — 4520

PS : 21 bars
T : -15°C to +80°C
Body : Cast iron GJL
Chamber pressure : 2,5 bar, peak hour at 21 bar
Flanged : PN16
Application : Clear water, building

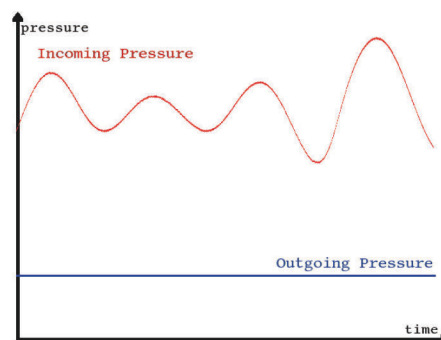


DN	PFA	Weight
80	-	18.0kg
100	-	31.0kg
125	-	32.0kg
150	-	67.0kg
200	-	93.0kg

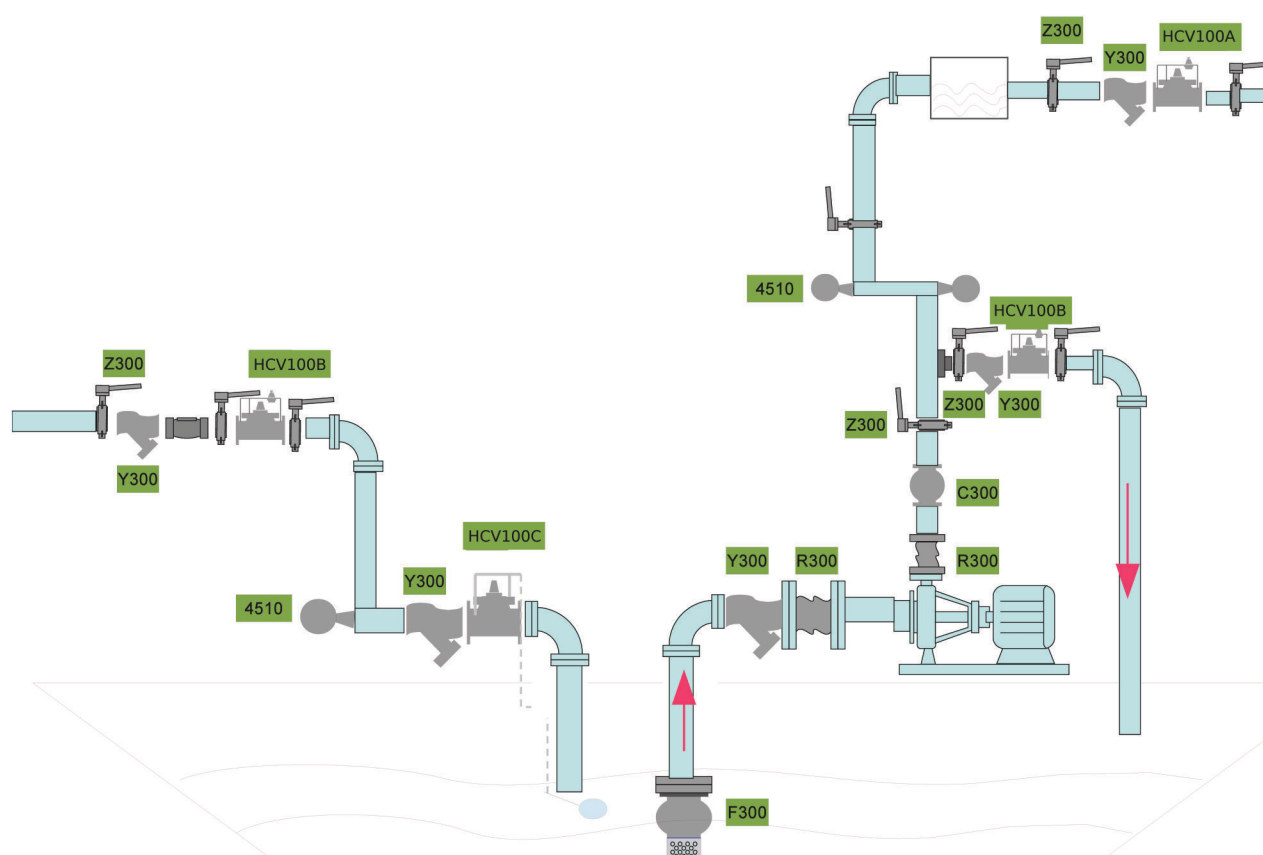
Why Pressure Management in Building ?

High water pressure is a contributing factor to background leakage (small leaks from the pipe system, typically at joints, that don't make it to the surface and are hard find) and burst water mains.

Research has shown that by managing water pressure, we can reduce pipe leakage, reduce the number of unplanned interruptions, improve the reliability of public assets and even prolong the life of appliances like your hot water services and dishwashing machines.



How to Manage Pressure in Water Supply System

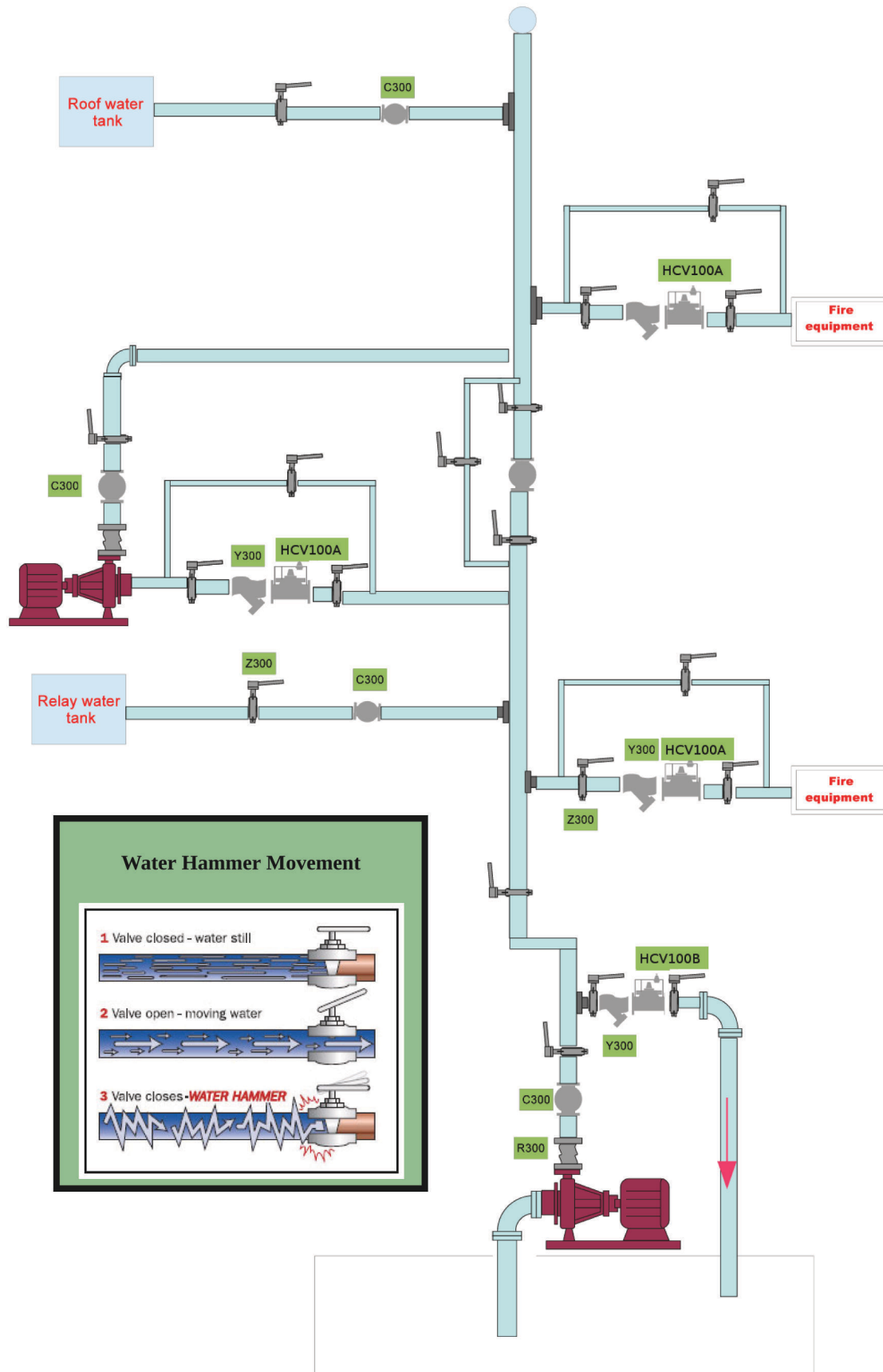


Maintenance Instruction

Regular maintenance is recommended, for a period of 6 to 12 months according to the quality of the water.

- Checking and cleaning filters of the pilot circuit and main pipe.
- Purging the upper chamber of main valve.
- Flashing the valves not frequently used.
- A general maintenance is needed for every 5 years.

Why Pressure Management in Fire Protection System ?

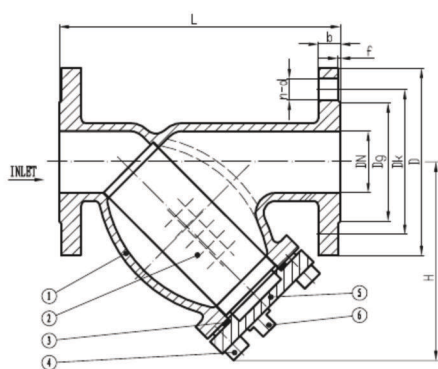


2 pressure range :	10/16 bars;
wide range :	DN50 to DN450;
Temperature :	-20°C to +100°C ;
Flange connection :	PN10/16;
Epoxy coated :	Thickness 150µm (standard), other thickness on request;
Application :	Clear water;



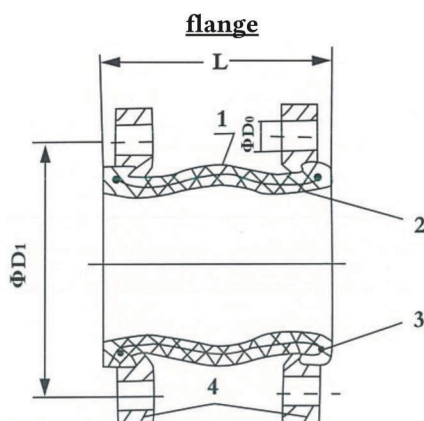
- 1. Body: Ductile iron
- 2. Screen: Stainless steel
- 3. Body Gasket: Graphite
- 4. Bolts: Steel
- 5. Cover: Ductile iron
- 6. Plug: Stainless steel

dimensions

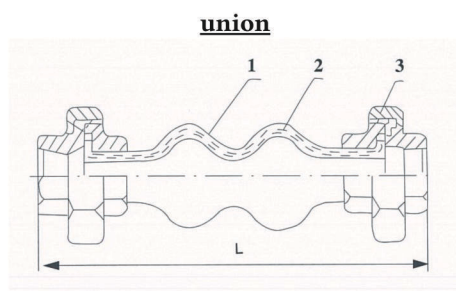


DN	L	Dg	Dk	D	f	b	n-d	H
15	130	46	65	95	2	12	4-14	68
20	150	56	75	105	2	14	4-14	78
25	160	65	85	115	3	14	4-14	88
32	180	76	100	140	3	16	4-19	98
40	200	84	110	150	3	16	4-19	125
50	230	99	125	165	3	19	4-19	153
65	290	118	145	185	3	19	4-19	183
80	310	132	160	200	3	19	8-19	219
100	350	156	180	220	3	19	8-19	238
125	400	184	210	250	3	19	8-19	279
150	480	211	240	285	3	19	8-23	315
200	600	266	295	340	3	20	12-28	400
250	730	319	355	405	3	22	12-28	482
300	850	370	410	460	4	24.5	12-28	565
350	920	429	470	520	4	26.5	16-28	780
450	1250	548	585	640	4	30	20-31	1100

2 pressure range : 10/16 bars;
 3 type of flange : Galvanized steel, Steel, Stainless steel;
 2 type of material : EPDM and NBR;
 2 type of connection : Flange and Union;
 Wide range : DN50 to DN300;
 Temperature : -10°C to +80°C (NBR), to +100°C (EPDM);
 Flange connection : PN10/16, ASA150, JIK5K/10K/16K;
 Deflection Angle : 15°;
 Application : Water supplier, HVAC, general service;



DN mm	Lmm	KG	Axial Stretch	Axial Compres.	Vertical disp.
40	95	3	6mm	10mm	9mm
50	105	4	7mm	10mm	10mm
65	115	5.4	7mm	13mm	12mm
80	130	6.5	8mm	15mm	12mm
100	135	7.5	10mm	19mm	13mm
125	170	9.5	12mm	19mm	13mm
150	180	11.7	12mm	20mm	14mm
200	205	16.3	16mm	25mm	22mm
250	240	23.4	16mm	25mm	22mm
300	260	29.1	16mm	25mm	22mm



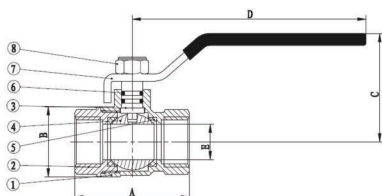
DN in	Lmm	KG	Axial Stretch	Axial Compres.	Vertical disp.
½	200	0.44	5mm	22mm	22mm
¾	200	0.65	5mm	22mm	22mm
1	200	1	5mm	22mm	22mm
1¼	200	1.3	5mm	22mm	22mm
1½	200	1.9	5mm	22mm	22mm
2	200	2.6	5mm	22mm	22mm
2½	200	3.72	5mm	22mm	22mm
3	200	4.9	5mm	22mm	22mm

Nominal diameter :	DN15-DN100;
Connection :	Threaded ;
ISO228 :	(equivalent to DIN 259 and BS 2779);
Media temperature :	-10 -120°C;
Pressure range :	25 bar;
Permissible medium :	Water services, heating and air-conditioning plants, compressed air systems;
Test :	Opening/closing test : 10000 times;

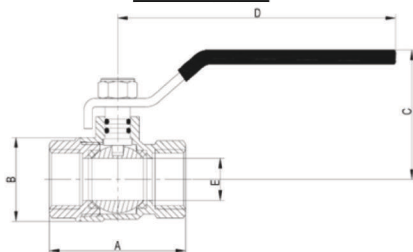


- Anti blow-out stem
- Solid ball
- PTFE packing
- Flat steel handle or aluminium butterfly handle
- Reversible handle
- BSP, NPT
- F/F, F/M, M/M, M/F

partList



dimensions



No	Part	Material	EN
1	Body	Brass	CW614
2	Bonnet	Brass	CW614
3	Stem	PTFE	
4	Ball	Brass	CW614
5	Seat	Brass	CW614
6	O-ring	NBR	
7	Handle	iron	
8	Nut	Stainless steel	SS201
9	ball	Brass (1/4"-1/2")	CW614
		Stainless Steel (3/4"-4")	SS304

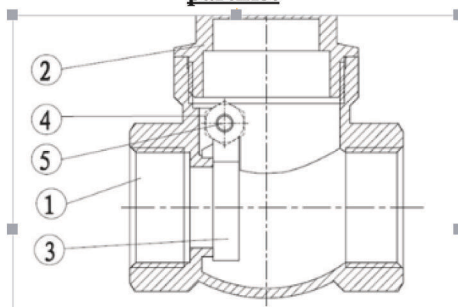
DN	A	B	C	D	E	PN	KVS(m³/h)
1/4"	40	23	39.2	87	9	25	-
3/8"	41	23	39.8	87	10	25	-
1/2"	48.2	29.5	54.2	95	14.8	25	15.3
3/4"	56	35.6	57.6	95	19	25	27.5
1"	65	42.7	60.6	126	24	25	39.5
1 1/4"	76	53	75.8	140	30.2	25	65.0
1 1/2"	85	63	81.3	140	37	25	215.0
2"	99	79	88.5	165	47	25	249.0
2 1/2"	132	102.5	121.5	224	62	25	511.0
3"	152	120.5	129.5	224	74	25	587.0
4"	178	144.5	141	283.5	90	25	1062.0

Nominal diameter :	DN15-DN100;
Connection :	Threaded ISO228 (equivalent to DIN 259 and BS 2779);
Media temperature :	-10 -120°C;
Pressure range :	16 bar;
Permissible medium :	Hot and cold water, oils and domestic water service;
Test :	Opening/closing test: 10000 times;



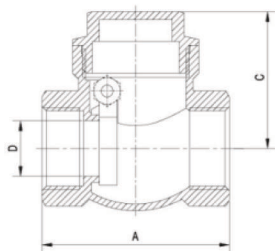
- Full brass check valves.
- Horizontal or vertical position (respect the flow direction indicated by the arrow)
- Female / female type

partList



No	Part	Material	EN
1	Body	Brass	CW614
2	Bonnet	Brass	CW614
3	Seal	Brass	CW614
4	Nut	Brass	CW614
5	Stem	Brass	CW614

dimensions

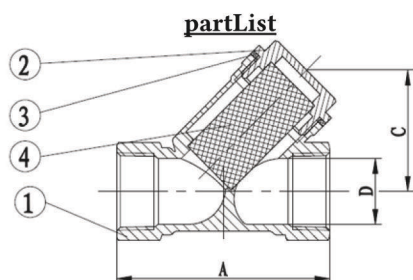


DN	A(mm)	C(mm)	D(mm)	PN(bar)	KVS(m³/h)
1/2"	47.5	35.5	14	16	15.3
3/4"	56	39	18	16	26.5
1"	63	46.5	22	16	38
1 1/4"	71	51	28	16	60.3
1 1/2"	80.5	59.5	33.5	16	192.5
2"	93	67	43	16	228
2 1/2"	108	77	53	16	422.3
3"	125	84	64	16	496
4"	158	102	85	16	1003

Nominal diameter :	DN15-DN100;
Connection :	Threaded ISO228 (equivalent to DIN 259 and BS 2779);
Media temperature :	-10 -120°C;
Pressure range :	16 bar;
Permissible medium :	Hot and cold water, oils and domestic water service;
Test :	Opening/closing test: 10000 times;



- Removable stainless steel filter SS304
- Horizontal or vertical position (respect the flow direction indicated by the arrow)
- Female / female type



dimensions

No	Part	Material	EN
1	Body	Brass	CW614
2	Bonnet	Brass	CW614
3	Seal	PTFE	
4	Strainer	Stainless steel	SS304

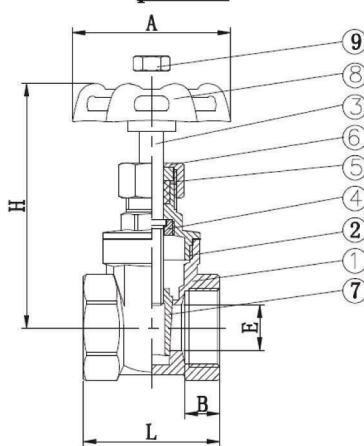
DN	A(mm)	B(mm)	C(mm)	PN(bar)	KVS(m³/h)
1/2"	56.5	32.5	18	16	19.5
3/4"	69	36	22.5	16	33.2
1"	80	42	28.5	16	49
1 1/4"	96	52.5	36	16	77.5
1 1/2"	105	61.5	43.5	16	250
2"	125	75	54	16	286
2 1/2"	134.5	86	65	16	518
3"	156	101	76	16	589
4"	181.5	123	97	16	1144

Nominal diameter :	DN15-DN100;
Connection :	Threaded ISO228 (equivalent to DIN 259 and BS 2779);
Media temperature :	-10 -120°C;
Pressure range :	16 bar;
Permissible medium :	Hot and cold water, compressed air, oils, non-corrosive fluids and steam;
Test :	Opening/closing test: 10000 times;

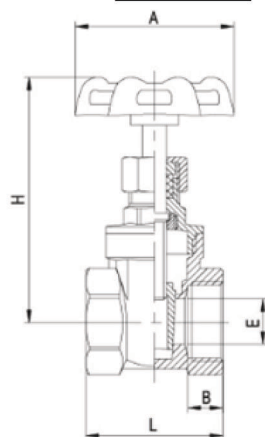


- Surface: Brass color or Nickel plating (rack plating)
- Handle: Dacromet plated, avoid rustiness in 3-5 years
- PVC thickness: 1-1.3m
- Full bore
- Rotating non rising stem
- Inside screw stem
- Single wedge disc
- Female / Female BSP cylindric
- Double O rings on stem
- BSP/NPT
- F/F

partList



dimensions



No	Part	Material	EN
1	Body	Brass	CW614
2	Bonnet	Brass	CW614
3	Stem	Brass	CW614
4	Lock Cap	Brass	CW614
5	Filler	PTFE	
6	Lock Cap	Brass	CW614
7	Disc	Brass	CW614
8	Hand wheel	Cast-iron	
9	Nut	Stainless steel	SS201

DN	A(mm)	B(mm)	H(mm)	L(mm)	E(mm)	PN(bar)	KVS(m³/h)
1/2"	54	12	71	41	14	16	15.3
3/4"	55	12.5	74	43	15	16	22
1"	60	14	85	48	19.5	16	33.5
1 1/4"	71	15	102	53	25	16	54
1 1/2"	71	14	111	54	31	16	178
2"	80	16	127	61	40	16	212
2 1/2"	100	22	170	78	53	16	422
3"	110	22	180	83	60	16	465
4"	143	22.5	220	91	75	16	885

I General statement

The following General Terms and Conditions of Sale of applies to all the Products and services provided by Omeax SARL.

II Orders, acceptance, and return

The general terms and condition of sale are accepted by the client once the order is validated.

The order expresses the Purchaser's irrevocable commitment ; hence, the Purchaser cannot cancel it unless the Supplier expressly consents thereto beforehand. Consequently, if the Purchaser requests cancellation of all or part of the order, the Supplier has the right to demand execution of the contract and full payment of the sums stipulated therein.

The return of goods and the establishment of a credit for the Purchaser - may be effectuated only with the express prior written agreement of the Supplier, which will specify the conditions thereof. The fact that the Supplier agrees to take back a product, does not confer on the Purchaser the right to return other products, even if identical.

If the Supplier consents to a return, it must, in particular, meet the following cumulative conditions : the Purchaser must return the product carriage paid,at its expense and risk,to the place indicated by the Supplier ; the product must be returned in perfect condition,protected and packed in its original packing; a return does not exempt the Purchaser from its obligation to pay; a return gives rise to the establishment of a credit corresponding to the price of the products involved, after verification of the condition thereof, less a fixed deduction for administrative processing of the return (from 15 up to 30%), an additional reduction may be applied if repackaging, paint or change of packing was required for the equipment to be put back on the shelf.

In the case of the manufacturing of a product pursuant to specifications meeting the Purchaser's technical specifications, no return shall be accepted.

III Products, modifications

1. The quality of the products which Supplier manufactures or supplies shall be exclusively as set out in the current specifications of Supplier. Measures and tolerances are subject to EN standards as amended from time to time, otherwise to use in the business and the state of the art.
2. Supplier may at any time make changes to its performance or the Products as far as such changes: are required to comply with applicable safety or other statutory or regulatory requirements; and do not materially affect their quality or performance, and are not unreasonable for the Customer.
3. The product information on catalogue, website are for reference only.

IV Price and conditions of payment

Price

Unless agreed differently, the prices of Supplier shall be Ex Works Supplier (INCOTERMS 2010) in EURO. Expenses for packaging shall be charged separately.

VAT is not included in the prices of Supplier. It shall be charged separately and at the respective statutory rate. VAT shall be separately stated in each invoice.

If more than four months pass between conclusion of the Agreement and delivery, Supplier shall be entitled to increase prices in line with development of market and cost of production.

Minimum order value shall be € 300 net. Supplier shall be entitled to charge a handling surcharge of fifty Euro (€ 50) for orders with a lower value. The risks are thus transferred to the Purchaser upon delivery as specified above, without prejudice to the Supplier's right to invoke the reservation of ownership clause or use its right of retention.

In the event that the Purchaser contracts for the transport and assumes the cost thereof, it shall assume responsibility for all financial consequences of a direct action of the carrier against the Supplier. Any storage requested by the Purchaser shall be subject to an express agreement in which the financial terms, duration and risks must be specified.

Payment

Unless otherwise expressly agreed, payments shall be made in advance, before the goods are collected by the forwarder.

The contractually agreed dates of payment shall not be contested unilaterally by the Purchaser for any reason whatsoever, even in the event of dispute. Early payments are made without discount, unless otherwise specifically agreed.

Late payment :In accordance with Act n° 2001-420 of May 15, 2001 and with the European directive 2000/35 EC of June 29, 2000, any late payment entails the application of default interest equal to the most recent refinancing rate of the European Central Bank increased by seven points.

Any payment not made on a due date constitutes an event of default which, at the

Supplier's discretion, results in the immediate payability of all sums outstanding, even those that have not yet fallen due. The fact that the Supplier invokes any one of these provisions does not deprive it of the right to apply the reservation of ownership clause stipulated in article 10.5. In the event of late payment, the Supplier has a right of retention in the manufactured products and related supplies pursuant to article 2286 of the Civil Code.

Changes in the Purchaser's situation

In the event of deterioration in the Purchaser's situation observed by any means and/or attested by late payment or repeated tardiness, or when its financial situation substantially differs from data that are provided, delivery of orders in process shall be made only in consideration of the immediate payment thereof.

In such event, or in the event that the Purchaser sells, transfers, pledges or contributes its business to a company, or a significant part of its assets or equipment, or if a draft has not been honoured within seven business days of its sending, the Supplier reserves the right without notice to :

- declare a default resulting in the immediate payability of all sums that remains owed in any respect whatsoever ;
- suspend any shipment ;
- establish first the rescission of all current contracts and, second, retain the instalments, tooling equipment and parts that it received ;
- reject any new order.

Offsetting of payments

The Purchaser is strictly prohibited from any illegal practice such as automatic debiting or invoicing of the Supplier for sums that the latter has not expressly recognized to be its responsibility. Any automatic debiting constitutes an outstanding payment giving rise to the application of the provisions regarding late payments, and may be sanctioned pursuant to article L442-6 I 8° of the Commercial Code. Only an offsetting effectuated under conditions specified by law is permitted.

Reservation of ownership

The Supplier retains full ownership of the subject products until the effective payment of the entire principal and ancillary items. Default of payment on any due date may entail the repos- session of these products. However, upon delivery, the Purchaser assumes liability for damage that these products might incur or cause.

V Delivery, transport, Verification and acceptance of products

Delivery times commence to run from the latest of the following dates :

- date of the order's acknowledgement of receipt ;
- date of receipt of all of the information, approvals, materials, products, details of execution due from the Purchaser or which are necessary for execution of the contract, or, when applicable, receipt of the down payment ;
- date of execution of preliminary contractual or legal obligations incumbent on the Purchaser.

The agreed time limits are important elements that must be specified in the contract, including their nature (times for availability, presentation for acceptance, delivery, legal acceptance, etc.). However, the stipulated time limits are only indicative and shall not be invoked in circumstances that are beyond the Supplier's control, particularly in the event of the Purchaser's failure to perform its contractual obligations.

Verification of products upon delivery.

Whatever the terms of delivery, it is up to the recipient, at its expense and under its responsibility, to verify the products or have them verified upon their arrival.

In the event of damage or non-conformity with the purchase order, the recipient :

- shall note its reservations on the delivery slip, and shall immediately inform the Supplier in writing ;
- shall express its reservations to the carrier according to the procedures and within the times specified by the regulations applicable to the mode of transport, with a copy thereof to the Supplier.

Taking over

Upon the unpacking, the Purchaser must verify the conformity of the products with the terms and conditions of the contract, and must report to the Supplier any visible or detectable defects within 7 days of delivery. Any collections, controls, inspections, tests and certificates requested by the Purchaser are at its expense. These additional operations shall be carried out in factory or on site at the Supplier's discretion.

In the case of products manufactured pursuant to specifications, the contract may specify conditions of taking over.

Each of these acceptances may be effectuated with or without reservations. If acceptance is pronounced with reservations, the parties

General Terms and Conditions of Sale

shall agree on a deadline for the lifting thereof. The Supplier shall notify the Purchaser of the date of these acceptances which, unless otherwise agreed to, must occur within a maximum of 10 business days of receipt of the notification.

If the Purchaser, having been advised of the date of these operations, is not present, a report of failure to attend, and acceptance shall be deemed to have occurred on the date that was set, without reservations.

Acceptance shall also be deemed to be given without reservations if the Purchaser uses the product (even in a limited way) or if he expresses reservations considered to be minor, which do not prevent use of the product in normal conditions independent of the level of the observed performance.

VI Warranty and liability

Exclusions of warranty and liability

The warranty does not apply, with all liability of the Supplier being excluded, in the following cases :

- parts subjected to normal wear and tear ;
- installation or use that is not in conformity with the proper professional standards,or with the defined technical specifications ;
- failure to comply with the installation, use or maintenance instructions ;
- defective oversight, storage or maintenance ;
- a change or intervention by the Purchaser or a third party in the product that is not authorized by the Supplier, or which is made with parts and/or consumables that are not original.

The warranty does not apply, with all liability of the Supplier being excluded, in the event of default of payment by the Purchaser, without the latter having the right to prevail thereon in order to suspend or defer its payments.

Contractual warranty

Unless otherwise stipulated, the Supplier provides a 1 years warranty from the date of invoice. To invoke the warranty, the Purchaser must immediately notify the Supplier in writing of defects it has observed in the product, and specify the operating circumstances in which these defects were noticed.

The warranty, at the Supplier's discretion, consists only of repairing or replacing products that it finds defective upon their arrival at its premises.

Travel, transport and shipment costs and assembly and disassembly costs such as handling costs are not included in the warranty.

Liability

The Supplier's liability is strictly limited to compliance with contractual specifications.

The Supplier shall manufacture the product or provide the service requested by the Purchaser in compliance with the standards of its profession.

The Supplier's liability shall be limited to direct material damage suffered by the Purchaser due to wrongful acts or omissions of the Supplier when executing the contract. The Supplier shall not be required to indemnify consequential or indirect damage such as operating losses, profits, deprivation of a right or opportunity, commercial injury, financial loss.

The Supplier is not required to redress the injurious consequences of wrongful acts or omissions of the Purchaser or third parties in respect to execution of the contract, and that is especially so in the events listed in article 9.1.

The Supplier is not liable for damage resulting from the Purchaser's use of technical documents, information or data coming from, or imposed by, the Purchaser. The Supplier's civil liability, for any causes except for bodily injuries and gross negligence, is limited to the cost of supplies collected on the date of the service.

The Purchaser guarantees the Supplier or its insurers against recourse taken by its insurers or third parties in contractual relationships therewith, above the limits and exclusions specified above.

VII Penalties

When penalties and indemnities are mutually agreed, they are deemed to serve as a fixed and liquidated indemnification, and exclude any other type of sanction or indemnification. These contractual penalties are capped, and apply only to the part of supplies or services that is involved.

VIII Hardship and force majeure

Hardship

If an event that is beyond the parties' control compromises the equilibrium of the contract to such an extent that one of the parties is unable to execute its obligations, the parties agree to negotiate in good faith a modification of the contract. Such events include particularly the occurrence of a fluctuation in the price of raw materials, a change in customs duties, a change in the

exchange rate or in the applicable laws and regulations. Should the parties fail in their negotiations, they agree to appoint a mediator or to call for a conciliation with the Presiding Judge of the competent Commercial Court acting as the arbitrator.

Force majeure

Neither party in this contract shall be held liable for its delay or failure to execute its obligations hereunder if such delay or failure is the direct or indirect consequence of an event of force majeure, defined in a broader scope than that of the French case law, such as the occurrence of a natural disaster, earthquakes, storms, fires, floods, conflicts, wars, attacks, labour conflicts, total or partial strikes at the premises of the Supplier, Purchaser, or the suppliers, subcontractors, providers of services, carriers, post, public services, etc., mandatory orders of the public authorities (import prohibitions, embargos), operating accidents, machine breakdowns, explosions. Each party shall immediately inform the other party of the occurrence of an event of force majeure brought to its knowledge which, in its opinion, is of such a nature as to affect the performance of the contract. The parties must consult with each other within the shortest possible time to examine in good faith the consequences of the event of force majeure, and mutually consider the measures to be taken.

IX Intellectual property and Confidentiality

Intellectual property and knowledge of documents and products

All of the intellectual property rights, as well as the knowledge included in transmitter documents, delivered products and provided services remain the Supplier's exclusive property. Any transfer of intellectual property rights or knowledge must be subject to a specific contract. The Supplier reserves the right to make use of its knowledge and results in its research and development work. All plans, descriptions, technical documents or estimates provided to the other party are transmitted thereto as a gratis loan, the purpose of which is to evaluate and discuss the Supplier's commercial offer. They shall not be used by the other party for any other purposes. These documents must be returned to the Supplier upon first request.

Confidentiality

The parties are reciprocally committed to a general obligation of confidentiality regarding any oral or written information, regardless of the medium thereof (discussion reports, plans, exchanges of computerized data, activities, installations, projects, expertise, prototypes developed at the Purchaser's requests, products, etc.) that are exchanged when preparing and executing the contract, unless said information is a matter of common knowledge or will become so by means other than through the Purchaser's wrongful act or omission.

Therefore, the parties commit to :

- keep strictly secret all confidential information and, in particular, refrain from disclosing or transmitting all or part thereof to any person by any means, directly or indirectly, without the other party's written authorization beforehand ;
- refrain from using all or part of confidential information for purposes or an activity other than execution of the contract ;
- refrain from making copies or imitations of all or part of confidential information.

The parties commit to take all necessary measures to ensure compliance with this obligation of confidentiality throughout the duration of the contract and even after the expiration thereof, and guarantee compliance therewith by all of their employees and subcontractors or other contracting parties. This obligation is absolute.

Guarantee in the event of infringement

Each party guarantees that the elements it provides or designs for execution of the contract (plans, specifications, processes, and their conditions of application, etc...) do not use intellectual rights or proprietary expertise owned by third parties. They guarantee that they have the right of free disposal of said elements without conflicting with a contractual or legal obligation. They mutually guarantee each other against the direct or indirect consequences of any action for civil or criminal liability, particularly an action for infringement or unfair competition.

X Disputes and applicable law

The parties commit to resolve their disputes by amicable means before submitting them to the competent Court.

In the absence of amicable settlement, it is expressly agreed that any dispute related to the contract shall be adjudicated exclusively by the Court located in the area of the Supplier's domicile, even in the event of an action for enforcement of a guarantee or a multiplicity of defendants. Only French law and, when applicable, the Vienna Convention regarding international sales of goods, shall apply.



OMEAX

SIMPLIFIES LIFE

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