>> catalogue 2005

ENOLGAS

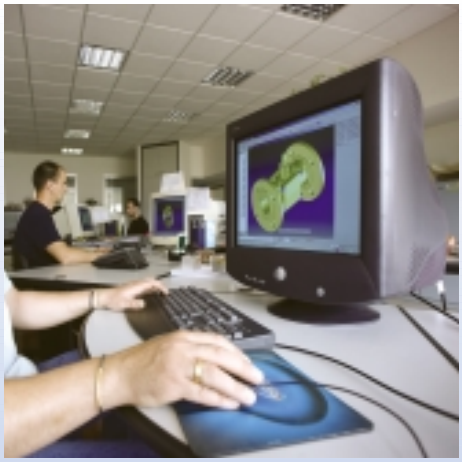
Enolgas Bonomi was founded in 1960 as a family business. Initially it manufactured valves for the food, oil and gas industry. The company soon specialized in the production of cocks and valves for plumbing and construction, as well as for the natural gas distribution network.
In 1970 it started production of ball valves for general purpose applications.

In 1991 the Enolgas Bonomi Quality System obtained ISO 9001 certification for design, manufacturing and service. Every step of the full cycle production is controlled by the skilled staff of the company's Quality Assurance department.

Before being packed and delivered, all components and finished products must pass a series of tests to ensure that they are both perfectly manufactured and functional. They are then shipped all over the world and stocked by an international network of distributors, who by means of efficient logistics can make these goods available in every place of the globe.

Enolgas Bonomi S.p.A. offers its customers a comprensive range of standard products, plus a skillful technology and staff devoted to research and design new products, to be developed in co-operation with customers by means of CAD-CAM and CNC machines.

Enolgas Bonomi S.p.A. strives to maintain product excellence and innovation, collaborating with Universities departments by editing its R&D achievements. Enolgas Bonomi S.p.A. also holds several European and international product certifications and patents, incorporated into its advanced technologies and products.



gas water natural liquid

Thanks to its long and renovated experience in the field, today Enolgas Bonomi S.p.A. markets products which are a landmark on international marketplaces.

These products include a wide range of gas safety devices, as well as manually, pneumatically and electrically operated valves in brass, carbon steel and stainless steel, for plumbing installations, HVAC applications and several industrial automations to be used with gas, water, air, oils and hydrocarbons.

The constant dedication to the improvement of the products and the cooperative relationship with customers and suppliers are the steady foundation towards future positive developments of Enolgas Bonomi S.p.A. to meet the challenges of the globalization.

THE COMPANY QUALITY SYSTEM

ENOLGAS BONOMI S.p.A. has always been considering Quality a strategic factor and has been one of the first Italian firms in its field to implement a Quality Assurance System, in accordance with the ISO 9000.
Consequently, as early as in 1991 ENOLGAS BONOMI S.p.A. obtained the approval of its Quality Assurance System, as per the certificates issued respectively by ICIM-CISQ, as the Italian Certification Institute and IQNET, as the International Certification Network.

ENOLGAS BONOMI S.p.A., aware of the fact that Quality has no time and space limits, is currently committed with the constant improvement of the products, the service and the collaboration with suppliers and customers.
The primary goal of ENOLGAS BONOMI S.p.A. is the user safety and the customer satisfaction, in line with the new Quality VISION 2000.
To keep and improve this goal, ENOLGAS BONOMI S.p.A. dedicats persisten care in selecting and training the staff and its professional qualification, being convinced that human resources come first.

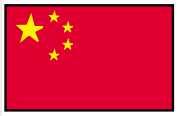
THE INTERNATIONAL CERTIFICATIONS


AUSTRALIA


AUSTRIA

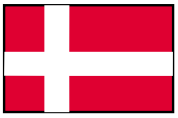

BELGIUM

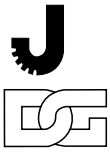

CANADA


CHINA


CZECH REPUBLIC


CROATIA


DENMARK




FINLAND


GERMANY


GREAT BRITAIN


LITUANIA


NORWAY


NORWAY

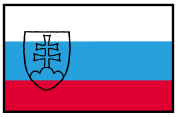

NEW ZEALAND


NEW ZEALAND

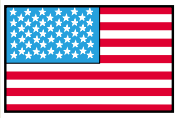

POLAND

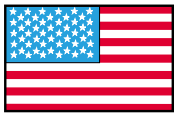

RUSSIA


SINGAPORE

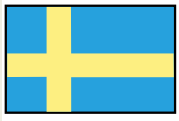

SLOVAK REPUBLIC


SLOVENIA


UNITED STATES


UNITED STATES


SWEDEN


SWEDEN


SWITZERLAND


SWITZERLAND


HUNGARY

GAS VALVES

WATER VALVES

AUTOMATED VALVES

FULL BORE BALL VALVE FOR GAS

OMEGA

EC Type Examination Certificate

Issued by BG plc, Certification Services.
Gas Research & Technology Centre, Ashley Road, Loughborough, Leicestershire LE11 3QR

NOTIFIED BODY NUMBER 0087 JOB NO. E27477

CERTIFICATE NO. BG/EC/87/0138

DATE 30 October 1997

ORIGINAL/SUPPLEMENTARY Original

MANUFACTURER ENOLGAS BONOMI S.A.S.
VIA EUROPA 227
25063 CONCESIO (BRESCIA)
ITALY

PRODUCT TYPE Ball Valves

MODEL DESIGNATION OMEGA SERIES MODELS: D98, D988, D925, D926, D985, D925, D946, 30950

DAY PARTS/DN 1st, 2nd and 3rd

DESTINATION COUNTRIES All EU Countries

EC PRODUCT IDENT. NO. DETAILED

DECLARATION

Type samples representative of the above mentioned product have been tested and examined and found to comply with the Essential Requirements detailed in Annex I of the European Gas Appliance Directive (90/396/EEC)

Signed on behalf of Notified Body

P G Johnstone
Manager
BG plc Research & Technology
Certification Services

BG plc

Certificate of Compliance

Certificate: 1027406 (LR 114978) Master Contract: 201303

Project: 1366196 Date Issued: 2001-02-28

Issued to: Enolgas Bonomi S.A.S.
di Bonomi Sandro e Sandri
25062 Concesio (BS) Italy

Attention: Annona Cassa

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US'

C SA US

Issued by: Valdis Udris

Authorized by: George Grass
Operations Manager

PRODUCTS

3371 01 VALVES (GAS) – General Use – ANSI Z21.15-1997•CGA 9.1-M97

Model Numbers Rated Pressure (psig) Size (Inches)

• For Use With Natural or Propane Gas
Angle

3.0300/096 OMEGA 1/2 1/2 x 1/2M
3.0300/094 OMEGA 1/2 1/2 x 1/2
3.0300/095 OMEGA 1/2 3/4 x 3/4M
3.0300/093 OMEGA 1/2 3/4 x 3/4

3371 01 VALVES (GAS) – General Use – ANSI Z21.15-1997•CGA 9.1-M97

Model Numbers Rated Pressure (psig) Size (Inches)

• For Use With Natural, MBL, Mixed, Liq. Pet. or Propane Gases and LP-Gas Air Mixtures
Angle

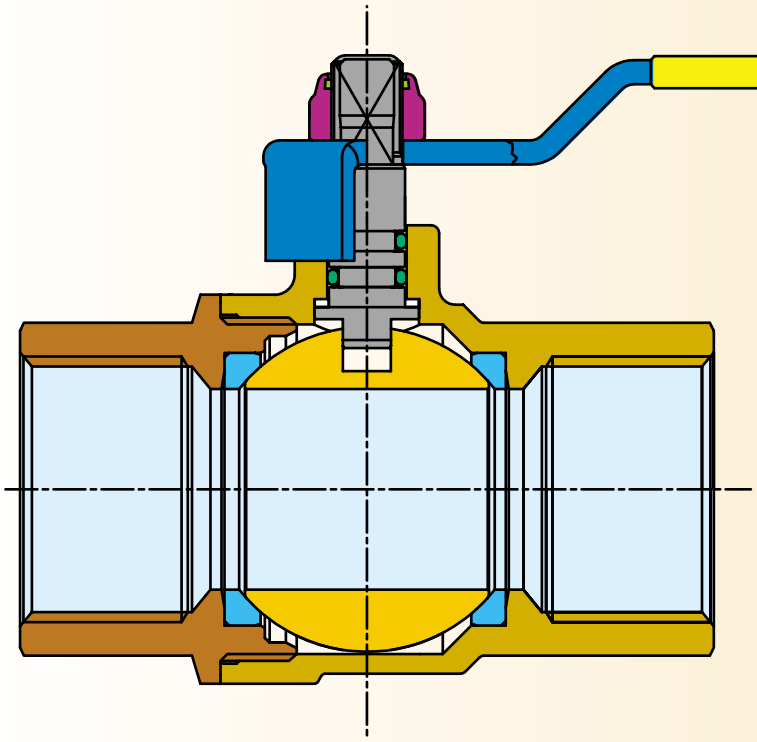
The 'C' and 'US' indicators adjacent to the CSA Mark signify that the product has been evaluated to the applicable CSA and ANSI/UL Standards for use in Canada and the U.S., respectively. This 'US' indicator includes products eligible to bear the 'NRTL' indicator. NRTL, or Nationally Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.

D 007972 2001/0.30

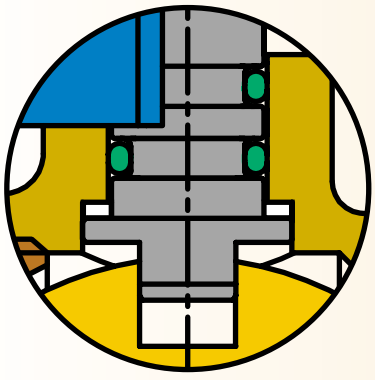
APPROVED TO EN 331

OMEGA

FULL BORE BALL VALVE FOR GAS

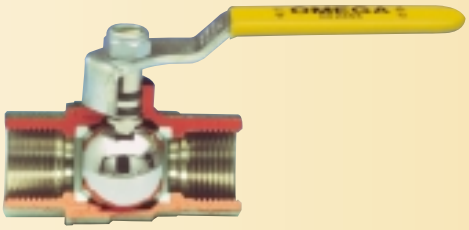


BODY	1
END ADAPTER	2
BALL	3
BALL GASKETS	4
STEM	5
THRUST WASHER	6
O-RINGS	7
HANDLE	8
SELF-LOCKING NUT	9

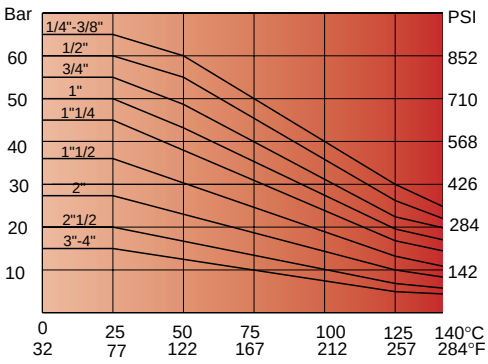


DOUBLE SEAL BLOW OUT PROOF- STEM

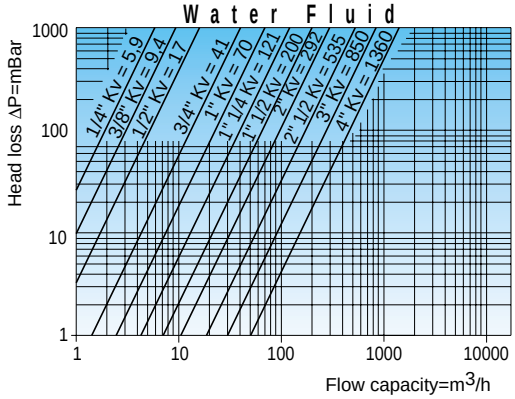
- The **OMEGA** ball valves are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.
- The **OMEGA** ball valves have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.



PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM
Water Fluid



INTERNATIONAL APPROVALS
- The **OMEGA** ball valves satisfy the specifications contained in the EN 331 standards and in the UNI-CIG 8274 and 8275 standards.
- The **OMEGA** ball valves have obtained official approval for use with gas in various countries.

FEATURES
- Specially designed for gas applications.
- Heavy line, full bore, long threads.
- Perfect seal at low and high pressure.
- Solid, reliable for life-time use.
- No need of maintenance at all.

END CONNECTIONS
- Screwed to ISO 7/1 Rp parallel standard.
- Screwed to ISO 7/1 Rc taper standard, available only upon request.

UTILISATION
- The **OMEGA** ball valves are suitable for all types of gas, town gas (1st family), natural gas (2nd family) and L.P.G.gas (3rd family) in systems using low and medium pressure.
- The **OMEGA** ball valves are also suitable for hot and cold water, compressed air, oils and hydrocarbons in general.

WORKING PRESSURE
- For gas max 5 MOP.
- For other uses from PN 64 (size 1/4") to PN 16 (size 4").
- For L.P.G. 5-20 MOP.
- See pressure/temperature diagram.

TEMPERATURE LIMITS
- For gas -20°C +60°C.
- For other uses -20°C +140°C.
- See pressure/temperature diagram.

INSTALLATION INSTRUCTIONS
- The valves can be installed in any position: horizontal, vertical or oblique. In any case they must be visible and easily accessible. The operating handle must be free and it must be possible to rotate it easily and completely to the open and closed position. Unless something else is suggested, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter-clockwise.
- There aren't any differences in the flow direction, unless other instructions appear on the valve.
- For the seal of the threaded connections of the valve to the hoses, please refer to the standards UNI ISO 7, UNI ISO 228 or to other standards applying the particular case.
- The system must be planned and accomplished in such a way as to avoid bending or torsional stress and other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed in to the hoses with suitable means and by using its key. The torque wrench setting should guarantee the seal without deforming or damaging any components of the valve.
- After installing the valve it is necessary to verify the seal of the gaskets and of the whole system by referring to the technical standards and to the applicable laws.
- Please avoid tampering with the valve and particularly with its parts which are intended to guarantee the sealing, with the operating devices and with the on-off stops.
- Do not let the valve in such a position where it is neither completely open nor completely closed for a long time, as this could damage the gaskets and the ball, compromise the seal and prevent the system work properly.
- If the valves, especially the big ones, are difficult to open or close after they have not been operating for a long time, please use a hose or something similar and put it on their handle, so that it works as a sort of extension and makes the operation easier.
- It is recommended to install a y-strainer between the hose where the flow comes from and the valve in order to make the latter work correctly and to maintain a good seal.

- For every further question please contact the authorized dealers or ENOLGAS BONOMI S.p.A. directly.

MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N-UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N-UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N-UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N-UNI EN 12164	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for gas
8	Handle	Steel Fe P02	Zinc-plated, yellow P.V.C. insulated
	Lever and T-handle	AL UNI5076	Yellow polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel

BALL VALVE WITH DOUBLE-FUNCTION LOCKING DEVICE

ADVANTAGES

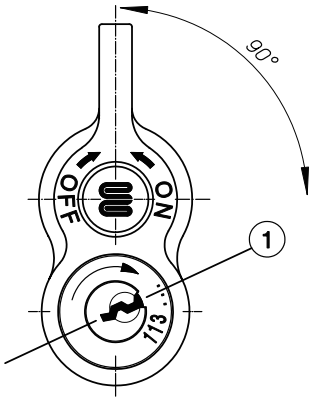
- Safe locking device.
- Practical and rapid arrearage system which replaces the laborious fixing through the traditional wire-leading. (“Arrearage” indicates that it is possible for the person in charge of the system to prevent the user from opening the valve. For example every company has the chance for suspending the gas supply in case the user does not pay).
- Two grey keys are given to the user together with the valve.
- The person in charge of the system can receive a master key, which suits all the locks and can be used in case of arrearage. It is a yellow key and can be given only after it has been requested.
- The same yellow key can be used for 100 different combinations.

art. S.0268

UTILISATION

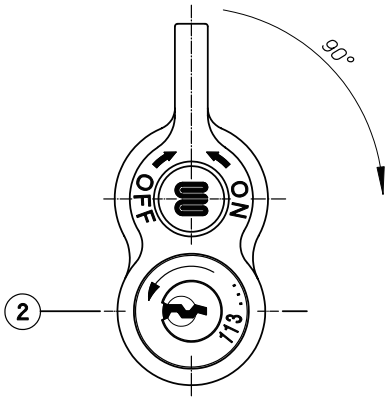
- Mainly used in the gas distribution system, especially for the valve in the gas meter bracket, as provided for in the standard UNI 9036 about gas security.
- Distribution systems, water supply storage tanks, or other fluids you want to prevent from free public use.
- The locking device is assembled in the valves of the OMEGA range (see the articles in the next pages), which are suitable for both gas and water application and for other compatible fluids.

NORMAL POSITION



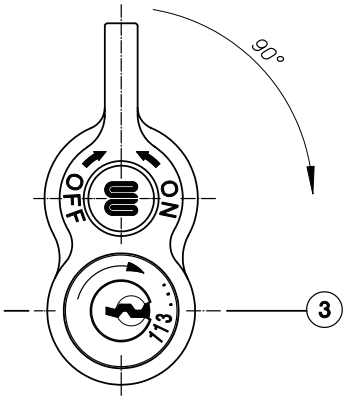
1- When the key is in this position, the valve works normally ON-OFF and the key itself CANNOT be taken away.

LOCKING POSITION DECIDED BY THE USER



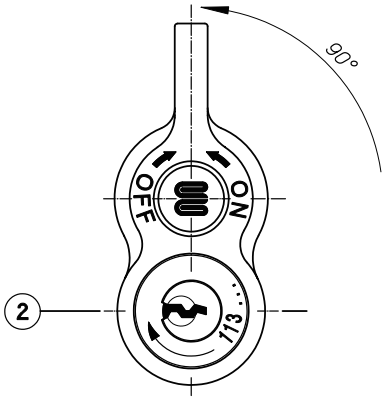
2- When the key is in this position, the valve can be locked in the OFF position and the key CAN be taken away.

ARREARAGE POSITION



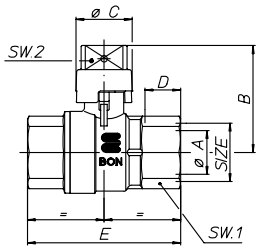
3- When the key is in this position, the valve can be locked in the OFF position and CANNOT be opened with the user’s key.

RETURN TO THE NORMAL POSITION



4- When the key has been put in this position again by the supplier, the valve can work normally.

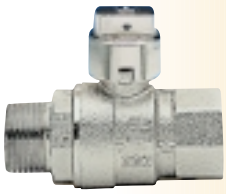
Art. S.0251 OMEGA

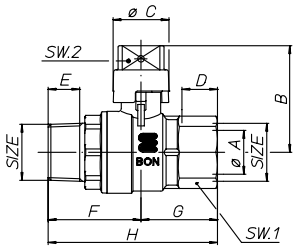


Full bore ball valve for gas with lockable rectangular head, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	15	20	25	32	40	50	65	80	100
B mm	39,5	49	53,5	69,5	75,5	92,5	103,5	113,2	139
øC mm	23	25,5	25,5	34,5	34,5	40,5	40,5	47	47
D mm	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3	39,3
E mm	59,5	70	83	98,5	108	130	158	182,5	219
SW1 mm	25	31	38	47	54	66	83	97	124
SW2 mm	11	12	12	15	15	18	18	21	21
Weight gr.	240	330	590	994	1526	2604	3430	-	-

Art. S.0252 OMEGA

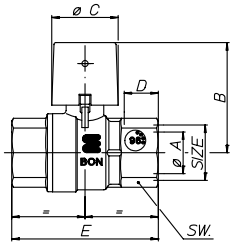




Full bore ball valve for gas with lockable rectangular head, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"			
øA bore	15	20	25	32	40	50			
B mm	39,5	49	53,5	69,5	75,5	92,5			
øC mm	23	25,5	25,5	34,5	34,5	40,5			
D mm	15	16,3	19,1	21,4	21,4	25,7			
E mm	13,2	14,5	16,8	19,1	19,1	23,4			
F mm	37,25	41	47,4	54	59,6	71,6			
G mm	29,75	35	41,6	49	53,9	64,9			
H mm	67	76	89	103	113,5	136,5			
SW1 mm	25	31	38	47	54	66			
SW2 mm	11	12	12	15	15	18			
Weight gr.	244	361	595	1019	1576	2631			

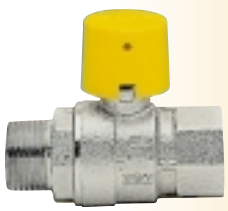
Art. S.0257 OMEGA

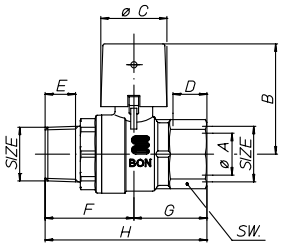


Full bore ball valve for gas with lockable rectangular head and yellow plastic cap, female/female, nickel-plated.

SIZE		¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore		20	25	32	40	50	65	80	100
B mm		52,5	57	73	79	96	107	122	130
øC mm		31,5	31,5	40,5	40,5	47,5	47,5	55	55
D mm		16,3	19,1	21,4	21,4	25,7	30,2	33,3	39,3
E mm		70	83	98,5	108	130	158	182,5	219
SW mm		31	38	47	54	66	83	97	124
Weight gr.		340	600	1006	1538	2618	3312	-	-

Art. S.0258 OMEGA



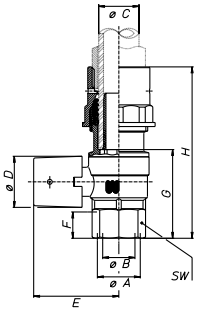


Full bore ball valve for gas with lockable rectangular head and yellow plastic cap, male/female, nickel-plated.

SIZE		¾"	1"	1"¼	1"½	2"			
øA bore		20	25	32	40	50			
B mm		52,5	57	73	79	96			
øC mm		31,5	31,5	40,5	40,5	47,5			
D mm		16,3	19,1	21,4	21,4	25,7			
E mm		14,5	16,8	19,1	19,1	23,4			
F mm		41	47,4	54	59,6	71,6			
G mm		35	41,6	49	53,9	64,9			
H mm		76	89	103	113,5	136,5			
SW mm		31	38	47	54	66			
Weight gr.		390	605	1031	1588	2645			

FULL BORE BALL VALVE FOR GAS

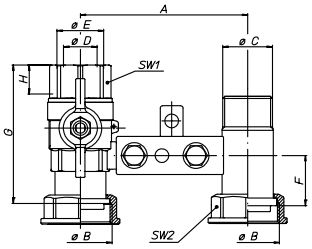
Art. S.0259 OMEGA



Full bore ball valve with lockable rectangular head and yellow plastic cap, female/pe-pipe fitting and special thread for pe-pipe protection.

SIZE		¾"x25	1"x32
øA mm		¾"	1"
øB bore		20	25
øC mm		25	32
øD mm		31,5	31,5
E mm		52,5	57
F mm		16,3	19,1
G mm		55	65,5
H mm		106	124
SW mm		31	38

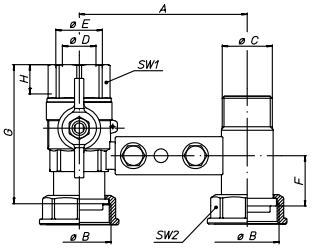
Art. S.0260 GAS BRACKET



Complete bracket for gas meter Ø 110 mm axle base, for fischer mounting.

SIZE	¾"x1"¼	1"x1"¼
A mm	110	110
øB mm	1"¼	1"¼
øC mm	1"	1"
øD bore	17,5	22
øE mm	¾"	1"
F mm	32,5	32,5
G mm	73	92
H mm	16,2	19,1
SW1 mm	31	38
SW2 mm	46	46
Weight gr.	835	1005

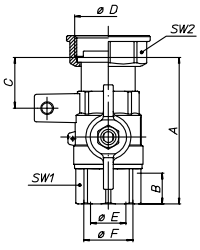
Art. S.0261 GAS BRACKET



Complete bracket for gas meter Ø 110 mm axle base.

SIZE	¾"x1"¼	1"x1"¼
A mm	110	110
øB	1"¼	1"¼
øC	1"	1"
øD bore	17,5	22
øE	¾"	1"
F mm	32,5	32,5
G mm	73	92
H mm	16,2	19,1
SW1 mm	31	38
SW2 mm	46	46
Weight gr.	841	1011

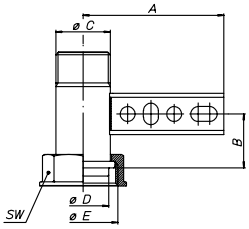
Art. S.0263 GAS BRACKET



Ball valve for gas meter, female, with T-handle.

SIZE	¾"x1"¼	1"x1"¼
A mm	73	91
B mm	16,2	19,1
C mm	32,5	31,5
øD	1"¼	1"¼
øE bore	17,5	22
øF mm	¾"	¾"
SW1 mm	31	38
SW2 mm	46	46
Weight gr.	479	631

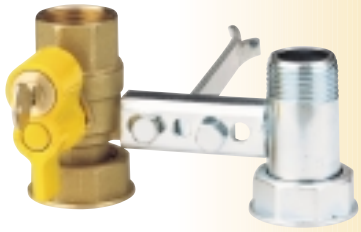
Art. S.0264 GAS BRACKET

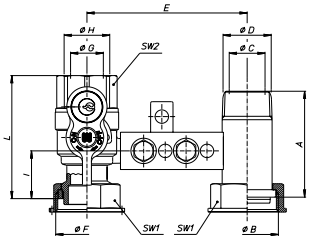


Tube with crossbar for gas meters brackets, 110 mm axle base, zinc-plated.

SIZE	¾"x1"¼	1"x1"¼
A mm	85	85
B mm	32,5	32,5
øC	¾"	1"
øD	1"¼	1"¼
øE		
SW mm	46	46
Weight gr.	276	284

Art. S.0265 GAS BRACKET-KEY LOCKED

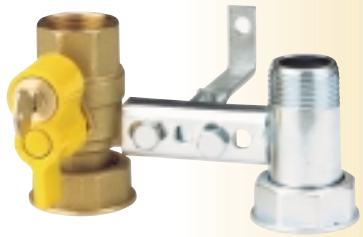


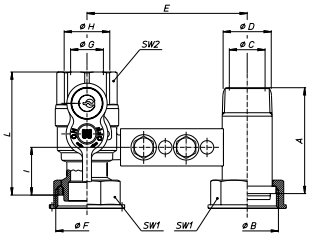


Complete bracket for gas meter Ø 110 mm axle base, for fischer mounting, with **key-locking device**.

SIZE	¾"x1"¼	1"x1"¼
A mm	71	71
øB	1"¼	1"¼
øC mm	24	24
øD	¾"	1"
E	110	110
ø F	1"¼	1"¼
ø G mm	16	22
ø H	¾"	1"
I	32	32
L	82,5	82,5
SW1-2 mm	45-31	45-38

Art. S.0266 GAS BRACKET-KEY LOCKED

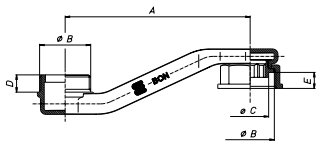




Complete bracket for gas meter Ø 110 mm axle base, with **key-locking device**.

SIZE	¾"x1"¼	1"x1"¼
A mm	71	71
øB	1"¼	1"¼
øC mm	24	24
øD	¾"	1"
E	110	110
ø F	1"¼	1"¼
ø G mm	16	22
ø H	¾"	1"
I	32	32
L	82,5	82,5
SW1-2 mm	45-31	45-38

Art. S.0267 GAS ADAPTER

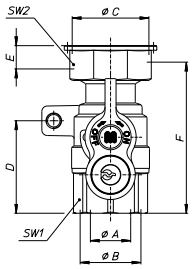


Adapter for gas meters.

SIZE	1"¼x140
A mm	140
B mm	13
C mm	14
SW mm	46
Weight gr.	570

FULL BORE BALL VALVE FOR GAS

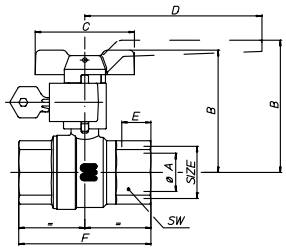
Art. S.0268 GAS BRACKET-KEY LOCKED



Ball valve for gas meter, female, with **key-locking device**.

SIZE	¾"x1"¼	1"x1"¼
ø A mm	16	22
øB	¾"	1"
øC	1"¼	1"¼
øD mm	50,5	50,5
E mm	12,7	12,7
F mm	82,5	82,5
SW1 mm	31	38
SW2 mm	45	45
Weight gr.	610	650

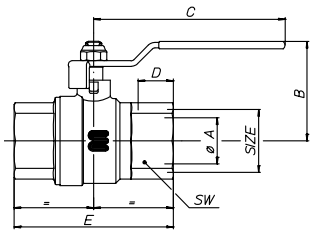
Art. S.0269 OMEGA-KEY LOCKED



Full bore heavy-line ball valve, with **key-locking device**, female/female, nickel-plated.

SIZE	¾"	1"
øA bore	20	25
B mm	79,5	84
C mm	65	65
D mm	-	-
E mm	16,3	19,1
F mm	73,5	86,5
SW mm	32	39
Weight gr.	645	858

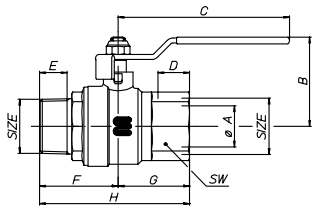
Art. S.0271 OMEGA



Full bore ball valve for gas with steel lever, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	37	37	41,7	49,8	53,8	63,2	72	83,7	99,5	113,2	139
C mm	90	90	90	105	105	120	140	170	170	250	250
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3	39,3
E mm	47,5	49,5	65	73,5	86,5	101,5	115,5	132,5	158	182,5	219
SW mm	17	21	26	32	39	48	55	68	83	97	124
Weight gr.	138	151	257	392	618	1040	1607	2716	3497	5665	10508

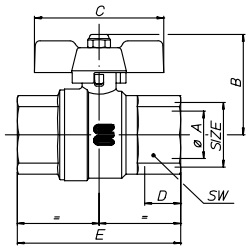
Art. S.0272 OMEGA



Full bore ball valve for gas with steel lever, male/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"
øA bore	10	10	15	20	25	32	40	50
B mm	37	37	41,7	49,8	53,8	63,2	72	83,7
C mm	90	90	90	105	105	120	140	170
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7
E mm	9,7	10,1	13,2	14,5	16,8	19,1	19,1	23,4
F mm	30,75	31,25	38	42,25	47,75	54,25	60,25	72,75
G mm	23,75	24,75	32,5	36,75	43,25	50,75	55,75	66,25
H mm	54,5	56	70,5	79	91	105	116	139
SW mm	17	21	26	32	39	48	55	68
Weight gr.	153	167	261	408	623	1065	1657	2752

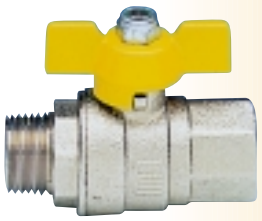
Art. S.0277 OMEGA

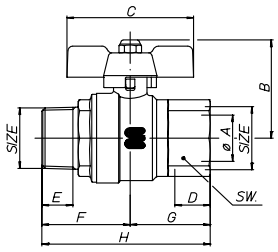


Full bore ball valve for gas with T-handle, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"
øA bore	10	10	15	20	25
B mm	35	35	40,5	49,5	54
C mm	52	52	52	65	65
D mm	11	11,4	15	16,3	19,1
E mm	47,5	49,5	65	73,5	86,5
SW mm	17	21	26	32	39
Weight gr.	115	128	235	358	584

Art. S.0278 OMEGA

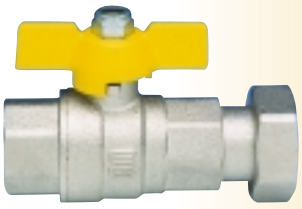


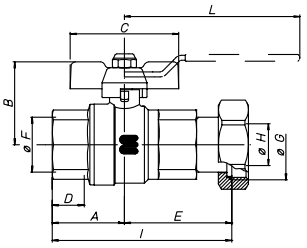


Full bore ball valve for gas with T-handle, male/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"
øA bore	10	10	15	20	25
B mm	35	35	40,5	49,5	54
C mm	52	52	52	65	65
D mm	11	11,4	15	16,3	19,1
E mm	9,7	10,1	13,2	14,5	16,8
F mm	30,75	31,25	38	42,25	47,75
G mm	23,75	24,75	32,5	36,75	43,25
H mm	54,5	56	70,5	79	91
SW mm	17	21	26	32	39
Weight gr.	130	144	239	374	589

Art. S.0284 OMEGA

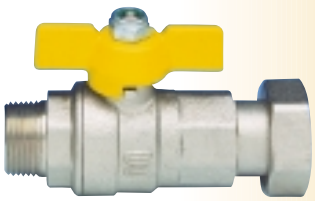


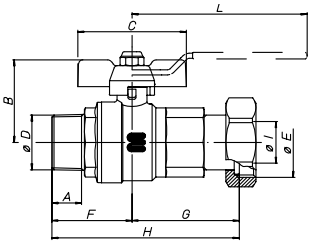


Full bore ball valve for gas with T-handle or steel lever, female/nut, nickel-plated.

SIZE	½"x¾"	¾"x1"	¾"x1"¼	1"x1"¼	1"¼x1"½	1"½x2"
A mm	32,5	36,75	36,75	43,25	50,75	55,75
B mm	41,7	49,8	49,8	53,8	63,2	72
C mm	52	65	31	65	-	-
D mm	15	16,3	16,3	19,1	21,4	21,4
E mm	48	53,25	61,75	65,25	74,25	92,25
øF	½"	¾"	¾"	1"	1"¼	1"½
øG	¾"	1"	1"¼	1"¼	1"½	2"
øH mm	-	-	31	31	-	46,5
I mm	65,5	90	98,5	108,5	125	148
L mm	-	-	-	-	120	140
Weight gr.	314	488	525	765	1271	2062

Art. S.0285 OMEGA



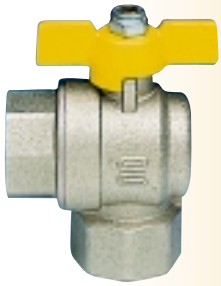


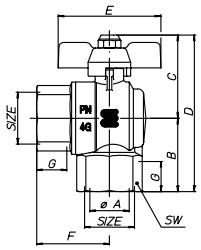
Full bore ball valve for gas with T-handle or steel lever, male/nut, nickel-plated.

SIZE	½"x¾"	¾"x1"	¾"x1"¼	1"x1"¼	1"¼x1"½	1"½x2"
A mm	13,2	14,5	14,5	16,8	19,1	19,1
B mm	41,7	49,8	49,8	53,8	63,2	72
C mm	52	65	65	65	-	-
øD	½"	¾"	¾"	1"	1"¼	1"½
øE	¾"	1"	1"¼	1"¼	1"½	2"
F mm	38	42,25	42,25	47,47	54,25	60,25
G mm	48	53,25	61,75	65,25	74,25	92,25
H mm	86	95,5	104	113	128,5	152,5
øI mm	-	-	31	31	-	46,5
L mm	-	-	-	-	120	140
Weight gr.	318	504	541	770	1296	2112

FULL BORE BALL VALVE FOR GAS

Art. S.0286 OMEGA

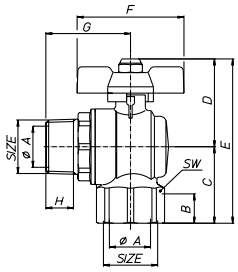




Angled full bore ball valve for gas with T-handle, female/female, nickel-plated.

SIZE	½"x½"	¾"x¾"	1"x1"
øA bore	15	20	25
B mm	33	39	46,5
C mm	39,5	48,5	53
D mm	72,5	87,5	99,5
E mm	52	65	65
F mm	31,5	35	41,5
G mm	15	16,3	19,1
SW mm	26	32	39
Weight gr.	196	335	504

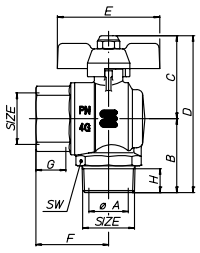
Art. S.0287 OMEGA



Angled full bore ball valve for gas male/female, with T-handle, nickel-plated

SIZE	½"x½"	¾"x¾"	1"x1"
øA bore	15	20	25
B mm	15	16,3	18,1
C mm	33	39	46,5
D mm	39,5	48,5	53
E mm	72,5	87,5	99,5
F mm	52	65	65
G mm	38,5	44,5	51,5
H mm	13,3	14,5	16,8
SW mm	26	32	39
Weight gr.	180	368	562

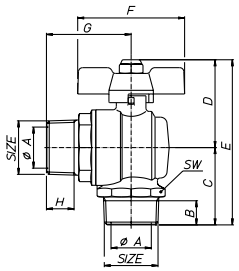
Art. S.0288 OMEGA



Angled full bore ball valve for gas with T-handle, male/female, nickel-plated.

SIZE	½"x½"	¾"x¾"	1"x1"
øA bore	15	20	25
B mm	33,5	39,5	47
C mm	39,5	48,5	53
D mm	73	88	100
E mm	52	65	65
F mm	31,5	35	41,5
G mm	15	16,3	19,1
H mm	11,5	12,9	14,7
SW mm	26	32	39
Weight gr.	197	324	505

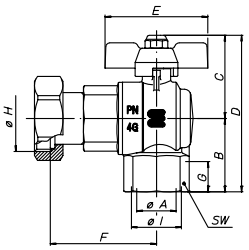
Art. S.0289 OMEGA



Angled full bore ball valve for gas male/male, with T-handle, nickel-plated.

SIZE	½"x½"	¾"x¾"	1"x1"
øA bore	15	20	25
B mm	11,5	12,9	14,7
C mm	33,5	39,5	47
D mm	39,5	48,5	53
E mm	73	88	100
F mm	52	65	65
G mm	38,5	44,5	51,5
H mm	13,2	14,5	16,8
SW mm	26	32	39
Weight gr.	181	357	563

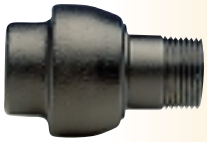
Art. S.0290 OMEGA

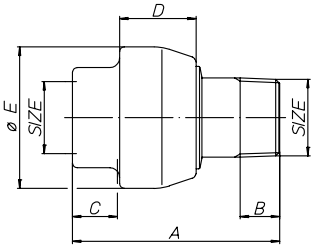


Angled full bore ball valve for gas with T-handle, female/nut, nickel-plated.

SIZE	¾"x1"	¾"x1"¼	1"x1"¼							
øA bore	20	20	25							
B mm	39	39	46,5							
C mm	48,5	48,5	53							
D mm	87,5	87,5	99,5							
E mm	65	65	65							
F mm	51,5	61	64,5							
G mm	16,3	16,3	19,1							
øH mm	20	20	25							
øI mm	¾"	¾"	1"							
SW mm	32	32	39							
Weight gr.	464	502	746							

Art. S.0356 DL-JOINT

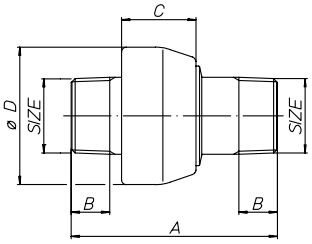




Dielectric joint, male/female.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"		
A mm	100	110	120	135	145	150	180	200		
B mm	11,5	12,9	14,7	17,2	17,2	21,7	24,3	27,4		
C mm	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3		
D mm	29	30	32	35	36	38	46	48		
øE mm	45	52	60	70	76	90	110	130		
PN bar	10	10	10	10	10	10	10	10		
Weight gr.	400	500	700	1000	1200	1700	3000	4000		

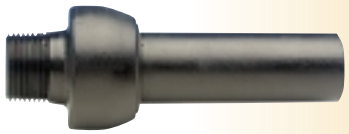
Art. S.0357 DL-JOINT

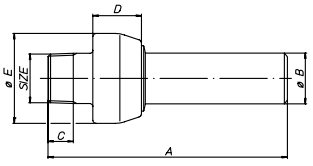


Dielectric joint, male/male.

SIZE		¾"	1"	1"¼	1"½	2"	2"½	3"		
A mm		125	137	154	168	170	194	232		
B mm		12,9	14,7	17,2	17,2	21,7	24,3	27,4		
C mm		30	32	35	36	38	46	48		
øD mm		52	60	70	76	90	110	130		
PN bar		10	10	10	10	10	10	10		
Weight gr.		500	700	1000	1200	1700	3000	4000		

Art. S.0358 DL-JOINT



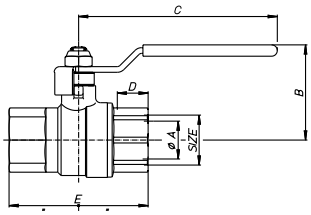


Dielectric joint, male/weldable end.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"		
A mm	156	170	183	203	214	221	255	275		
øB mm	22	27	34	43	49	61	77	90		
C mm	11,5	12,9	14,7	17,2	17,2	21,7	24,3	27,4		
D mm	29	30	32	35	36	38	46	48		
øE mm	45	52	60	70	76	90	110	130		
PN bar	10	10	10	10	10	10	10	10		
Weight gr.	450	600	800	1300	1500	1900	3800	5154		

FULL BORE BALL VALVE FOR GAS

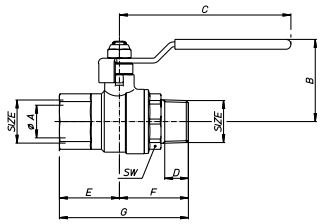
Art. S.1101 OMEGA HTB



Full bore ball valve for gas with steel lever, female/female, nickel-plated. This valve complies with the standard EN 1775 and DIN 3537/1 about resistance at high temperature.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	42	50	54,5
C mm	90	105	105
D mm	15	16,3	19,1
E mm	64,5	73,5	86,5
SW mm	26	32	39

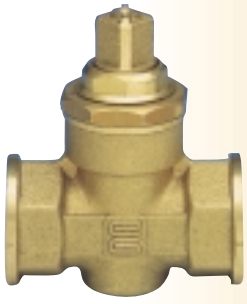
Art. S.1102 OMEGA HTB

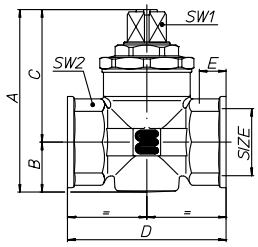


Full bore ball valve for gas with steel lever, male/female, nickel-plated. This valve complies with the standard EN 1775 and DIN 3537/1 about resistance at high temperature.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	42	50	54,5
C mm	90	105	105
D mm	13,2	14,5	16,8
E mm	32,5	36,75	43,25
F mm	38	42,25	47,75
G mm	70,5	79	91
SW mm	26	32	39

Art. G.0055 GAS COCK

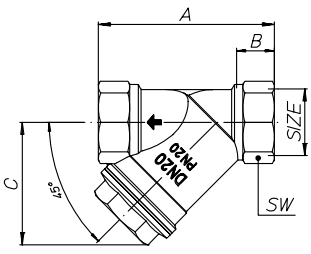




Tapered plug cock for gas and water with square head, female/female.

SIZE	½"	¾"	1"	1"¼	1"½	2"
A mm	64,5	73	85,5	102,5	109,75	127,5
B mm	15,5	19	23	31	33,5	39,5
C mm	49	54	62,5	71,5	76,25	88
D mm	57	64	75	92	102	122
E mm	9,7	11,2	12,7	13,7	15,7	17,7
SW1 mm	12	12,5	14,5	19	19	24
SW2 mm	25	31	38	47,5	54	66
Weight gr.	235	367	553	908	1213	1769

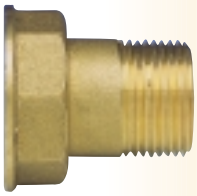
Art. G.0180 Y-STRAINER

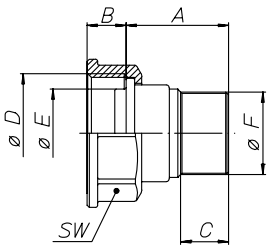


Y-Strainer with stainless steel sieves (ext. 0,4mm - int. 0,3mm) for gas.

SIZE	⅜"	½"	¾"	1"	1"¼	1"½	2"
A mm	55	58	70	87	96	106	126
B mm	10	12	13	17	20	21	22
C mm	40	40	50	60	68	75	90
SW mm	21	25	31	38	48	55	68
PN	16	16	16	16	16	16	16
Weight gr.	130	150	240	395	700	860	1330

Art. G.0195 NUT and TAIL





Nut and tail for gas meter.

SIZE	¾"x1"¼	1"x1"¼	1"½x2"	2"x2"½
A mm	38,5	36,5	50,5	55,5
B mm	12,5	12,5	12,5	14
C mm	19,5	19,5	19,5	19,5
øD mm	1"¼	1"¼	2"	2"½
øE mm	31	31	46,5	58
øF mm	¾"	1"	1"½	2"
SW mm	45	45	64	79,5
Weight gr.	189	191	485	720

TOP • GAS

FULL BORE BALL VALVE FOR GAS

DVGW

DVGW-Zertifikat

über die Erteilung des DVGW-Prüfzeichens

DVGW certificate

for granting the DVGW Test Mark

DVGW
DG-4313AT0342

Anwendungsbereich	Gasversorgung
Zertifikatinhaber	ENGLGAS S.A.S. Via Europa 227, I-20092 Cinisello (MI)
Hersteller	ENGLGAS S.A.S. Via Europa 227, I-20092 Cinisello (MI)
Produktart	Armaturen: Absperrarmatur für Gasinstallation kleiner oder gleich PN 4
Produktbezeichnung	Kugelhahn in Durchgangsform für die Gasinstallation
Modell / Typ	
Prüfgrundlagen	DIN EN 331 (Entwurf 10. 1993)
Prüfbericht	96/060/4212/818 vom 21.08.1996 (DVGW-Forschungsstelle, Karlsruhe)
Aktenzeichen	96-01-60-GW6
Ablaufdatum	

Grundlage für die Erteilung dieses Zertifikats ist die Geschäftsordnung der DVGW-Zertifizierungsstelle für die nationale Zertifizierung von Produkten der Gas- und Wasserversorgung.
Dieses Zertifikat ist Eigentum der DVGW-Zertifizierungsstelle. Weitere Angaben siehe Rückseite.

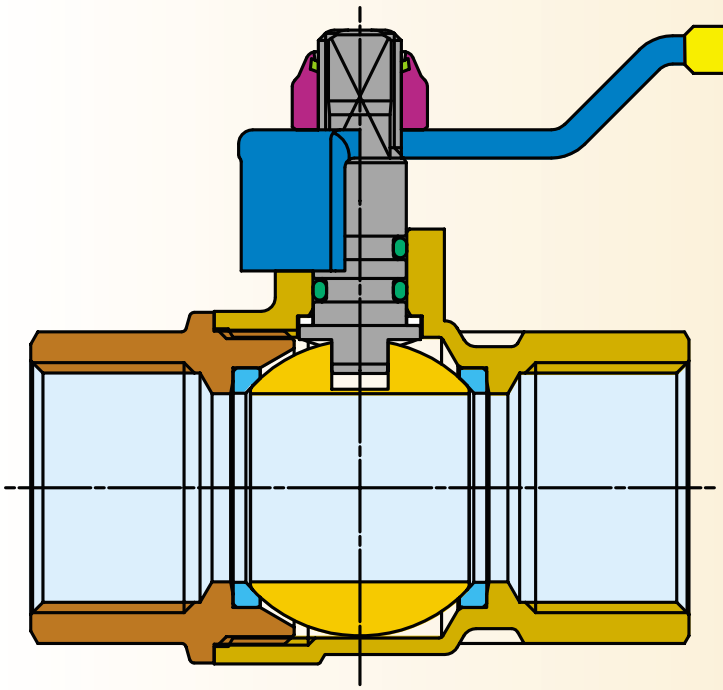
14.10.1998

DVGW

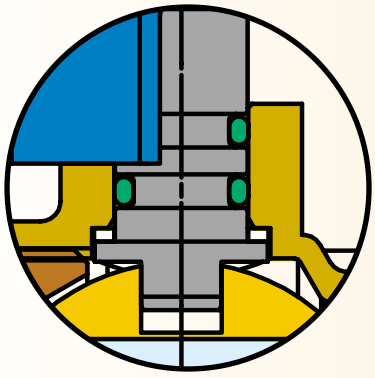
APPROVED TO EN 331

TOP • GAS

FULL BORE BALL VALVE FOR GAS



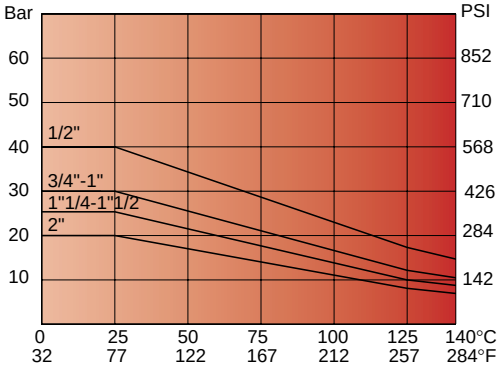
BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
THRUST WASHER	6	
O-RINGS	7	
HANDLE	8	
SELF-LOCKING NUT	9	



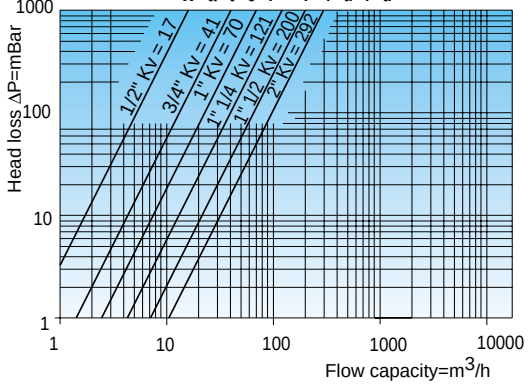
DOUBLE SEAL BLOW OUT PROOF- STEM

- The **TOP•GAS** ball valves are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.
- The **TOP•GAS** ball valves have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM
Water Fluid



INTERNATIONAL APPROVALS

- The **TOP•GAS** ball valves satisfy the specifications contained in the EN 331 standards
- The **TOP•GAS** ball valves have obtained official approval for use with gas in various countries..

FEATURES

- Standard line, full bore, long threads.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 7/1 Rp parallel standard.
- Screwed to ISO 7/1 Rc taper standard, available only upon request.

UTILISATION

- The **TOP•GAS** ball valves are suitable for all types of gas, town gas (1st family), natural gas (2nd family) L.P.G. gas (3rd family) in systems using low and medium pressure.

- The **TOP•GAS** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.

WORKING PRESSURE

- For gas max 5 MOP.
- For other uses from PN 40 (size 1/2") to PN 20 (size 2").
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- For gas -20°C +60°C.
- For other uses -20°C +140°C.
- See pressure/temperature diagram.

INSTALLATION INSTRUCTIONS

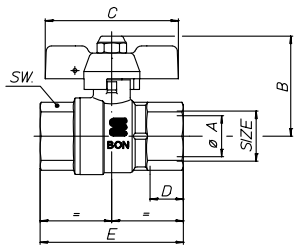
- The valves can be installed in any position: horizontal, vertical or oblique. In any case they must be visible and easily accessible. The operating handle must be free and it must be possible to rotate it easily and completely to the open and closed position. Unless something else is suggested, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter-clockwise.
- There aren't any differences in the flow direction, unless other instructions appear on the valve.
- For the seal of the threaded connections of the valve to the hoses, please refer to the standards UNI ISO 7, UNI ISO 228 or to other standards applying the particular case.
- The system must be planned and accomplished in such a way as to avoid bending or torsional stress and other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed in to the hoses with suitable means and by using its key. The torque wrench setting should guarantee the seal without deforming or damaging any components of the valve.
- After installing the valve it is necessary to verify the seal of the gaskets and of the whole system by referring to the technical standards and to the applicable laws.
- Please avoid tampering with the valve and particularly with its parts which are intended to guarantee the sealing, with the operating devices and with the on-off stops.
- Do not let the valve in such a position where it is neither completely open nor completely closed for a long time, as this could damage the gaskets and the ball, compromise the seal and prevent the system from working properly.
- If the valves, especially the big ones, are difficult to open or close after they have not been operating for a long time, please use a hose or something similar and put it on their handle, so that it works as a sort of extension and makes the operation easier.
- It is recommended to install a y-strainer between the hose where the flow comes from and the valve in order to make the latter work correctly and to maintain a good seal.
- For every further question please contact the authorized dealers or ENOLGAS BONOMI S.p.A. directly.

MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N-UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N-UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N-UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N-UNI EN 12164	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for gas
8	Handle	Steel Fe P02	Zinc-plated, yellow P.V.C. insulated
	Lever and T-handle	AL UNI5076	Yellow polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel

FULL BORE BALL VALVE FOR GAS

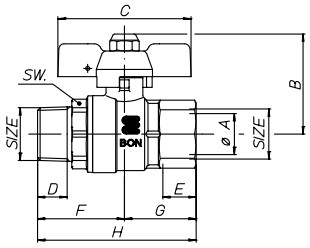
Art. S.1217 TOP•GAS



Full bore ball valve for gas with **sealeable T-handle**, female/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	39,5	49	53,5
C mm	52	65	65
D mm	15	16,3	19,1
E mm	59,5	70	83
SW mm	25	31	38
Weight gr.	176	320	500

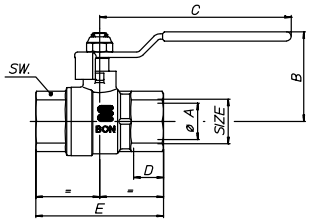
Art. S.1218 TOP•GAS



Full bore ball valve for gas with **sealeable T-handle**, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore B mm	15	20	25
C mm	39,5	49	53,5
D mm	52	65	65
E mm	13,2	14,5	16,8
F mm	15	16,3	19,1
G mm	37,25	42,5	47,5
H mm	29,75	35	41,5
SW mm	67	77,5	89
	25	31	38
Weight gr.	200	343	530

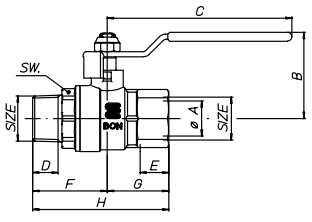
Art. S.1221 TOP•GAS



Full bore ball valve for gas with steel lever, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	49,5	53,5	66	72	86
C mm	90	105	105	140	140	170
D mm	15	16,3	19,1	21,4	21,4	25,7
E mm	59,5	70	83	98,5	108	130
SW mm	25	31	38	47	47	66
Weight gr.	204	346	533	987	1475	2456

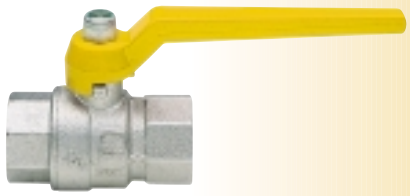
Art. S.1222 TOP•GAS

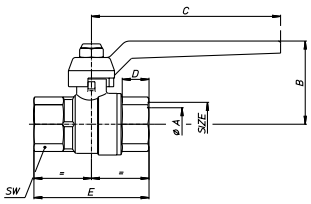


Full bore ball valve for gas with steel lever, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	49,5	53,5	66	72	86
C mm	90	105	105	140	140	170
D mm	13,2	14,5	16,8	19,1	19,1	23,4
E mm	15	16,3	19,1	21,4	21,4	25,7
F mm	37,25	42,5	47,5	53,75	59,5	71,5
G mm	29,75	35	41,5	49,25	54	65
H mm	67	77,5	89	103	113,5	136,5
SW mm	25	31	38	47	54	66
Weight gr.	223	371	564	977	1447	2477

Art. S.1224 TOP•GAS

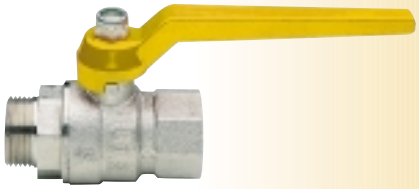


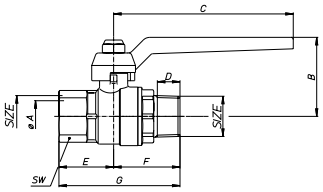


Full bore ball valve with aluminium lever, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	42	50,5	54,5	68,5	74,5	83,5
C mm	95	115	115	150	150	170
D mm	15	16,3	19,1	21,4	21,4	25,7
E mm	59,5	70	83	98,5	108	130
SW mm	25	31	38	47	54	66

Art. S.1225 TOP•GAS

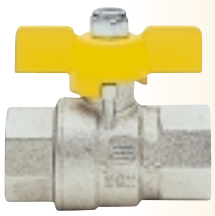


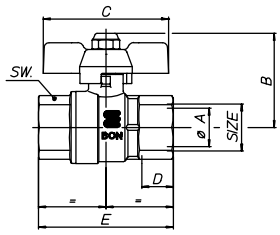


Full bore ball valve with aluminium lever, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	42	50,5	54,5	68,5	74,5	83,5
C mm	95	115	115	150	150	170
D mm	13,2	14,5	19,1	21,4	21,4	25,7
E mm	37,25	35	47,5	53,75	59,5	71,5
F mm	29,75	42,5	41,5	49,25	54	65
G mm	67	77,5	89	103	113,5	136,5
SW mm	25	31	38	47	54	66

Art. S.1227 TOP•GAS

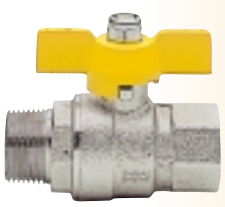


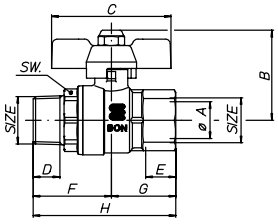


Full bore ball valve for gas with T-handle, female/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	39,5	49	53,5
C mm	52	65	65
D mm	15	16,3	19,1
E mm	59,5	70	83
SW mm	25	31	38
Weight gr.	182	312	499

Art. S.1228 TOP•GAS



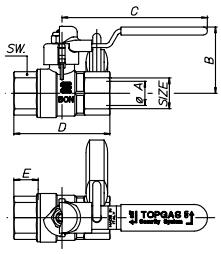


Full bore ball valve for gas with T-handle, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	39,5	49	53,5
C mm	52	65	65
D mm	13,2	14,5	16,8
E mm	15	16,3	19,1
F mm	37,25	42,5	47,5
G mm	29,75	35	41,5
H mm	67	77,5	89
SW mm	25	31	38
Weight gr.	201	337	530

FULL BORE BALL VALVE FOR GAS

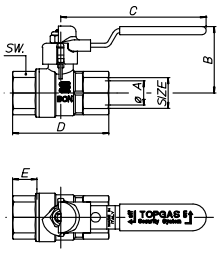
Art. S.1230 TOP•GAS



Full bore ball valve for gas, female/female, with steel **lever lockable** in closed and open position, **with padlock**, nickel-plated.

SIZE	½"
øA bore	15
B mm	41
C mm	90
D mm	59,5
E mm	15
SW mm	25
Weight gr.	305

Art. S.1231 TOP•GAS



Full bore ball valve for gas, female/female, with steel **lever lockable** in closed and open position by padlock, nickel-plated.

SIZE	½"
øA bore	15
B mm	41
C mm	90
D mm	59,5
E mm	15
SW mm	25
Weight gr.	205

REDUCED BORE BALL VALVE FOR GAS

BON • GAS

SINCERT

CERTIFICAZIONE DEI PRODOTTI
PRODUCT CERTIFICATION

ICIM

002AV/1

ENOLGAS BONOMI S.p.A.
Via Europa, 227
25062 CONCESIO (BS)

RUBINETTO A SFERA
GAS BALL COCK

BONGAS serie G032

BONGAS modello G032

70R011-0

EN 331

30/06/01

15/07/04

29/06/07

DVGW

Verbindliches Datenblatt als Prüfbescheinigung

Anlage 1 – Teil 1

Prüfbericht mit Abänderungen 03/2/97/0312/8/99
über die **Baumusterprüfung Nr. 03-0800-GN (als Ergänzungsprüfung)**
von **handbetätigten Kegelhähnen und Kegelhähnen mit geschlossenem Boden für die Gas-Hausinstallation**
nach DIN EN 331:1998-04

Auftraggeber:	Enolgas Bonomi S. p. A., I-25062 Concesio (BS), Via Europa, 227
Mitgeltender Prüfbericht:	AZ 86/0651/0312/818 vom 21.08.1986 (Baumusterprüfung)
Zweck der Prüfung:	**Verlängerung der DVGW-Registrierurkunde: DG-43124/10342**
Hersteller:	der Auftraggeber
Gerätart:	Kugelhahn in Durchgangsform mit reduziertem Durchgang für die Gasinstallation
Typbezeichnung:	BON GAS
Druckklasse:	MOP 5 (Zulässiger Betriebsdruck 5 bar)
Temperaturklasse:	-20 °C (Umgebungstemperaturbereich -20 °C bis +60 °C)
Nennweiten (Anschluss):	DN 15, 20, 25, 32, 40, 50 (Durchgang um 1 Nennweite reduziert)
Gasanschlüsse:	beidseitig Innengewinde Rp 1/2 bis Rp 2, einerseits auch Außengewinde R 1/2 bis R 2, jeweils nach DIN 2999 Teil 1
Gehäusewerkstoff:	CW 617 N, vernickelt
Werkstoff Abschlusskörper:	CW 617 N, verchromt
Werkstoff Kugeldichtung:	PTFE
Betätigungsorgan:	Handhebel oder – nur DN 15 bis 25 – Flügelgriff
Registrierungspflichtige Bauteile:	**Dichtungswerkstoff nach DIN EN 549** Typ ME 8010/70, Fa. Flutgum (NG-5112AB08)[1] * **Anaerobes Dauerdichtmittel nach DIN EN 751-1** Typ Loctite 2701, Fa. Loctite (NG-5146AR08)[1] ** **Schmierstoff nach DIN EN 377** Typ GRX3SO MF 24, Fa. FAPA (NG-5183AS05)[1] ** * O-Ringe Schalhwelle; ** Verbindung Gehäuse-Hauptteil mit Einschraubteil
Gasart:	alle Gase nach dem DVGW-Arbeitsblatt G 260
Anmerkung:	Dieser Prüfbericht gilt auch als Konformitätsbescheinigung für alle Mitgliedstaaten des Europäischen Komitees für Normung (CEN).

Die Anforderungen der obigen Norm werden erfüllt.

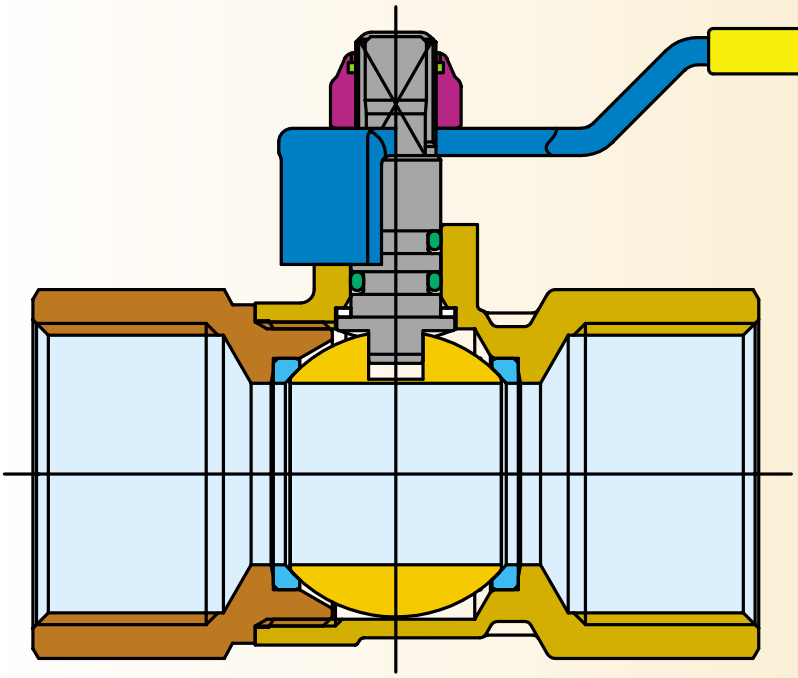
Karlsruhe, 7. Juni 2004

Prüfabteilungsleiter: Dr. Lönnig

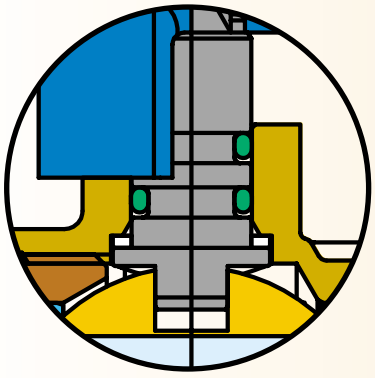
Prüfingenieur: Hansen

APPROVED TO EN 331

BON • GAS REDUCED BORE BALL VALVE FOR GAS



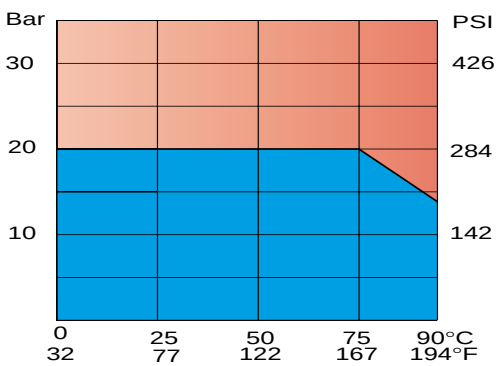
BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
THRUST WASHER	6	
O-RINGS	7	
HANDLE	8	
SELF-LOCKING NUT	9	



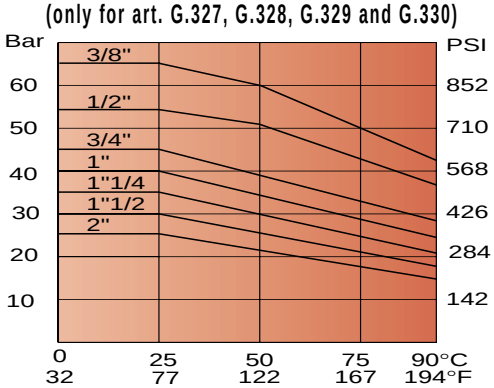
DOUBLE SEAL BLOW OUT PROOF-STEM

- The **BON•GAS** ball cocks are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.
- The **BON•GAS** ball cocks have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.

PRESSURE/TEMPERATURE DIAGRAM



PRESSURE/TEMPERATURE DIAGRAM
Water Fluid
(only for art. G.327, G.328, G.329 and G.330)



INTERNATIONAL APPROVALS

- The **BON•GAS** ball valves satisfy the specifications contained in the EN 331 standards.

FEATURES

- Standard line, full bore, long threads.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 7/1 Rp parallel standard.
- Screwed to ISO 7/1 Rc taper standard, available only upon request.

UTILISATION

- The **BON•GAS** ball valves are suitable for all types of gas, town gas (1st family), natural gas (2nd family) L.P.G. gas (3rd family) in systems using low and medium pressure.

- The **BON•GAS** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.

WORKING PRESSURE

- For gas max PN 5 = 5 MOP.
- For other uses from PN 40 (size 1/2") to PN 20 (size 2").
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- For gas -20°C +60°C.
- For other uses -20°C + 90°C.
- See pressure/temperature diagram.

INSTALLATION INSTRUCTIONS

- The valves can be installed in any position: horizontal, vertical or oblique. In any case they must be visible and easily accessible. The operating handle must be free and it must be possible to rotate it easily and completely to the open and closed position. Unless something else is suggested, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter-clockwise.
- There aren't any differences in the flow direction, unless other instructions appear on the valve.
- For the seal of the threaded connections of the valve to the hoses, please refer to the standards UNI ISO 7, UNI ISO 228 or to other standards applying the particular case.
- The system must be planned and accomplished in such a way as to avoid bending or torsional stress and other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed in to the hoses with suitable means and by using its key. The torque wrench setting should guarantee the seal without deforming or damaging any components of the valve.
- After installing the valve it is necessary to verify the seal of the gaskets and of the whole system by referring to the technical standards and to the applicable laws.
- Please avoid tampering with the valve and particularly with its parts which are intended to guarantee the sealing, with the operating devices and with the on-off stops.
- Do not let the valve in such a position where it is neither completely open nor completely closed for a long time, as this could damage the gaskets and the ball, compromise the seal and prevent the system from working properly.
- If the valves, especially the big ones, are difficult to open or close after they have not been operating for a long time, please use a hose or something similar and put it on their handle, so that it works as a sort of extension and makes the operation easier.
- It is recommended to install a y-strainer between the hose where the flow comes from and the valve in order to make the latter work correctly and to maintain a good seal.

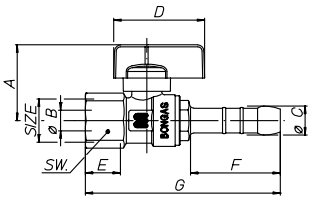
- For every further question please contact the authorized dealers or ENOLGAS BONOMI S.p.A. directly.

MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N-UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N-UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N-UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N-UNI EN 12164	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for gas
8	Handle	Steel Fe P02	Zinc-plated, yellow P.V.C. insulated
	Lever and T-handle	AL UNI5076	Yellow polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel

REDUCED BORE BALL VALVE FOR GAS

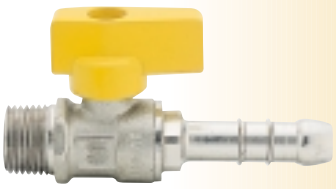
Art. G.0300 BON•GAS

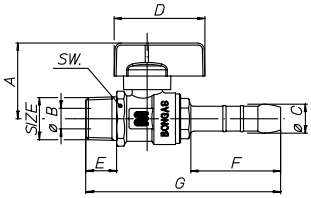


Ball cock for gas, female/hose connector 13 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	⅜"	½"
A mm	36,5	36,5
øB bore	10	10
øC mm	14	14
D mm	44	44
E mm	11,4	15
F mm	44,5	44,5
G mm	89,5	94,5
SW mm	21	25
Weight gr.	144	155

Art. G.0302 BON•GAS

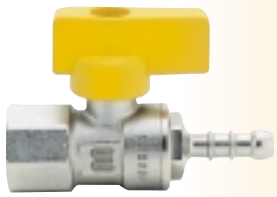


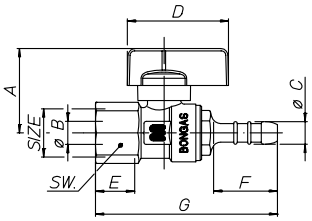


Ball cock for gas, male/hose connector 13 UNI 7141, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	⅜"	½"
A mm	36,6	36,6
øB bore	10	10
øC mm	14	14
D mm	44	44
E mm	11,9	15
F mm	44,5	44,5
G mm	91,5	94,5
SW mm	21	25
Weight gr.	143	153

Art. G.0308 BON•GAS

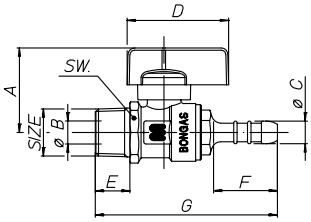




Ball cock for L.P.G., female/hose connector 8 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	⅜"	½"
A mm	36,5	36,5
øB bore	10	10
øC mm	9,8	9,8
D mm	44	44
E mm	11,4	15
F mm	29	29
G mm	74	79
SW mm	21	25
Weight gr.	129	140

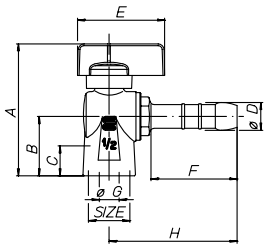
Art. G.0310 BON•GAS



Ball cock for L.P.G., male/hose connector 8 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	¼"	⅜"	½"
A mm	36,6	36,6	36,6
øB bore	8,5	10	10
øC mm	9,8	9,8	9,8
D mm	44	44	44
E mm	11,5	11,9	15
F mm	29	29	29
G mm	76	76	79
SW mm	21	21	25
Weight gr.	125	128	138

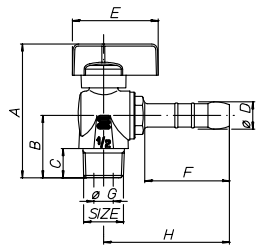
Art. G.0312 BON•GAS



Angled ball cock for gas, female/hose connector 13 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	3/8"	1/2"
A mm	61,5	66,5
B mm	25	30
C mm	11,4	15
øD mm	14	14
E mm	44	44
F mm	44,5	44,5
øG bore	10	10
H mm	64,7	64,7
Weight gr.	176	154

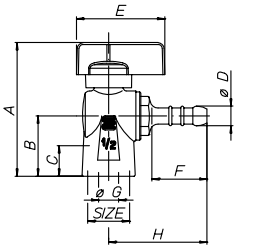
Art. G.0314 BON•GAS



Angled ball cock for gas, male/hose connector 13 UNI 7141, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	3/8"	1/2"
A mm	65,1	68,5
B mm	28,5	32
C mm	11,9	15
øD mm	14	14
E mm	44	44
F mm	44,5	44,5
øG bore	10	10
H mm	64,7	64,7
Weight gr.	156	165

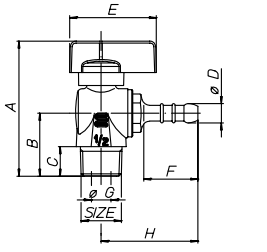
Art. G.0320 BON•GAS



Angled ball cock for L.G.P., male/hose connector 13 UNI 7141, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	3/8"	1/2"
A mm	61,5	66,5
B mm	25	30
C mm	11,4	15
øD mm	9,8	9,8
E mm	44	44
F mm	29	29
øG bore	10	10
H mm	49,2	49,2
Weight gr.	161	139

Art. G.0322 BON•GAS

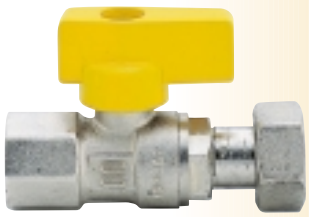


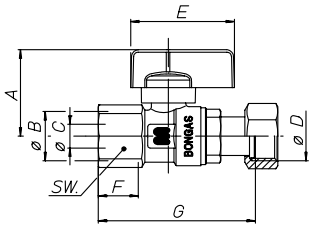
Angled ball cock for L.P.G., male/hose connector 8 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	3/8"	1/2"
A mm	65,1	68,6
B mm	28,5	32
C mm	11,9	15
øD mm	9,8	9,8
E mm	44	44
F mm	29	29
øG bore	10	10
H mm	49,2	49,2
Weight gr.	141	154

REDUCED BORE BALL VALVE FOR GAS

Art. G.0323 BON•GAS



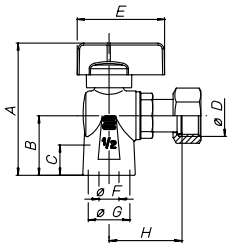


Straight ball cock for gas, female/nut, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"x½"	½"x¾"
A mm	36,5	36,5
øB	½"	½"
øC bore	10	10
øD	½"	¾"
E mm	44	44
F mm	15	15
G mm	68	69
SW mm	25	25
Weight gr.	184	205

Art. G.0324 BON•GAS

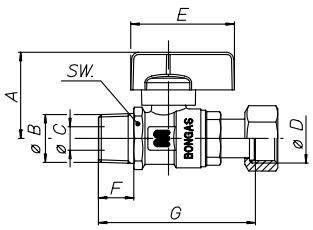
ICIM UNI EN 331



Angled ball cock for gas, female/nut, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"x½"	½"x¾"
A mm	66,5	66,5
B mm	30	30
C mm	15	15
øD	½"	¾"
E mm	44	44
øF bore	10	10
øG	½"	½"
H mm	38,2	39,2
Weight gr.	183	204

Art. G.0325 BON•GAS

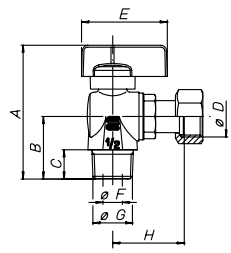


Straight ball cock for gas, male/nut, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"x½"	½"x¾"
A mm	36,6	36,6
øB	½"	½"
øC bore	10	10
øD	½"	¾"
E mm	44	44
F mm	15	15
G mm	68	69
SW mm	25	25
Weight gr.	182	208

Art. G.0326 BON•GAS

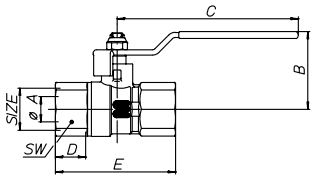
ICIM UNI EN 331



Angled ball cock for gas, male/nut, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"x½"	½"x¾"	¾"x¾"
A mm	68,6	66,6	66,9
B mm	32	32	30,3
C mm	15	15	15
øD	½"	¾"	¾"
E mm	44	44	44
øF bore	10	10	10
øG	½"	½"	¾"
H mm	38,2	39,2	39,2
Weight gr.	198	216	215

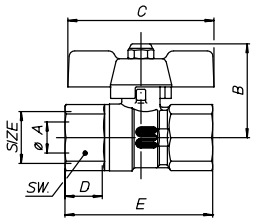
Art. G.0327 BON•GAS



Reduced bore ball valve for gas with steel lever, female/female, nickel-plated.

SIZE	⅜"	½"	¾"	1"	1"¼	1"½	2"
øA bore	10	12,5	17,5	20	25	32	40
B mm	37	39,5	43	49,5	53,5	63	72
C mm	90	90	90	105	105	120	140
D mm	11,4	15	16,3	19,1	21,4	21,4	25,7
E mm	49,5	60	72	80	89,2	99	118,8
SW mm	21	25	31	38	47	54	66
Weight gr.	151	188	306	430	601	977	1767

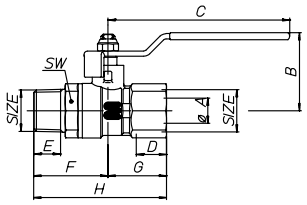
Art. G.0328 BON•GAS



Reduced bore ball valve for gas with T-handle, female/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	12,5	17,5	20
B mm	38	41,5	49
C mm	52	52	65
D mm	15	16,3	19,1
E mm	60	72	80
SW mm	25	31	38
Weight gr.	166	284	396

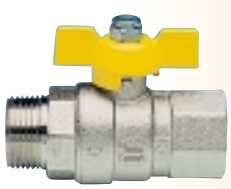
Art. G.0329 BON•GAS

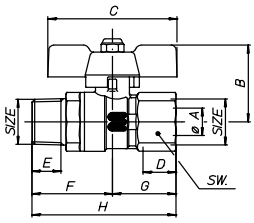


Reduced bore ball valve for gas with steel lever, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	12,5	17,5	20
B mm	39,5	43	49,5
C mm	90	90	105
D mm	15	16,3	16,8
E mm	13,2	14,5	19,1
F mm	36,75	41,5	45
G mm	29	36	40
H mm	65,75	77,5	85
SW mm	25	31	38
Weight gr.	202	329	450

Art. G.0330 BON•GAS



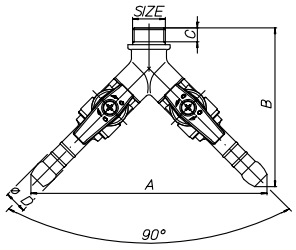


Reduced bore ball valve for gas with T-handle, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	12,5	17,5	20
B mm	38	41,5	49
C mm	52	52	65
D mm	15	16,3	19,1
E mm	13,2	14,5	16,8
F mm	36,75	41,5	45
G mm	29	36	40
H mm	65,75	77,5	85
SW mm	25	31	38
Weight gr.	180	307	416

REDUCED BORE BALL VALVE FOR GAS

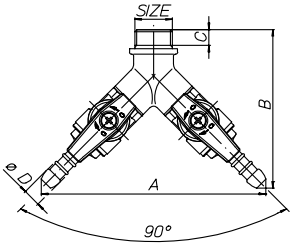
Art. G.0334 BON•GAS



Twin-bodied ball cock for gas, male/2x hose connector 13 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"
A mm	148
B mm	98
C mm	10,5
øD mm	14
Weight gr.	370

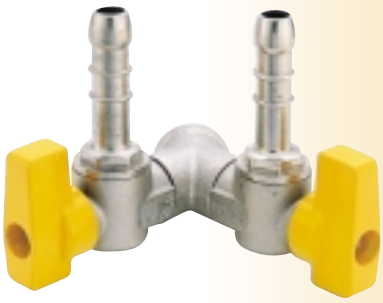
Art. G.0342 BON•GAS

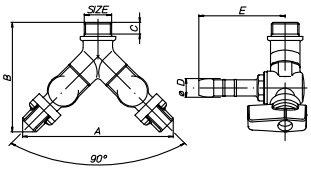


Twin-bodied ball cock L.P.G., male/2x hose connector 8 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"
A mm	123
B mm	88
C mm	10,5
øD mm	9,8
Weight gr.	340

Art. G.0346 BON•GAS

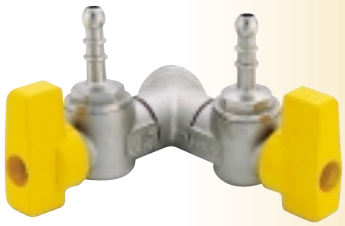


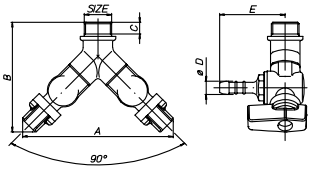


Twin-bodied angled ball cock for gas, male/2x hose connector 13 UNI 7141-72, with aluminium lever yellow plastic coated, nickel-plated.,

SIZE	½"
A mm	115
B mm	85,5
C mm	10,5
øD mm	14
E mm	64,5
Weight gr.	396

Art. G.0354 BON•GAS

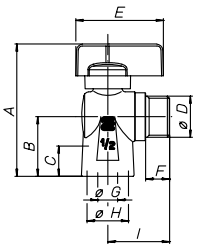




Twin-bodied angled ball cock for L.P.G., male/2x hose connector 8 UNI 7141-72, with alluminium lever yellow plastic coated, nickel-plated.

SIZE	½"
A mm	115
B mm	85,5
C mm	10,5
øD mm	9,8
E mm	49
Weight gr.	366

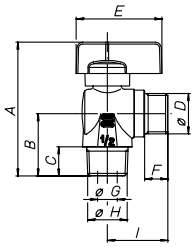
Art. G.0356 BON•GAS



Angled ball cock for gas, female/male, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"x½"
A mm	66,5
B mm	30
C mm	15
øD	½"
E mm	44
F mm	12
øG bore	10
øH	½"
I mm	31,2
Weight gr.	142

Art. G.0358 BON•GAS

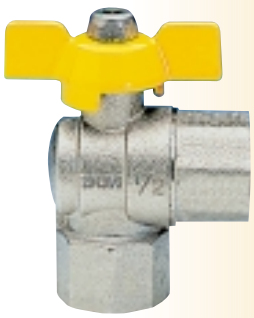


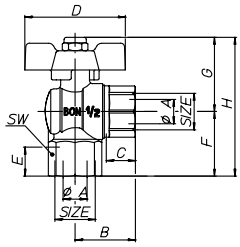
Angled ball cock for gas, male/male, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"x½"
A mm	68,6
B mm	32
C mm	15
øD	½"
E mm	44
F mm	12
øG bore	10
øH	½"
I mm	31,2
Weight gr.	157

Art. G.0360 BON•FLEX

ICIM UNI EN 331



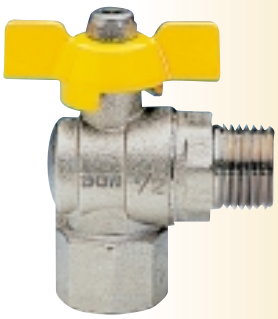


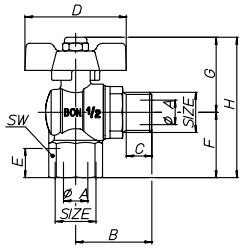
Angled ball cock for gas female/female with T-handle for female flexible hose UNI 9891, nickel-plated.

SIZE	½"x½"
øA pass.	12,5
B mm	31
C mm	15
D mm	52
E mm	15
F mm	33,5
G mm	38,5
H mm	72
SW mm	26
Peso gr.	231

Art. G.0361 BON•FLEX

ICIM UNI EN 331





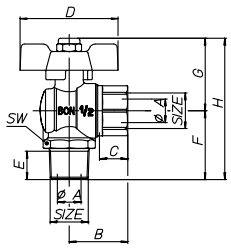
Angled ball valve for gas female/male with T-handle for flexible pipe female UNI 9891, nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	39,15
C mm	13,2
D mm	52
E mm	15
F mm	33,5
G mm	38,5
H mm	72
SW mm	26
Weight gr.	222

REDUCED BORE BALL VALVE FOR GAS

Art. G.0362 BON•FLEX

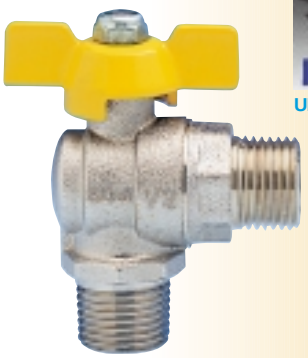
UNI EN 331



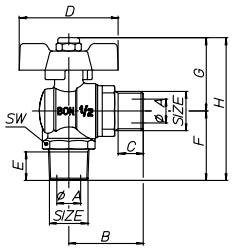
Angled ball cock for gas male/female with T-handle for female flexible hose UNI 9891, nickel-plated.

SIZE	½"x½"
øA pass.	12,5
B mm	31
C mm	15
D mm	52
E mm	15
F mm	36,5
G mm	38,5
H mm	75
SW mm	26
Weight gr.	222

Art. G.0363 BON•FLEX



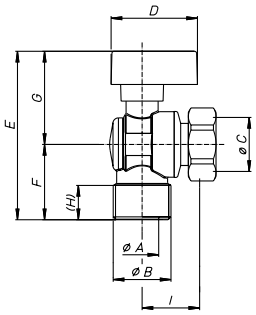
UNI EN 331



Angled ball valve for gas male/male with T-handle for flexible pipe female UNI 9891, nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	39,15
C mm	13,2
D mm	52
E mm	15
F mm	36,5
G mm	38,5
H mm	75
SW mm	26
Weight gr.	213

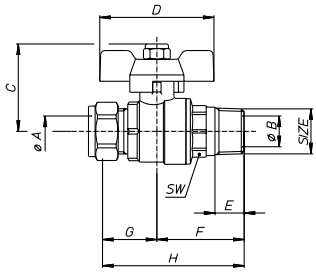
Art. G.0386 BON•GAS



Angled ball cock for gas, male/nut, with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"x½"	¾"x¾"
ø A mm	12,5	15
øB	½"	¾"
øC	½"	¾"
D mm	39	39
E mm	71	76
F mm	41	34
G mm	30	42
H mm	12	15,5
I mm	26	26

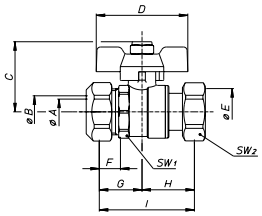
Art. R.0173 BON•GAS



Ball valve for gas, male/copper pipe connection, with metal olive, with butterfly, nickel-plated.

SIZE	½"x14	½"x18
øA mm	14,2	18,2
øB mm	15	15
C mm	40	40
D mm	52	52
E mm	13,5	13,5
F mm	39,75	39,75
G mm	24,75	24,25
H mm	64,5	64
SW mm	25	22
Weight gr.	210	232

Art. R.0253 BON•GAS

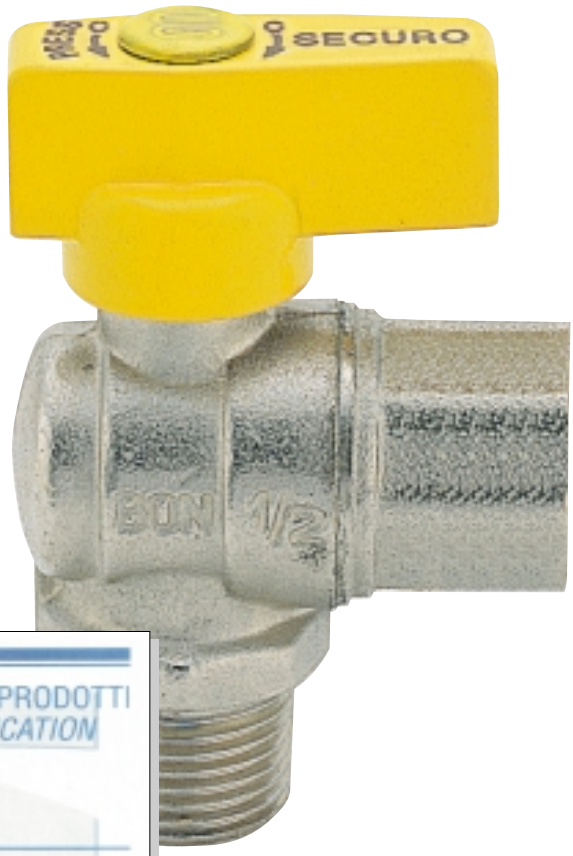


Ball valve for gas, nut/copper pipe connection, with metal olive, with T-handle, nickel-plated.

SIZE	¾"x18
øA mm	15
øB mm	18,2
C mm	40
D mm	52
øE	¾"
F mm	12
G mm	24,25
H mm	29,75
I mm	54
SW1 mm	28
SW2 mm	30

SECURO

BALL COCK FOR GAS, LEVER WITH SECURITY DEVICE PREVENTING THE ACCIDENTAL OPENING



SINCERT

CERTIFICAZIONE DEI PRODOTTI
PRODUCT CERTIFICATION

ICIM

003AV/1

ENOLGAS BONOMI S.p.A.
Via Europa, 227
25062 CONCESIO (BS)

RUBINETTO A SFERA
GAS BALL COCK

SECURO serie 0043
SECURO series 0043

70R011-0

EN 331

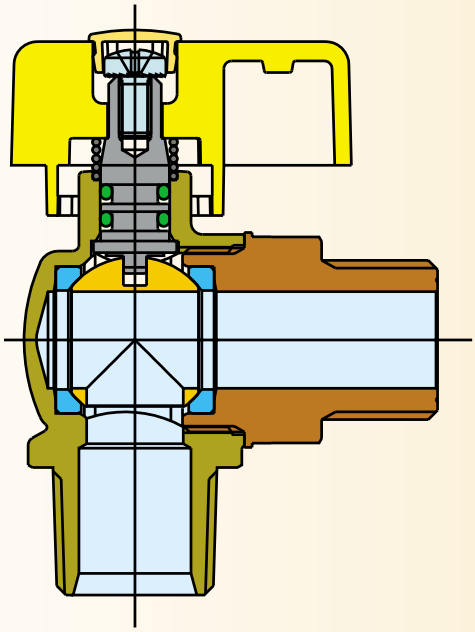
30/05/01

15/07/04

29/06/07

SECURO

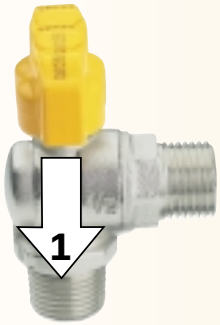
BALL COCK FOR GAS, LEVER WITH SECURITY DEVICE PREVENTING ACCIDENTAL OPENING



BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
O-RINGS	6	
SPRING	7	
HANDLE	8	
SCREW	9	
PLUG	10	

HOW THE SECURITY DEVICE WORKS

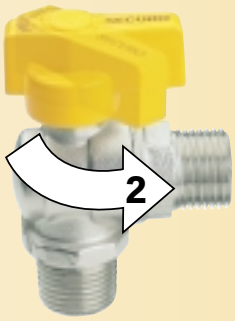
PUSH

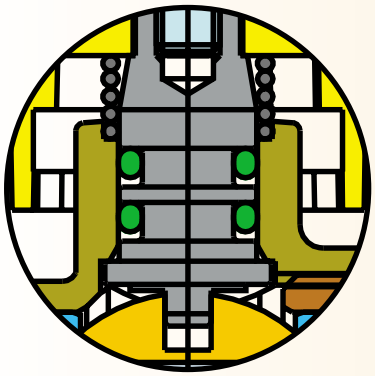


OPENING: The ball cock is opened by applying the pressure from the top to the bottom of the lever (1) and rotating the same anti-clockwise (2). This double movement prevents the unintentional and accidental openings.

CLOSING: The ball cock is normally closed clockwise. Once in the “closed” position, the security device is released automatically.

TURN





DOUBLE SEAL BLOW OUT PROOF-STEM

- The **SECURO** ball cocks are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.
- The **SECURO** ball cocks have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.

FEATURES

- The **SECURO** ball cocks meet the requirements contained in the UNI-CIG 8274, 8275, 7129 and EN 331 standard on the safe use of combustible gas.
- The opening procedure is effected through a pressure and rotation at 90° of the lever.
- The bore is 75% of the pipe.
- They are planned just on purpose to be used with gas.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials with no need for maintenance.

END CONNECTIONS

- Screwed to UNI ISO 7/1 and UNI ISO 228.

USES

- The **SECURO** ball cocks are suitable for all types of gas, town gas (1st family), natural gas (2nd family) L.P.G. gas (3rd family) in systems using low and medium pressure.
- The **SECURO** ball cocks are suitable for hot and cold water, compressed air, oils and hydrocarbons in general.
- For particular utilisations see the chemical resistance table on pages 160 and 161.

WORKING PRESSURES

- For gas max PN 5 = 5 MOP (Maximum operating pressure).
- For L.P.G. max PN 20 = 20 MOP (Maximum operating pressure).
- See pressure/temperature diagram. For other uses.

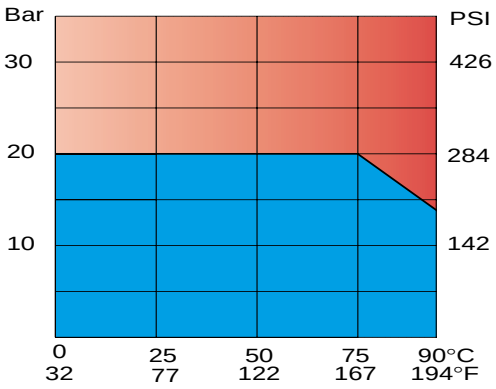
TEMPERATURE LIMITS

- For gas -20°C +60°C.
- For other uses -20°C + 90°C.

INSTALLATION INSTRUCTIONS

- The valves can be installed in any position: horizontal, vertical or oblique. In any case they must be visible and easily accessible. The operating handle must be free and it must be possible to rotate it easily and completely to the open and closed position. Unless something else is suggested, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter-clockwise.
- There aren't any differences in the flow direction, unless other instructions appear on the valve.
- For the seal of the threaded connections of the valve to the hoses, please refer to the standards UNI ISO 7, UNI ISO 228 or to other standards applying the particular case.
- The system must be planned and accomplished in such a way as to avoid bending or torsional stress and other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed in to the hoses with suitable means and by using its key. The torque wrench setting should guarantee the seal without deforming or damaging any components of the valve.
- After installing the valve it is necessary to verify the seal of the gaskets and of the whole system by referring to the technical standards and to the applicable laws.
- Please avoid tampering with the valve and particularly with its parts which are intended to guarantee the sealing, with the operating devices and with the on-off stops.
- Do not let the valve in such a position where it is neither completely open nor completely closed for a long time, as this could damage the gaskets and the ball, compromise the seal and prevent the system from working properly.
- It is recommended to install a y-strainer between the hose where the flow comes from and the valve in order to make the latter work correctly and to maintain a good seal.
- For every further question please contact the authorized dealers or ENOLGAS BONOMI S.p.A. directly.

PRESSURE/TEMPERATURE DIAGRAM

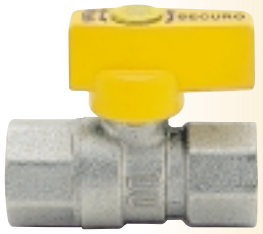


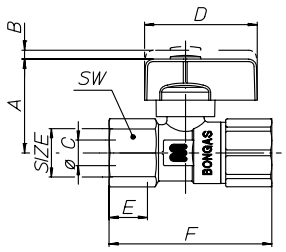
MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	OT 58 UNI5705 CW 614 N	Nickel-plated forged brass
2	End adapter	OT 58 UNI5705 CW 614 N	Nickel-plated forged brass
3	Ball	OT 58 UNI5705 CW 614 N	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	OT 58 UNI5705 CW 614 N	Machined brass bar, nichel-plated
6	O-Rings	Elastomer	Suitable for gas
7	Spring	Stainless Steel AISI 302	Normalized
8	Handle	Alluminium	Yellow coated
9	Screw	Steel C8	Zinc-plated
10	Plug	Resin Moplen	Yellow

BALL COCK FOR GAS, LEVER WITH SECURITY DEVICE PREVENTING ACCIDENTAL OPENING

Art. G.0420 SECURO

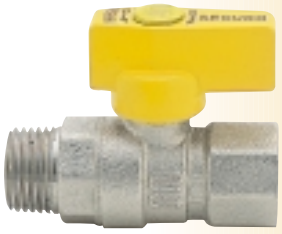


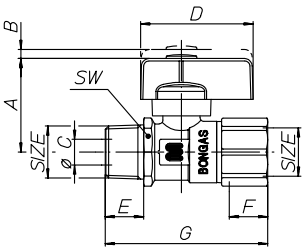


Ball cock for gas, lever with security device preventing the accidental openings, female/female, nickel-plated.

SIZE	½"
A mm	36,5
B mm	3,5
øC bore	10
D mm	44
E mm	15,2
F mm	63,5
SW mm	25
Weight gr.	172

Art. G.0421 SECURO

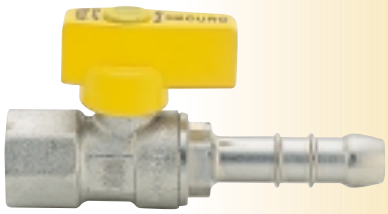


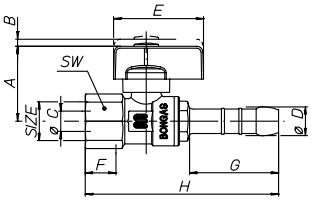


Ball cock for gas, lever with security device preventing the accidental openings, male/female, nickel-plated.

SIZE	½"
A mm	36,5
B mm	3,5
øC bore	10
D mm	44
E mm	12,7
F mm	15,2
G mm	63,5
SW mm	25
Weight gr.	180

Art. G.0422 SECURO

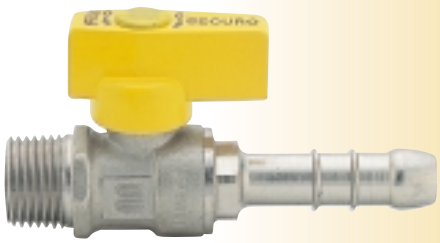


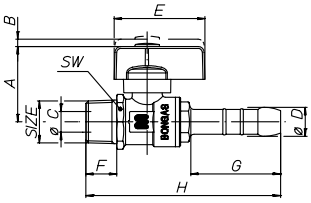


Ball cock for gas, lever with security device preventing the accidental openings, female/hose connector 13 UNI 7141-72, nickel-plated.

SIZE	½"
A mm	36,5
B mm	3,5
øC bore	10
øD mm	14
E mm	44
F mm	15,2
G mm	44,5
H mm	94,5
SW mm	25
Weight gr.	176

Art. G.0423 SECURO

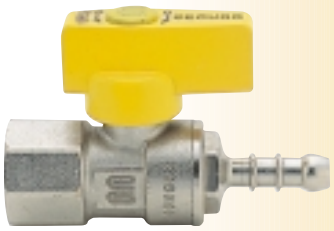


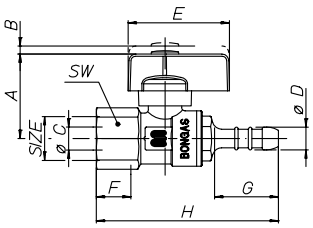


Ball cock for gas, lever with security device preventing the accidental openings, male/hose connector 13 UNI 7141, nickel-plated.

SIZE	½"
A mm	36,5
B mm	3,5
øC bore	10
øD mm	14
E mm	44
F mm	15,2
G mm	44,5
H mm	94,5
SW mm	25
Weight gr.	170

Art. G.0424 SECURO

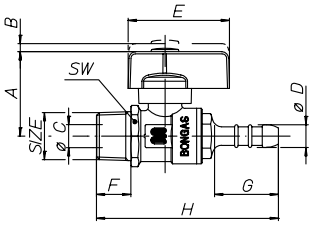




Ball cock for L.P.G., lever with security device preventing the accidental openings, female/hose connector 8 UNI 7141-72, nickel-plated.

SIZE	½"
A mm	36,5
B mm	3,5
øC bore	10
øD mm	9,8
E mm	44
F mm	15,2
G mm	29
H mm	80,5
SW mm	25
Weight gr.	164

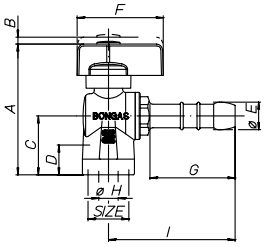
Art. G.0425 SECURO



Ball cock for L.P.G., lever with security device preventing the accidental openings, male/hose connector 8 UNI 7141-72, nickel-plated.

SIZE	½"
A mm	36,5
B mm	3,5
øC bore	10
øD mm	9,8
E mm	44
F mm	15,2
G mm	29
H mm	80,5
SW mm	25
Weight gr.	164

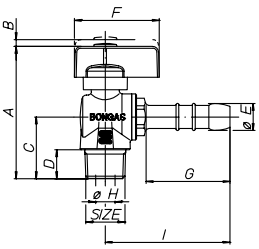
Art. G.0426 SECURO



Angled ball cock for gas, lever with security device preventing the accidental openings, female/hose connector 13 UNI 7141-72, nickel-plated.

SIZE	½"
A mm	66,5
B mm	3,5
C mm	30
D mm	15,2
øE mm	14
F mm	44
G mm	44,5
øH bore	10
I mm	64,7
Weight gr.	186

Art. G.0427 SECURO

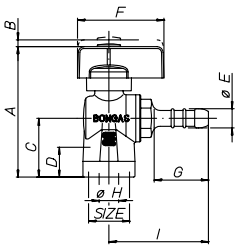


Angled ball cock for gas, lever with security device preventing the accidental openings, male/hose connector 13 UNI 7141, nickel-plated.

SIZE	½"
A mm	68,5
B mm	3,5
C mm	32
D mm	12,7
øE mm	14
F mm	44
G mm	44,5
øH bore	10
I mm	64,7
Weight gr.	184

BALL COCK FOR GAS, LEVER WITH SECURITY DEVICE PREVENTING ACCIDENTAL OPENING

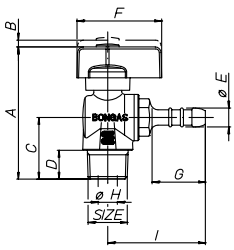
Art. G.0428 SECURO



Angled ball cock for L.P.G., lever with security device preventing the accidental openings, female/hose connector 13 UNI 7141, nickel-plated.

SIZE	½"
A mm	66,5
B mm	3,5
C mm	30
D mm	15,2
øE mm	8,9
F mm	44
G mm	29
øH bore	10
l mm	50,7
Weight gr.	139

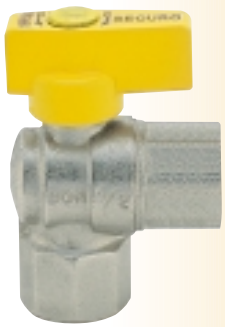
Art. G.0429 SECURO

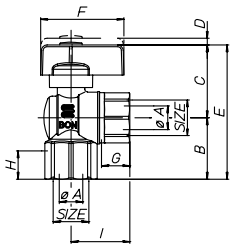


Angled ball cock for L.P.G., lever with security device preventing the accidental openings, male/hose connector 8 UNI 7141-72, nickel-plated.

SIZE	½"
A mm	68,5
B mm	3,5
C mm	32
D mm	12,7
øE mm	9,8
F mm	44
G mm	29
øH bore	10
l mm	50,7
Weight gr.	172

Art. G.0430 SECURO

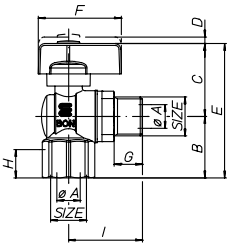




Angled ball cock for gas female/female, lever with security device preventing the accidental openings, for female flexible hose UNI 9891, nickel-plated.

SIZE	½"x ½"
øA bore	12,5
B mm	32,5
C mm	38,5
D mm	3,5
E mm	71
F mm	44
G mm	15
H mm	15,2
l mm	31
Weight gr.	220

Art. G.0431 SECURO

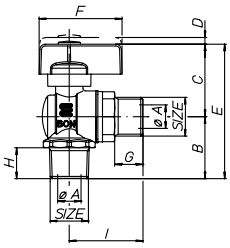


Angled ball cock for gas female/male, lever with security device preventings the accidental opening, flexible hose female UNI 9891, nickel-plated.

SIZE	½"x ½"
øA bore	12,5
B mm	32,5
C mm	38,5
D mm	3,5
E mm	71
F mm	44
G mm	13,2
H mm	15,2
l mm	39,2
Weight gr.	210

Art. G.0432 SECURO

UNI EN 331

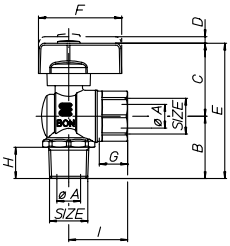


Angled ball cock for gas male/male, lever with security device preventing the accidental openings, flexible hose female UNI 9891, nickel-plated.

SIZE	½"x ½"
øA bore	12,5
B mm	33
C mm	38,5
D mm	3,5
E mm	71,5
F mm	44
G mm	13,2
H mm	14,7
I mm	39,2
Weight gr.	200

Art. G.0433 SECURO

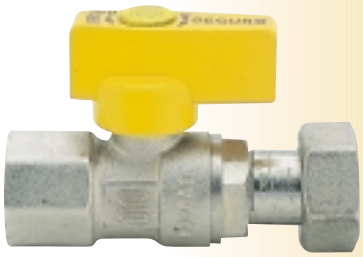
UNI EN 331

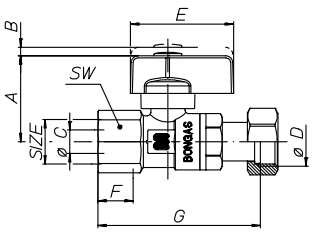


Angled ball cock for gas male/female, lever with security device preventing the accidental openings, for female flexible hose UNI 9891, nickel-plated.

SIZE	½"x ½"
øA bore	12,5
B mm	33
C mm	38,5
D mm	3,5
E mm	71,5
F mm	44
G mm	15
H mm	14,7
I mm	31
Weight gr.	210

Art. G.0434 SECURO



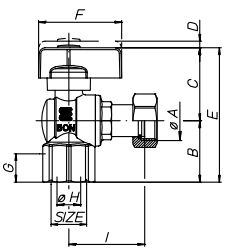


Straight ball cock for gas, lever with security device preventing the accidental openings, female/nut, nickel-plated.

SIZE	½"x ½"	½"x ¾"
A mm	36,5	36,5
B mm	3,5	3,5
øC bore	10	10
øD	½"	¾"
E mm	44	44
F mm	15,2	15,2
G mm	69,2	70,2
SW mm	25	25
Weight gr.	198	210

Art. G.0435 SECURO

UNI EN 331

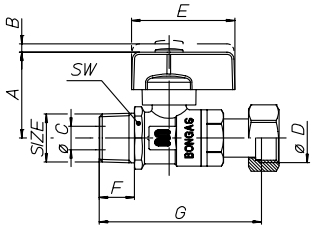


Angled ball cock for gas, lever with security device preventing the accidental openings, female/nut, nickel-plated.

SIZE	½"x ½"	½"x ¾"
øA	½"	¾"
B mm	32,5	32,5
C mm	38,5	38,5
D mm	3,5	3,5
E mm	71	71
F mm	44	44
G mm	15,2	15,2
H bore	12,5	12,5
I mm	40,2	40,7
Weight gr.	218	234

BALL COCK FOR GAS, LEVER WITH SECURITY DEVICE PREVENTING ACCIDENTAL OPENING

Art. G.0436 SECURO

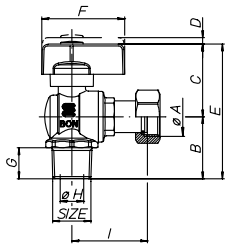


Straight ball cock for gas, lever with security device preventing the accidental openings, male/nut, nickel-plated.

SIZE	½"x½"	½"x¾"
A mm	36,5	36,5
B mm	3,5	3,5
øC bore	10	10
øD	½"	¾"
E mm	44	44
F mm	12,7	12,7
G mm	69,2	70,2
SW mm	25	25
Weight gr.	192	204

Art. G.0437 SECURO

ICIM
UNI EN 331



Angled ball cock for gas, lever with security device preventing the accidental openings, male/nut, nickel-plated.

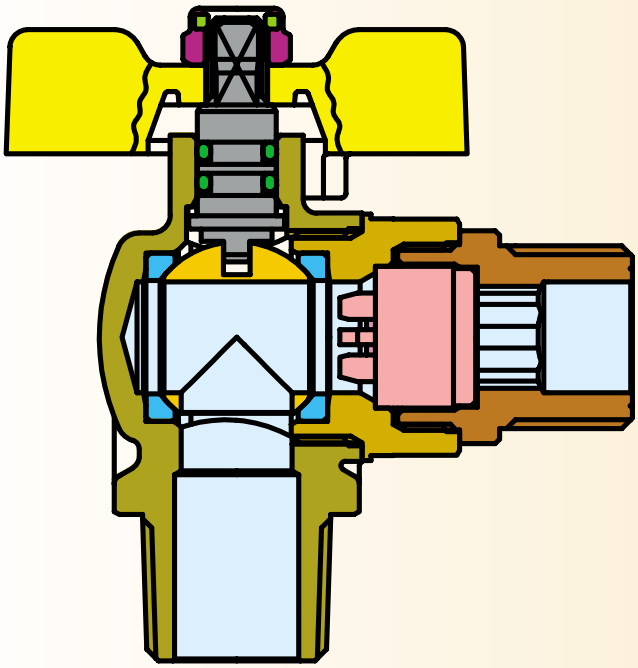
SIZE	½"x½"	½"x¾"
øA	½"	¾"
B mm	33	33
C mm	38,5	38,5
D mm	3,5	3,5
E mm	71,5	71,5
F mm	44	44
G mm	14,7	14,7
H bore	12,5	12,5
I mm	40,2	40,7
Weight gr.	226	219

GASTOP +

BALL COCK FOR GAS WITH “SAFETY + PLUS SYSTEM INSIDE”

GASTOP +

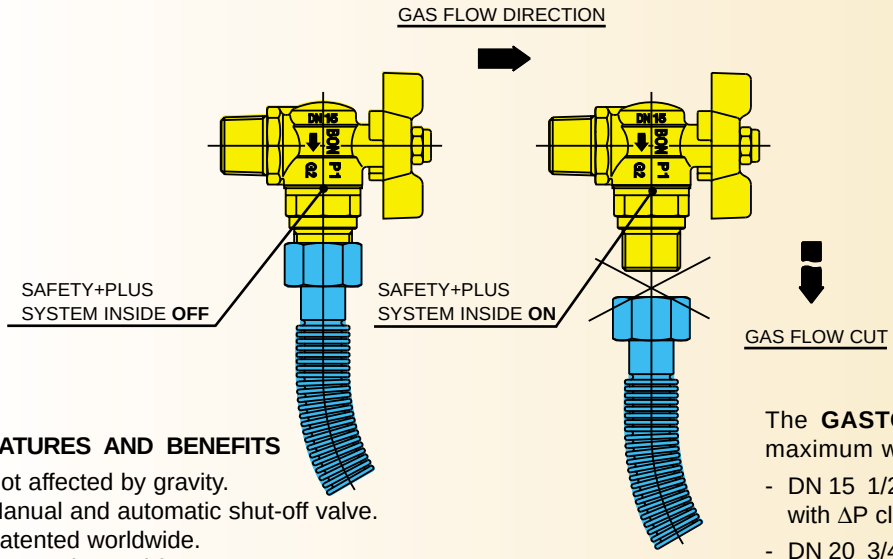
BALL COCK FOR GAS WITH "SAFETY + PLUS SYSTEM INSIDE"



BODY	1	
END ADAPTER	2	
NIPPLE	3	
"SAFETY + PLUS SYSTEM INSIDE"	4	
BALL	5	
BALL GASKETS	6	
STEM	7	
THRUST WASHER	8	
O-RINGS	9	
T-HANDLE	10	
SELF-LOCKING NUT	11	

HOW THE SAFETY + PLUS SYSTEM INSIDE WORKS

GASTOP+: stainless steel flexible hose installation example



ANTI-EARTHQUAKE FUCTION

The "Safety + Plus System Inside" (**O**verflow **S**ystem) interrumpts the gas flow in case of accidental removal , for example, of the flexible hose from the installation or in the event of serious leaking due to failure, deterioration of the hoses or exceptional facts like ***earthquake or any atmospherical event***.

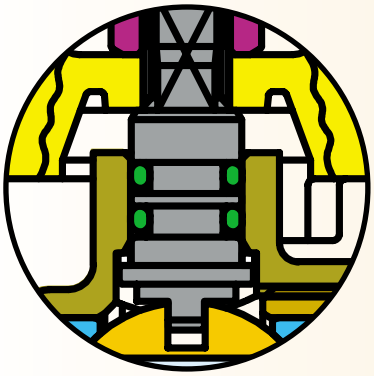
The safety system is magnetic and works only if the capacity and pressure values correspond to those herewith indicated.

FEATURES AND BENEFITS

- Not affected by gravity.
- Manual and automatic shut-off valve.
- Patented worldwide.
- Magnet is good for 400 years.
- Inexpensive.
- Automatically resets, cannot be manually overrided.
- No memory loss.
- 10 minutes or less to fit.

The **GASTOP+** ball valves are dimensioned for a maximum working capacity of:

- DN 15 1/2" : 1,8 m^3/h (natural gas); 1,1 m^3/h (L.P.G.) with ΔP closing at minimum = 5 mbar
- DN 20 3/4" : 3,7 m^3/h (natural gas); 1,8 m^3/h (L.P.G.) with ΔP closing at minimum = 10 mbar



DOUBLE SEAL BLOW OUT PROOF-STEM

- The **GASTOP+** ball cocks are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.
- The **GASTOP+** ball cocks have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.

FEATURES

- **GASTOP+** is made by a manual shut-off ball valve for gas, manufactured according to the EN 331 standard and by a “Safety+Plus System Inside” (**O**verflow **S**ystem) with automatic resetting. The residual leackage that occur when the device is in off position permits the automatic resetting.
- The opening procedure is effected through a 90°rotation of the lever.
- **GASTOP+** is planned just on purpose to be used with gas and it assures a perfect seal at low pressure.
- Wear resistant, solid and long lasting materials with no need for maintenance.

END CONNECTIONS

- Screwed to UNI ISO 7/1 and UNI ISO 228.

USES AND WORKING PRESSURE

- The **GASTOP+** ball valves are used in the domestic applications with town gas (1st family), natural gas (2nd family) and L.P.G. (3rd family) like rubber-holders, stainless steel flexible hose, for all applications such as water heaters, oven, etc. and main shut-off ball valves, in the sizes 1/2” and 3/4” with maximum working pressure of 50 mbar.

TEMPERATURE LIMITS

- -20°C +60°C.

INSTALLATION INSTRUCTIONS

- The **GASTOP+** ball valves have to be assembled in properly built installation, to the current standards of the countries in which the installation takes place.
- The arrow stamped on the body indicates the flow direction of the gas. So as to assure the correct functioning of the safety system, it is necessary to respect the installation’s instructions.
- The **GASTOP+** ball valves have to be assembled in installations dimensioned for a maximum working capacity of:
  -1/2” : 1,8 m^3/h (natural gas); 1,1 m^3/h (L.P.G.) with ΔP closing at minimum = 5 mbar.
  -3/4” : 3,7 m^3/h (natural gas); 1,8 m^3/h (L.P.G.) with ΔP closing at minimum = 10 mbar.

WARNINGS

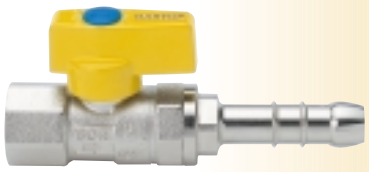
- The correct functioning of the **GASTOP+** cannot be guaranteed in the following cases:
- Incorrect installation/assembling.
- No respect of the working conditions.
- Presence of impurity/dampness in gas.
- In the event of fire.

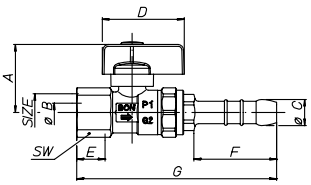
MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N-UNI EN 12165 (Brass)	Nickel-plated forged brass
2	End adapter	CW 617 N-UNI EN 12165 (Brass)	Nickel-plated forged brass
3	Nipple	CW 617 N-UNI EN 12165 (Brass)	Nickel-plated forged brass
4	“Safety + Plus System Inside”	Miscellaneous	Various
5	Ball	CW 614 N-UNI EN 12164 (Brass)	Machined brass bar, chrome-plated
6	Ball gaskets	P.T.F.E.	Pure Teflon
7	Stem	CW 614 N-UNI EN 12164 (Brass)	Machined brass bar, nickhel-plated
8	Thrust washer	P.T.F.E.	Pure Teflon
9	O-Rings	Elastomer	Suitable for gas
10	T-handle	AL UNI5076	Yellow polyurethan-coated aluminium
11	Self-locking nut	8G Steel	Zinc-plated steel

BALL COCK FOR GAS WITH "SAFETY + PLUS SYSTEM INSIDE"

Art. G.0450 GASTOP+

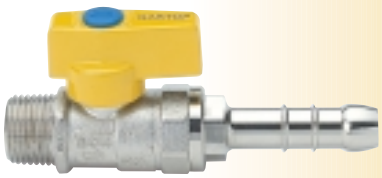


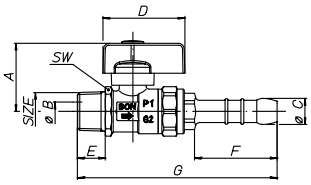


Ball cock for gas, female/hose connector 13 UNI 7141-72, with "Safety+Plus System Inside" (**O**verflow **S**ystem), with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"
A mm	36,5
øB bore	10
øC mm	14
D mm	44
E mm	15,2
F mm	44,5
G mm	107,5
SW	25
Weight gr.	194

Art. G.0455 GASTOP+

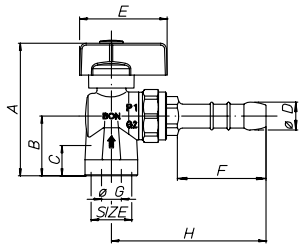




Ball cock for gas, male/hose connector 13 UNI 7141, with "Safety+Plus System Inside" (**O**verflow **S**ystem), with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"
A mm	36,5
øB bore	10
øC mm	14
D mm	44
E mm	15
F mm	44,5
G mm	107,5
SW	25
Weight gr.	190

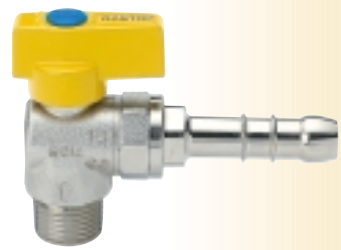
Art. G.0460 GASTOP+

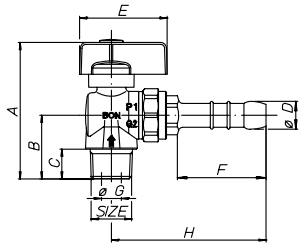


Angled ball cock for gas, female/hose connector 13 UNI 7141-72, with "Safety+Plus System Inside" (**O**verflow **S**ystem), with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"
A mm	66,5
B mm	30
C mm	15,2
øD mm	14
E mm	44
F mm	44,5
øG bore	10
H mm	77,5
SW	10
Weight gr.	214

Art. G.0465 GASTOP+

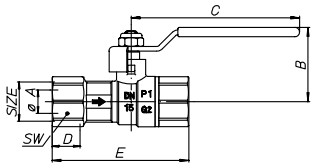




Angled ball cock for gas, male/hose connector 13 UNI 7141, with "Safety+Plus System Inside" (**O**verflow **S**ystem), with aluminium lever yellow plastic coated, nickel-plated.

SIZE	½"
A mm	68,5
B mm	32
C mm	15
øD mm	14
E mm	44
F mm	44,5
øG bore	10
H mm	77,5
SW	10
Weight gr.	212

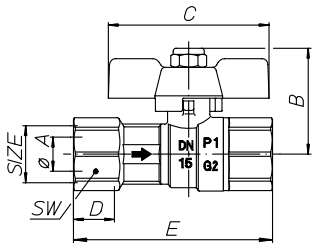
Art. G.0470 GASTOP+



Reduced bore ball valve for gas with steel handle, female/female, with "Safety+Plus System Inside" (**O**verflow **S**ystem), nickel-plated.

SIZE	½"	¾"
øA bore	12,5	17,5
B mm	39,5	43
C mm	90	90
D mm	15	16,3
E mm	73	85
SW	25	31
Weight gr.	194	312

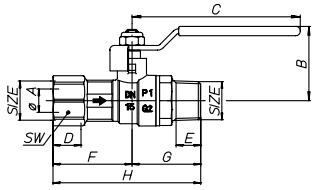
Art. G.0471 GASTOP+



Reduced bore ball valve for gas with T-handle, female/female, with "Safety+Plus System Inside" (**O**verflow **S**ystem), nickel-plated.

SIZE	½"	¾"
øA bore	12,5	17,5
B mm	38	41
C mm	52	52
D mm	15	16,3
E mm	73	85
SW	25	31
Weight gr.	174	292

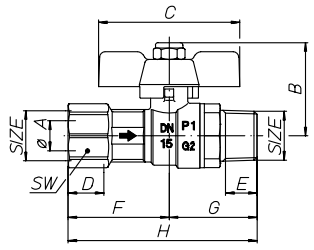
Art. G.0475 GASTOP+



Reduced bore ball valve for gas with steel handle, male/female, with "Safety+Plus System Inside" (**O**verflow **S**ystem), nickel-plated.

SIZE	½"	¾"
øA bore	12,5	17,5
B mm	39,5	43
C mm	90	90
D mm	15	16,3
E mm	13,2	14,5
F mm	42,25	49
G mm	30,75	41,5
H mm	79	90,5
SW	25	31
Weight gr.	207	334

Art. G.0476 GASTOP+

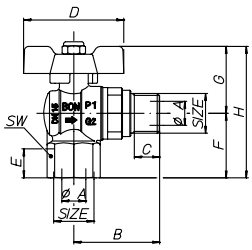


Reduced bore ball valve for gas with T-handle, male/female, with "Safety+Plus System Inside" (**O**verflow **S**ystem), nickel-plated.

SIZE	½"	¾"
øA bore	12,5	17,5
B mm	38	41
C mm	52	52
D mm	15	16,3
E mm	13,2	14,5
F mm	42,25	49
G mm	30,75	41,5
H mm	79	90,5
SW	25	31
Weight gr.	185	312

BALL COCK FOR GAS WITH "SAFETY + PLUS SYSTEM INSIDE"

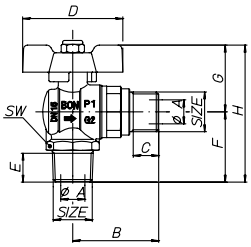
Art. G.0480 GASTOP+



Angled ball valve for gas female/male with T-handle for flexible pipe female UNI 9891, with "Safety+Plus System Inside" (**O**verflow **S**ystem), nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	48,7
C mm	13,2
D mm	52
E mm	15
F mm	33,5
G mm	34,5
H mm	48,7
SW	26
Weight gr.	222

Art. G.0485 GASTOP+



Angled ball valve for gas male/male with T-handle for flexible pipe female UNI 9891, with "Safety+Plus System inside" (**O**verflow **S**ystem), nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	44,5
C mm	13,2
D mm	52
E mm	15
F mm	36,5
G mm	34,5
H mm	71
SW	26
Weight gr.	218

BON • TAS

BALL VALVE FOR GAS WITH THERMIC SECURITY DEVICE

DVGW

DVGW Zertifizierungsstelle

Zertifikat über ein DVGW Prüfzeichen

certificate for a DVGW test mark

DG-4340AU0485

Anwendungsbereich *field of application*	Produkte der Gasversorgung *products of gas supply*
Produktart *product category*	Gasarmaturen: Thermisch Auslösende Absperreinrichtung (TAE) (4340)
Produktbezeichnung *product description*	Thermisch auslösende Absperreinrichtung (TAE) in Durchgangsform mit metallisch dichtendem Absperrkörper, zum Schutz unmittelbar nachgeschalteter Objekte in der Gasinstallation
Modell *model*	TAS 22...
Bestimmungsgebäude *countries of destination*	DE
Prüfberichte *test reports*	BNP: 03/745/4343/SH vom 17.09.2002 (SSI)
Prüfgrundlagen *basis of type examination*	DIN 3586 [Entwurf 01.06.1999]
Ablaufdatum / AZ *date of expiry / file no.*	30.12.2005 / 02-0705-GHV

DVGW Deutsche Vereinigung des Gas- und Wasserfaches e.V. Technisch-wissenschaftliche Vereine
Zertifizierungsstelle
Josef-Wirmer-Straße 1-3
D-53123 Bonn
Telefon: +49 0228/91 88 607
Telefax: +49 0228/91 88 690

DVGW

Vorläufiges Datenblatt als Prüfbescheinigung

Anlage 1 – Teil 3 Seite 1/2

Prüfbericht mit Aktenzeichen 03/24743122816
über die **Baumusterprüfung Nr. 03-8680-GN (als Ergänzungsprüfung)**
von **handbetätigten Kugelhähnen und Kugelhähnen mit geschlossenem Boden für die Gas-Hausinstallation**
nach DIN EN 331: 1999-04

Auftraggeber: Emilgas Bonomi S. p. A., I-25082 Corzoise (BS), Via Europa, 227

Mitgeltende Prüfberichte: AZ 08/085/4312/B16 vom 21.08.1998 (Baumusterprüfung BON GAS)
AZ 08/085/4341/B16 vom 21.08.1998 (Ergänzungsprüfung BON TAS)

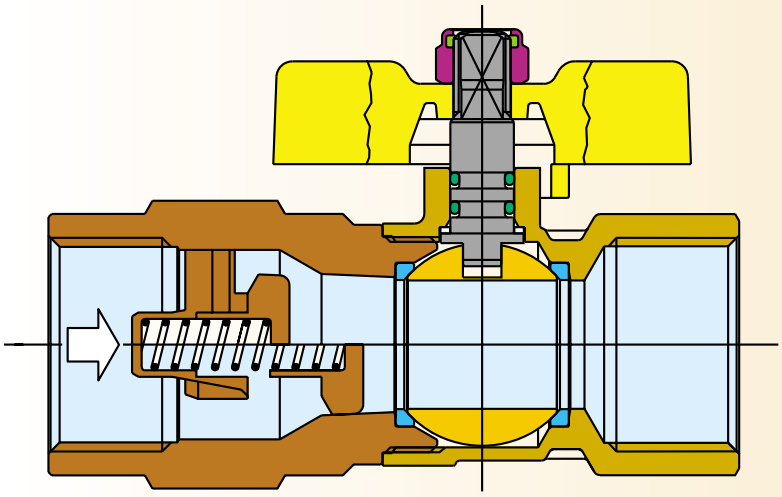
Zweck der Prüfung: **Verlängerung der DVGW-Registriernummer DG-4341AT0345**

Hersteller:	der Auftraggeber
Gerätart:	Kugelhahn in Durchgangsform mit reduziertem Durchgang, eingangsseitig mit angebauter thermisch auslösender Absperreinrichtung (TAE), einsetzbar als Hauptabsperreinrichtung im Sinne der TRGI '86/96
Typbezeichnung:	BON TAS
Druckklasse:	MOP 5 (Zulässiger Betriebsdruck 5 bar)
Temperaturklasse:	-20 °C (Umgebungstemperaturbereich -20 °C bis +60 °C)
Thermische Belastbarkeit:	650 °C
Nennweiten (Anschluss):	DN 15, 20, 25, 32, 40, 50 (Durchgang um 1 Nennweite reduziert)
Gasanschlüsse:	Jeweils beidseitig Innengewinde Rp 1/2 bis Rp 2, eingangsseitig auch Außengewinde R 1/2 bis R 2, jeweils nach DIN 2999 Teil 1
Gehäusewerkstoff:	Kugelhahn: – CW 617 N, vernickelt TAE: – Automatenstahl 9S Mn Pb 36, vernickelt (bis DN 25) bzw. Stahl St 52-3 (ab DN 32)
Werkstoff Anschlusskörper:	Kugelhahn: – CW 617 N, vernickelt TAE: – Automatenstahl 9S Mn Pb 36, vernickelt oder verkupfert (bis DN 25) bzw. Stahl St 52-3 (ab DN 32)
Werkstoff Kugeldichtung:	PTFE
Betätigungsorgan:	Handhebel oder – nur DN 15 bis 25 – Flügelgriff
Arbeitselement TAE:	eutektisches Schmelzlot, Schmelzpunkt 95 °C
Ansprechtemperatur TAE:	100 °C (+0, -5) K

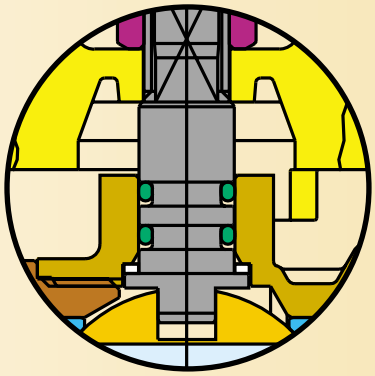
APPROVED TO EN 331

BON • TAS

BALL VALVE FOR GAS WITH THERMIC SECURITY DEVICE



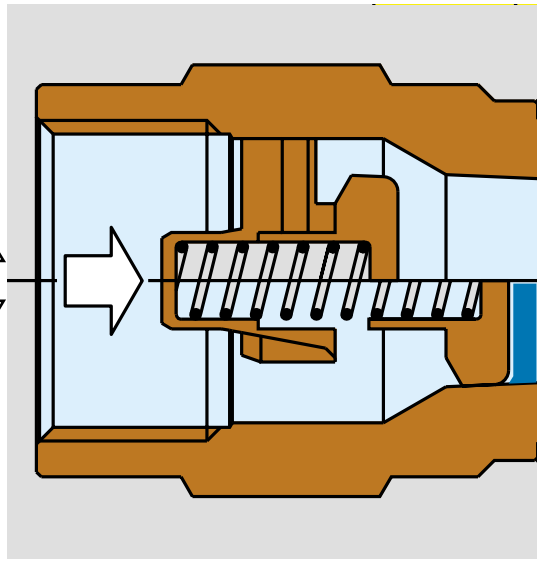
BODY	1		THRUST WASHER	6	
TAS DEVICE	2		O-RINGS	7	
BALL	3		T-HANDLE	8	
BALL GASKETS	4		SELF LOCKING NUT	9	
STEM	5				



DOUBLE SEAL BLOW-OUT PROOF STEM

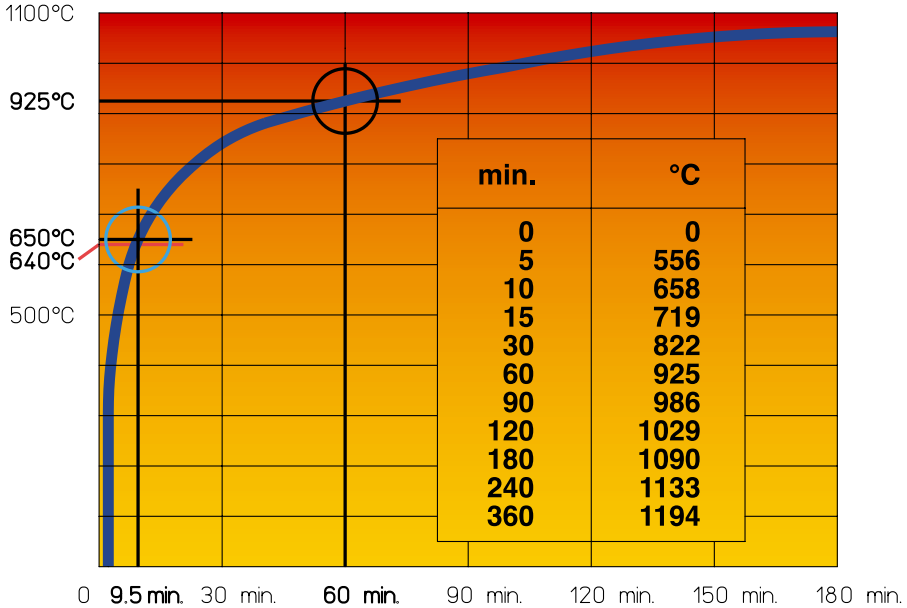
- The **BON•TAS** ball valves for gas are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.
- The **BON•TAS** ball valves have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.

TAS THERMIC SAFETY DEVICE



The **TAS** thermic security device works in case of fire, as soon as temperature reaches 100°C.

TIME/TEMPERATURE DIAGRAM



min.	°C
0	0
5	556
10	658
15	719
30	822
60	925
90	986
120	1029
180	1090
240	1133
360	1194

- LIGHT UP TEMPERATURE OF GAS: 640°C APPROX.
- STRENGHTPOINT OF THE BON•TAS: 925°C

FEATURES

- The valve **BON•TAS** is the combination of the ball valve **BON•GAS** and the thermic security device **TAS**.
- Rapid on/off 90° turn operation.
- The gas flow capacity complies with the EN331.
- Perfect seal at low and high pressure.
- Solid construction for life-time use.
- No need of maintenance at all.

EUROPEAN STANDARDS

- The ball valve **BON•GAS** for gas complies with the EN 331 and the thermic security device complies with the DIN VP 301.

AUTOMATIC WORKING

- The **TAS** thermic security device works in case of fire, as soon as temperature reaches 100°C, so blocking the flow of gas for at least 60 minutes at the temperature of 925°C.

USES

- The valve **BON•TAS** is suitable for domestic and industrial installations to MOP5.

END CONNECTIONS

- Screwed to ISO 7/1 and ISO 228.

WORKING PRESSURE

- For gas max M0P5 = PN5.

TEMPERATURE LIMITS

- For gas –20°C +60°C

NOTE

- The diagrams pressure/temperature and loss of head refer to the ball valve **BON•GAS**.

INSTALLATION INSTRUCTIONS

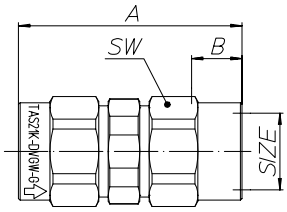
- The valves can be installed in any position: horizontal, vertical or oblique. In any case they must be visible and easily accessible. The operating handle must be free and it must be possible to rotate it easily and completely to the open and closed position. Unless something else is suggested, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter-clockwise.
- There aren't any differences in the flow direction, unless other instructions appear on the valve.
- For the seal of the threaded connections of the valve to the hoses, please refer to the standards UNI ISO 7, UNI ISO 228 or to other standards applying the particular case.
- The system must be planned and accomplished in such a way as to avoid bending or torsional stress and other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed in to the hoses with suitable means and by using its key. The torque wrench setting should guarantee the seal without deforming or damaging any components of the valve.
- After installing the valve it is necessary to verify the seal of the gaskets and of the whole system by referring to the technical standards and to the applicable laws.
- Please avoid tampering with the valve and particularly with its parts which are intended to guarantee the sealing, with the operating devices and with the on-off stops.
- Do not let the valve in such a position where it is neither completely open nor completely closed for a long time, as this could damage the gaskets and the ball, compromise the seal and prevent the system from working properly.
- If the valves, especially the big ones, are difficult to open or close after they have not been operating for a long time, please use a hose or something similar and put it on their handle, so that it works as a sort of extension and makes the operation easier.
- It is recommended to install a y-strainer between the hose where the flow comes from and the valve in order to make the latter work correctly and to maintain a good seal.
- For every further question please contact the authorized dealers or ENOLGAS BONOMI S.p.A.

MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N-UNI EN 12165 (Brass)	Nickel-plated forged brass
2	TAS device	Miscellaneous	Various
3	Ball	CW 614 N-UNI EN 12164 (Brass)	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N-UNI EN 12164 (Brass)	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for gas
8	Lever handle	Steel Fe P02	Zinc-plated, yellow P.V.C. insulated
	T-handle	AL UNI5076	Yellow polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel

BALL VALVE FOR GAS WITH THERMIC SECURITY DEVICE

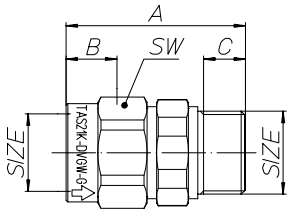
Art. G.0255 TAS



Thermic security device for gas, female/female, zinc-plated.

SIZE	½"	¾"	1"
A mm	54,5	61	69
B mm	12,6	14,1	15,9
SW mm	27	32	41
Weight gr.	152	214	410

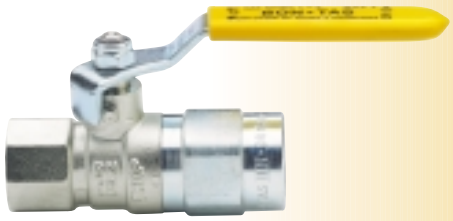
Art. G.0256 TAS

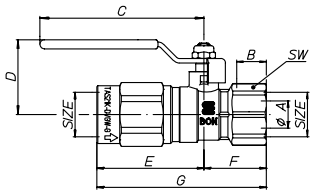


Thermic security device for gas, male/female, zinc-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
A mm	46	49	55,5	90	90	110
B mm	14	15,5	18,6	25,8	25,2	30,9
C mm	13	14,2	16,8	17	19,2	22,1
SW mm	27	32	41	50	55	70
Weight gr.	106	158	292	650	850	1350

Art. G.0261 BON•TAS

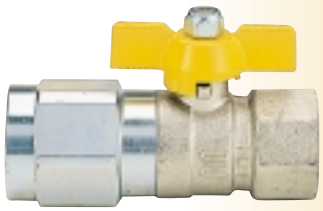


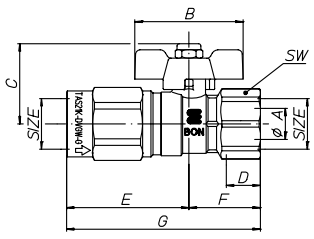


Ball valve for gas female/female with TAS thermic security device, with lever handle, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	12,5	15	20	25	32	40
B mm	15	16,3	19,1	21,4	21,4	25,7
C mm	90	90	105	105	120	140
D mm	39,5	41	49,5	53,5	63	72
E mm	52,75	58,75	67,5	98,4	100,5	123,6
F mm	29	34,25	40	44,6	49,5	59,4
G mm	81,75	93	107,5	143	150	183
SW mm	25	32	38	47	54	66
Weight gr.	276	378	640	1170	1740	2810

Art. G.0265 BON•TAS

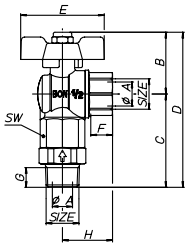




Ball valve for gas female/female with TAS thermic security device, with T-handle, nickel-plated.

SIZE	½"	¾"	1"
øA bore	12,5	15	20
B mm	52	52	65
C mm	37	40	49
D mm	15	16,3	19,1
E mm	52,75	58,75	67,5
F mm	29	34,25	40
G mm	81,75	93	107,5
SW mm	25	32	38
Weight gr.	253	358	606

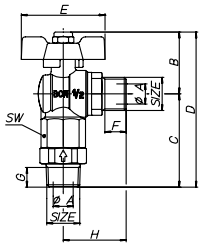
Art. G.0270 BON•TAS



Angled ball valve for gas male/female with TAS thermic security device, with T-handle, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	39,5	49	49
C mm	57,5	65	73
D mm	97	114	126
E mm	52	65	65
F mm	15	16,3	19,1
G mm	7,2	13,7	16,2
H mm	31,5	35	41,5
SW mm	27	32	41
Weight gr.	262	420	652

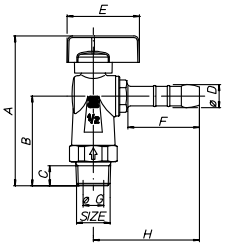
Art. G.0271 BON•TAS



Angled ball valve for gas male/male with TAS thermic security device, with T-handle, nickel-plated.

SIZE	½"
øA bore	15
B mm	35,5
C mm	58
D mm	93,5
E mm	52
F mm	13,2
G mm	7,2
H mm	39,15
SW mm	27
Weight gr.	288

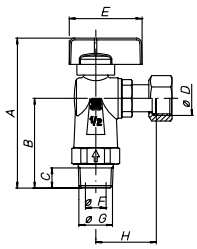
Art. G.0278 BON•TAS



Angled ball valve for gas male/rubber holder with TAS thermic security device, with T-handle, nickel-plated.

SIZE	½"
A mm	91,3
B mm	54,5
C mm	7,2
øD mm	14
E mm	44
F mm	44,5
øG bore	10
H mm	64,7
Weight gr.	230

Art. G.0284 BON•TAS

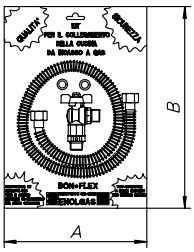


Angled ball valve for gas male/nut with TAS thermic security device, for water heaters, with T-handle, nickel-plated.

SIZE	½"x½"	½"x¾"
A mm	91,3	91,3
B mm	54,5	54,5
C mm	7,2	7,2
øD	½"	¾"
E mm	44	44
øF bore	10	10
øG	½"	½"
H mm	38,2	39,2
Weight gr.	254	270

BALL VALVE FOR GAS WITH THERMIC SECURITY DEVICE

Art. G.0376 BON•FLEX•TAS



Angle ball valve for gas, male/female, **with security TAS device**, plus extensible flexible hose **yellow plastic coated**, female/female, as per norm UNI 9891, plus 2 gaskets.Packed in skin-pack.

SIZE	½"x2 mt
A mm	240
B mm	340
Weight gr.	579

BON • FLEX

BALL VALVE FOR GAS FOR FLEXIBLE PIPE

SINCERT

CERTIFICAZIONE DEI PRODOTTI
PRODUCT CERTIFICATION

ICIM

001AV/1

ENOLGAS BONOMI S.p.A.
Via Europa, 227
25082 CONCESIO (BS)

RUBINETTO A SFERA
GAS BALL COCK

BONFLEX serie G036 modelli G0363N04, G0360N34, G0361N04, G0362N34
BONFLEX series G036 models G0363N04, G0360N34, G0361N04, G0362N34

70R011-0

EN 331

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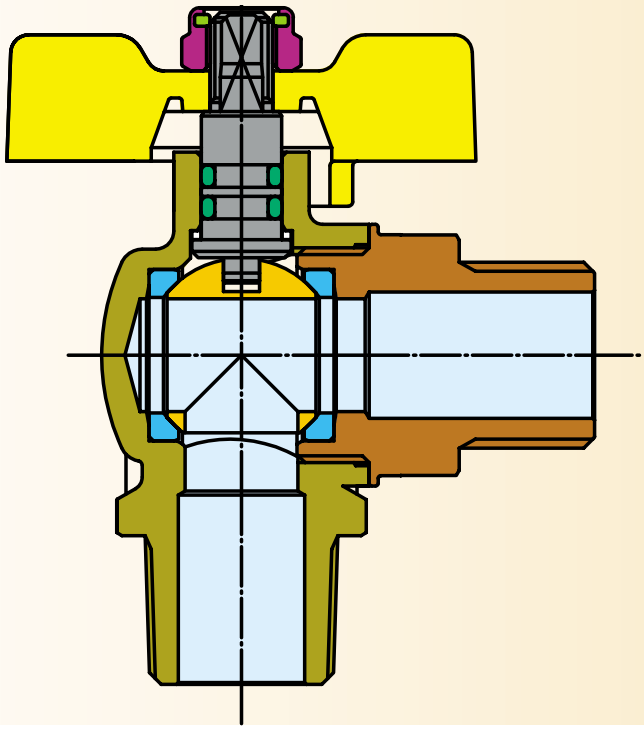
15/07/04
29/05/07

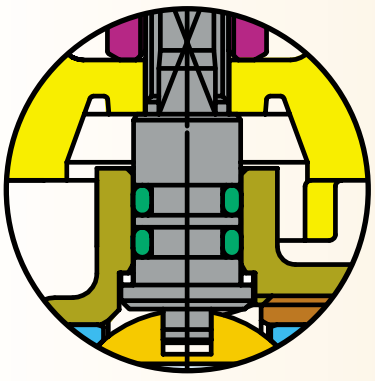
APPROVED TO EN 331

BON • FLEX

BALL VALVE FOR GAS FOR FLEXIBLE PIPE



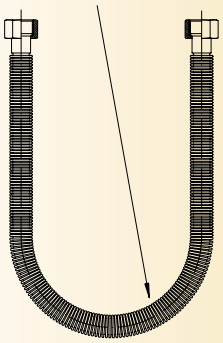
BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
THRUST WASHER	6	
O-RINGS	7	
HANDLE	8	
SELF-LOCKING NUT	9	



DOUBLE SEAL BLOW OUT PROOF- STEM

- The **BON•FLEX** ball cocks are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.
- The **BON•FLEX** ball cocks have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.

BENDING RADIUS NOT BELOW 50 mm



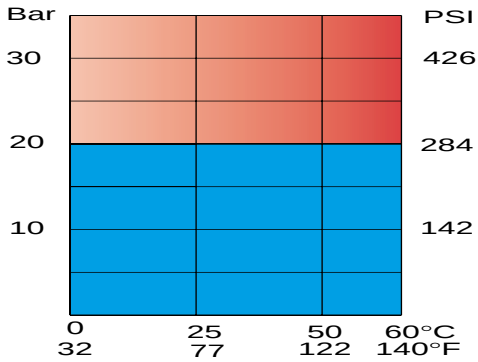
BON•FLEX HOSE

IN STAINLESS STEEL

YELLOW PLASTIC COATED

- ***Extensible***
- ***Flexible***
- ***Flameproof***

PRESSURE/TEMPERATURE DIAGRAM



INTERNATIONAL APPROVALS
- The **BON•FLEX** ball valves satisfy the specifications contained in the EN 331.

FEATURES
- Specially designed for gas applications.
- Heavy line,partial reduced bore (12,5 mm).
- Perfect seal at low and high pressure.
- Solid, reliable for life-time use.
- No need of maintenance at all.

END CONNECTIONS
- Screwed to ISO 7/1 Rp parallel standard.

UTILISATION
- The **BON•FLEX** ball valves are suitable for all types of gas, town gas (1st family), natural gas (2nd family) L.P.G. gas (3rd family) in systems using low and medium pressure.

WORKING PRESSURE

For gas max PN 5 = 5 MOP

TEMPERATURE LIMITS
- For gas -20°C +60°C.
- See pressure/temperature diagram.

FLEXIBLE HOSE FEATURES
- The **BON•FLEX** hose is a corrugated stainless steel AISI 316 L flexible hose whit yellow plastic sheat according to italian UNI-CIG 9891 standards.
- It fits any position with a banding radius not below 50 mm.
- It is extensible up to 2 mt (twice so much its length).

PACKING
- The **BON•FLEX** is supplied in a practical skin-packing, so it is ready for the use and it includes instructions and warnings for the assemblin.

CHARACTERISTICS OF THE SHEATH
- Besides keeping the characteristics of the hose unchanged, the sheath also shelters it against eventual damages caused by the corrosion of the chemical agents normally used in houses and from electrical discharges emitted by appliances which have not been properly earthed.
- Material: yellow polyolefin
- Flame resistance: self-extinguishing
- Temperature of continuous operation: from 55∞ to 135∞
- Breaking load: 17 Mpa
- Dielectric resistance: 250 KV/cm
- Volume resistivity: 10(16) Omh x cm

INSTALLATION INSTRUCTIONS
- The present kit is suitable for the connection of appliances whose technical nominal rate is not higher than 35 kW.
- Make sure that the appliance to be connected and the whole electrical system have been regularly earthed. Eventual leakage currents could collide with the hose and perforate it causing leaks of gas and the relevant dangers.
- After closing the main gas shut-off cock, screw the **BON•FLEX** cock to the hose by using the taper thread or to another fitting where the gas comes from. Use hemp or a PTFE tape in order to seal it.
- Extend the flexible hose lengthwise how long you would like to, but in any case no longer than the length indicated on the tail of the hose itself.
- Screw a nut to the kitchen fitting provided with a suitably long 1/2" male UNI ISO 228 parallel thread. Do not forget to put the gasket supplied together with the hose between the two parts which are being connected and screw the nut until it is sealed.
- After moving the kitchen to the final position, screw the other nut to the parallel thread of the cock as described above.
- The hose should not to be subject to bending or torsional stresses while the nuts are being screwed in.
- Do not bend a hose whose radius is shorter than 50 mm.
- After opening the gas cock again, test the seal of the connections and of the hose by using soapy water or other suitable means. If bubbles appear, there is a leakage. In this case the hose has to be screwed again and the connections have to be tested.
- The connections and the flexible part should not be fixed in a wall.
- The guarantee is not valid any longer, if the product has not been properly assembled or disassembled or in the case it has not been used correctly. Therefore we recommend you to have the work only done by specialized installers.
- Avoid the contact with sharp corners.
- Use water with neutral soap and do not use brushes or abrasive sponge when cleaning the flexible hose. Rinse it after cleaning.
- Refer to the current standards in case you should need further information about how to install this product.

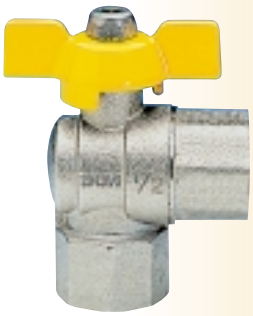
MATERIAL SPECIFICATION

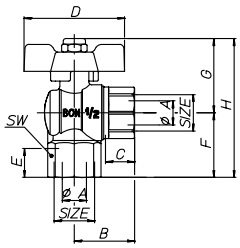
	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N-UNI EN 12165 (Brass)	Nickel-plated forged brass
2	End adapter	CW 617 N-UNI EN 12165 (Brass)	Nickel-plated forged brass
3	Ball	CW 614 N-UNI EN 12164 (Brass)	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N-UNI EN 12164 (Brass)	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for gas
8	T-Handle	AL UNI5076	Yellow polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel

BALL VALVE FOR GAS FOR FLEXIBLE PIPE

Art. G.0360 BON•FLEX

UNI EN 331



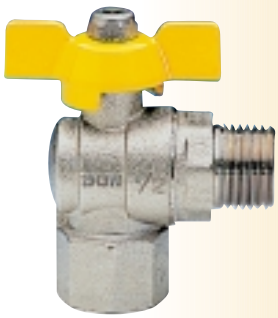


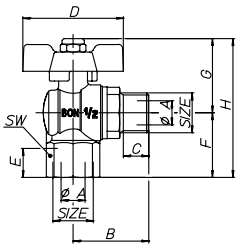
Angled ball cock for gas, female/female, with T-handle, for female flexible hose UNI 9891, nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	31
C mm	15
D mm	52
E mm	15
F mm	33,5
G mm	38,5
H mm	72
SW mm	26
Weight gr.	231

Art. G.0361 BON•FLEX

UNI EN 331



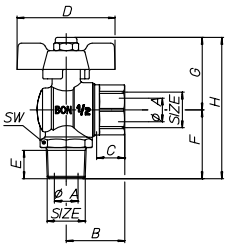


Angled ball valve for gas female/male with T-handle for flexible pipe female UNI 9891, nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	39,15
C mm	13,2
D mm	52
E mm	15
F mm	33,5
G mm	38,5
H mm	72
SW mm	26
Weight gr.	222

Art. G.0362 BON•FLEX

UNI EN 331

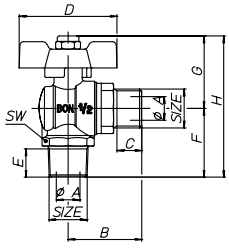


Angled ball cock for gas, male/female, with T-handle, for female flexible hose UNI 9891, nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	31
C mm	15
D mm	52
E mm	15
F mm	36,5
G mm	38,5
H mm	75
SW mm	26
Weight gr.	222

Art. G.0363 BON•FLEX

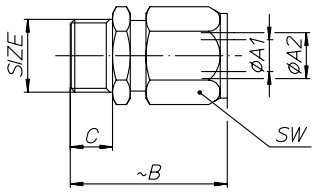
UNI EN 331



Angled ball valve for gas male/male with T-handle for flexible pipe female UNI 9891, nickel-plated.

SIZE	½"x½"
øA bore	12,5
B mm	39,15
C mm	13,2
D mm	52
E mm	15
F mm	36,5
G mm	38,5
H mm	75
SW mm	26
Weight gr.	213

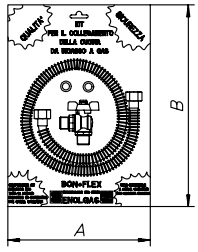
Art. G.0367 BON•FLEX



Adapter joint between hose connector and stainless steel hose, in compliance with norm UNI 9891, nickel-plated. Single piece packed in plastic bag.

SIZE	½"
øA1 mm	9
øA2 mm	13
B mm	44
C mm	12
SW mm	24
Weight gr.	102

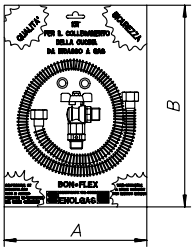
Art. G.0374 BON•FLEX



Angle ball valve for gas, male/male plus extensible flexible hose **yellow plastic coated**, female/female, as per norm UNI 9891, plus 2 gaskets. Packed in skin-pack.

SIZE	½"x1,5mt	½"x2 mt
A mm	240	240
B mm	340	340
Weight gr.	513	579

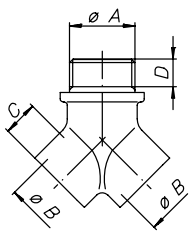
Art. G.0376 BON•FLEX•TAS



Angle ball valve for gas, male/female, **with security TAS device**, plus extensible flexible hose **yellow plastic coated**, female/female, as per norm UNI 9891, plus 2 gaskets.Packed in skin-pack.

SIZE	½"x2 mt
A mm	240
B mm	340
Weight gr.	579

Art. G.0657 BON•FLEX

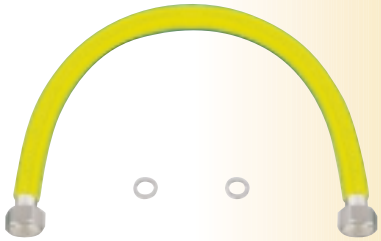


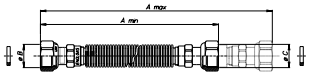
Y- Union, male/female/female, nickel-plated.

SIZE	½"x½"
øA	½"
øB	½"
C mm	14,7
D mm	13,2
Weight gr.	127

S.S. FLEXIBLE PIPE FOR GAS

Art. G.0365 BON•FLEX

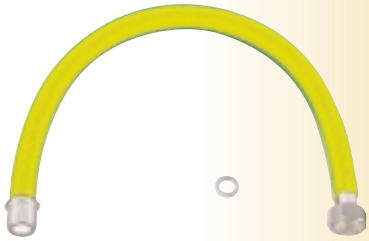


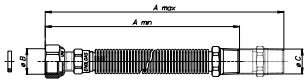


Flexible hose in stainless steel with **yellow plastic coat** as per norm UNI-CIG 9891 female/female with 2 gaskets.

SIZE	500x1000	750x1500	1000x2000
A min. mm	500	750	1000
A max. mm	1000	1500	2000
øB	½"	½"	½"
øC	½"	½"	½"

Art. G.0366 BON•FLEX

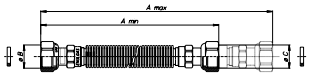




Flexible hose in stainless steel with **yellow plastic coat** as per norm UNI-CIG 9891 female/male with 1 gasket.

SIZE	500x1000	750x1500	1000x2000
A min. mm	500	750	1000
A max. mm	1000	1500	2000
øB	½"	½"	½"
øC	½"	½"	½"

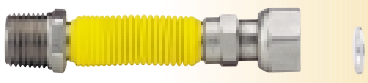
Art. G.0370 BON•FLEX

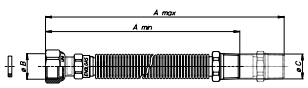


Flexible hose in stainless steel with **yellow plastic coat** as per norm UNI-CIG 9891 female/female with 2 gaskets.

SIZE	½"x½"	¾"x¾"	1"x1"
A min x A max	90x140	90x140	90x140
A min x A max	130x220	130x220	130x220
A min x A max	220x420	220x420	220x420
A min x A max	300x600	300x600	300x600

Art. G.0371 BON•FLEX





Flexible hose in stainless steel with **yellow plastic coat** as per norm UNI-CIG 9891 female/male with 1 gasket.

SIZE	½"x½"	¾"x¾"	1"x1"
A min x A max	90x140	90x140	90x140
A min x A max	130x220	130x220	130x220
A min x A max	220x420	220x420	220x420
A min x A max	300x600	300x600	300x600

AQUA • FLEX

S.S. FLEXIBLE PIPE FOR WATER

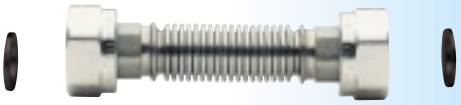
BON•FLEX
Stainless steel pipe flexible tube for GAS

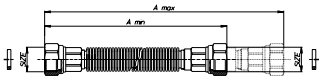
- **BON•FLEX** is an extensible and flexible joint in stainless steel and it is covered by an external thermoshrinking coating.
- The range is produced according to the standard UNI-CIG 9891 and in order to connect domestic or similar appliances (kitchens, boilers etc.) whose nominal heat input is no higher than 35 Kw to the gas circuit.
- **BON•FLEX** was approved by the Institute for Quality Label.
- The external coating is intended to shelter the hose from eventual aggressions coming from the surrounding environment.

AQUA•FLEX
Stainless steel pipe flexible tube for WATER

- **AQUA•FLEX** is an extensible and flexible joint in stainless steel and it is used in order to connect household appliances (boilers, fan-coils, radiators etc.) to the water circuit.
- Solubilized after welding the ending fittings.
- Available also with stainless steel nut and can be used in food industry too.

Art. H.0370 AQUAFLEX

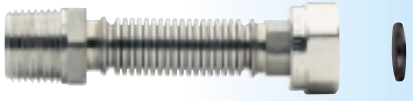


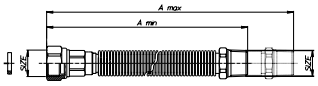


Flexible hose in AISI 316 stainless steel, female/female, with rubber gasket.

SIZE	½"x½"	½"x¾"	¾"x¾"	1"x1"
A min x A max	90x140	90x140	90x140	90x140
A min x A max	130x220	130x220	130x220	130x220
A min x A max	220x420	220x420	220x420	220x420
A min x A max	300x600	-	300x600	300x600

Art. H.0371 AQUAFLEX





Flexible hose in AISI 316 stainless steel, male/female, with rubber gasket.

SIZE	½"x½"	½"x¾"	¾"x¾"	1"x1"
A min x A max	90x140	90x140	90x140	90x140
A min x A max	130x220	130x220	130x220	130x220
A min x A max	220x420	220x420	220x420	220x420
A min x A max	300x600	-	300x600	300x600

IN • GAS

BUILT-IN BALL VALVE FOR GAS

SINCERT

CERTIFICAZIONE DEI PRODOTTI
PRODUCT CERTIFICATION

ICIM

CERTIFICATO N. / *CERTIFICATE NO.* 004AV/1

ENOLGAS BONOMI S.p.A.
Via Europa, 227
25062 CONCESIO (BS)

RUBINETTO A SFERA
GAS BALL COCK

INGAS serie GS40
(per l'elenco specifico dei modelli vedere l'allegato)
INGAS series GS40
(see the enclosure for detailed products list)

7SR011-0

EN 331

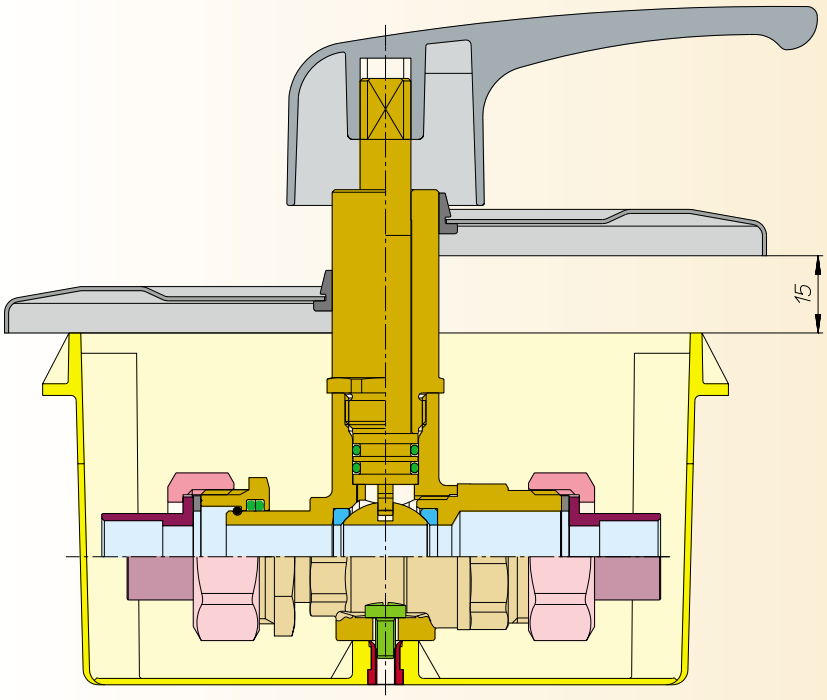
30/05/01

15/07/04

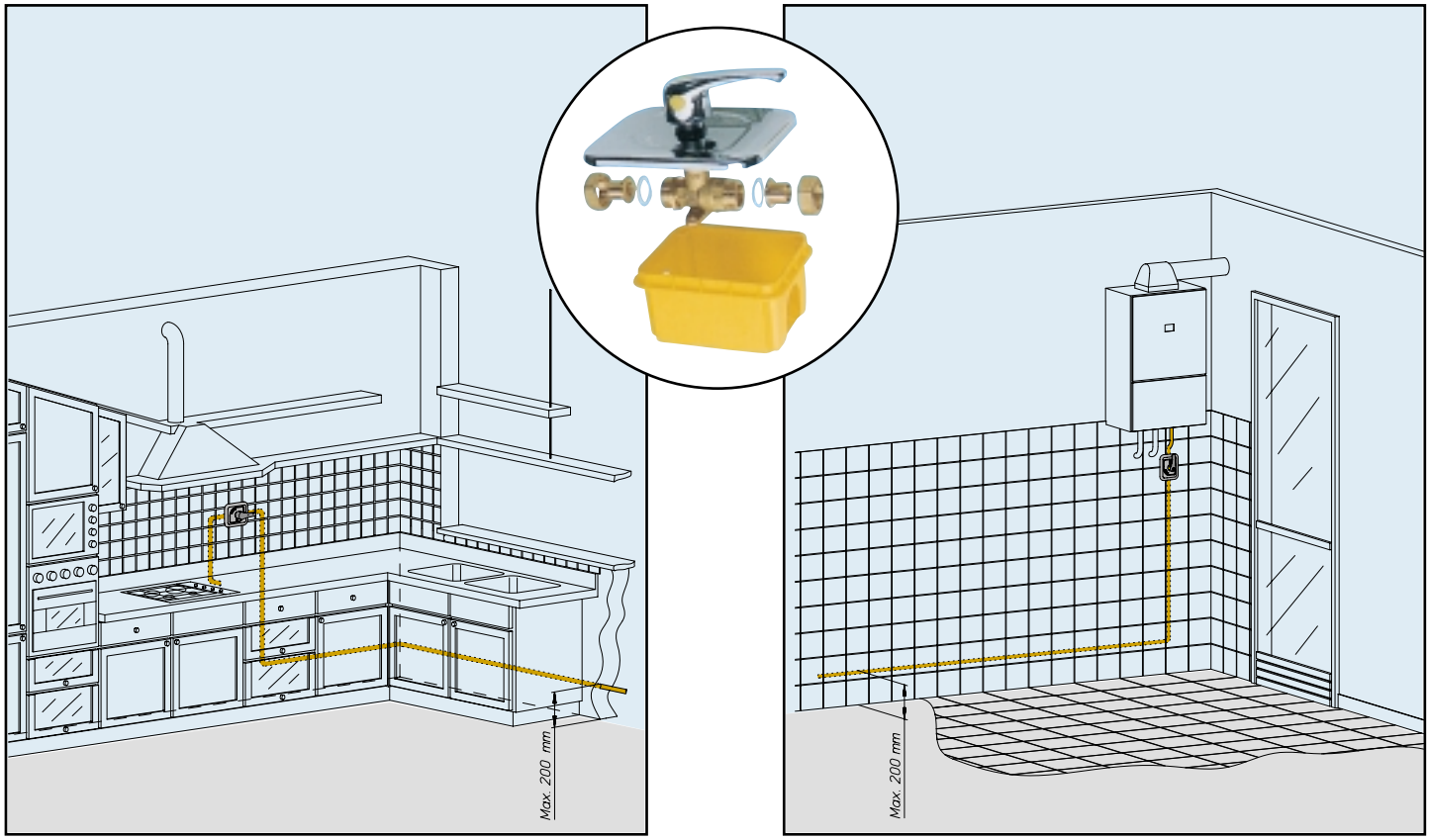
25/05/07

IN • GAS

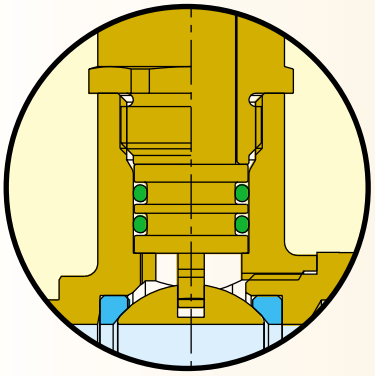
BUILT-IN BALL VALVE FOR GAS



BALL VALVE	1	
BASKET WITH PROTECTION	2	
WELDING ENDS	3	
BALL GASKETS	4	
FIXING NUTS	5	
O-RINGS	6	
METALLIC RINGS	7	
COVERING PLATE	8	
HANDLE	9	
FIXING SCREWS	10	



Applications examples of IN•GAS ball valve.



DOUBLE SEAL

- The **IN•GAS** ball valves have a double seal with elastomer O-Rings, chosen for their high resistance to ageing.

INTERNATIONAL APPROVALS

- The **IN•GAS** ball valves satisfy the specifications contained in the EN 331.

FEATURES

- Specially designed for gas applications.
- Internal bore ø mm. 12,5 - 17,5.
- Perfect seal at low and high pressure.
- Solid, reliable for life-time use.
- No need of maintenance at all.
- Open and close by mean of handle 90° rotation.
- Telescopic adapter for assembling operation.

END CONNECTIONS

- 1/2", 3/4" and 1": screwed ISO 228.
- 12, 14, 16, 18, 22 mm: to be welded on pipe.

UTILISATION

- The **IN•GAS** ball valves are suitable for all types of gas, town gas (1st family), natural gas (2nd family) L.P.G. gas (3rd family) in systems using low and medium pressure.

APPLICATIONS EXAMPLE

- Upstream the connecting hose for ranges.
- Upstream heaters and boilers.
- As general ON-OFF system.

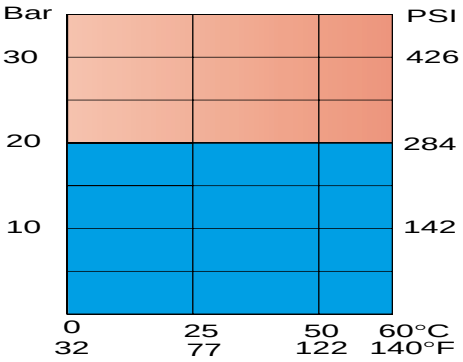
WORKING PRESSURE

- For gas max PN 5 = 5 MOP
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- For gas -20°C +60°C.
- See pressure/temperature diagram.

PRESSURE/TEMPERATURE DIAGRAM



MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Ball valve	Brass UNI EN 12164 - 12165	Brass
2	Basket with protection	Plastic	Forged
3	Welding ends	Bronze	Machined bar
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Fixing nuts	CW 614 N UNI EN 12164	Machined brass bar
6	O-rings	Elastomer	Suitable for gas
7	Metallic rings	Aluminum or Fiber	Annealed Al
8	Covering plate	Zn Al Mg Alloy	Chrome plated
9	Handle	Zn Al Mg Alloy	Chrome plated
10	Fixing screws	Steel C8	Zinc-plated

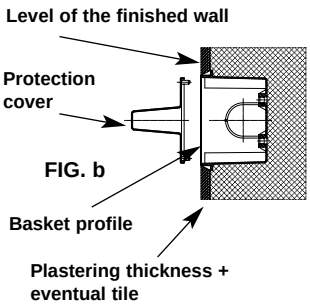
BUILT-IN BALL VALVE FOR GAS

INSTALLATION INSTRUCTIONS

Art.G0400 - IN•GAS

Premises
The present kit has been produced for the connection of appliances whose nominal heat input is not higher than 35 kW.

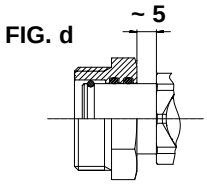
The following instructions have been written in order to provide the necessary guidelines for the assembly of the products supplied together with this paper alone. To lay, to test and to maintain the pipes or other connected appliances it is necessary to refer to the specific instructions for those products, to the UNI CIG 7129 standard or to other applicable standards.



1. **CLEFT CARRYING OUT FOR BASKET AND PIPES**
   Prepare the chase for the pipes housing and the cleft for the basket housing in the expected position, horizontal or vertical (**fig. a**). For the correct pipes route and the chase depth refer to the standard UNI CIG 7129 or to other applicable standards.

2. **BASKET WALLING IN**
   Fix the basket alone (do not fix the pipes yet) so that the basket profile is aligned with the finished wall. Consider also an eventual tile laying. For mere aesthetic reasons you should keep the basket vertically or horizontally aligned. Use the apposite protection cover in order not to stain the basket with mortar (**fig. b**).

3. **COCK POSITIONING**
   Fix the cock (without the handle and the covering-plate) on the bottom of the basket with the apposite screws by using the apposite flange (**fig. c**). 12/14/16 mm cocks are provided with a telescopic device in order to make their installation, their maintenance and their eventual replacement easier. Therefore the installation should be carried out when the telescopic bar hold is at about half of its stroke, so that the shift is possible in both directions (**fig. d**).



(only for mm 12/14/16 sizes)

4. **PIPES CONNECTION**
   Proceed to the laying and connecting of the pipes. Especially for the copper pipe it is necessary to weld the tails provided together with the nut on the ends of the pipeline (**fig. e**). Use the gaskets (which have been supplied together with the product) to obtain the seal between cock and tails. Make sure that the sealing surfaces do not show evident crushes and/or scratches which could prevent a safe seal of the connection also in a long while. To screw the nuts and the cocks it is necessary to use two keys; the first one is used to hold both the mobile part and the whole cock. It is important not to hit that part of the tails where the telescopic ring slides while assembling the pieces. Otherwise the seal could be compromised.

5. **ALIGNMENT AND WALLING IN OF THE PIPES**
   After verifying the seal of the whole system, especially of its connections, close the cock and position its protection cover again. Fix the pipes making sure of their correct alignment in order to avoid excessive bending stresses on the cock and on the telescopic joint. The eventual tile laying should let the whole port of the basket uncover. Do not forget that all the cocks and the eventual threaded connections should be visible or put in unsealed boxes for inspections.

6. **POSITIONING OF THE COVERING-PLATE AND OF THE HANDLE**
   Position the covering-plate and the handle by fixing the latter with the apposite screw. To fix the covering-plate use silicone in two opposed points alone. Do not seal the whole covering-plate which should not be characterised by watertight integrity. Let the cock in the OFF-position until it is used. If the appliance is still unconnected to the bottom of the cock it is necessary to put a safety plug there.

Art.G0403 - IN•GAS 2

Premises
The present kit has been produced for the connection of appliances whose nominal heat input is not higher than 35 kW.
The following instructions have been written in order to provide the necessary guidelines for the assembly of the products supplied together with this paper alone. To lay, to test and to maintain the pipes or other connected appliances, it is necessary to refer to the specific instructions for those products, to the UNI CIG 7129 standard or to other technical standards and applicable laws.

1. **CLEFT CARRYING OUT FOR BASKET AND PIPES**
   The cock can be installed vertically or horizontally, but it should be visible and easily accessible. The handle should be free and it should be possible to rotate it easily and completely to the open and closed position. Unless something else is written, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter-clockwise. Prepare the chase for the pipes housing and the cleft to house the basket in the expected position, horizontal or vertical. For the correct pipes route and the chase depth you should refer to the standard UNI CIG 7129 or to other technical standards and applicable laws.

2. **BASKET WALLING IN**
   Fix the basket alone (do not fix the pipes yet) so that the external profile of the basket is aligned with the finished wall. Consider also an eventual tile laying while doing it. For mere aesthetic reasons keep the basket vertically or horizontally aligned. Use the apposite protection cover in order not to stain the basket with mortar.

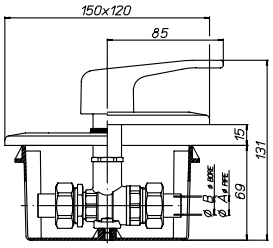
3. **COCK POSITIONING, PIPES CONNECTION**
   Lay the cock and connect it (without handle) to the pipes. The flow direction is not important, unless it is indicated by an arrow on the cock.
   To seal the threaded connections of the cock to the pipes refer to what is written in UNI ISO 7 and UNI ISO 228 standards or to other standards which apply the different cases.
   The system must be planned and realized in such a way as to avoid bending and torsional stresses or other forces which could damage the cock, obstacle its seal and prevent it from working properly.
   The screwing to the pipes must be carried out with suitable means by using the apposite key of the valve. The torque wrench setting must guarantee the seal without deforming or damaging any part of the valve.
   After installing the valve it is necessary to verify the seal of the connection and of the whole system by referring to the technical standards and to the applicable laws.
   Do not tamper with the cock and especially with its components intended to guarantee the seal, with the on-off devices and with the ON-OFF stops.

4. **PIPES WALLING IN**
   After verifying the seal of the system, close the cock, position the protection cover again and fix the pipes. The eventual tile laying should let the whole port of the basket uncover. Do not forget that all the cocks and the threaded connections should be visible or put in unsealed boxes for inspections.

5. **POSITIONING OF THE COVERING-PLATE AND OF THE HANDLE**
   Position the covering-plate and the handle by fixing the latter with the apposite screw. To fix the covering-plate use silicone in two opposed points alone. Do not seal the whole covering-plate which should not be characterised by watertight integrity. Let the cock in the OFF-position until it is used. If the appliance is still unconnected to the bottom of the cock it is necessary to put a safety plug there.

Art. G.0400 IN•GAS

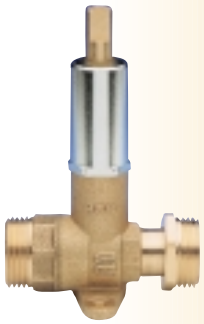
UNI EN 331

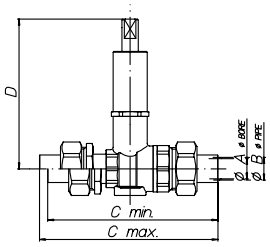


Built-in ball valve for gas with checking point as per norm UNI CIG 7129, complete with lever-shield-weld fittings for copper pipe and plastic basket.

SIZE	mm 12	mm 14	mm 15	mm 16	mm 18	mm 22
øA mm	12	14	15	16	18	22
øB bore	12,5	12,5	12,5	12,5	17,5	17,5
Weight gr.	964	968	970	974	1080	1086

Art. G.A400 IN•GAS



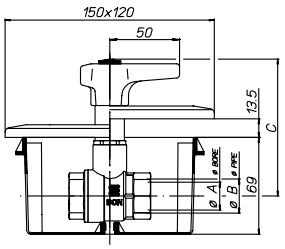


Built-in ball valve for gas only, male/male.

SIZE	¾"	1"
øA bore	12,5	17,5
øB tubo	12/14/16	18/22
C min. mm	66,5	65
C max. mm	71,5	70
D mm	92,3	97,5
Weight gr.	375	500

Art. G.0403 IN•GAS 2

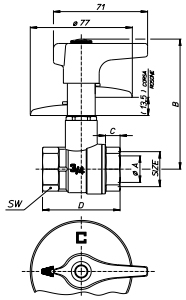
UNI EN 331



Built-in ball valve for gas female/female with checking point as per norm UNI CIG 7129, complete with lever-shield-weld fittings for iron (female/female) pipe and plastic basket.

SIZE	½"	¾"	1"
øA bore	15	20	25
øB tubo	½"	¾"	1"
C mm	95	98	107
Weight gr.	610	730	1010

Art. G.0404 IN•GAS 3

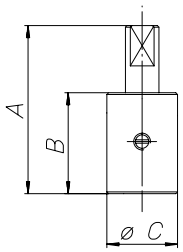


Built-in ball valve for gas female/female with checking point as per norm UNI CIG 7129, complete with lever-shield-weld fittings for iron (female/female) pipe.

SIZE	½"	¾"	1"
øA bore	15	20	25
øB tubo	½"	¾"	1"
C mm	95	98	107
D mm	49	58,5	69
DN	15	20	25
SW	26	31	39
Weight gr.	610	730	1010

BUILT-IN BALL VALVE FOR GAS

Art. G.A989 IN•GAS



30 mm extension with screw, for spindle/stem, chrome-plated.

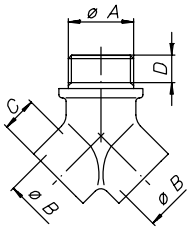
SIZE	mm 30
A	50
B	30
øC mm	21

FITTINGS

BRASS FITTINGS FOR GAS

BRASS FITTINGS FOR GAS

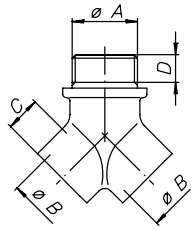
Art. G.0655



Y- Union, male/female/female, nickel-plated.

SIZE	½"x⅜"
øA	½"
øB	⅜"
C mm	11
D mm	8,7
Weight gr.	82

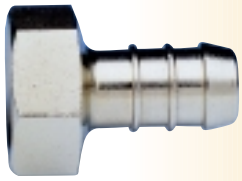
Art. G.0657

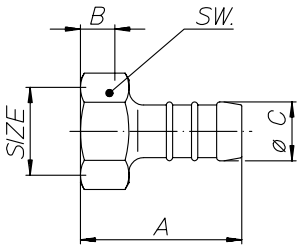


Y- Union, male/female/female, nickel-plated.

SIZE	⅜"x⅜"	½"x½"
øA	⅜"	½"
øB	⅜"	½"
C mm	11	14,7
D mm	7,7	13,2
Weight gr.	90	127

Art. G.0659

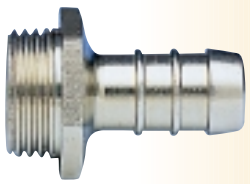


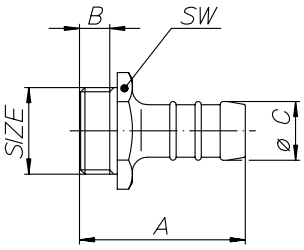


Hose connector for gas, water, oil and air, female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"
A mm	35	36	38,5	48,5	58,5
B mm	6,2	7,2	8,2	9,2	10,7
øC mm	10,5	14	14	18	22
SW mm	16	19	24	24	38
Weight gr.	18	24	36	76	109

Art. G.0661

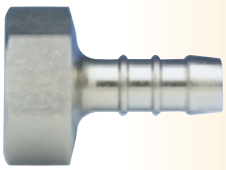


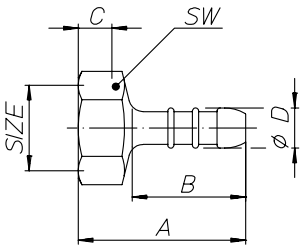


Hose connector for gas, water, oil and air, male, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"
A mm	35,5	36,5	39,5	47,5	60,5
B mm	5,2	6,2	7,2	8,2	9,7
øC mm	10,5	14	14	18	22
SW mm	16	19	24	24	38
Weight gr.	17	26	39	61	111

Art. G.0663

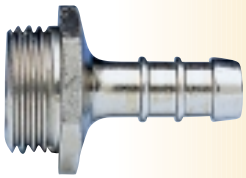


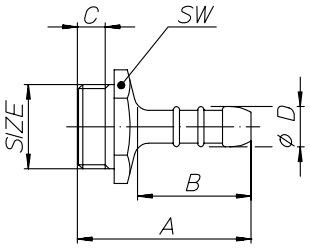


Hose connector for L.P.G., water, oil and air, female, nickel-plated.

SIZE	3/8"	1/2"
A mm	36,5	39
B mm	26,6	27,3
C mm	7,2	8,2
øD mm	10,5	10,5
SW mm	19	24
Weight gr.	22	33

Art. G.0665

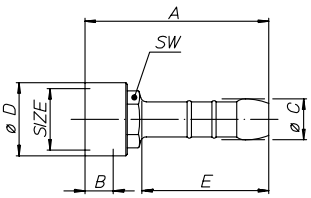




Hose connector for L.P.G., water oil and air, male, nickel-plated.

SIZE	3/8"	1/2"
A mm	37	39,5
B mm	26,6	27,3
C mm	6,2	7,2
øD mm	10,5	10,5
SW mm	19	24
Weight gr.	22	32

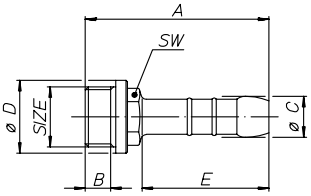
Art. G.0881



Hose connector for gas 13 UNI 7141-72, female, nickel-plated.

SIZE		1/2"
A mm		63
B mm		9,7
øC mm		14
øD mm		25
E mm		44,5
SW mm		18
Weight gr.		54

Art. G.0883

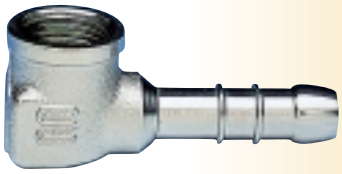


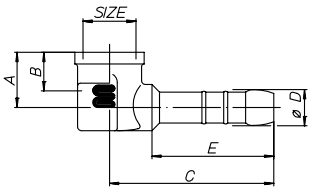
Hose connector for gas13 UNI 7141, male, nickel-plated.

SIZE		1/2"
A mm		63
B mm		8,7
øC mm		14
øD mm		25
E mm		44,5
SW mm		18
Weight gr.		52

BRASS FITTINGS FOR GAS

Art. G.0889

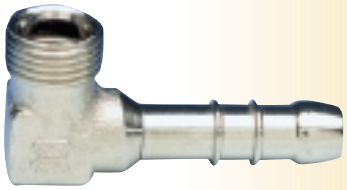


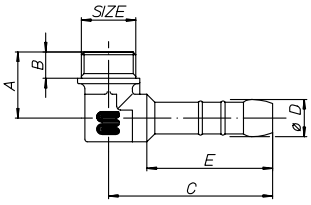


Angled hose connector for L.P.G. 13 UNI 7141, female, nickel-plated.

SIZE	½"
A mm	21,5
B mm	15
C mm	64
øD mm	14
E mm	47,5
Weight gr.	106

Art. G.0891



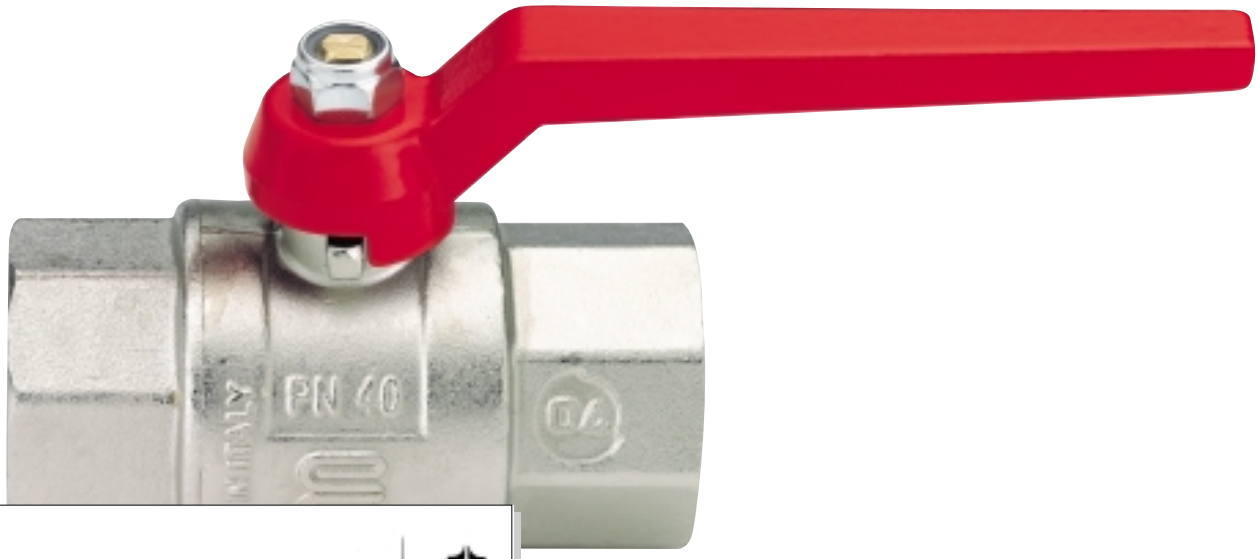


Angled hose connector for L.P.G. 13 UNI 7141, male, nickel-plated.

SIZE	½"
A mm	25
B mm	10
C mm	62
øD mm	14
E mm	47,5
Weight gr.	105

SINTESI

HEAVY LINE FULL BORE BALL VALVE TO DIN STANDARD



DVGW

Vorläufiges Datenblatt als Prüfbescheinigung

Anlage 1

Prüfbericht mit Aktenzeichen 03/626/4312/908
über die **Baumusterprüfung Nr. 83-0184-DNV**
von **handbetätigten Kugelhähnen und Kegelhähnen mit geschlossenem Boden für die Gas-Hausinstallation**
nach DIN EN 331:1999-04

Zweck der Prüfung:	**Zertifizierung durch DVGW, ÖVGW, SVGW**
Hersteller:	der Auftraggeber
Fertigungsstätte:	Eredi Bonomi S. A. S. di Bonomi Sandro e Fratelli I-23892 Cremeno (BS), Via Europa, 227
Gerätetyp:	Kugelhahn in Durchgangsform für die Gasinstallation
Druckklasse:	MOP 5 (zulässiger Betriebsdruck 5 bar)
Temperaturklasse:	-20 °C (Umgebungstemperaturbereich -20 °C bis +60 °C)
Baulänge:	DIN 3357 Teil 4, Reihe l_1
Nennweiten:	DN 8, 10, 15, 20, 25
Gasanschlüsse:	zweiteilig Innengewinde Rp 1/4 bis Rp 1 nach DIN 2999Teil 1 (ISO 7-1)
Gehäusewerkstoff:	Messing CW 617 N, vernickelt
Werkstoff Absperrkörper:	Messing CW 617 N, vernickelt / verchromt
Werkstoff Kugeldichtung:	PTFE
Betätigungsorgan:	Handhebel
Registrierungspflichtige Bauteile:	**Dichtungswerkstoff nach DIN EN 549** Typ O-RITE HNBR, Fa. LAV. EL. GOMMA (NG-51128NO80) [1] **Anwendbare Gasmediadirektiv nach DIN EN 751-1** Typ Loctite 2721, Fa. Loctite (NG-5146ÄRO817) [2] [1] O-Ringe Schalhwelle, [2] Verbindung Einschraubstutzl / Gehäuse
Gasart:	Brenngase der 1., 2. und 3. Familie
Anmerkung:	Dieser Prüfbericht gilt auch als Normkonformitätsbescheinigung für alle Mitgliedstaaten des Europäischen Komitees für Normung (CEN).

Die Anforderungen der obigen Norm werden erfüllt.

Karlsruhe, 27. Februar 2004

Prüfstellenleiter: (Lüthe)

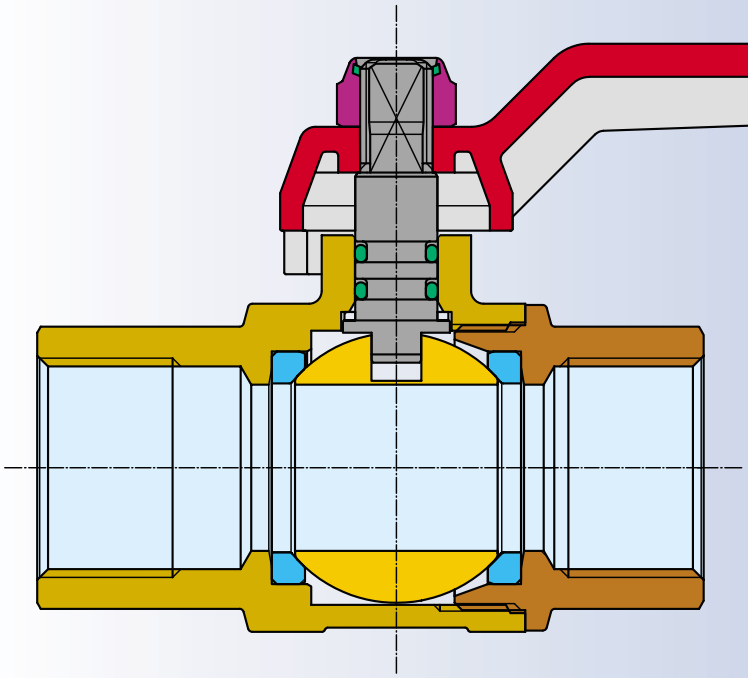
Prüfingenieur: (Fränzen)

DVGW-Forschungsstelle am Engler-Bunte-Institut der Universität Karlsruhe (TH)
Eine Einrichtung des DVGW Deutsche Vereinigung des Gas- und Wasserfaches e.V.

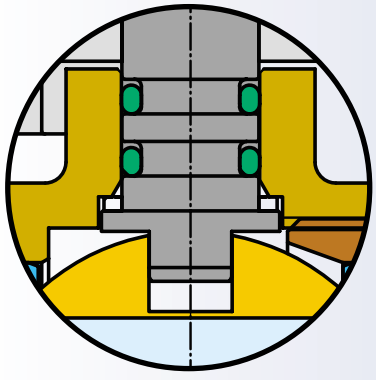
Postfach 6369
D-76049 Karlsruhe
Engler-Bunte-Ring 1-7
D-76131 Karlsruhe
Telefon (+49) 721 608-22-45
Telefax (+49) 721 608-24 89
http://www.dvgw-ebi.de

SINTESI

HEAVY LINE FULL BORE BALL VALVE TO DIN STANDARD

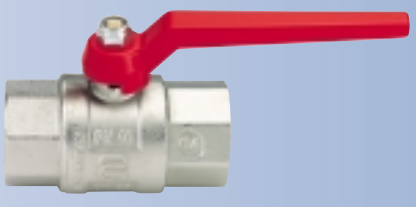


BODY	1
END ADAPTER	2
BALL	3
BALL GASKETS	4
STEM	5
THRUST WASHER	6
O-RINGS	7
HANDLE	8
SELF-LOCKING NUT	9



DOUBLE SEAL BLOW OUT-PROOF STEM

- The **SINTESI** ball valves are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives guarantees against the accidental blow-out of the stem and because it is not possible to tamper it accidentally from the outside.
- The **SINTESI** ball valves have 2 elastomer O-Rings on the stem, having longlife resistance to ageing.
- The double seal is performed by an anti-friction teflon thrust washer, working as a high pressure gasket.



FEATURES

- Heavy line, full bore, long threads.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 7/1 Rp parallel standard.
- Screwed to ISO 7/1 Rc taper standard, available only upon request. The delivery time is to be agreed with the manfacturer everytime.

STANDARD

- The **SINTESI** ball valves are designed to DIN Standard 3202 Teil 4.

UTILISATION

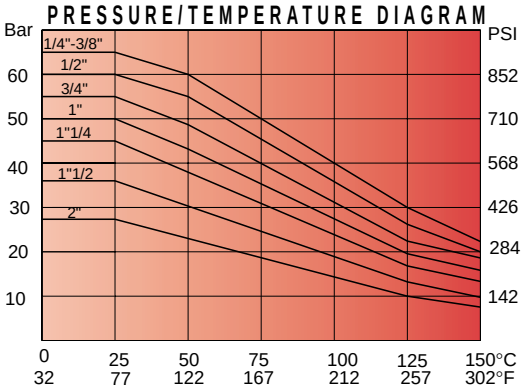
- The **SINTESI** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- For special uses, see the table of chemical resistance on the pages 206 and 207.

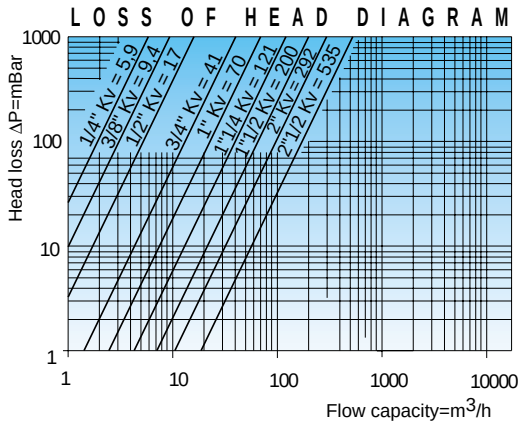
WORKING PRESSURE

- From PN 64 (size 1/4") to PN 28 (size 2").
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- -20°C +150°C



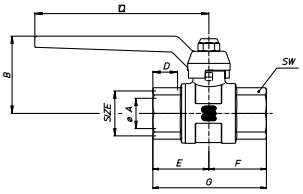


MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for the use
8	Handle	Steel Fe P02	Zinc-plated, red P.V.C. insulated
	Lever and T-handle	AL UNI5076	Red polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel

HEAVY LINE FULL BORE BALL VALVE TO DIN STANDARD

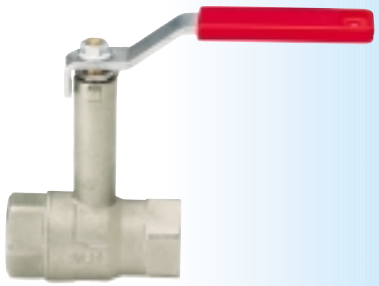
Art. S.1184 SINTESI

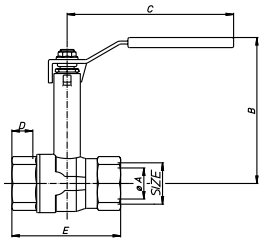


Full bore ball valve, **heavy line**, female/female, with face to face dimension to DIN standard 3202 Teil 4.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"
øA bore	8	10	15	20	25	32	40	50
B mm	37	36,75	41,5	51	55	64,5	75,3	87,5
C mm	80	80	95	115	115	130	150	170
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7
E mm	25,5	24,75	32,5	36,75	43,25	55	55,75	70
F mm	24,5	30,25	42,5	43,25	46,75	55	64,25	70
G mm	50	55	75	80	90	110	120	140
SW mm	17	22	26	32	41	50	55	70
Weight gr.	146	202	325	459	721	1170	1873	3166

Art. S.1191 SINTESI • XT • MONOBLOCK

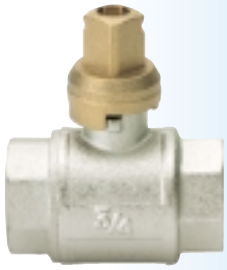


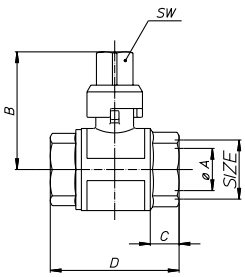


Full bore ball valve, with monoblock extended stem, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	95	98,5	105	112	124	132
C mm	104	104	131	131	161	161
D mm	17	18,5	21,5	24,5	24,5	28
E mm	61,5	70	82	97	105	125

Art. S.0254-S.1254 SINTESI LONG•CAP

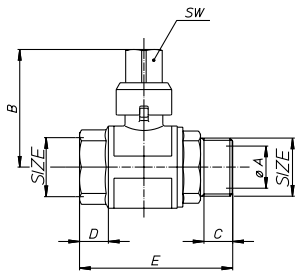




Full bore ball valve, female/female, with head sealing cap for road setting.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	14	19	25	31	39	49
B mm	50	53	65	70	88	98
C mm	13	13	14	17	17	19
D mm	54	58	68	82	89	105
SW mm	13	13	13	13	13	13
KV mm	15,5	31,7	58,5	96	160	269

Art. S.0255-S.1255 SINTESI LONG•CAP

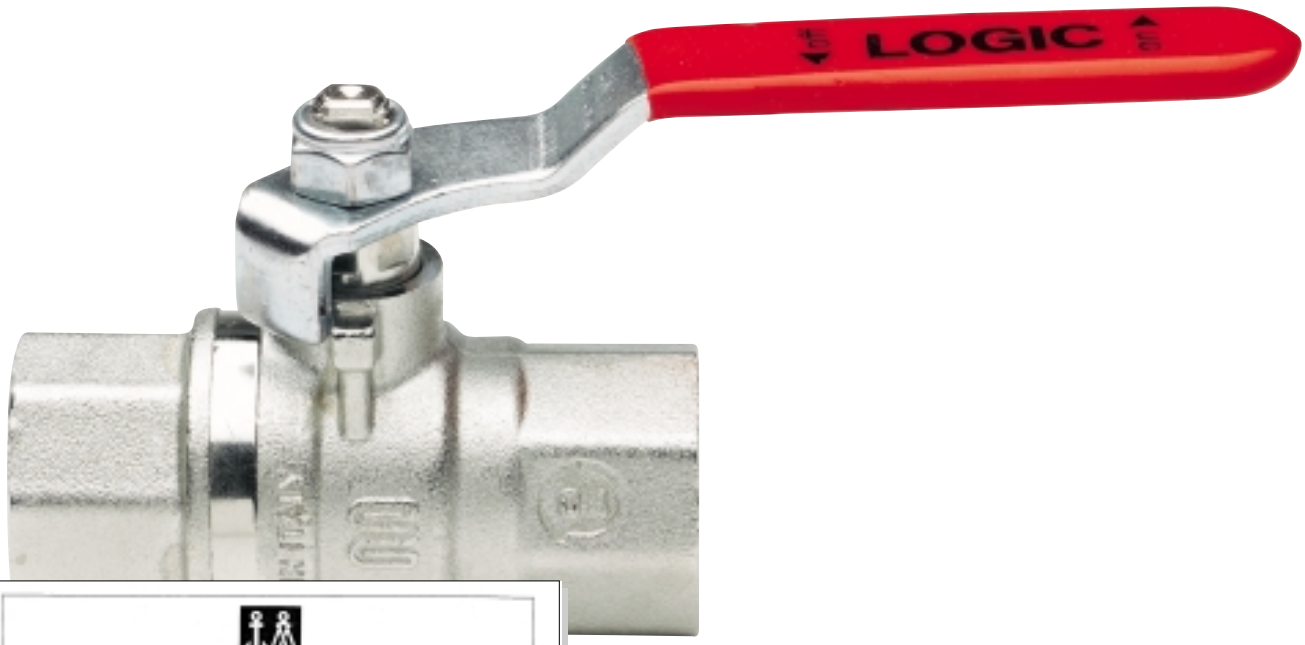


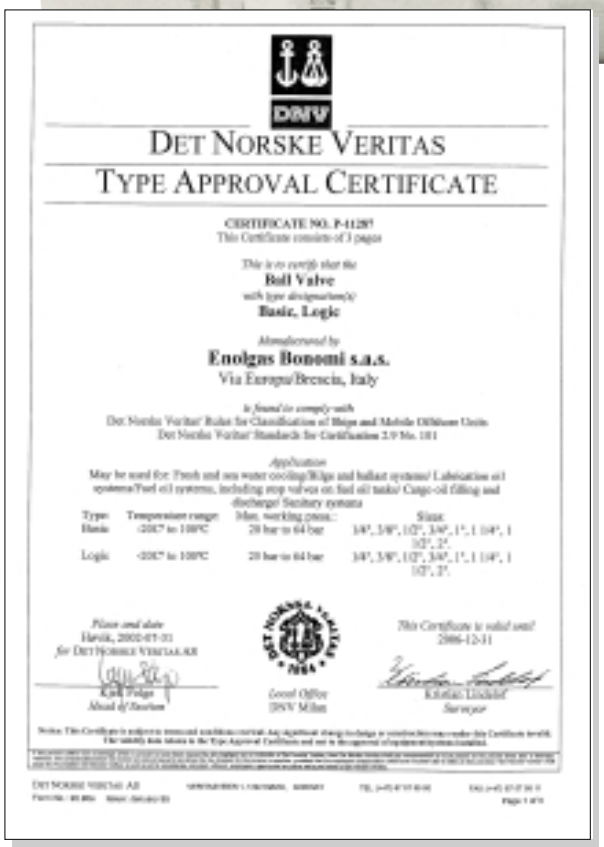
Full bore ball valve, male/female, with head sealing cap for road setting.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	14	19	25	31	39	49
B mm	50	53	65	70	88	98
C mm	13	14	16	18	20	20
D mm	13	13	14	17	17	19
E mm	63	69	80	93	103	122
SW mm	13	13	13	13	13	13
KV mm	15,5	31,7	58,5	96	160	269

HEAVY LINE FULL BORE BALL VALVE

LOGIC





DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-11287
This Certificate consists of 3 pages

This is to certify that the
Ball Valve
with type designation(s)
Basic, Logic

Manufactured by
Enolgas Bonomi s.a.s.
Via Europa/Brescia, Italy

is found to comply with
Det Norske Veritas' Rules for Classification of Ships and Mobile Offshore Units
Det Norske Veritas' Standards for Certification 2.9 No. 101

Application
May be used for: Fresh and sea water cooling/Bilge and ballast systems/ Lubrication oil systems/Fuel oil systems, including stop valves on fuel oil tanks/ Cargo oil filling and discharge/ Sanitary systems

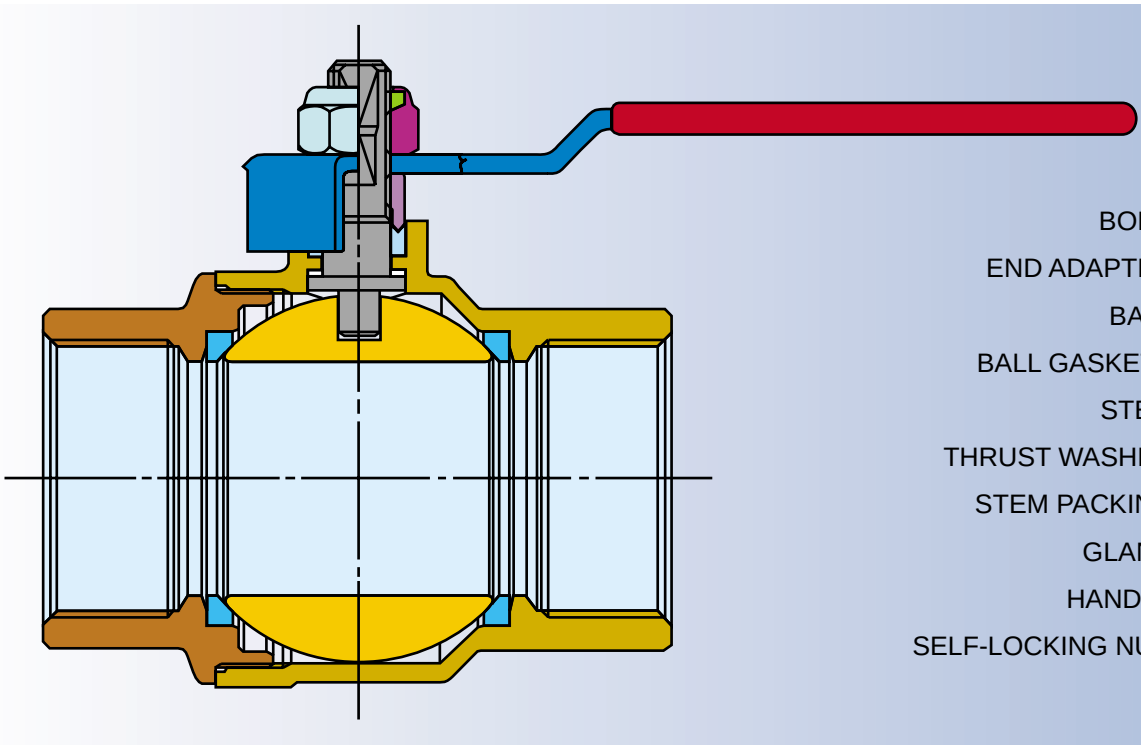
Type:	Temperature range:	Max. working press.:	Sizes:
Basic	-20/67 to 100°C	20 bar to 64 bar	1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2".
Logic	-20/67 to 100°C	20 bar to 64 bar	1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2".

Place and date
Høvik, 2003-07-31
for DET NORSKE VERITAS AS
Kjell Helge
Head of Section

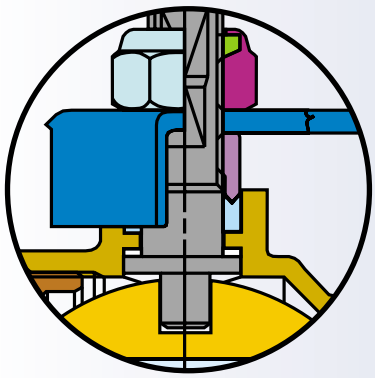
Local Office
DNV Milan

This Certificate is valid until
2006-12-31
Kristian Lindelof
Surveyor

LOGIC HEAVY LINE FULL BORE BALL VALVE



BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
THRUST WASHER	6	
STEM PACKING	7	
GLAND	8	
HANDLE	9	
SELF-LOCKING NUT	10	



DOUBLE SEAL BLOW OUT PROOF-STEM

- The **LOGIC** ball valves are bottom loaded stem designed. This "anti-blow-out" stem also prevents from tampering with the internals of the valve when in the line.
- The double seal is performed by an anti-friction teflon thrust washer, working as a high pressure gasket.

FEATURES

- Heavy line, full bore, long threads.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 7/1 Rp parallel standard.
- Screwed to ISO 7/1 Rc taper standard, available only upon request. The delivery time is to be agreed with the manfacturer everytime.

UTILISATION

- The **LOGIC** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- For special uses, see the table of chemical resistance on pages 206 and 207.

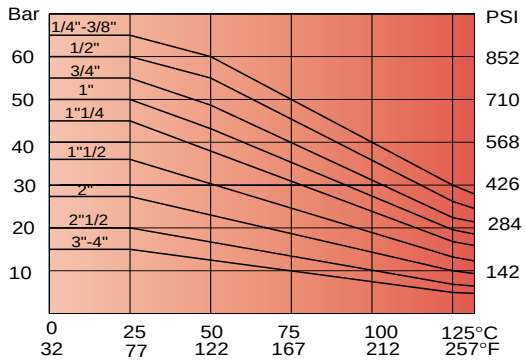
WORKING PRESSURE

- From PN 64 (size 1/4") to PN 16 (size 4").
- See pressure/temperature diagram.

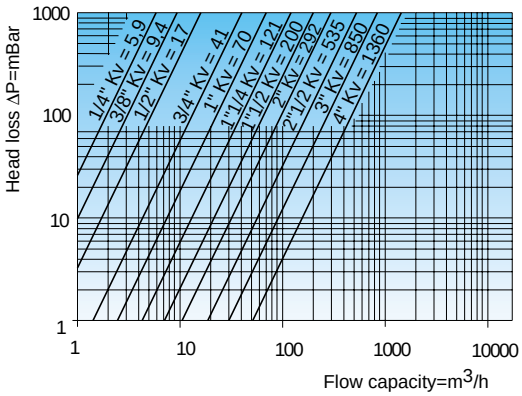
TEMPERATURE LIMITS

- -20°C +130°C

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM

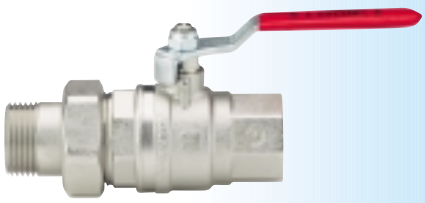


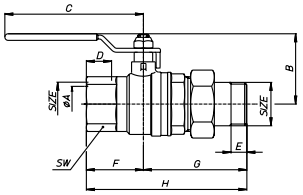
MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	Stem packing	P.T.F.E.	Pure Teflon
8	Gland	CW 614 N UNI EN 12164	Machined brass bar
9	Handle	Steel Fe P02	Zinc-plated, red P.V.C. insulated
	Lever and T-handle	AL UNI5076	Red polyurethan-coated aluminium
10	Self-locking nut	8G Steel	Zinc-plated steel

HEAVY LINE FULL BORE BALL VALVE

Art. S.0190 LOGIC

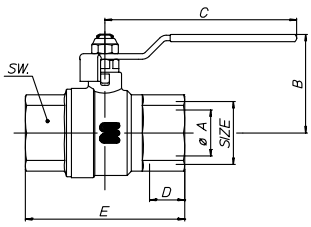




Full bore ball valve with steel handle, nut and tail/female, **heavy line**, nickel-plated.

SIZE	1"	1"¼									
øA bore	25	32									
B mm	53,5	63,5									
C mm	105	120									
D mm	19,1	21,4									
E mm	12	15									
F mm	43,25	50,75									
G mm	77,50	88,75									
H mm	121,5	139,5									
DN	25	32									
SW mm	39	48									
Weight gr.	858	1292									

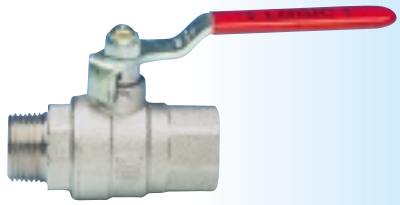
Art. S.0191 LOGIC

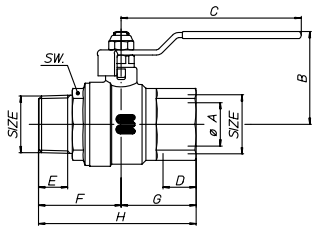


Full bore ball valve with steel handle, female/female, **heavy line**, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	38	38	42	49,5	53,5	63,5	72,5	84	102	113,5	135
C mm	90	90	90	105	105	120	140	170	170	250	250
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3	39,3
E mm	47,5	49,5	65	73,5	86,5	101,5	111,5	132,5	158	182,5	219
SW mm	17	21	26	32	39	48	55	68	83	97	124
Weight gr.	140	153	258	404	633	1044	1608	2716	3526	5657	10663

Art. S.0192 LOGIC

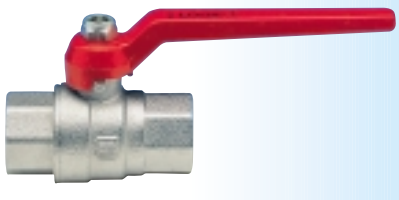


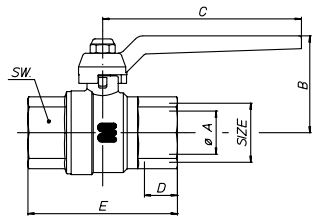


Full bore ball valve with steel handle, male/female, **heavy line**, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"		
øA bore	10	10	15	20	25	32	40	50		
B mm	38	38	42	49,5	53,5	63,5	72,5	84		
C mm	90	90	90	105	105	120	140	170		
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7		
E mm	9,7	10,1	13,2	14,5	16,8	19,1	19,1	23,4		
F mm	30,75	31,25	38	42,25	47,75	54,24	60,25	72,75		
G mm	23,75	24,75	32,5	36,75	43,25	50,75	55,75	66,25		
H mm	54,5	56	70,5	79	91	105	116	139		
SW mm	17	21	26	32	39	48	55	68		
Weight gr.	155	169	262	420	638	1069	1658	2752		

Art. S.0194 LOGIC

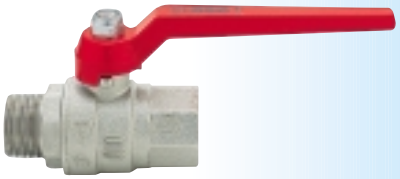


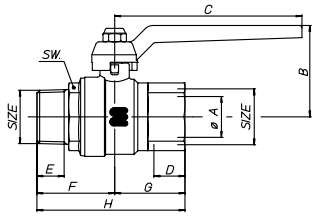


Full bore ball valve with aluminium lever, female/female, **heavy line**, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2" ½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	39,5	39,5	41,5	51	55	64,5	75,5	87,5	108	119,5	142
C mm	80	80	95	115	115	130	150	170	170	235	235
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3	39,3
E mm	47,5	49,5	65	73,5	86,5	101,5	111,5	132,5	158	181,5	219
SW mm	17	21	26	32	39	48	55	68	83	97	124
Weight gr.	122	135	250	380	612	1010	1579	2678	3484	5634	10640

Art. S.0195 LOGIC

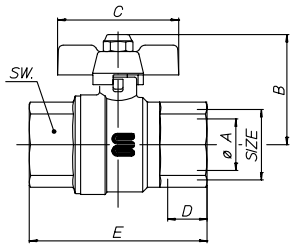




Full bore ball valve with aluminium lever, male/female, **heavy line**, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"
øA bore	10	10	15	20	25	32	40	50
B mm	39,5	39,5	41,5	51	55	64,5	75,5	87,5
C mm	80	80	95	115	115	130	150	170
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7
E mm	9,7	10,1	13,2	14,5	16,8	19,1	19,1	23,4
F mm	30,75	31,25	38	42,25	47,75	54,25	60,25	72,75
G mm	23,75	24,75	32,5	36,75	43,25	50,75	55,75	66,25
H mm	54,5	56	70,5	79	91	105	116	139
SW mm	17	21	26	32	39	48	55	68
Weight gr.	137	151	250	399	617	1035	1440	2714

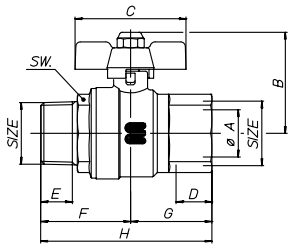
Art. S.0197 LOGIC



Full bore ball valve with T-handle, female/female, **heavy line**, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"
øA bore	10	10	15	20	25
B mm	33,75	33,75	40,5	49,2	53,2
C mm	52	52	52	65	65
D mm	11	11,4	15	16,3	19,1
E mm	47,5	49,5	65	73,5	86,5
SW mm	17	21	26	32	39
Weight gr.	117	130	236	370	599

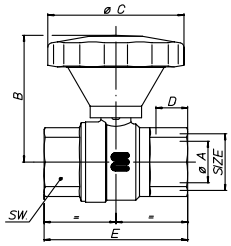
Art. S.0198 LOGIC



Full bore ball valve with T-handle, male/female, **heavy line**, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"
øA bore	10	10	15	20	25
B mm	33,75	33,75	40,5	49,2	53,2
C mm	52	52	52	65	65
D mm	11	11,4	15	16,3	19,1
E mm	9,7	10,1	13,2	14,5	16,8
F mm	30,75	31,25	38	42,25	47,75
G mm	23,75	24,75	32,5	36,75	43,25
H mm	54,5	56	70,5	79	91
SW mm	17	21	26	32	39
Weight gr.	132	146	240	386	604

Art. S.0450 LOGIC • BRAVO

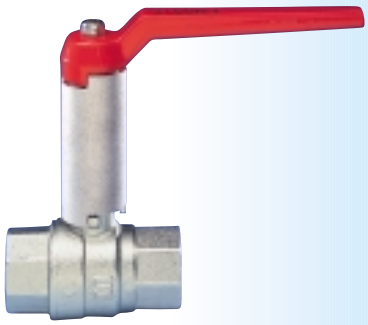


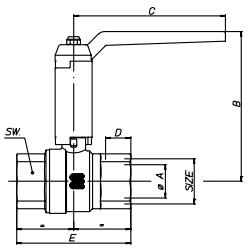
Full bore ball valve with BRAVO gear handle, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"
øA bore	10	10	15	20	25	32	40	50
B mm	67	67	70,5	76	80	116	123	131,5
øC mm	82	82	82	82	82	128	128	128
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7
E mm	47,5	49,5	65	73,5	86,5	101,5	111,5	132,5
SW mm	17	21	26	32	39	48	55	68
Weight gr.	184	197	302	428	657	1218	1760	2840

HEAVY LINE FULL BORE BALL VALVE

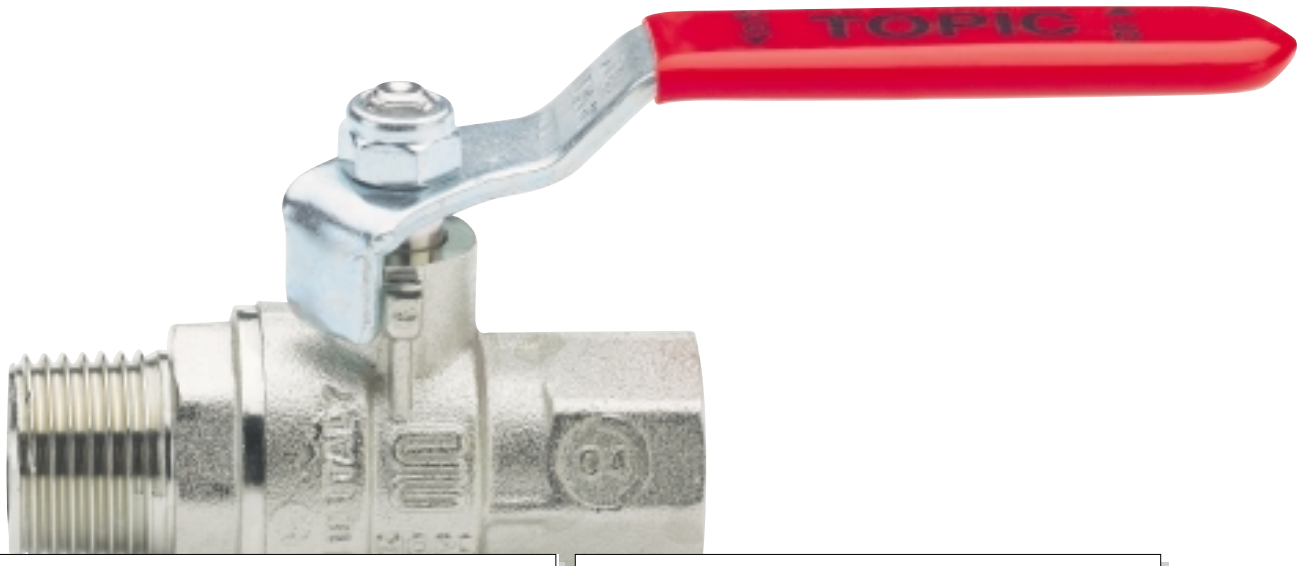
Art. S.0454 LOGIC • XT





Full bore ball valve with extended stem, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	96,5	96,5	98,5	109,5	113,5	123	133	145	164,5	176	197,5
C mm	80	80	95	115	115	130	150	170	170	235	235
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3	39,3
E mm	47,5	49,5	65	73,5	86,5	101,5	111,5	132,5	158	181,5	219
SW mm	17	21	26	32	39	48	55	68	83	97	124
Weight gr.	203	216	326	484	713	1160	1747	2925	3723	6366	11562



Factory Mutual Research

November 5, 1999

QUICK OPENING VALVES - BALL TYPE

TOPIC 512H
Sizes 1/2, 3/4, 1, 1-1/4, 1-1/2, and 2 inch NPS

from

ENOLGAS BONOMI S.A.S.
DI BONOMI SANDRO E FRATELLI
VIA EUROPA, 227
25062 CONCESIO (BS)
ITALY

I INTRODUCTION

II DESCRIPTION

2.1 Rated Working Pressure

Size, inch (mm)	Rated Working Pressure, psi (KPa)
1/2 (12)	500 (4000)
3/4 (19)	405 (3000)
1 (25)	405 (3000)
1-1/4 (32)	365 (2500)
1-1/2 (38)	360 (2500)
2 (50)	290 (2000)

Certification of Trade Mark

"VALVOLA VERDE®"

(ECO VALVE)

The article named **Ball valve 2" mod. "TOPIC", Ni coated**
representative of Family n°1,
of manufacturer **ENOLGAS S.p.A.**
Located in **via Europa, 227 - 25062 Concesio (BS)**

It has been certified by RUVARIS Srl to be able to get the mark
"VALVOLA VERDE®"

because, submitted to Pb release test (carcinogenic metal as per "Guidelines for Drinking water - 1996" WHO),
it has given release levels under the WHO limits.
The extraction procedure adopted is according to ANSI/NSF61 section 8.
Test results are showed in the following table:

METAL	RESULTS pH 5	RESULTS pH 10	LIMITS
Pb Lead	----gl	----gl	10 - gl

Scientific Revisor
Dr. Giuliano Franzoni

Technical Revisor
Dr. Andrea Rja

Ref. VVERDE001_Rev00
Date 13/12/04

Relaz. Tec. 064_113
date 15/12/2005

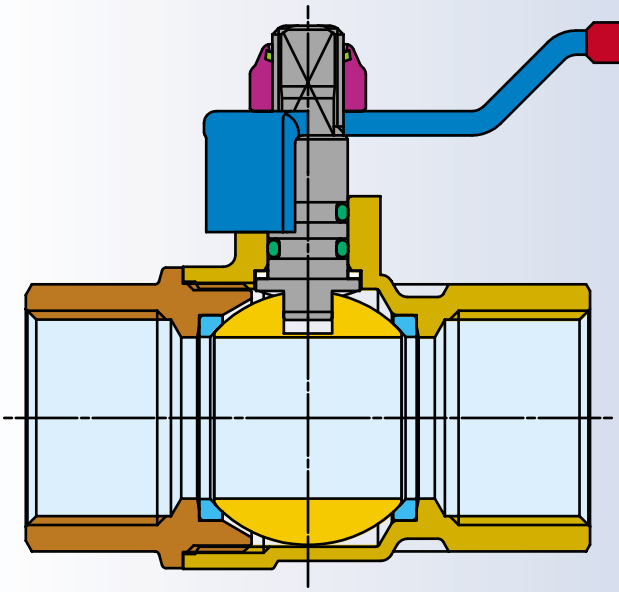
1/2

TOPIC

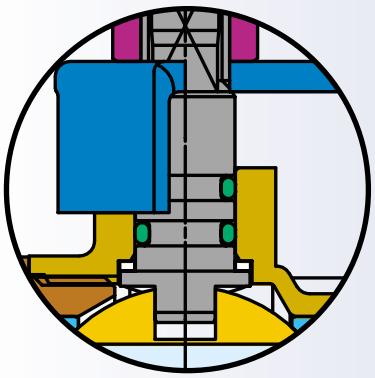
FULL BORE BALL VALVE

TOPIC

FULL BORE BALL VALVE

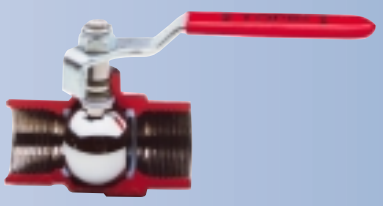


BODY	1
END ADAPTER	2
BALL	3
BALL GASKETS	4
STEM	5
THRUST WASHER	6
O-RINGS	7
HANDLE	8
SELF-LOCKING NUT	9



DOUBLE SEAL BLOW OUT-PROOF STEM

- The **TOPIC** ball valves are bottom loaded stem designed. This "anti-blow-out" stem also prevents from tampering with the internals of the valve when in the line.
- The **TOPIC** ball valves have 2 elastomer O-Rings on the stem, having longlife resistance to ageing.
- The double seal is performed by an anti-friction teflon thrust washer, working as a high pressure gasket.



FEATURES

- Standard line, full bore, long threads.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 7/1 Rp parallel standard.
- Screwed to ISO 7/1 Rc taper standard, available only upon request. The delivery time is to be agreed with the manfacturer everytime.

UTILISATION

- The **TOPIC** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- For special uses, see the table of chemical resistance on page 206 and 207.

WORKING PRESSURE

- From PN 50 (size 1/4") to PN 20 (size 2").
- See pressure/temperature diagram.

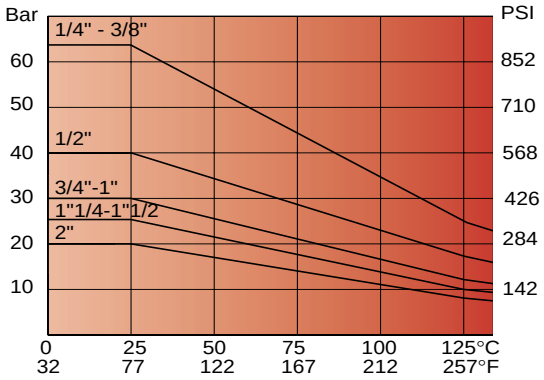
TEMPERATURE LIMITS

- -20°C +130°C

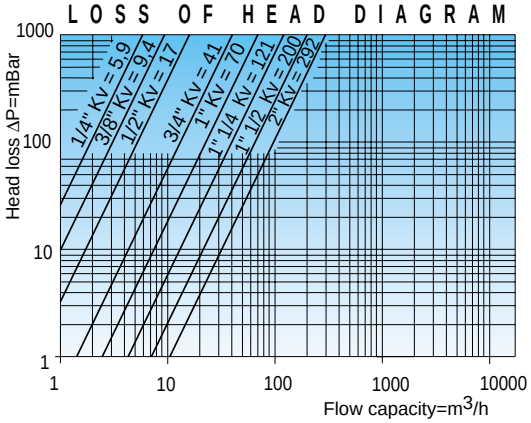
LEAD WASHED BRASS VALVES

- It is possible to receive the TOPIC valves in the lead washed version upon request.
- Recent studies have indeed proven that brass valves and cocks release significant quantities of lead (which is contained in each lead alloy) in water. This quantity is higher in the first months of use of the valve.
- Enolgas Bonomi S.p.A. has managed to take lead away from the brass surface in a simple and cheap way, by using a patented washing process.
- The products which undergo this process are completely according to the new standards concerning the release of lead in drinkable water.
- As a consequence of such process, the release of lead is always lower than 10 micrograms/liter, which is the value recommended by the WHO (World Health Organization).

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM

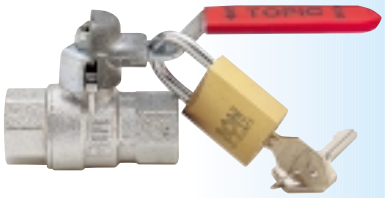


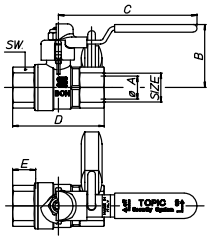
MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for the use
8	Handle	Steel Fe P02	Zinc-plated, red P.V.C. insulated
	Lever and T-handle	AL UNI5076	Red polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel

FULL BORE BALL VALVE

Art. S.0200 - S.1200 TOPIC

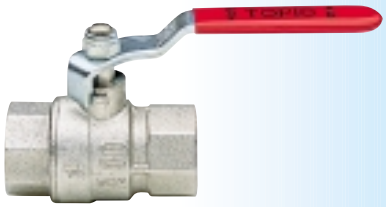


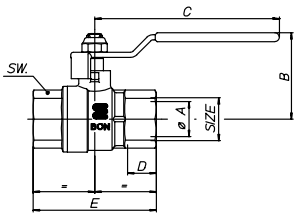


Full bore ball valve, female/female, with steel handle, **lockable in closed and open position** by means of a padlock, nickel-plated.
Art. S.0200 without padlock
Art. S.1200 with padlock

SIZE	½"
øA bore	15
B mm	41
C mm	90
D mm	59,5
E mm	15
SW mm	25
Weight gr.	231

Art. S.0201 TOPIC



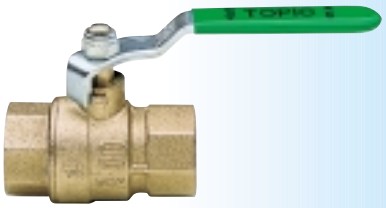


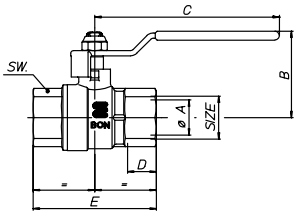
Full bore ball valve with steel handle, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	49,5	53,5	66	72	86
C mm	90	105	105	140	140	170
D mm	15	16,3	19,1	21,4	21,4	25,7
E mm	59,5	70	83	98,5	108	130
SW mm	25	31	38	47	54	66
Weight gr.	204	346	533	987	1475	2456

Art. S.0201V TOPIC • GREEN VALVE

AVAILABLE ALSO IN DZR BRASS

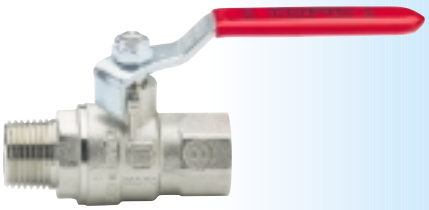


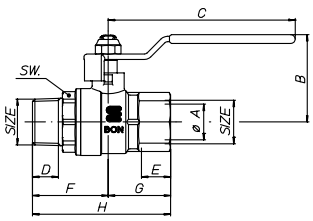


Full bore ball valve with steel handle, female/female, **lead washed**.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	49,5	53,5	66	72	86
C mm	90	105	105	140	140	170
D mm	15	16,3	19,1	21,4	21,4	25,7
E mm	59,5	70	83	98,5	108	130
SW mm	25	31	38	47	54	66
Weight gr.	204	346	533	987	1475	2456

Art. S.0202 TOPIC



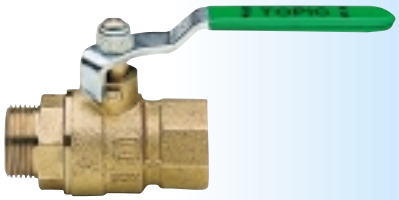


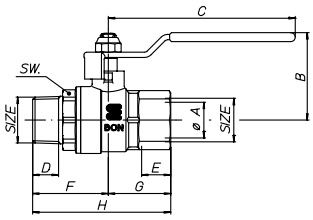
Full bore ball valve with steel handle, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	49,5	53,5	66	72	86
C mm	90	105	105	140	140	170
D mm	13,2	14,5	16,8	19,1	19,1	23,4
E mm	15	16,3	19,1	21,4	21,4	25,7
F mm	37,25	42,5	47,5	53,75	59,5	71,5
G mm	29,75	35	41,5	49,25	54	65
H mm	67	77,5	89	103	113,5	136,5
SW mm	25	31	38	47	54	66
Weight gr.	223	371	564	960	1492	2483

Art. S.0202V TOPIC • GREEN VALVE

AVAILABLE ALSO IN DZR BRASS

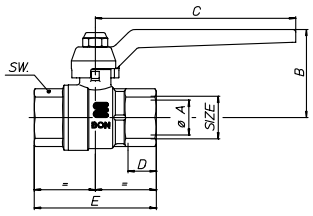




Full bore ball valve with steel handle, male/female, **lead washed**.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	49,5	53,5	66	72	86
C mm	90	105	105	140	140	170
D mm	13,2	14,5	16,8	19,1	19,1	23,4
E mm	15	16,3	19,1	21,4	21,4	25,7
F mm	37,25	42,5	47,5	53,75	59,5	71,5
G mm	29,75	35	41,5	49,25	54	65
H mm	67	77,5	89	103	113,5	136,5
SW mm	25	31	38	47	54	66
Weight gr.	223	371	564	960	1492	2483

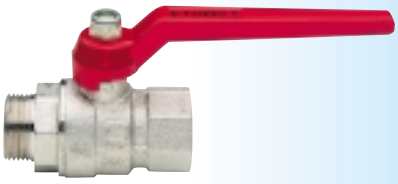
Art. S.0204 TOPIC

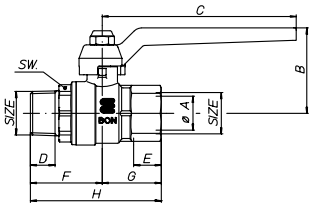


Full bore ball valve with aluminium lever, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	50,5	54,5	66	72	88,5
C mm	95	115	115	150	150	170
D mm	15	16,3	19,1	21,4	21,4	25,7
E mm	59,5	70	83	98,5	108	130
SW mm	25	31	38	47	54	66
Weight gr.	192	325	512	958	1446	2414

Art. S.0205 TOPIC

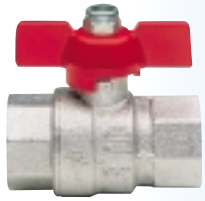


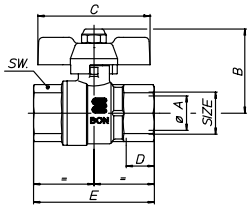


Full bore ball valve with aluminium lever, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	41	50,5	54,5	66	72	88,5
C mm	95	115	115	150	150	170
D mm	13,2	14,5	16,8	19,1	19,1	23,4
E mm	15	16,3	19,1	21,4	21,4	25,7
F mm	37,25	42,5	47,5	53,75	59,5	71,5
G mm	29,75	35	41,5	49,25	54	65
H mm	67	77,5	89	103	113,5	136,5
SW mm	25	31	38	47	54	66
Weight gr.	211	350	543	939	1421	2441

Art. S.0207 TOPIC



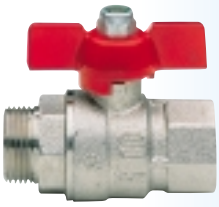


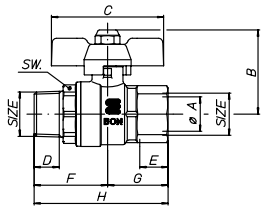
Full bore ball valve with T-handle, female/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	39,5	49	53,5
C mm	52	65	65
D mm	15	16,3	19,1
E mm	59,5	70	83
SW mm	25	31	38
Weight gr.	182	312	499

FULL BORE BALL VALVE

Art. S.0208 TOPIC

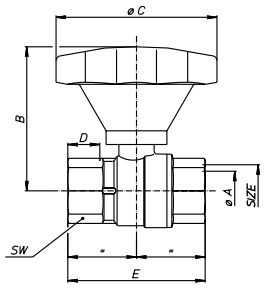




Full bore ball valve with T-handle, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	39,5	49	53,5
C mm	52	65	65
D mm	13,2	14,5	16,8
E mm	15	16,3	19,1
F mm	37,25	42,5	47,5
G mm	29,75	35	41,5
H mm	67	77,5	89
SW mm	25	31	38
Weight gr.	201	337	530

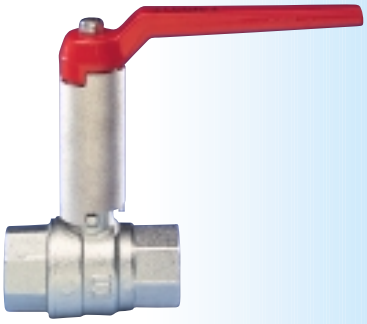
Art. S.0458 TOPIC•BRAVO

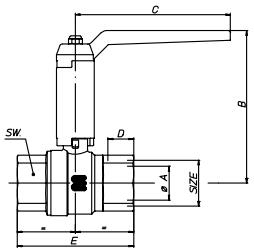


Full bore ball valve with BRAVO gear handle, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"
øA bore	10	10	15	20	25	32	40	50
B mm	65,5	65,5	69,5	74	80	114	120	130
øC mm	82	82	82	82	82	128	128	128
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7
E mm	47,5	49,5	59,5	70	83	98,5	108	130
SW mm	17	21	25	31	38	47	54	66
Weight gr.	175	213	242	325	562	1070	1566	2570

Art. S.0466 TOPIC•XT

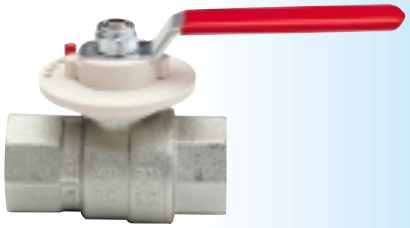


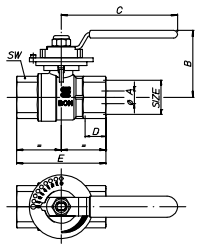


Full bore ball valve with extended stem, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	96,5	96,5	98,5	109,5	113,5	123	133	145	164,5	176	197,5
C mm	80	80	95	115	115	130	150	170	170	235	235
D mm	11	11,4	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3	39,3
E mm	47,5	49,5	65	73,5	86,5	101,5	111,5	132,5	158	181,5	219
SW mm	17	21	26	32	39	48	55	68	83	97	124
Weight gr.	203	216	326	484	713	1160	1747	2925	3723	6366	11562

Art. S.1205 HEATING BALL VALVE

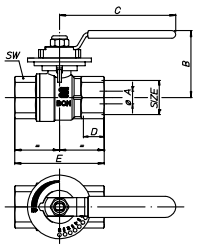




Ball valve for floor heating equipment with **graduated disc**, **red lever**, nickel-plated.

SIZE	¾"
øA bore	10
B mm	52,6
C mm	91
D mm	16,3
E mm	70
SW mm	31
Weight gr.	382

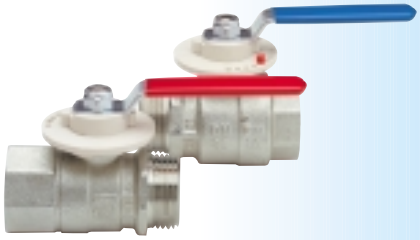
Art. S.1206 HEATING BALL VALVE

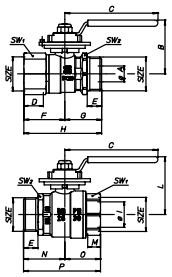


Ball valve for floor heating equipment with **graduated disc**, **blue lever**, nickel-plated.

SIZE	¾"
øA bore	10
B mm	52,6
C mm	91
D mm	16,3
E mm	70
SW mm	31
Weight gr.	382

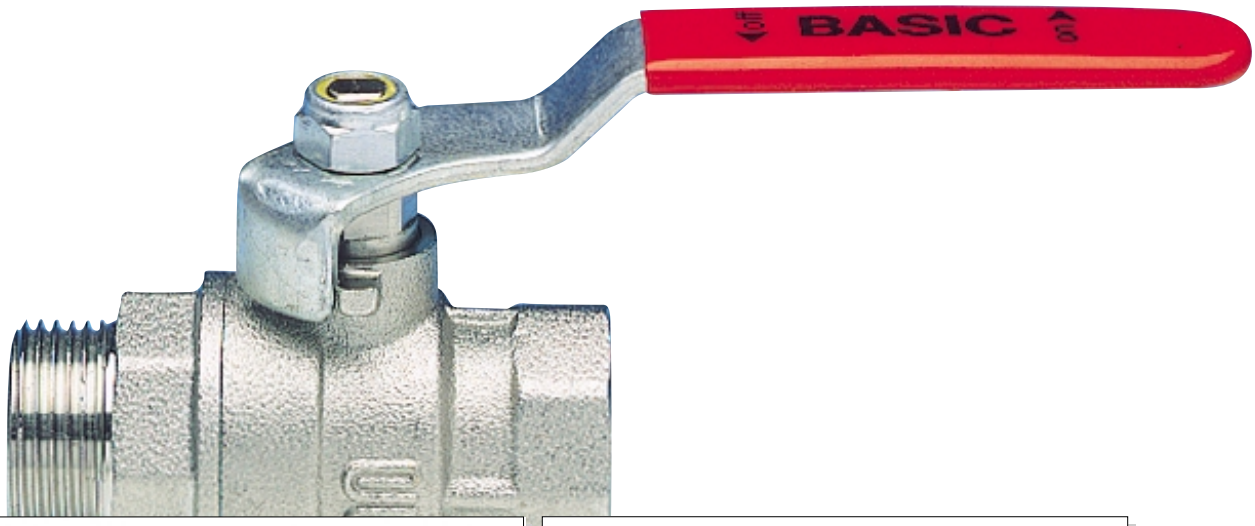
Art. S.1207 HEATING BALL VALVE

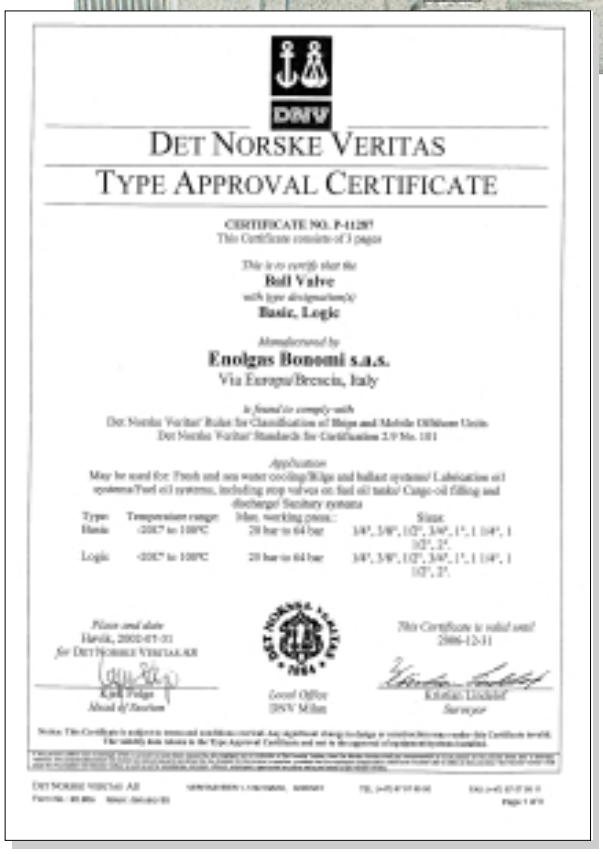




Couple of ball valves for floor heating equipment with **graduated discs**, **red and blue levers**, nickel-plated.

SIZE	1"
øA bore	15,3
B mm	52,8
C mm	91
D mm	19,1
E mm	14
F mm	40
G mm	36
H mm	76
øI mm	25
L mm	56,6
N mm	41,6
O mm	34,9
P mm	76,5
SW1 mm	39
SW2 mm	38
Weight gr.	940





DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-11287
This Certificate consists of 3 pages

This is to certify that the

Ball Valve

with type designation(s)

Basic, Logic

Manufactured by

Enolgas Bonomi s.a.s.

Via Europa/Brescia, Italy

is found to comply with

Det Norske Veritas' Rules for Classification of Ships and Mobile Offshore Units
Det Norske Veritas' Standards for Certification 2.9 No. 101

Application

May be used for: Fresh and sea water cooling/Bilge and ballast systems/ Lubrication oil systems/Fuel oil systems, including stop valves on fuel oil tanks/ Cargo oil filling and discharge/ Sanitary systems

Type:	Temperature range:	Max. working press.:	Sizes:
Basic	-20/67 to 100°C	20 bar to 64 bar	1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2".
Logic	-20/67 to 100°C	20 bar to 64 bar	1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2".

Place and date
Høvik, 2003-07-31
for DET NORSKE VERITAS AS

Kjell Helge
Head of Section

Local Office
DNV Milan

This Certificate is valid until
2008-12-31

Kristian Lindelof
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/services supplied.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed NOK 1 400 000.

In these terms and conditions "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

DET NORSKE VERITAS AS — TEL: [illegible] — FAX: [illegible]

Page 1 of 3

Certification of Trade Mark

"VALVOLA VERDE®"

(ECO VALVE)

The article named **Ball valve 2" mod. "BASIC", Ni coated,**
representative of Family n° 1,
of manufacturer **ENOLGAS S.p.A.**
Located in **via Europa, 227 - 25062 Concesio (BS)**

It has been certified by RUVARIS Srl to be able to get the mark
"VALVOLA VERDE®"

because, submitted to Pb release test (carcinogenic metal as per "Guidelines for Drinking water - 1998" WHO),
it has given release levels under the WHO limits.
The extraction procedure adopted is according to ANSI/NSF61 section 8.
Test results are showed in the following table:

METAL	RESULTS pH 5	RESULTS pH 10	LIMITS
Pb Lead	- - - - g/l	- - - - g/l	10 - g/l

Scientific Revisor
Dr. Giuliano Franzosi

Technical Revisor
Dr. Andrea Rijo

Ref. VVERIDI01_Rev00
Date 15/12/06

Relaz. Tec. 064_113
date 15/12/2006

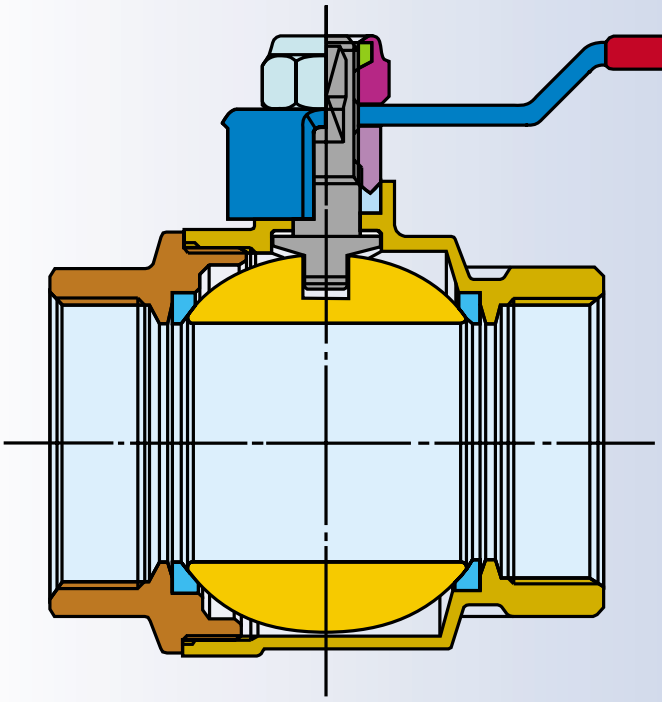
1/2

FULL BORE BALL VALVE

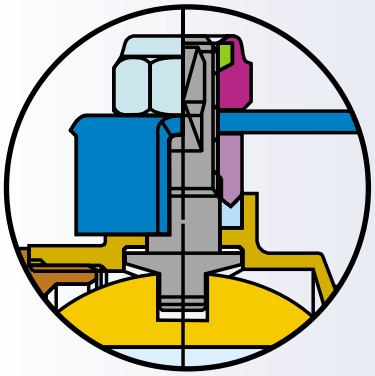
BASIC

BASIC

FULL BORE BALL VALVE

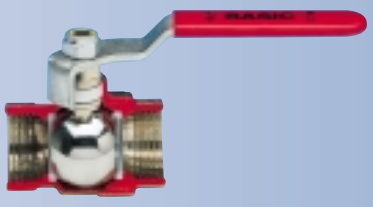


BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
THRUST WASHER	6	
STEM PACKING	7	
GLAND	8	
HANDLE	9	
SELF-LOCKING NUT	10	



DOUBLE SEAL BLOW OUT-PROOF STEM

- The **BASIC** ball valves are bottom loaded stem designed. This "anti-blow-out" stem also prevents from tampering with the internals of the valve when in the line.
- The double seal is performed by an anti-friction teflon thrust washer, working as a high pressure gasket.



FEATURES

- Standard line, full bore, short threads.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 228/1 standard.

UTILISATION

- The **BASIC** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- For special uses, see the table of chemical resistance on the pages 206 and 207.

WORKING PRESSURE

- From PN 50 (size 1/4") to PN 10 (size 4").
- See pressure/temperature diagram.

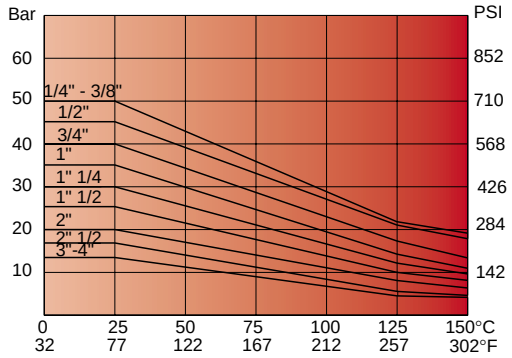
TEMPERATURE LIMITS

- -20°C +150°C

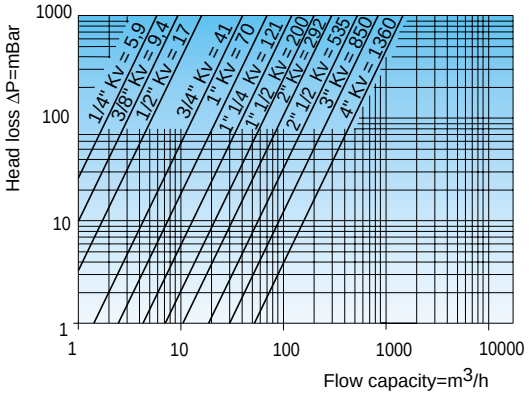
LEAD WASHED BRASS VALVES

- It is possible to receive the BASIC valves in the lead washed version upon request.
- Recent studies have indeed proven that brass valves and cocks release significant quantities of lead (which is contained in each lead alloy) in water. This quantity is higher in the first months of use of the valve.
- Enolgas Bonomi S.p.A. has managed to take lead away from the brass surface in a simple and cheap way, by using a patented washing process.
- The products which undergo this process are completely according to the new standards concerning the release of lead in drinkable water.
- As a consequence of such process, the release of lead is always lower than 10 micrograms/liter, which is the value recommended by the WHO (World Health Organization).

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM

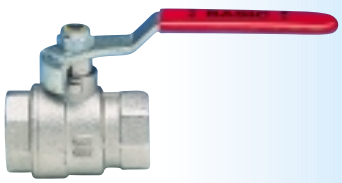


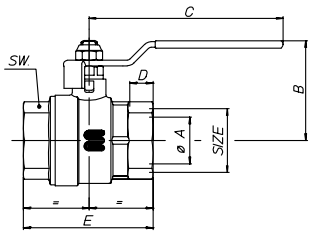
MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar, nickel-plated
6	Thrust washer	P.T.F.E.	Pure Teflon
7	Stem packing	P.T.F.E.	Pure Teflon
8	Gland	CW 614 N UNI EN 12164	Machined brass bar
9	Handle	Steel Fe P02	Zinc-plated, red P.V.C. insulated
	Lever and T-handle	AL UNI5076	Red polyurethan-coated aluminium
10	Self-locking nut	8G Steel	Zinc-plated steel

FULL BORE BALL VALVE

Art. S.0211 BASIC

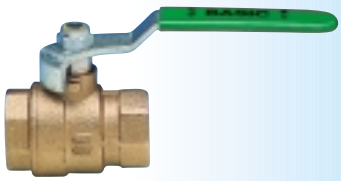


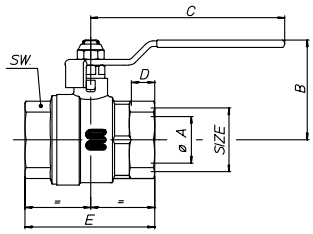


Full bore ball valve with steel handle, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2" ½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	38	38	39,5	47,5	51,5	62	71	85,5	98,5	112,5	135
C mm	90	90	90	105	105	120	140	170	170	250	250
D mm	11	11,4	9,5	11	12,5	13,5	15,5	17,5	19,5	21	24,3
E mm	47,5	49,5	49	59	70	81	94	112	134	156	189
SW mm	17	21	25	31	38	47	54	66	83	97	124
Weight gr.	140	153	182	307	465	795	1330	2280	3202	5376	9080

Art. S.0211V BASIC • GREEN VALVE

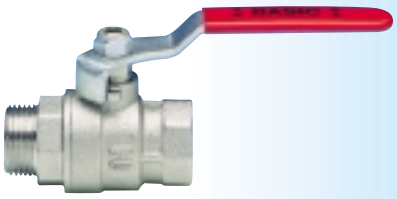


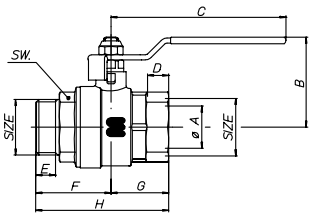


Full bore ball valve with steel handle, female/female, **lead washed**.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2" ½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	38	38	39,5	47,5	51,5	62	71	85,5	98,5	112,5	135
C mm	90	90	90	105	105	120	140	170	170	250	250
D mm	11	11,4	9,5	11	12,5	13,5	15,5	17,5	19,5	21	24,3
E mm	47,5	49,5	49	59	70	81	94	112	134	156	189
SW mm	17	21	25	31	38	47	54	66	83	97	124
Weight gr.	140	153	182	307	465	795	1330	2280	3202	5376	9080

Art. S.0212 BASIC

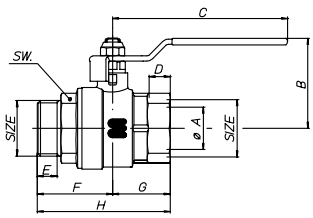




Full bore ball valve with steel handle, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	39,5	47,5	51,5	62	71	85,5
C mm	90	105	105	120	140	170
D mm	9,5	11	12,5	13,5	15,5	17,5
E mm	9,7	10,7	11,7	13,2	14,7	16,7
F mm	35	40,5	44,5	47,5	54,5	65
G mm	24,5	29,5	35	40,5	47	56
H mm	59,5	70	79,5	98	101,5	121
SW mm	25	31	38	47	54	66
Weight gr.	209	351	551	898	1437	2297

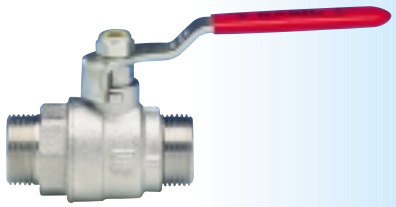
Art. S.0212V BASIC • GREEN VALVE

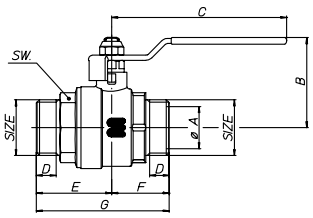


Full bore ball valve with steel handle, male/female, **lead washed**.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	39,5	47,5	51,5	62	71	85,5
C mm	90	105	105	120	140	170
D mm	9,5	11	12,5	13,5	15,5	17,5
E mm	9,7	10,7	11,7	13,2	14,7	16,7
F mm	35	40,5	44,5	47,5	54,5	65
G mm	24,5	29,5	35	40,5	47	56
H mm	59,5	70	79,5	98	101,5	121
SW mm	25	31	38	47	54	66
Weight gr.	209	351	551	898	1437	2297

Art. S.0213 BASIC

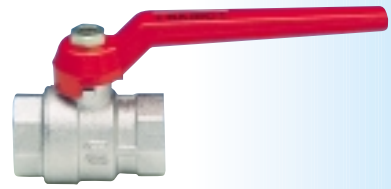


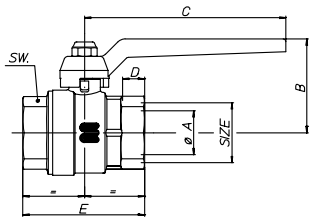


Full bore ball valve with steel handle, male/male, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	39	48
B mm	39,5	47,5	51,5	72	74	80
C mm	90	105	105	150	150	150
D mm	9,7	10,7	11,7	17	20	20
E mm	35	40,5	44,5	47,7	54,5	65
F mm	24,5	29,5	35	40,5	47,5	56
G mm	59,5	70	79,5	97	110	125
SW mm	25	31	38	47	54	66
Weight gr.	210	354	524	890	1430	2400

Art. S.0214 BASIC

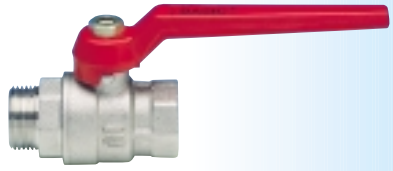


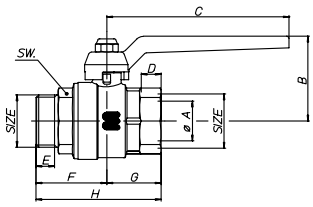


Full bore ball valve with aluminium lever, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	38,5	38,5	40	49,5	53,5	64	74,5	90	105,5	119,5	142
C mm	80	80	80	115	115	130	150	170	170	235	235
D mm	11	11,4	9,5	11	12,5	13,5	15,5	17,5	19,5	21	24
E mm	47,5	49,5	49	59	70	81	94	112	134	156	189
SW mm	17	21	25	31	38	47	54	66	83	97	124
Weight gr.	122	135	163	284	448	758	1300	2173	3146	5345	10100

Art. S.0215 BASIC

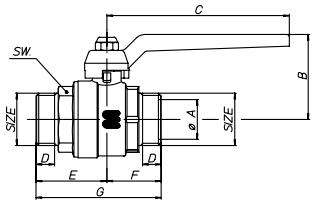




Full bore ball valve with aluminium lever, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	40	49,5	53,5	64	74,5	90
C mm	80	115	115	130	150	170
D mm	9,5	11	12,5	13,5	15,5	17,5
E mm	9,7	10,7	11,7	13,2	14,7	16,7
F mm	35	40,5	44,4	51	57	66
G mm	24,5	29,5	35	40,5	47	56
H mm	59,5	70	79,5	91,5	104	122
SW mm	25	31	38	47	54	66
Weight gr.	192	330	530	864	1408	2259

Art. S.0216 BASIC

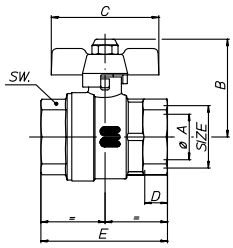


Full bore ball valve with aluminium lever, male/male, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
øA bore	15	20	25	32	40	50
B mm	40	49,5	53,5	64	74,5	90
C mm	80	115	115	130	150	170
D mm	9,7	10,7	11,7	13,2	14,7	16,7
E mm	34,75	40,5	44,5	47,7	54,5	65
F mm	24,75	29,5	35	40,5	47,5	56
G mm	59,5	70	79,5	88	102	121
SW mm	25	31	38	47	54	66
Weight gr.	130	315	501	865	1400	2370

FULL BORE BALL VALVE

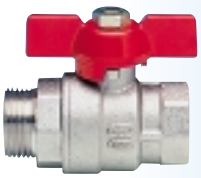
Art. S.0217 BASIC

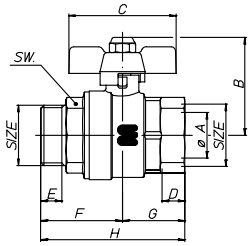


Full bore ball valve with T-handle, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"
øA bore	10	10	15	20	25
B mm	34,5	34,5	38	47	51
C mm	52	52	52	65	65
D mm	7	8,5	9,5	11	12,5
E mm	38	43	49	59	70
SW mm	17	21	25	31	38
Weight gr.	108	120	165	273	437

Art. S.0218 BASIC

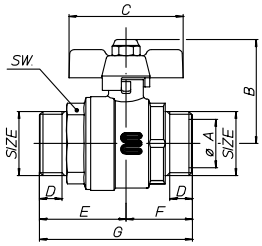




Full bore ball valve with T-handle, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	38	47	51
C mm	52	65	65
D mm	9,5	11	12,5
E mm	9,7	10,7	11,7
F mm	35	40,5	44,4
G mm	24,5	29,5	35
H mm	59,5	70	79,5
SW mm	25	31	38
Weight gr.	187	317	517

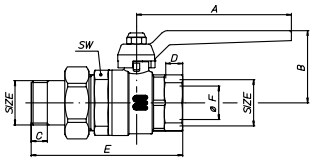
Art. S.0219 BASIC



Full bore ball valve with T-handle, male/male, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	38	47	51
C mm	52	65	65
D mm	9,7	10,7	11,7
E mm	35	40,5	44,5
F mm	24,5	29,5	35
G mm	59,5	70	79,5
SW mm	25	31	38
Weight gr.	188	320	500

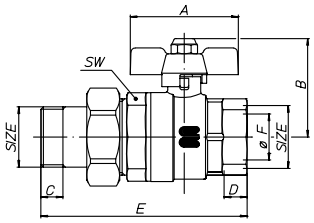
Art. S.0226 BASIC



Full bore ball valve with nut and tail, with aluminium lever, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼
A mm	80	115	115	115
B mm	40,5	48,5	52,5	54,5
C mm	10	12	12	15
D mm	9,5	11	12,5	21,4
E mm	83	96	112,5	129
øF bore	15	20	25	25
SW mm	27	34	43	49
Weight gr.	273	464	740	893

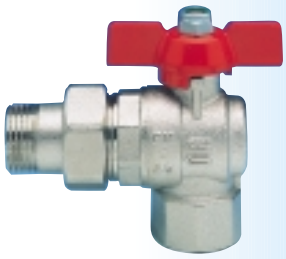
Art. S.0227 BASIC

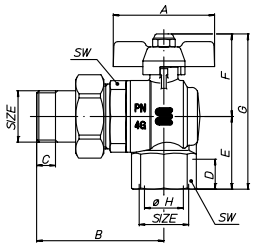


Full bore ball valve with nut and tail, with T-handle, male/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼
A mm	52	65	65	65
B mm	39	48	52	53
C mm	10	12	12	15
D mm	9,5	11	12,5	21,4
E mm	83	96	112,5	130
øF bore	15	20	25	25
SW mm	27	34	43	49
Weight gr.	268	430	727	881

Art. S.0228 BASIC

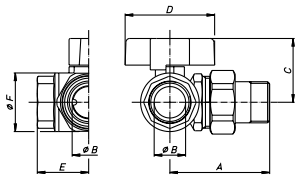




Angled full bore ball valve with nut and tail, with T-handle, female/male, nickel-plated.

SIZE	½"	¾"	1"
A mm	52	65	65
B mm	60,5	70	81,5
C mm	10	12	12
D mm	15	16,3	19,1
E mm	33	39	46,5
F mm	40	49	53
G mm	73	88	99,5
øH bore	15	20	25
SW mm	26	32	39
Weight gr.	292	493	772

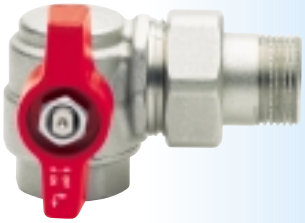
Art. S.1091 BASIC

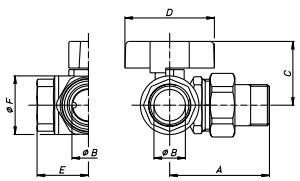


Horizontal angled full bore ball valve, with **blue** T-handle, female/nut and tail.

SIZE	¾"	1"
A mm	63,4	78,5
øB mm	20	25
C mm	41,5	47
D mm	57	57
E mm	31,6	38
øF mm	38,5	47
Weight gr.	423	768

Art. S.1092 BASIC



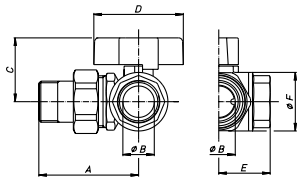


Horizontal angled full bore ball valve, with **red** T-handle, female/nut and tail.

SIZE	¾"	1"
A mm	63,4	78,5
øB mm	20	25
C mm	41,5	47
D mm	57	57
E mm	31,6	38
øF mm	38,5	47
Weight gr.	423	768

FULL BORE BALL VALVE

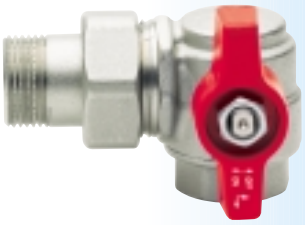
Art. S.1093 BASIC

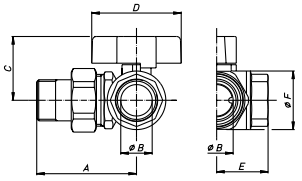


Horizontal angled full bore ball valve, with **blue** T-handle, female/nut and tail.

SIZE	¾"	1"
A mm	63,4	78,5
øB mm	20	25
C mm	41,5	47
D mm	57	57
E mm	31,6	38
øF mm	38,5	47
Weight gr.	423	768

Art. S.1094 BASIC

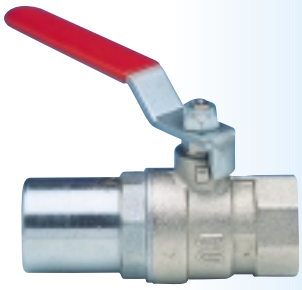


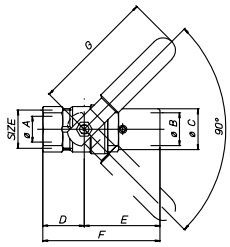


Horizontal angled full bore ball valve, with **red** T-handle, female/nut and tail.

SIZE	¾"	1"
A mm	63,4	78,5
øB mm	20	25
C mm	41,5	47
D mm	57	57
E mm	31,6	38
øF mm	38,5	47
Weight gr.	423	768

Art. S.0229 BASIC•DEEP FRYERS

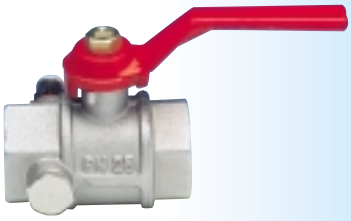


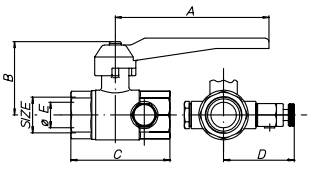


Female ball valve for deep fryers, with red steel lever, nickel-plated.

SIZE	¾"
øA bore	17,5
øB mm	22,3
øC mm	29,5
D mm	30
E mm	55
F mm	85
G mm	90
Weight gr.	330

Art. S.0242 - S.0245 BASIC•DRAIN VALVE

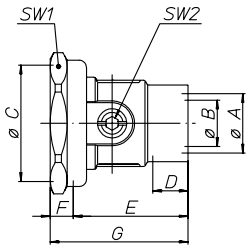




Art. S.0242 - Full bore drain valve, with hose connector.
Art. S.0245 - Full bore drain valve, without hose connector.

SIZE	½"	¾"	1"	1"¼	1"½	2"
A mm	75	95	95	115	150	150
B mm	43	52	56	71	81	89
C mm	54	60,5	74	84	96	110
D mm	55	58	62	66	71	78
ø E bore	15	20	25	32	40	50
Weight gr.	235	345	535	890	1250	1720

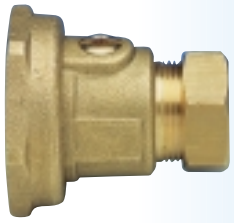
Art. S.0320 MINI•PUMP

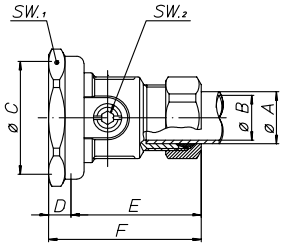


Ball valve for pumps, female threaded, with hexagonal nut.

SIZE	1"½x¾	1"½x1
øA	3/4"	1"
øB bore	19	19
øC	1"1/2	1"1/2
D mm	14,5	15,7
E mm	47,3	49
F mm	9,5	9,5
G mm	56,8	58,5
SW_1 mm	52	52
SW_2 mm	5	5
Weight gr.	293	307

Art. S.0321 MINI•PUMP

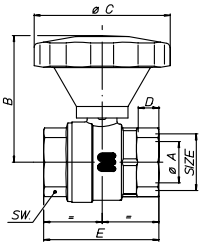




Ball valve for pumps, compression ring connection for copper pipe, with hexagonal nut.

SIZE	1"½x22	1"½x28
øA mm	22	28
øB bore	19	19
øC	1"1/2	1"1/2
D mm	9,5	9,5
E mm	52,5	53,5
F mm	62	63
Weight gr.	334	334

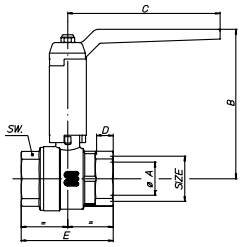
Art. S.0460 BASIC•BRAVO



Full bore ball valve with BRAVO gear handle, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1" ¼"	1"½	2"
øA bore	10	10	15	20	25	32	40	50
B mm	67	67	68	74	78	114,5	121	130
øC mm	82	82	82	82	82	128	128	128
D mm	7	8,5	9,5	11	12,5	13,5	15,5	17,5
E mm	38	43	49	59	70	81	94	112
SW mm	17	21	25	31	38	47	54	66
Weight gr.	175	187	226	330	514	969	1435	2314

Art. S.0464 BASIC•XT

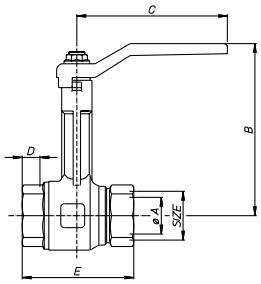


Full bore ball valve with extended stem, female/female, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	10	10	15	20	25	32	40	50	65	80	100
B mm	96,5	96,5	97,5	107	111	121,5	131	146,5	161	175	190
C mm	80	80	80	115	115	130	150	170	170	235	235
D mm	7	8,5	9,5	11	12,5	13,5	15,5	17,5	19,5	21	24,3
E mm	38,5	43,5	49	58,5	70	80,5	94	111,5	134	156	189
SW mm	17	21	25	31	38	47	54	66	83	97	124
Weight gr.	194	206	245	387	571	911	1469	2438	3399	6120	-

FULL BORE BALL VALVE

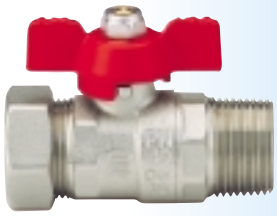
Art. S.0472 BASIC • XT • MONOBLOCK

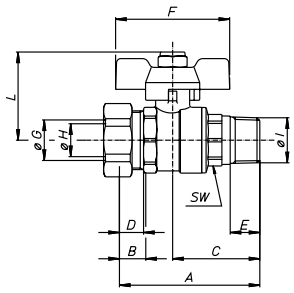


Full bore ball valve, with monoblock extended stem, female/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B min mm	26,5	30	35
B max mm	51	54	64
C mm	24,5	24	29
D mm	100	103	112
E mm	9,5	11	11,5
F mm	49	58,5	69
SW mm	26	31	39
Weight gr.	443	530	880

Art. R.0090 BASIC

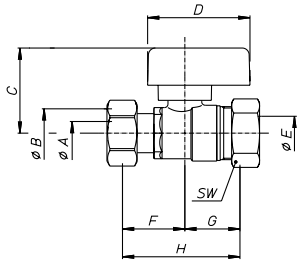




Ball valve for water, male/compression ring connection for copper pipe, with butterfly, nickel-plated.

SIZE	½"x16	¾"x18
A bore	64	64
B mm	12	12
C mm	39,75	39,75
D mm	11	11
E mm	13,5	18
F mm	52	52
øG mm	18,5	18,5
øH mm	15	15
øI	½"	¾"
L mm	40,2	40,2
SW mm	22	28

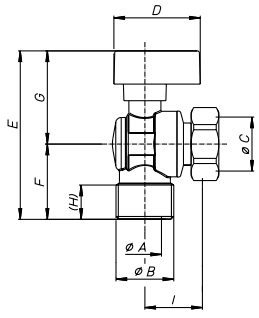
Art. R.0254 BASIC



Ball valve for water, nut/compression ring connection for copper pipe, with black plastic coated aluminium lever, nickel-plated.

SIZE	½"x14
øA bore	10
B	½"
C mm	36,6
D mm	44
øE mm	14
F mm	26,8
G mm	23,7
H mm	50,5
SW mm	25

Art. G.0387 BASIC



Angled ball valve for water, male/nut, with black plastic coated aluminium lever, nickel-plated.

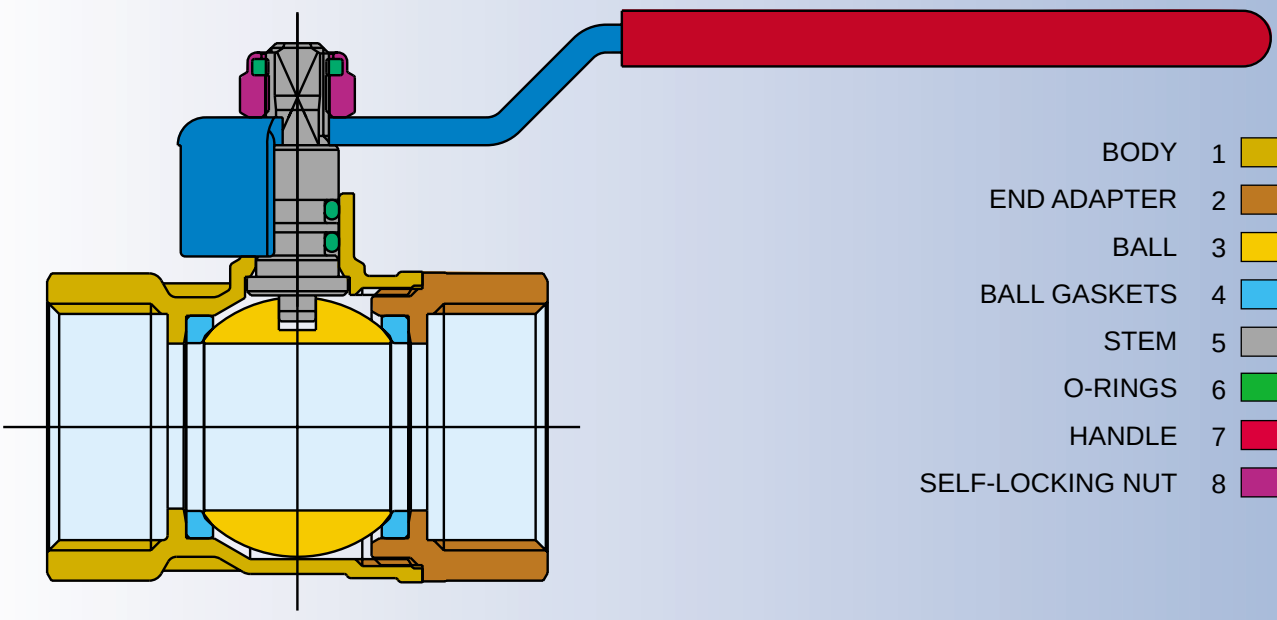
SIZE	½"x½"	¾"x¾"
ø A mm	12,5	15
øB	½"	¾"
øC	½"	¾"
D mm	39	39
E mm	71	76
F mm	41	34
G mm	30	42
H mm	12	15,5
I mm	26	26

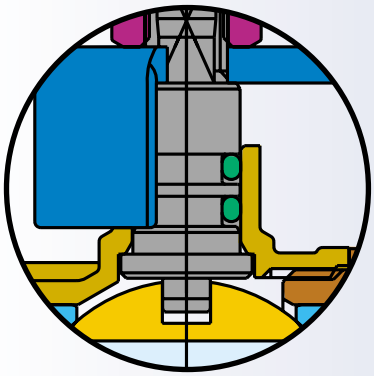
ATOMIC

STANDARD BORE BALL VALVE

ATOMIC

STANDARD BORE BALL VALVE





BLOW OUT-PROOF STEM

- The **ATOMIC** ball valves are bottom loaded stem designed. This "anti-blow-out" stem also prevents from tampering with the internals of the valve when in the line.
- The **ATOMIC** ball valves have a double seal with 2 elastomer O-Rings on the stem, having long life resistance to ageing.

FEATURES

- Compact line design.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 228/1 standard.
- Screwed to ISO 228/1r standard, available only upon request. The delivery time is to be agreed with the manfacturer everytime.

UTILISATION

- The **ATOMIC** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- For special uses, see the table of chemical resistance on pages 206 and 207.

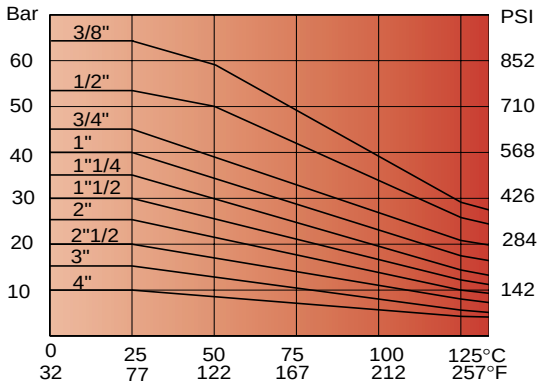
WORKING PRESSURE

- From PN 65 (size 3/8") to PN 10 (size 4").
- See pressure/temperature diagram.

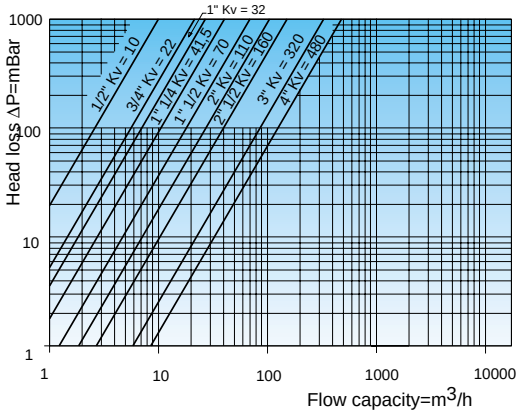
TEMPERATURE LIMITS

- -20°C +130°C

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM

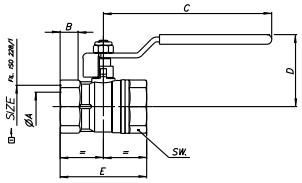


MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar, nickel-plated
6	O-Rings	Elastomer	Suitable for the use
7	Handle	Steel Fe P02	Zinc-plated, red P.V.C. insulated
	Lever and T-handle	AL UNI5076	Red polyurethan-coated aluminium
8	Screw	8G Steel	Zinc-plated steel

STANDARD BORE BALL VALVE

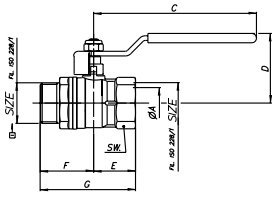
Art. R.0311 ATOMIC



Reduced bore ball valve with steel handle, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	14	18	23	25	32	40	50	63	76
B mm	9,8	11,2	12,7	13,7	15,7	17,7	85	95	110
C mm	105	105	105	105	120	140	170	170	250
D mm	42	45	48	53,5	63	72	18,5	19,3	21,3
E mm	45,5	54	61,5	74,5	85	102,5	113	129	150
SW	25	30	38	47	54	66	83	96	122
Weight gr.	150	225	325	550	876	1445	2800	4020	4550

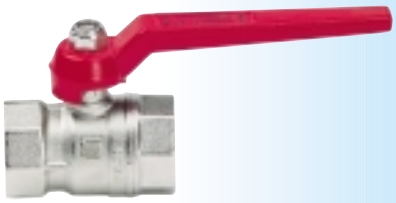
Art. R.0312 ATOMIC

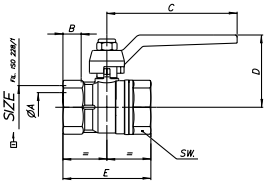


Reduced bore ball valve with steel handle, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	14	18	23
B mm	9,8	11,2	12,7
C mm	105	105	105
D mm	42	45	48
E mm	22,75	27	30,75
F mm	30,25	34,5	39,5
G mm	53	61,5	70,25
SW	25	31	38
Weight gr.	176	253	386

Art. R.0314 ATOMIC

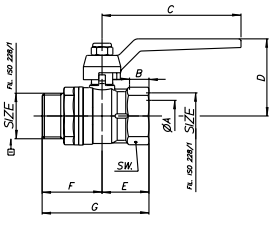




Reduced bore ball valve with aluminium lever, female/female, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	14	18	23	25	32	40	50	63	76
B mm	9,8	11,2	12,7	13,7	15,7	17,7	97	115	120
C mm	80	80	80	115	130	130	180	270	270
D mm	41,5	44,5	47,5	54,5	64	72	21	24	24
E mm	45,5	54	61,5	74,5	85	102,5	110	133	150
SW	25	30	38	47	54	66	83	97	121
Weight gr.	133	200	310	520	875	1380	2741	3989	4460

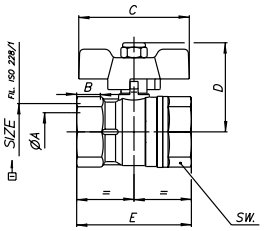
Art. R.0315 ATOMIC



Reduced bore ball valve with aluminium lever, male/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	14	18	23
B mm	9,8	11,2	12,7
C mm	80	80	80
D mm	41,5	44,5	47,5
E mm	22,75	27	30,75
F mm	30,25	34,5	39,5
G mm	53	61,5	70,25
SW	25	31	38
Weight gr.	150	233	366

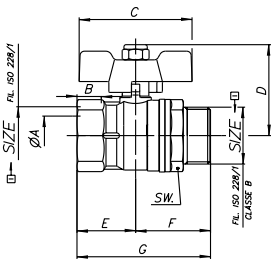
Art. R.0317 ATOMIC



Reduced bore ball valve with T-handle, female/female, nickel-plated.

SIZE	½"	¾"	1"
øA bore	14	18	23
B mm	9,8	11,2	12,7
C mm	52	52	52
D mm	39	42	45
E mm	45,5	54	61,5
SW	25	31	38
Weight gr.	123	195	289

Art. R.0318 ATOMIC



Reduced bore ball valve with T-handle, male/female, nickel-plated.

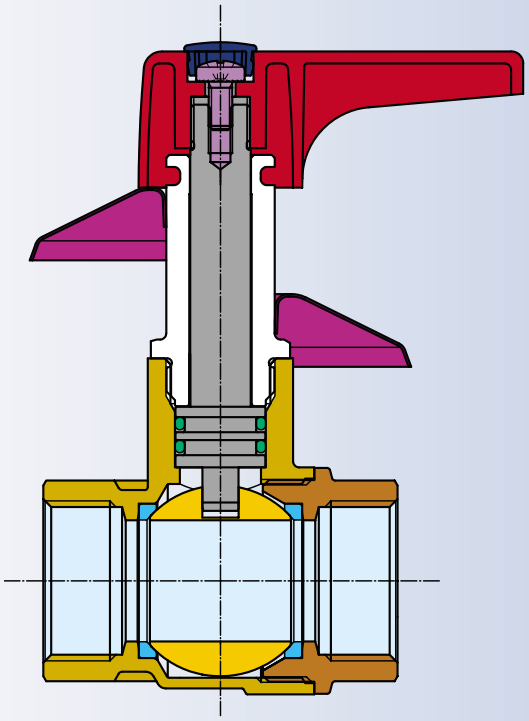
SIZE	½"	¾"	1"
øA bore	14	18	23
B mm	9,8	11,2	12,7
C mm	52	52	52
D mm	39	42	45
E mm	22,75	27	30,75
F mm	30,25	34,5	39,5
G mm	53	61,5	70,25
SW	25	31	38
Weight gr.	147	232	364

INCAS

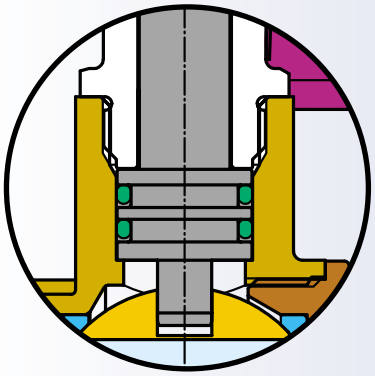
FULL BORE BALL VALVE

INCAS

FULL BORE BALL VALVE



BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
GLAND	6	
O - RINGS	7	
SCREW	8	
HANDLE	9	
COVERING PLATE	10	
PLUG	11	



TOP-ENTRY STEM DESIGN

- The **INCAS** ball valves are top-entry stem designed and is secured by the gland.
- The **INCAS** ball valves have a double seal with 2 elastomer O-Rings on the stem, having longlife resistance to ageing.

FEATURES

- Standard line, full bore.
- Perfect seal at low and high pressure.
- Wear resistant, solid and long lasting materials.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.

END CONNECTIONS

- Screwed to ISO 228/1 standard.

UTILISATION

- The **INCAS** ball valves are designed for wall built-in istallation.
- Suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- For special uses, see the table of chemical resistance on the pages 206 and 207.

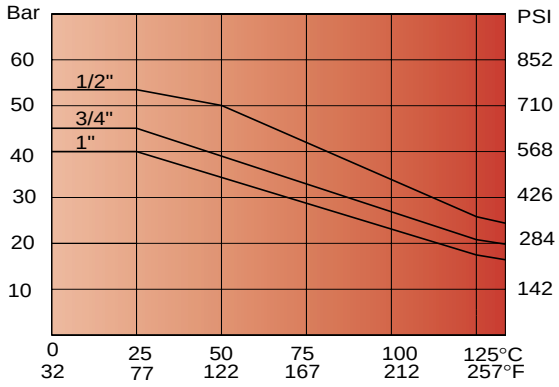
WORKING PRESSURE

- From PN 25 (sizes 1/2", 3/4", 1").
- See pressure/temperature diagram.

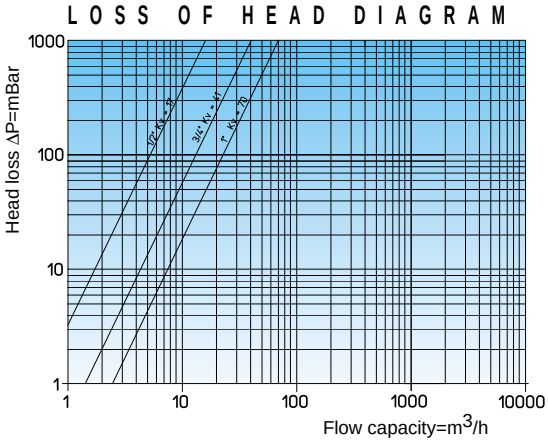
TEMPERATURE LIMITS

- -20°C +130°C

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM

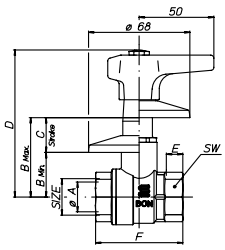


MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar, nickel-plated
6	Gland	P.T.F.E.	Pure Teflon
7	O - Rings	P.T.F.E.	Pure Teflon
8	Screw	CW 614 N UNI EN 12164	Machined brass bar
9	Handle	Crome brass	
10	Covering plate	8G Steel	Zinc-plated steel
11	Plug	8G Steel	Zinc-plated steel

FULL BORE BALL VALVE

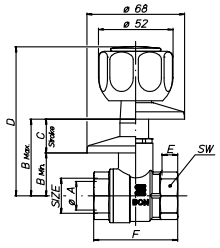
Art. S.0160 INCAS



Ball valve for wall built-in installation, with lever, chrome-plated, standard line.

SIZE	½"	¾"	1"
øA bore	15	20	25
B min mm	26,5	30	35
B max mm	50	53	61,5
C mm	23,5	23	26,5
D mm	95	98	107
E mm	9,5	11	11,5
F mm	49	58,5	69
SW mm	26	31	39
Weight gr.	405	521	728

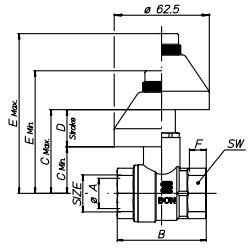
Art. S.0161 INCAS



Ball valve for wall built-in installation, with knob, chrome-plated, standard line.

SIZE	½"	¾"	1"
øA bore	15	20	25
B min mm	26,5	30	35
B max mm	51	54	64
C mm	24,5	24	29
D mm	100	103	112
E mm	9,5	11	11,5
F mm	49	58,5	69
SW mm	26	31	39
Weight gr.	443	530	880

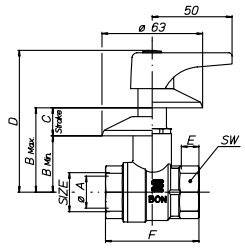
Art. S.0162 INCAS 2



Ball valve for wall built-in installation, with cap, chrome-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B mm	49	58,5	69
C min mm	27	30,5	36
C max mm	52	55	59
D mm	25	24,5	23
E min mm	77	80,5	86
E max mm	102	105	109
F mm	9,5	11	11,5
SW mm	26	31	39
Weight gr.	330	435	634

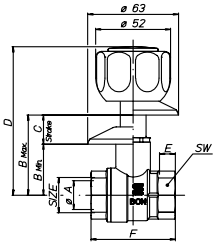
Art. S.0163 INCAS 2



Ball valve for wall built-in installation, with lever, chrome-plated.

SIZE	½"	¾"	1"
øA bore	15	20	25
B min mm	32	35,5	39,5
B max mm	49,5	53	57
C mm	17,5	17,5	17,5
D mm	85,5	89	93
E mm	9,5	11	11,5
F mm	49	58,5	69
SW mm	26	31	39
Weight gr.	331	437	618

Art. S.0164 INCAS 2



Ball valve for wall built-in installation, with knob, chrome-plated.

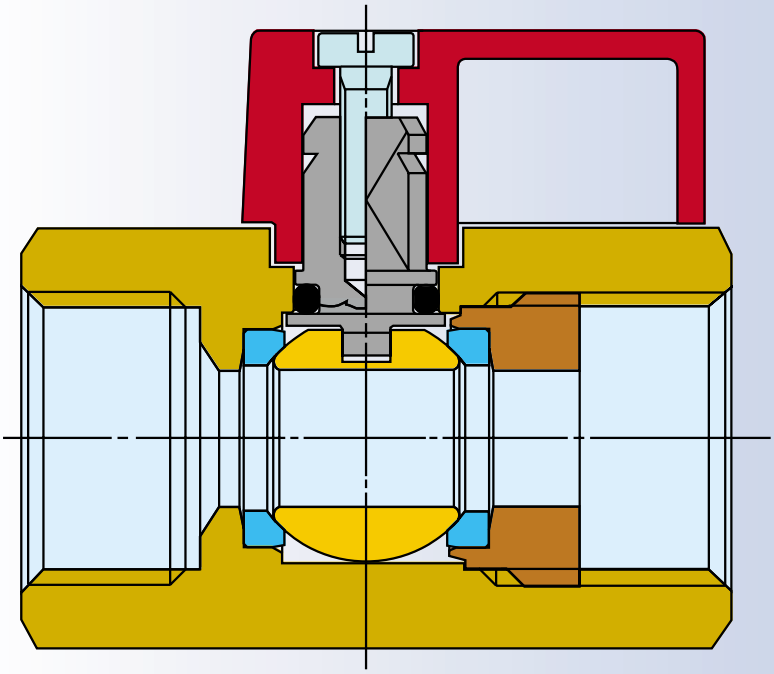
SIZE	½"	¾"	1"
øA bore	15	20	25
B min mm	32	35,5	39,5
B max mm	52	55,5	59,5
C mm	20	20	20
D mm	100	103	112
E mm	9,5	11	11,5
F mm	49	58,5	69
SW mm	26	31	39
Weight gr.	395	537	704

MINI • BON

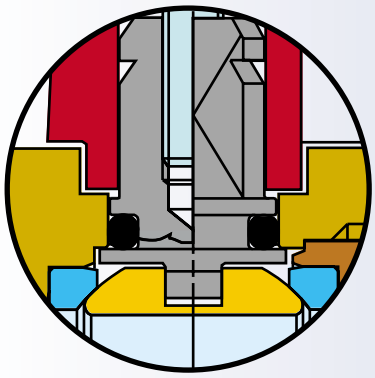
COMPACT BALL VALVE

MINI • BON

COMPACT BALL VALVE

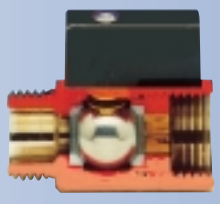


BODY	1	
RING NUT	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
O-RING	6	
HANDLE	7	
SCREW	8	



BLOW OUT-PROOF STEM

- The **MINI•BON** and **MINI•BON•CR** ball valves are bottom loaded stem designed. This "anti-blow-out" stem also prevents from tampering with the internals of the valve when in the line.
- The tightness is obtained by means of a rubber O-Ring.



MINI•BON

FEATURES
- Compact line design, reduced bore.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.
- Competitively priced.

END CONNECTIONS
- Screwed to ISO 228/1 standard.

UTILISATION
- The **MINI•BON** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- Since the **MINI•BON** ball valves only have one O-Ring, their use for gas applications is not advisable.
- For special uses, see the table of chemical resistance on the pages 206 and 207.

WORKING PRESSURE
- PN 10 max.
- See pressure/temperature diagram.

TEMPERATURE LIMITS
- -10°C +90°C

MINI•BON•CR BRASS*

FEATURES
- The **MINI•BON•CR** ball valves are manufactured with dezincification and corrosion resistant brass.

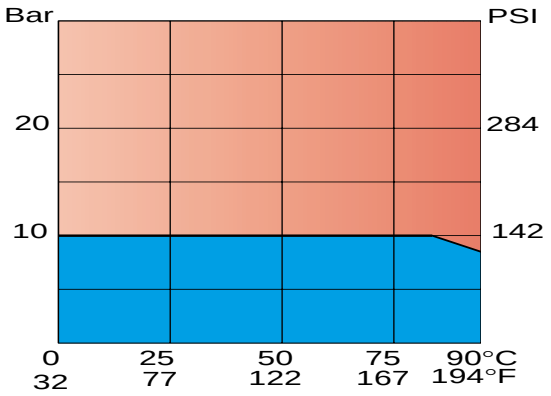
END CONNECTIONS
- Screwed to ISO 228/1 standard.

UTILISATION
- The **MINI•BON•CR** ball valves are particularly suitable for installation by chlorinated water or other aggressive media, that causes the dezincification of standard brass.
- The **MINI•BON•CR** ball valves are suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- Since the **MINI•BON•CR** ball valves only have one O-Ring, their use for gas applications is not advisable.

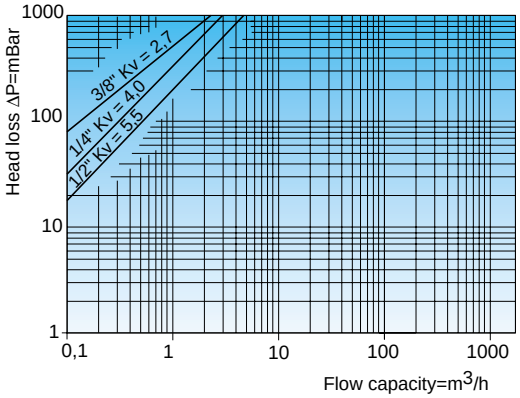
WORKING PRESSURE
- PN 10 max.
- See pressure/temperature diagram.

TEMPERATURE LIMITS
- -10°C +90°C

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM

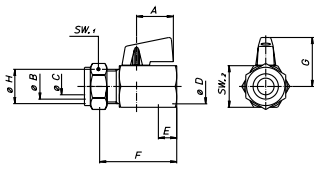


MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165*	Chrome-plated forged brass
2	Ring nut	CW 614 N UNI EN 12164*	Machined brass bar
3	Ball	CW 614 N UNI EN 12164*	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164*	Machined brass bar, nickel-plated
6	Stem O-Ring	NBR	Black rubber
7	Lever handle	Glass-filled Nylon	Black coloured
8	Screw	8G Steel	Zinc-plated steel

(*) The brass used for MINI•BON•CR compact valves is to CW 602 N

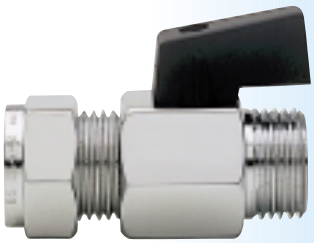
Art. S.0306 MINI • BON

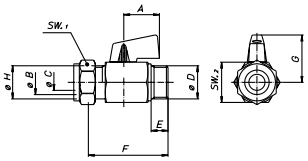


Ball valve with lever, female/compression ring, chrome-plated.

SIZE	⅜"x10	⅜"x12	½"x12	½"x14
A mm	22	22	22	22
øB mm	10	12	12	15
øC mm	8	8	10	10
øD	G.⅜"	G.⅜"	G.½"	G.½"
E mm	9	9	10,5	10,5
F mm	40	40	45	45
G mm	27	27	29	29
øH	G.⅜"	G.⅜"	G.⅜"	G.½"
SW1 mm	19	19	19	24
SW2 mm	21	21	25	25

Art. S.0307 MINI • BON

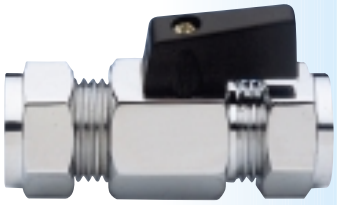


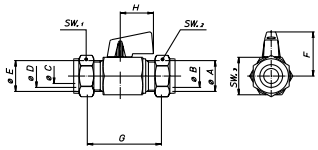


Ball valve with lever, male/compression ring, chrome-plated.

SIZE	⅜"x10	⅜"x12	½"x12	½"x14
A mm	22	22	22	22
øB mm	10	12	12	15
øC mm	8	8	10	10
øD	G.⅜"	G.⅜"	G.½"	G.½"
E mm	9	9	10,5	10,5
F mm	41	41	50	50
G mm	27	27	29	29
øH	G.⅜"	G.⅜"	G.⅜"	G.½"
SW1 mm	19	19	19	24
SW2 mm	21	21	25	25

Art. S.0308 MINI • BON

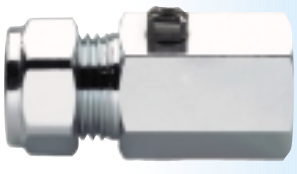


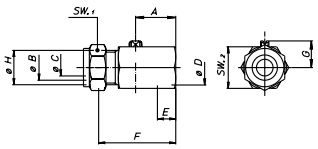


Ball valve with lever, compression ring/compression ring, chrome-plated.

SIZE	10x⅜"x10	12x⅜"x12	12x½"x12	14x½"x14
øA	G.⅜"	G.⅜"	G.⅜"	G.½"
øB mm	10	12	12	15
øC mm	8	8	10	10
øD mm	10	12	12	15
øE	G.⅜"	G.⅜"	G.⅜"	G.½"
F mm	27	27	29	29
G mm	41	41	41	50
øH mm	22	22	22	22
SW1 mm	19	19	19	24
SW2 mm	19	19	19	24
SW3 mm	21	21	25	25

Art. S.0309 MINI • BON

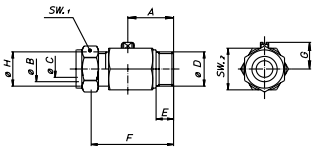




Ball valve, with screw-driver, female/compression ring, chrome-plated.

SIZE	⅜"x10	⅜"x12	½"x12	½"x15
A mm	21	21	25	25
øB mm	10	12	12	15
øC mm	8	8	10	10
øD	G.⅜"	G.⅜"	G.½"	G.½"
E mm	9	9	10,5	10,5
F mm	40	40	45	45
G mm	27	27	29	29
øH	G.⅜"	G.⅜"	G.⅜"	G.½"
SW1 mm	19	19	19	24
SW2 mm	21	21	25	25

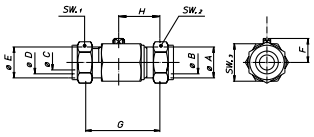
Art. S.0310 MINI • BON



Ball valve, with screw-driver, male/compression ring, chrome-plated.

SIZE	⅜"x10	⅜"x12	½"x12	½"x15
A mm	33	33	38,5	38,5
øB mm	10	12	12	15
øC mm	8	8	10	10
øD	G.⅜"	G.⅜"	G.½"	G.½"
E mm	9	9	10,5	10,5
F mm	41	41	50	50
G mm	27	27	29	29
øH	G.⅜"	G.⅜"	G.⅜"	G.½"
SW1 mm	19	19	19	24
SW2 mm	21	21	25	25

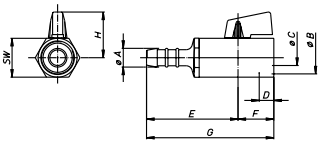
Art. S.0311 MINI • BON



Ball valve, with screw-driver, compression ring/compression ring, chrome-plated.

SIZE	10x⅜"x10	12x⅜"x12	12x½"x12	15x½"x15
øA	G.⅜"	G.⅜"	G.⅜"	G.½"
øB mm	10	12	12	15
øC mm	8	8	10	10
øD mm	10	12	12	15
øE	G.⅜"	G.⅜"	G.⅜"	G.½"
F mm	27	27	29	29
G mm	41	41	41	50
øH mm	33	33	38,5	38,5
øI mm	11,7	13,7	13,7	16,8
SW1 mm	19	19	19	24
SW2 mm	19	19	19	24
SW3 mm	21	21	25	25

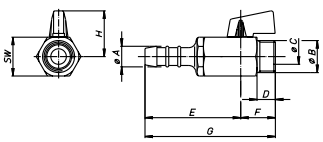
Art. S.0312 MINI • BON



Ball valve, miniball, female/outlet connector, with lever.

SIZE		¼"	⅜"	½"
øA		10,5	14	14
øB		¼"	⅜"	½"
øC mm		5,5	8	10
D mm		8	8,5	10
E mm		48,5	50	55,5
F mm		18,25	20,25	24
G mm		66,75	70,25	79,5
H mm		22	23,5	30
SW mm		19	21	25

Art. S.0313 MINI • BON

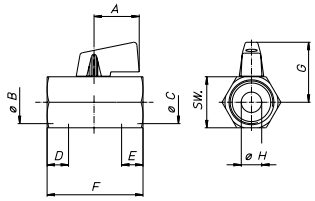


Ball valve, miniball, male/outlet connector, with lever.

SIZE		¼"	⅜"	½"
øA		10,5	14	14
øB		¼"	⅜"	½"
øC mm		5,5	8	10
D mm		8,8	8,8	9,8
E mm		48,5	50	55,5
F mm		17	19,5	23
G mm		65,5	69,5	78,5
H mm		22	23,5	30
SW mm		19	21	25

COMPACT BALL VALVE

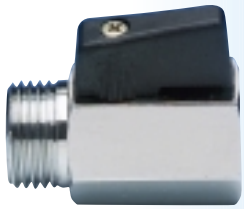
Art. S.0330 MINI • BON

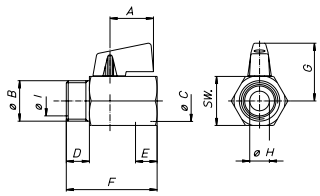


Ball valve with lever, female/female, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"	1"
A mm	22	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
D mm	9	9	10	10,5	13,5	15
E mm	9	9	9	10,5	13,5	15
F mm	39	39	42	47	54	66
G mm	27	27	27	29	31,5	35
øH mm	6	8	8	10	12	17,5
SW mm	21	21	21	25	30	37

Art. S.0331 MINI • BON

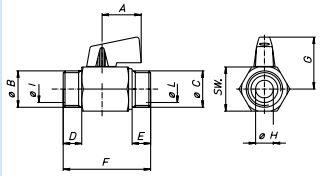




Ball valve with lever, male/female, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"	1"
A mm	22	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
D mm	9	9	9	10,5	13,5	15
E mm	9	9	9	10,5	13,5	15
F mm	39	39	40	45	51	62,5
G mm	27	27	27	29	31,5	35
øH mm	6	8	8	10	12	17,5
øI mm	6	8	12	15	18	25
SW mm	21	21	21	25	30	37

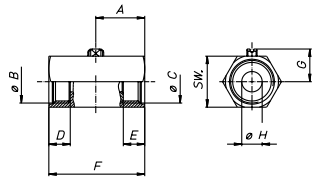
Art. S.0332 MINI • BON



Ball valve with lever, male/male, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"
A mm	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"
D mm	9	9	9	10,5	13,5
E mm	9	9	9	10,5	13,5
F mm	41	41	41	50	55
G mm	27	27	27	29	31,5
øH mm	6	8	8	10	12
øI mm	6	8	12	15	18
øL mm	6	8	12	15	18
SW mm	21	21	21	25	30

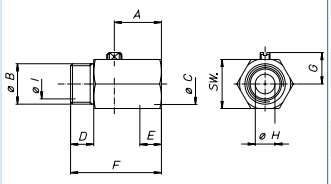
Art. S.0333 MINI • BON



Ball valve with screw-driver, female/female, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"	1"
A mm	18	18	21	24	27	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
D mm	9	9	10	10,5	13,5	15
E mm	9	9	9	10,5	13,5	15
F mm	39	39	42	47	54	66
G mm	12,5	12,5	12,5	14,5	17	21
øH mm	6	8	8	10	12	17,5
SW mm	21	21	21	25	30	37

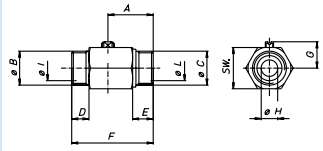
Art. S.0334 MINI • BON



Ball valve with screw-driver, male/female, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"	1"
A mm	18	18	21	24	27	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
D mm	9	9	9	10,5	13,5	15
E mm	9	9	9	10,5	13,5	15
F mm	39	39	40	45	51	62,5
G mm	12,5	12,5	12,5	14,5	17	21
øH mm	6	8	8	10	12	17,5
øI mm	6	8	12	15	18	25
SW mm	21	21	21	25	30	37

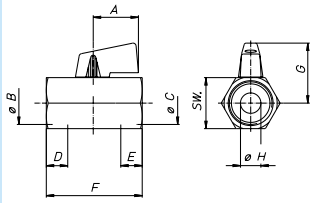
Art. S.0335 MINI • BON



Ball valve with screw-driver, male/male, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"					
A mm	18	18	21	24	27					
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"					
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"					
D mm	9	9	9	10,5	13,5					
E mm	9	9	9	10,5	13,5					
F mm	41	41	41	50	55					
G mm	12,5	12,5	12,5	14,5	17					
øH mm	6	8	8	10	12					
øI mm	6	8	12	15	18					
øL mm	6	8	12	15	18					
SW mm	21	21	21	25	30					

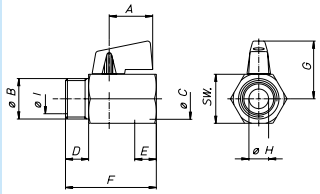
Art. S.1317 MINI • BON • LUX



Ball valve, female/female, with chrome-plated lever, **polished execution**.

SIZE	⅛"	¼"	⅜"	½"	¾"	1"
A mm	22	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
D mm	9	9	10	10,5	13,5	15
E mm	9	9	9	10,5	13,5	15
F mm	39	39	42	47	54	66
G mm	27	27	27	29	31,5	35
øH mm	6	8	8	10	12	17,5
SW mm	21	21	21	25	30	37

Art. S.1318 MINI • BON • LUX

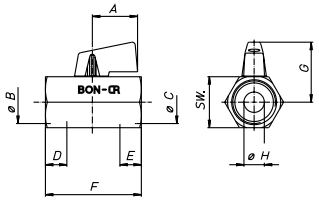


Ball valve, male/female, with chrome-plated lever, **polished execution**.

SIZE	⅛"	¼"	⅜"	½"	¾"	1"
A mm	22	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
D mm	9	9	9	10,5	13,5	15
E mm	9	9	9	10,5	13,5	15
F mm	39	39	40	45	51	62,5
G mm	27	27	27	29	31,5	35
øH mm	6	8	8	10	12	17,5
øI mm	6	8	12	15	18	25
SW mm	21	21	21	25	30	37

COMPACT BALL VALVE IN DZR BRASS

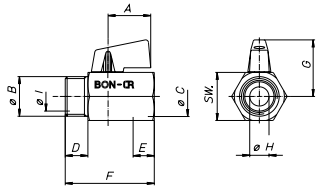
Art. S.0338 MINI • BON • CR



CR-Brass ball valve with lever, female/female, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"
A mm	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"
D mm	9	9	10	10,5	13,5
E mm	9	9	9	10,5	13,5
F mm	39	39	42	47	54
G mm	27	27	27	29	31,5
øH mm	6	8	8	10	12
SW mm	21	21	21	25	30

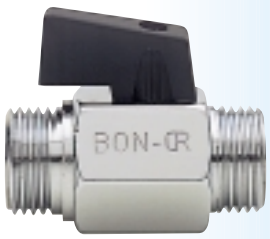
Art. S.0339 MINI • BON • CR

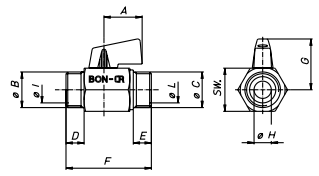


CR-Brass ball valve with lever, male/female, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"	1"
A mm	22	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"	G.1"
D mm	9	9	9	10,5	13,5	15
E mm	9	9	9	10,5	13,5	15
F mm	39	39	40	45	51	62,5
G mm	27	27	27	29	31,5	35
øH mm	6	8	8	10	12	17,5
øI mm	6	8	12	15	18	25
SW mm	21	21	21	25	30	37

Art. S.0340 MINI • BON • CR

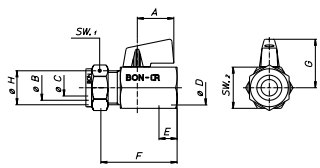




CR-Brass ball valve with lever, male/male, chrome-plated.

SIZE	⅛"	¼"	⅜"	½"	¾"
A mm	22	22	22	22	22
øB	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"
øC	G.⅛"	G.¼"	G.⅜"	G.½"	G.¾"
D mm	9	9	9	10,5	13,5
E mm	9	9	9	10,5	13,5
F mm	41	41	41	50	55
G mm	27	27	27	29	31,5
øH mm	6	8	8	10	12
øI mm	6	8	12	15	18
øL mm	6	8	12	15	18
SW mm	21	21	21	25	30

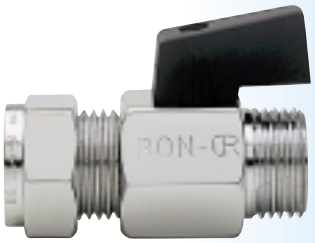
Art. S.0344 MINI • BON • CR

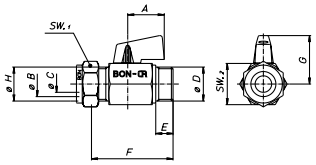


CR-Brass ball valve with lever, female/compression ring, chrome-plated.

SIZE	¼"x8	⅜"x10	⅜"x12	½"x12	½"x15	¾"x18	¾"x22	1"x28
A mm	22	22	22	22	22	22	22	22
øB mm	8	10	12	12	15	18	22	28
øC mm	8	8	8	10	10	12	12	17,5
øD	G.¼"	G.⅜"	G.⅜"	G.½"	G.½"	G.¾"	G.¾"	G.1"
E mm	9	9	9	10,5	10,5	13,5	13,5	15
F mm	39	40	40	45	45	51	51	-
G mm	27	27	27	29	29	31,5	31,5	35
øH	G.¼"	G.⅜"	G.⅜"	G.⅜"	G.½"	G.¾"	M28x1,5	M34x1,5
SW1 mm	17	19	19	19	24	30	32	38
SW2 mm	21	21	21	25	25	30	30	37

Art. S.0345 MINI • BON • CR

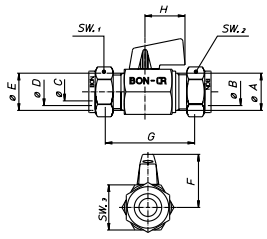




CR-Brass ball valve with lever, male/compression ring, chrome-plated.

SIZE	¼"x8	⅜"x10	⅜"x12	½"x12	½"x15	¾"x18	¾"x22	1"x28		
A mm	22	22	22	22	22	22	22	22		
øB mm	8	10	12	12	15	18	22	28		
øC mm	8	8	8	10	10	12	12	17,5		
øD	G.¼"	G.⅜"	G.⅜"	G.½"	G.½"	G.¾"	G.¾"	G.1"		
E mm	9	9	9	10,5	10,5	13,5	13,5	15		
F mm	41	41	41	50	50	55	55	-		
G mm	27	27	27	29	29	31,5	31,5	35		
øH	G.¼"	G.⅜"	G.⅜"	G.⅜"	G.½"	G.¾"	M28x1,5	M34x1,5		
SW1 mm	17	19	19	19	24	30	32	38		
SW2 mm	21	21	21	25	25	30	30	37		

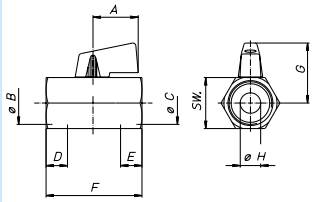
Art. S.0346 MINI • BON • CR



CR-Brass ball valve with lever, compression ring/compression ring, chrome-plated.

SIZE	10x⅜"x12	10x⅜"x15	10x⅜"x16	12x½"x12	12x½"x15	15x½"x15	10x⅜"x10	12x⅜"x12	15x½"x16	16x½"x16	18x¾"x18	22x¾"x22	28x1"x28
øA	G.⅜"	G.⅜"	G.⅜"	G.⅜"	G.½"	G.½"	G.⅜"	G.⅜"	G.½"	G.½"	G.¾"	M28x1,5	M34x1,5
øB mm	10	10	10	12	12	15	15	10	12	15	16	18	22	28
øC mm	8	8	8	8	10	10	10	8	8	10	10	12	12	17,5
øD mm	12	15	16	16	12	12	15	10	12	16	16	18	22	28
øE	G.⅜"	G.½"	G.½"	G.½"	G.⅜"	G.⅜"	G.½"	G.⅜"	G.⅜"	G.½"	G.½"	G.¾"	M28x1,5	M34x1,5
F mm	29	29	29	29	29	29	29	27	27	29	29	31,5	31,5	35
G mm	41	41	41	41	41	50	50	41	41	50	50	55	48	-
øH mm	22	22	22	22	22	22	22	22	22	22	22	22	22	22
SW1 mm	19	19	19	19	19	24	24	19	19	24	24	30	32	38
SW2 mm	19	24	24	24	19	19	24	19	19	24	24	30	32	38
SW3 mm	21	21	21	21	25	25	25	21	21	25	25	30	30	37

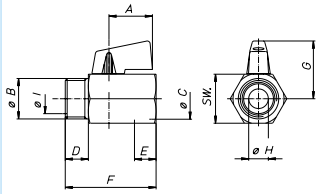
Art. S.1351C MINI • BON • CR • LUX



CR-Brass ball valve, female/female, with chrome-plated lever, **polished execution**.

SIZE			⅜"	½"	¾"					
A mm			22	22	22					
øB			G.⅜"	G.½"	G.¾"					
øC			G.⅜"	G.½"	G.¾"					
D mm			10	10,5	13,5					
E mm			9	10,5	13,5					
F mm			42	47	54					
G mm			27	29	31,5					
øH mm			8	10	12					
SW mm			21	25	30					

Art. S.1352C MINI • BON • CR • LUX



CR-Brass ball valve, male/female, with chrome-plated lever, **polished execution**.

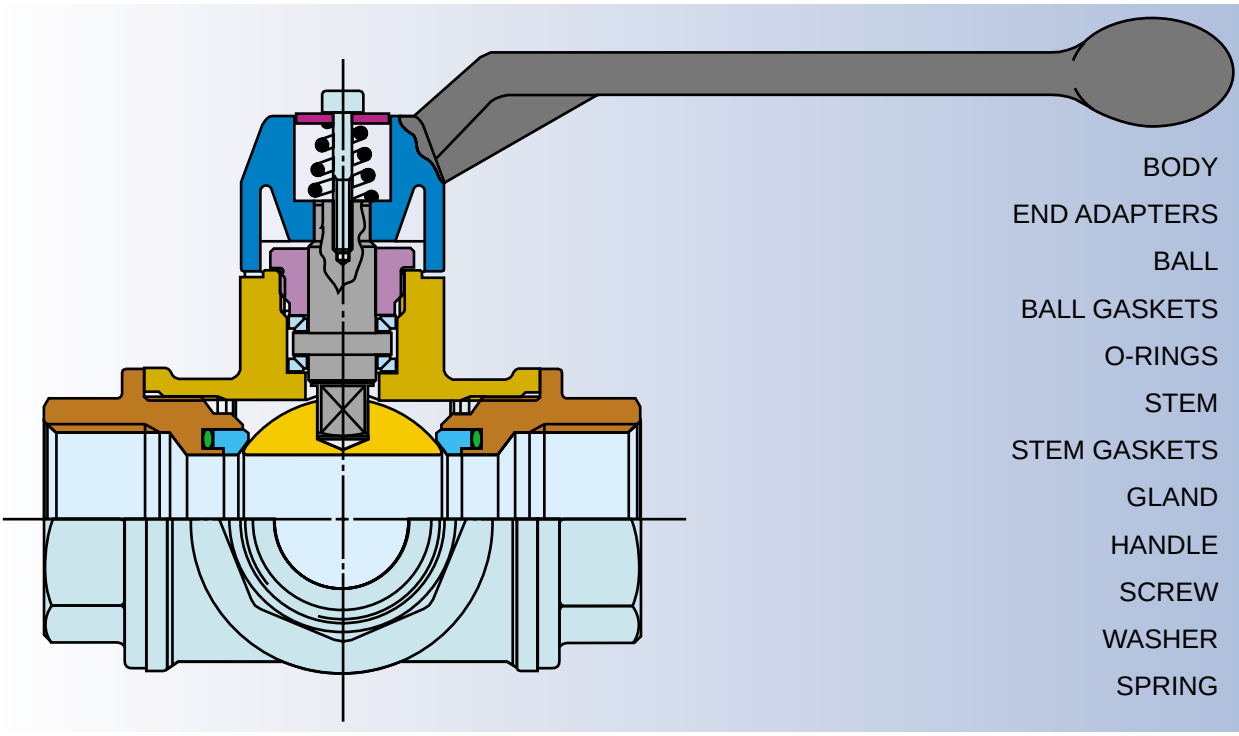
SIZE			⅜"	½"	¾"					
A mm			22	22	22					
øB			G.⅜"	G.½"	G.¾"					
øC			G.⅜"	G.½"	G.¾"					
D mm			9	10,5	13,5					
E mm			9	10,5	13,5					
F mm			40	45	51					
G mm			27	29	31,5					
øH mm			8	10	12					
øI mm			12	15	18					
SW mm			21	25	30					

DUO - TRIO

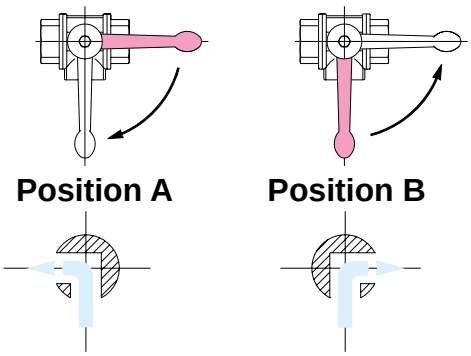
3 - WAY FULL BORE BALL VALVE

DUO - TRIO

3 - WAY FULL BORE BALL VALVE



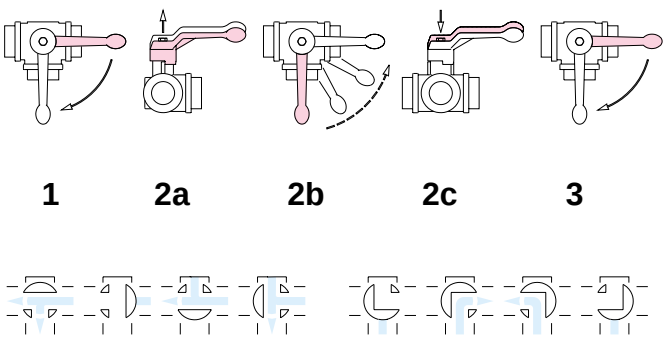
Art. S.360 DUO L-PORT



OPERATION INSTRUCTIONS

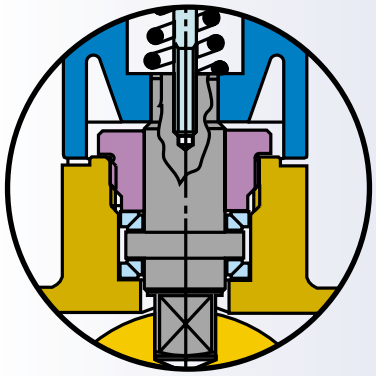
- The valve can be operated by rotating the handle 90° either clockwise or anti-clockwise. No need to disassemble the handle.
- **Position A**: from position **B** the handle is operated a quarter turn in a clockwise direction.
- **Position B**: from position **A** the handle is operated a quarter turn in an anti-clockwise direction.
- **Note -** Port position sign giving direction of flow is clearly marked on top of the stem.

Art. S.361 TRIO T-PORT - S.362 TRIO L-PORT



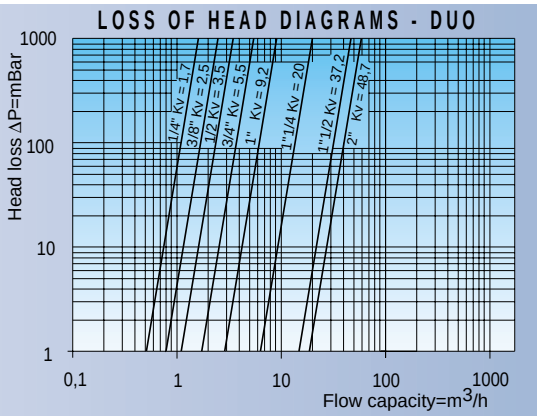
OPERATION INSTRUCTIONS

- The valve can be easily operated by lifting and at the same time rotating the handle either clockwise or anticlockwise, from 90° to 360°.
  The handle remains fixed to the body. No need to disassemble the handle.
- **Moves 1 and 3** : active operation with rotation of the ball.
- **Moves 2a, 2b and 2c** : passive operation with recovery of lever position, with no ball rotation.
- **Note -** Port position sign giving direction of flow is clearly marked on top of the stem.



DOUBLE SEAL

- The **DUO** and **TRIO** 3-way ball valves have a double seal on the stem packing obtained by No. 4 conical self-adjusting teflon gaskets.
- This unique design allows a dynamic sealing both at low and high pressure under different temperatures, thus granting a perfect, longlasting and reliable tightness.



FEATURES

- Heavy line, full bore, long threads.
- Accurate and solid design for high and reliable performances.
- Perfect seal at high and low pressure.
- Easy visual control of port position.

FEATURES OF THE DUO L-PORT

- The **DUO** full bore ball valve L-port has only two gaskets on the ball and **the flow inlet must always be connected to the central way**.
- So the **DUO** ball valve is not a shut-off valve and has the function to divert the flow either to the right or **alternatively** to the left.

FEATURES OF THE TRIO T-PORT AND L-PORT

- The **TRIO** full bore ball valve has 4 teflon gaskets (one on each side of the ball) and **the flow inlet can be indifferently connected to each one of the three threaded ends**.
- The **TRIO** ball valve is a real shut-off valve and has the function to divert the flow either to the right or to the left, or to **both sides at the same time**.

END CONNECTIONS

- Screwed to ISO 7/1 Rp parallel standard.

UTILISATION

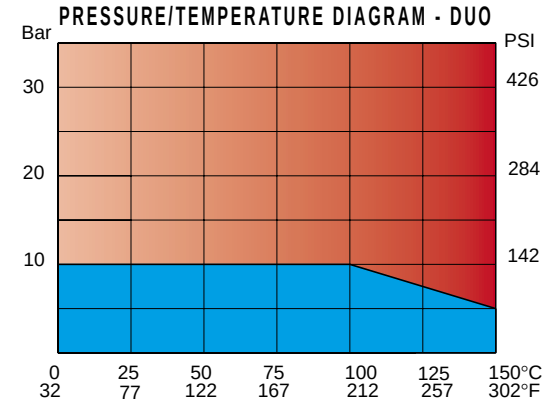
- Hot and cold water, compressed air and oils.
- For special uses, see the table of chemical resistance on pages 206 and 207.

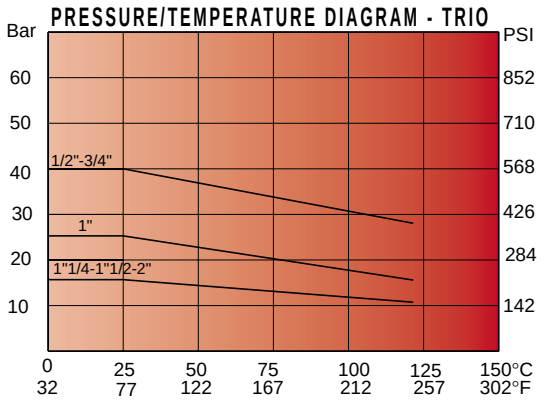
WORKING PRESSURE

- For **DUO** L-Port: PN 10.
- For **TRIO** T-Port and **TRIO** L-Port: from PN 40 (size 1/2") to PN 16 (size 2").
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- -20°C +150°C



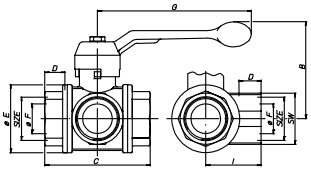


MATERIAL SPECIFICATION

ITEM		MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapters	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	O-Rings	Elastomer	Suitable for the use
6	Stem	CW 614 N UNI EN 12164	Machined brass bar
7	4 Stem gaskets	P.T.F.E.	Pure Teflon
8	Gland	CW 614 N UNI EN 12164	Machined brass bar
9	Lever handle	AL UNI5076	Black polyurethan-coated aluminium
10	Screw	8 G Steel	Zinc-plated steel
11	Washer	8 G Steel	Zinc-plated steel
12	Spring	Stainless steel	Normalized steel

3 - WAY FULL BORE BALL VALVE

Art. S.0360 DUO L•PORT

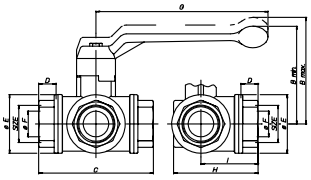


3-way full bore ball valve, **L-port**, with **2 P.T.F.E. gaskets**, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"
B mm	62	62	65	76	80	97	104	118
C mm	52	54	69	77	89	103	114	134
D mm	12	12	15	16,3	19,1	21,4	22	25,7
øE mm	29	29	36	45	54	65	79	96
øF bore	10	10	15	20	25	32	40	50
G mm	100	100	100	120	120	150	150	175
I mm	26	27	33	38	46	54	61	73
SW mm	22	22	27	33	40	50	57	70
Weight gr.	318	302	442	732	1020	1780	2590	4160

Art. S.0361 TRIO T•PORT

S0361 = S0362

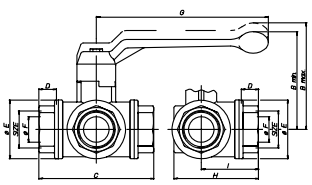


3-way full bore ball valve, **T-port**, with **4 P.T.F.E. gaskets**, nickel-plated.

SIZE	½"	¾"	1"	1"¼	1"½	2"
B max mm	85	98	102	120	125	141
B max mm	77	89	93	110	115	130
C mm	80	96	113	130	147	169
D mm	15	16,3	19,1	21,4	22	25,7
øE mm	38	48	58	67	78	95
øF bore	13	18	23	29	35	44
G mm	130	160	160	195	195	235
H mm	61	74	87,5	99	113,5	131,5
I mm	40	48	56,5	65	73,5	84,5
Weight gr.	620	1096	1640	2400	3380	5550

Art. S.0362 TRIO L•PORT

S0362 = S0361



3-way full bore ball valve, **L-port**, with **4 P.T.F.E. gaskets**, nickel-plated.

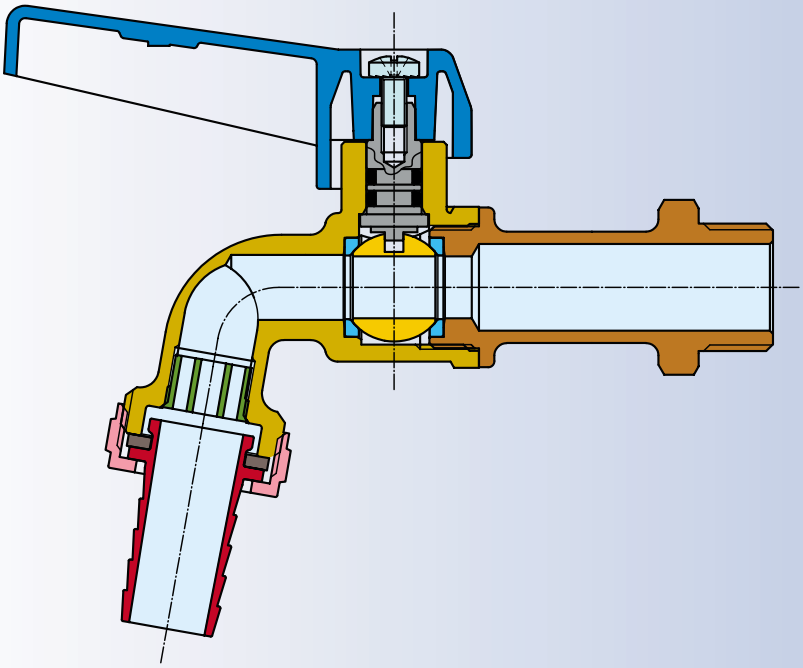
SIZE	½"	¾"	1"	1"¼	1"½	2"
B max mm	85	98	102	120	125	141
B max mm	77	89	93	110,5	115	130
C mm	80	96	113	130	147	169
D mm	15	16,3	19,1	21,4	22	25,7
øE mm	38	48	58	67	78	95
øF bore	13	18	23	29	35	44
G mm	130	160	160	195	195	235
H mm	61	74	87,5	99	113,5	131,5
I mm	40	48	56,5	65	73,5	84,5
Weight gr.	625	1109	1660	2444	3438	5606

EKO • BIBO

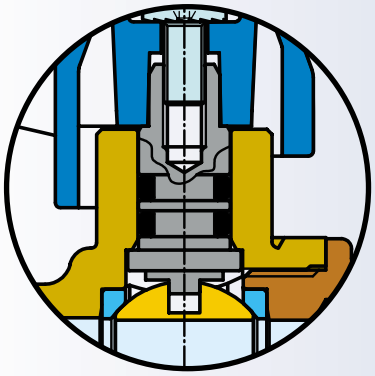
BALL BIB COCKS

EKO • BIBO

BALL BIB COCKS



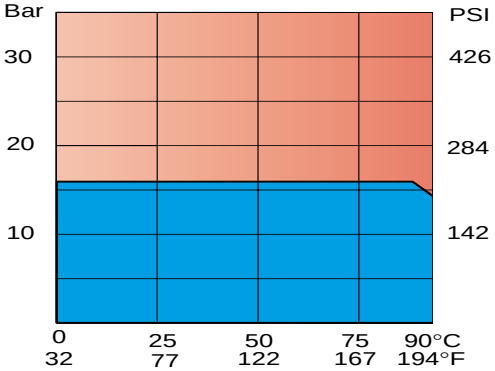
BODY	1	
END ADAPTER	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
GLAND	6	
LEVER	7	
SCREW	8	
FLOW STRAINER	9	
HOSE-HOLDER	10	
GASKET	11	
NUT	12	



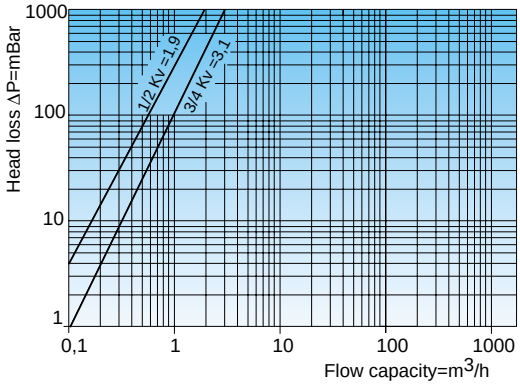
TIGHTNESS ON THE STEM

- The stem is top-entry designed and is secured by the gland.
- The tightness is obtained by 2 rubber O-Rings.

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM



FEATURES

- Accurate design and reliable performances.
- Perfect seal under all working conditions.
- Direct flow of fluids, with minimum head loss.
- Rapid on/off 90° turn operation.
- Easy visual control of open/closed position.
- Heavy and solid state for life-time use.

END CONNECTIONS

- Screwed to ISO 228/1 standard.

UTILISATION

- Cold and hot water, compressed air, oils, non-corrosive fluids, crude oil.
- For special uses, see the table of chemical resistance on the pages 206 and 207.

WORKING PRESSURE

- PN16 max.
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- -20°C +90°C

INSTALLATION INSTRUCTIONS

- The **EKO** and **BIBO** ball bib cocks can be installed in any position: horizontal, vertical or oblique. In any case they must be visible and easily accessible. The operating handle must be free and it must be possible to rotate it easily and completely to the open and closed position.
- Unless something else is suggested, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter- clockwise. There aren't any differences in the flow direction, unless other instructions appear on the valve.
- For the seal of the threaded connections of the valve to the hoses, please refer to the standards UNI ISO 7, UNI ISO 228 or to other standards applying the particular case.
- The system must be planned and accomplished in such a way as to avoid bending or torsional stresses and other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed to the hoses with suitable means and by using its key of the cock. The operating torque should guarantee the seal without deforming or damaging any components of the valve.
- After installing the valve it is necessary to verify the seal of the gaskets and of the whole system by referring to the technical standards and to the applicable laws.
- Please avoid tampering with the valve and particularly with its parts which are intended to guarantee the seal, with the operating devices and with the on-off stops.
- Do not let the valve in such a position where it is neither completely open nor completely closed for a long time, as this could damage the gaskets and the ball, compromise the seal and prevent the system from working how it should.
- It is recommended to install a y-strainer between the hose where the flow comes from and the valve in order to make the latter work correctly and to have a good seal.
- For every further question please contact the authorized dealers or ENOLGAS BONOMI directly.

LEAD WASHED BALL BIB COCKS

- The **EKO** and **BIBO** ball bib cocks valves, upon request, are available in lead whashed version.
- Recent studies have indeed proven that brass valves and cocks release significant quantities of lead (which is contained in each lead alloy) in water. This quantity is higher in the first months of use of the valve.
- Enolgas Bonomi S.p.A. has managed to take lead away from the brass surface in a simple and cheap way by using a patented washing process.
- The products which undergo this process are completely according to the new standards concerning the release of lead in drinkable water.
- As a consequence of such process, the release of lead is always lower than 10 micrograms/liter, which is the value recommended by the WHO (World Health Organization).

EKO•COLOR BALL BIB COCKS

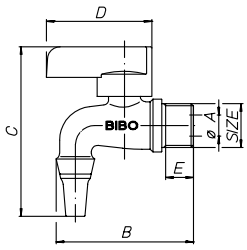
- **EKO•COLOR** ball bib cocks are coated by polish epoxy painting.

MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Nickel-plated forged brass
2	End adapter	CW 617 N UNI EN 12165	Nickel-plated forged brass
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar, nickel-plated
6	Stem O-Ring	NBR	Black rubber
7	Lever	AL UNI5076	Blue polyurethan-coated aluminium
8	Screw	8G Steel	Zinc-plated steel
9	Flow strainer	PE Resin	Forged plastic
10	Hose-holder	CW 617 N UNI EN 12165	Nickel-plated die cast brass
11	Hose-holder gasket	NBR	Black rubber
12	Nut	CW 617 N UNI EN 12165	Forged brass bar

BALL BIB COCKS

Art. S.0028 BIBO•LUX

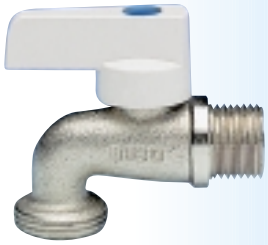


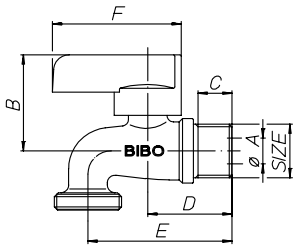
Angled ball cock for casks, male threaded with tip, with lever, polished chrome-plated. End adapter and ball in **stainless steel**.

SIZE	⅜"	½"
øA bore	10	10
B mm	65	65
C mm	80	80
D mm	50	50
E mm	14,6	14,6
Weight gr.	148	155

Art. S.0030 BIBO

AVAILABLE ALSO IN DZR BRASS

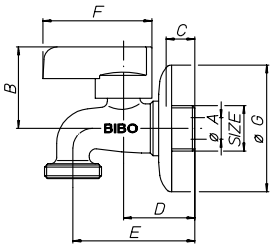




Ball bib cock for washing machines, nickel-plated.

SIZE	⅜"	½"
øA bore	10	10
B mm	37,5	37,5
C mm	15	15
D mm	33	33
E mm	56	56
F mm	50	50
Weight gr.	87	132

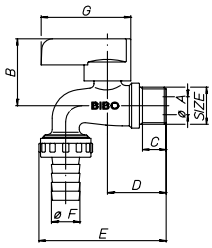
Art. S.0031 BIBO•LUX



Ball bib cock for washing machines, polished chrome-plated, equipped with lockshield.

SIZE	⅜"	½"
øA bore	10	10
B mm	37,5	37,5
C mm	14,6	14,6
D mm	33	33
E mm	56	56
F mm	50	50
Weight gr.	153	159

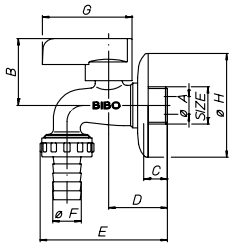
Art. S.0032 BIBO



Ball bib cock with hose connector, nickel-plated.

SIZE	⅜"	½"
øA bore	10	10
B mm	37,5	37,5
C mm	15	15
D mm	33	33
E mm	71	71
øF mm	16	16
G mm	50	50
Weight gr.	178	185

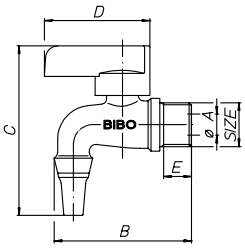
Art. S.0033 BIBO•LUX



Ball bib cock with hose connector, polished chrome-plated, equipped with lockshield.

SIZE	⅜"	½"
øA bore	10	10
B mm	37,5	37,5
C mm	14,6	14,6
D mm	33	33
E mm	71	71
øF mm	16	16
G mm	50	50
øH mm	58	58
Weight gr.	186	192

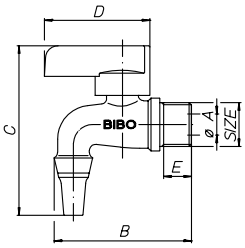
Art. S.0034C BIBO•LUX



Ball bib cock with bib outlet, **polished chrome-plated**.

SIZE	⅜"	½"
øA bore	10	10
B mm	65	65
C mm	80	80
D mm	50	50
E mm	14,6	14,6
Weight gr.	148	155

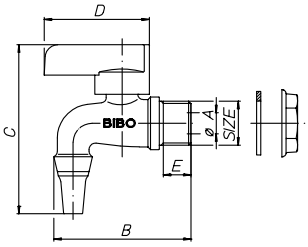
Art. S.0034N BIBO



Ball bib cock with bib outlet, **nickel-plated**.

SIZE	⅜"	½"
øA bore	10	10
B mm	65	65
C mm	80	80
D mm	50	50
E mm	14,6	14,6
Weight gr.	148	155

Art. S.0035 BIBO•LUX

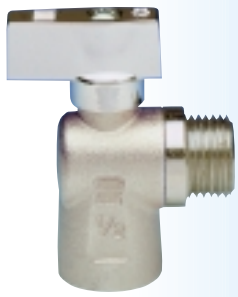


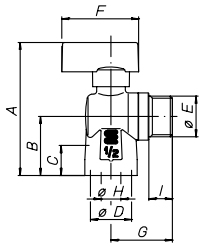
Ball bib cock for barrels, fitted with gasket, O-Ring and back nut, polished chrome-plated.

SIZE	⅜"	½"
øA bore	10	10
B mm	65	65
C mm	80	80
D mm	50	50
E mm	14,6	14,6
Weight gr.	178	183

BALL BIB COCKS

Art. S.0039 BOLA

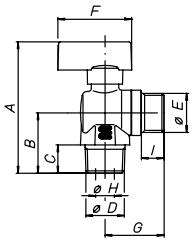




Angled ball bib cock with chrome-plated T-lever, female/male, nickel-plated.

SIZE	½"x½"
A mm	68,7
B mm	30
C mm	17
øD mm	½"
øE mm	½"
F mm	39
G mm	31,2
øH bore	10
I mm	12
Weight gr.	142

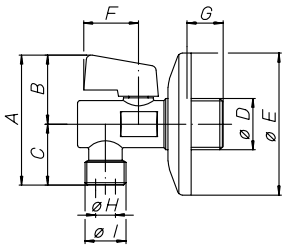
Art. S.0041 BOLA



Angled ball bib cock with chrome-plated T-lever, male/male, nickel-plated.

SIZE	½"x⅜"7	½"x½"	¾"x½"
A mm	0,8	70,8	71,1
B mm	32	32	32,3
C mm	15	15	12,5
øD mm	½"	½"	¾"
øE mm	⅜"	½"	½"
F mm	39	39	39
G mm	29,2	31,2	31,2
øH bore	10	10	10
Weight gr.	153	157	159

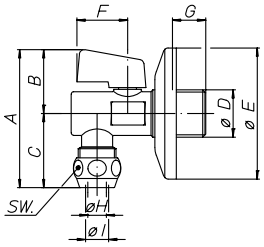
Art. S.0045 ANGLED VALVE



Undersink angled ball bib cock, male threaded, polished chrome-plated.

SIZE	½"x⅜"	½"x½"
A mm	52	52
B mm	27	27
C mm	25	25
øD mm	½"	½"
øE mm	57	57
F mm	22	22
G mm	15,6	15,6
øH bore	9	9
øI mm	⅜"	½"
SW mm	19	19
Weight gr.	106	110

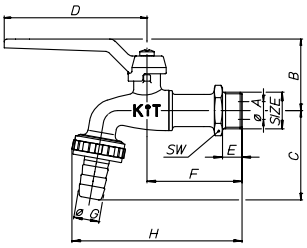
Art. S.0046 ANGLED VALVE



Undersink angled ball valve for copper tube connection, polished chrome-plated.

SIZE	½"x10
A mm	60
B mm	27
C mm	33
øD mm	½"
øE mm	57
F mm	22
G mm	15,6
øH bore	9
øI mm	10
SW mm	19
Weight gr.	122

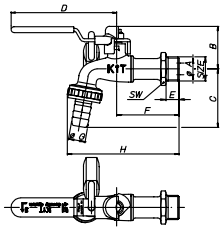
Art. S.0051 KIT



Ball bib cock with hose connector and aluminium long red handle, nickel-plated.

SIZE	½"	¾"	1"
øA bore	10	12	15
B mm	40	41,2	44
C mm	58	59,8	60
D mm	80	80	80
E mm	11	13	15,5
F mm	53,3	57,8	68,25
øG mm	14,5	19,5	19,5
H mm	95	109	124
SW mm	25	30	37
Weight gr.	194	283	470

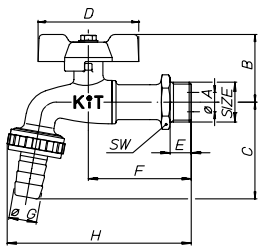
Art. S.0053 - S.0054 KIT



Ball bib cock with hose connector, with red steel handle **with locking device**, allowing lock open and closed position.
S.0053 without padlock
S.0054 with padlock

SIZE	½"	¾"
øA bore	10	12
B mm	36	37,5
C mm	62	63,5
D mm	90	90
E mm	11	13
F mm	53,3	57,8
øGmm	14,5	19,5
H mm	95	109
SW mm	25	30
Weight gr.	224	308

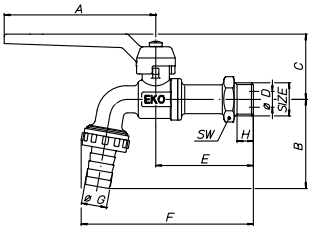
Art. S.0057 KIT



Ball bib cock with hose connector and aluminium T-handle, nickel-plated.

SIZE	½"	¾"
øA bore	10	12
B mm	35	36
C mm	63	65
D mm	52	52
E mm	11	13
F mm	53,3	57,8
øGmm	14,5	19,5
H mm	95	109
SW mm	25	30
Weight gr.	190	277

Art. S.0061 EKO

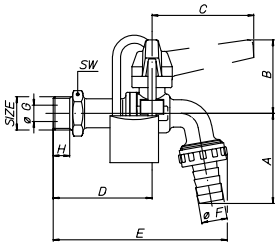


Ball bib cock with hose connector and long red handle, heavy line, nickel-plated.

SIZE	⅜"	½"	¾"	1"
A mm	95	95	95	95
B mm	50	57	65	79
C mm	40,5	41	43	46,5
øD bore	8	10	12,5	17,5
E mm	53	61,2	65,65	83,5
F mm	95	108	122	152
øGmm	14,5	16	19,5	27
H mm	10	12	14	15,5
SW mm	20	25	30	37
Weight gr.	217	275	375	603

BALL BIB COCKS

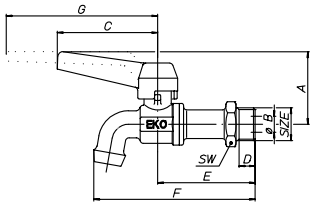
Art. S.0074 EKO



Ball bib cock **with locking device and padlock**, heavy line, nickel-plated.

SIZE	½"	¾"
A mm	57	65
B mm	45,5	47,5
C mm	63	63
D mm	61,2	65,65
E mm	108	122
øF mm	16	19,5
øG bore	10	12,5
SW mm	25	30
Weight gr.	398	494

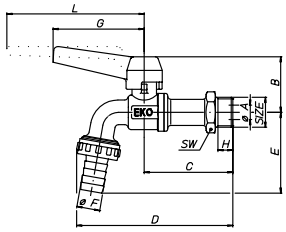
Art. S.0080 EKO



Ball bib cock with plain outlet, heavy line, nickel-plated.

SIZE	½"	¾"
A mm	45,5	47,5
øB bore	10	12,5
C mm	63	63
D mm	12	14
E mm	61,2	65,65
F mm	101	113
G mm	-	-
SW mm	25	30
Weight gr.	220	333

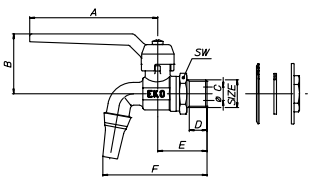
Art. S.0082 EKO



Ball bib cock with hose connector, heavy line, nickel-plated.

SIZE	⅜"	½"	¾"	1"
øA bore	10	10	12,5	17,5
B mm	44,5	45,5	47,5	46,5
C mm	53	61,2	65,65	83,5
D mm	95	108	122	152
E mm	50	57	65	79
øF mm	14,5	16	19,5	27
G mm	63	63	63	-
H mm	10	12	14	15,5
L mm	-	-	-	95
SW mm	20	25	30	37
Weight gr.	185	270	372	584

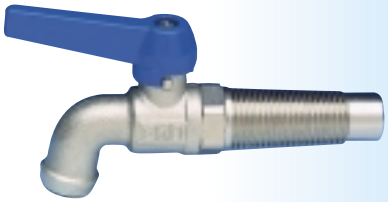
Art. S.0085 EKO

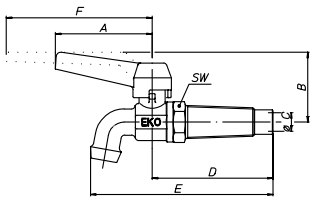


Ball bib cock for barrels in fiberglass-strengthened plastic fitteed with gasket, flange and back nut, nickel-plated.

SIZE	½"	¾"	1"
A mm	95	95	95
B mm	41	43	46,5
øC bore	10	12,5	17,5
D mm	15	21	17
E mm	36,7	44,15	44
F mm	77,5	92,5	105
SW mm	27	33	40
Weight gr.	262	375	502

Art. S.0089 ENOSTOP

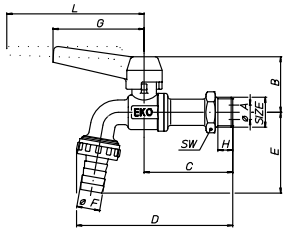




Ball bib cock for wooden cask, nickel-plated.

SIZE	mm 8	mm 10	mm 12	mm 16	mm 20
A mm	63	63	63	63	-
B mm	44,5	45,5	45,5	47,5	46,5
øC bore	10	10	10	12,5	17,5
D mm	64,25	72,7	78,7	88,65	129
E mm	98,5	112,5	118,5	136	188
F mm	-	-	-	-	98
SW mm	22	24	24	27	34
Weight gr..	175	248	285	424	547

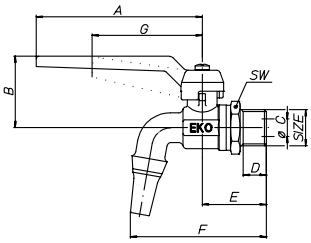
Art. S.0095 EKO



Ball bib cock with **hose connector Ø 14 mm**, heavy line, nickel-plated.

SIZE		½"
øA bore		10
B mm		45,5
C mm		61,2
D mm		108
E mm		54
øF mm		14,5
G mm		63
H mm		12
L mm		-
SW mm		25
Weight gr.		273

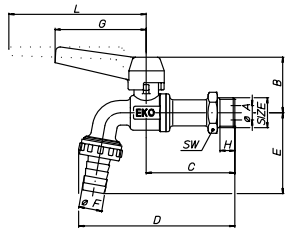
Art. S.0096 EKO



Ball bib cock with bib outlet, short execution, nickel-plated.

SIZE	⅜"	½"	¾"	1"
A mm	-	95	95	95
B mm	44,5	41	43	46,5
øC bore	10	10	12,5	17,5
D mm	10	15	21	17
E mm	29,25	36,7	44,15	44
F mm	64	77,5	92,5	105
Gmm	65	-	-	-
SW mm	22	27	33	40
Weight gr.	160	238	349	459

Art. S.0099 EKO • CHECK

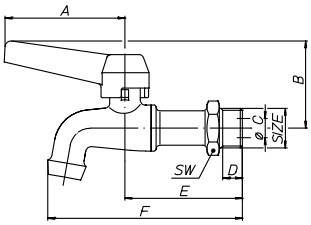


Ball bib cock with hose connector, heavy line, nickel-plated. **With non-return cartridge**.

SIZE		½"
øA bore		10
B mm		45,5
C mm		61,2
D mm		108
E mm		57
øF mm		16
G mm		63
H mm		12
L mm		-
SW mm		25
Weight gr.		270

BALL BIB COCKS

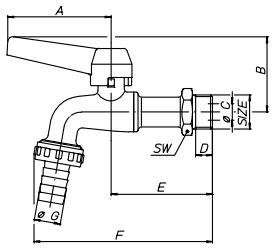
Art. S.0100 EKO•LUX



Ball bib cock with plain outlet, **polished chrome-plated**.

SIZE	½"
A mm	63
B mm	45,5
øC bore	10
D mm	12
E mm	61,2
F mm	101,5
SW mm	25
Weight gr.	229

Art. S.0101 EKO•LUX

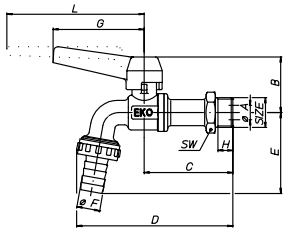


Ball bib cock with hose connector, **polished chrome-plated**.

SIZE	½"
A mm	63
B mm	45,5
øC bore	10
D mm	12
E mm	61,2
F mm	108
SW mm	25
Weight gr.	272

Art. S.0110 EKO•LOGIC

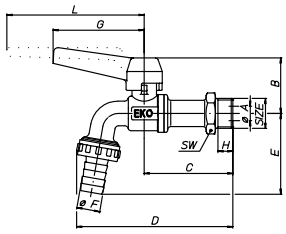
GREEN TAP



Ball bib cock with hose connector, heavy line, **lead washed, hard epoxy painted**.

SIZE	½"
øA bore	10
B mm	45,5
C mm	61,2
D mm	108
E mm	57
øF mm	16
G mm	63
H mm	12
L mm	-
SW mm	25
Weight gr.	270

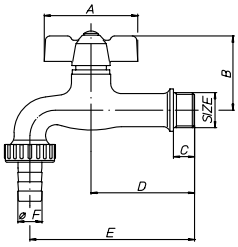
Art. S.0111 EKO•COLOR



Ball bib cock with hose connector, heavy line, **polished epoxy painted**.

SIZE	½"
øA bore	10
B mm	45,5
C mm	61,2
D mm	108
E mm	57
øF mm	16
G mm	63
H mm	12
L mm	-
SW mm	25
Weight gr.	270

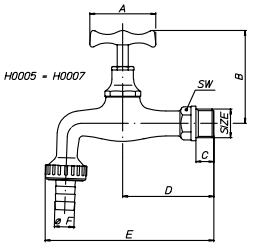
Art. H.0004 ANTI-FREEZE BIB COCK



Bib cock with hose connector, **anti-freeze**, nickel-plated.

SIZE	½"
A mm	55
B mm	44
C mm	12,7
D mm	61
E mm	97
øF mm	14,5
PN bar	10
Weight gr.	285

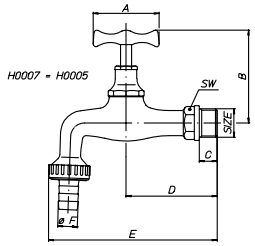
Art. H.0005 BIB COCK



Bib cock with hose connector, chrome-plated.

SIZE	⅜"	½"	¾"	1"
A mm	48	48	57	57
B mm	68	68	80	84
C mm	12	12,5	13,5	15
D mm	68	68	75	86
E mm	118	123	137	161
øF mm	14,5	14,5	20	27
SW mm	19	21	25	32
PN bar	10	10	10	10
Weight gr.	278	305	495	795

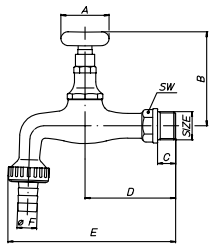
Art. H.0007 BIB COCK



Bib cock with hose connector, **polished**.

SIZE	⅜"	½"	¾"	1"
A mm	48	48	57	57
B mm	68	68	80	84
C mm	12	12,5	13,5	15
D mm	68	68	75	86
E mm	118	123	137	161
øF mm	14,5	14,5	20	27
SW mm	19	21	25	32
PN bar	10	10	10	10
Weight gr.	268	292	468	705

Art. H.0008 BIB COCK

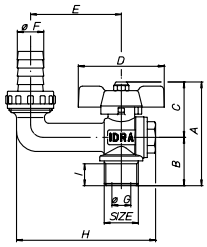


Bib cock with hose connector, with removable T-key, **polished**.

SIZE	½"
A mm	35
B mm	68
C mm	12,5
D mm	68
E mm	123
øF mm	14,5
SW mm	21
Weight gr.	295

BALL BIB COCKS

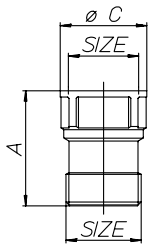
Art. S.0130 IDRA



Garden hose ball valve, heavy line, with T-handle.

SIZE	½"	½"	1"
A mm	62	67	83
B mm	29,25	31	43
C mm	32,75	36	40
D mm	52	52	52
E mm	55	60	69
øF mm	16	19,5	28
øG bore	10	12,5	17,5
H mm	84,5	92	108
I mm	13,2	13,2	21,7
SW mm	16	16	16
Weight gr.	248	354	559

Art. S.0135 FILTER



Filter to suit washing machine tap, female/male threaded, nickel-plated.

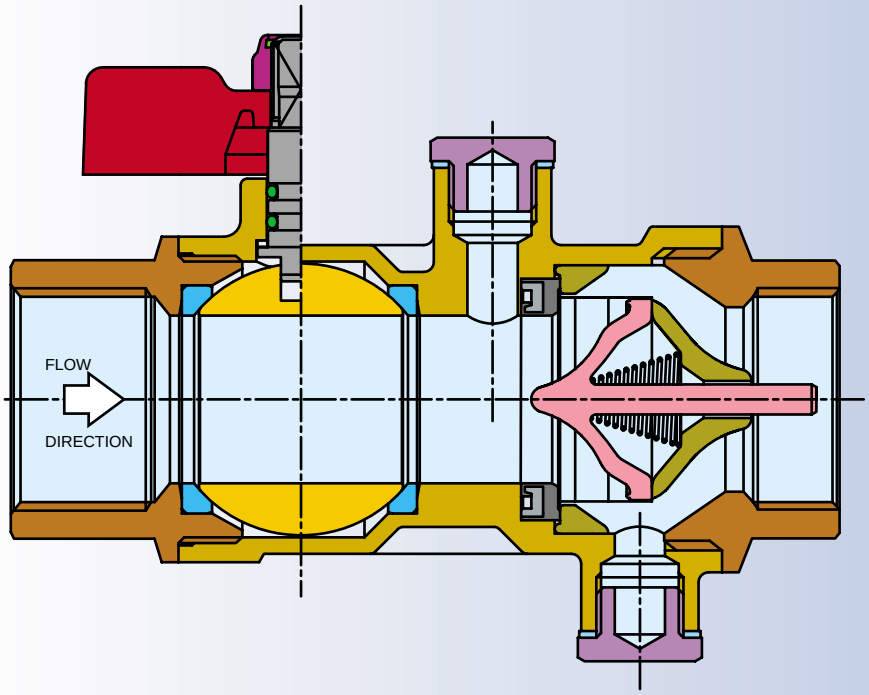
SIZE	¾"
A mm	40
øC mm	30
Weight gr.	58

ROBEX • VT

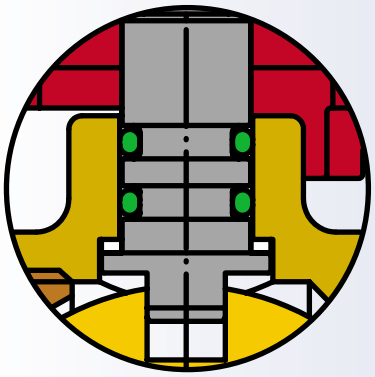
TRIPLE VALVE

ROBEX • VT

COMBINED VALVE



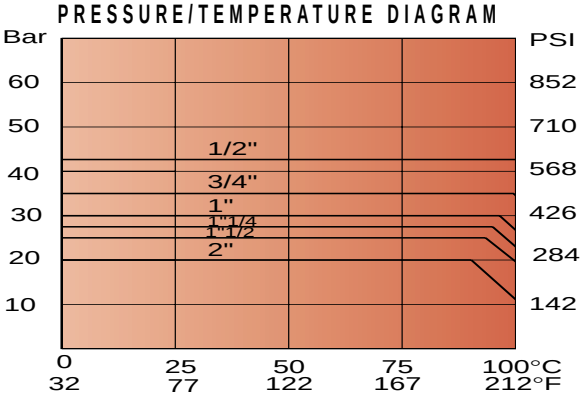
BODY	1	
END ADAPTERS	2	
BALL	3	
BALL GASKETS	4	
STEM	5	
THRUST WASHER	6	
O-RINGS	7	
T-HANDLE	8	
SELF-LOCKING NUT	9	
JUMPER GASKET	10	
JUMPER	11	
JUMPER GUIDE	12	
SPRING	13	
CAPS	14	
GASKETS	15	



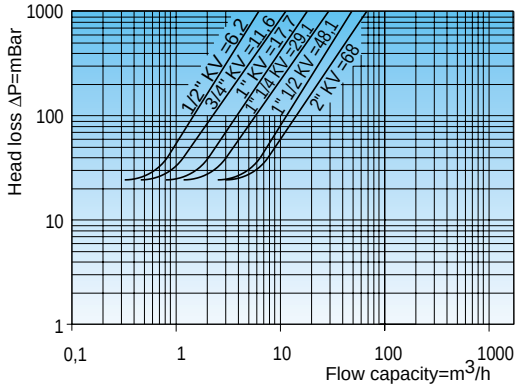
DOUBLE SEAL BLOW OUT-PROOF STEM

- The **ROBEX•VT** ball valves are bottom loaded stem designed. This "anti-blow-out" stem also prevents from tampering with the internals of the valve when in the line.
- The **ROBEX•VT** ball valves have 2 elastomer O-Rings on the stem, having longlife resistance to ageing.
- The double seal is performed by an anti-friction teflon thrust washer, working as a high pressure gasket.

PRESSURE/TEMPERATURE DIAGRAM



LOSS OF HEAD DIAGRAM



ROBEX•VT COMBINED VALVE

- The **ROBEX•VT** combined valve is a useful combination made up by an **OMEGA** heavy-duty full-bore ball valve, a **VALSTOP** heavy-duty full-bore check valve having very low head loss, and two plugged side outlets, one before and one after the check valve, for drain or measuring purposes.

FEATURES

- Heavy line, full bore and high flow capacity.
- Very low head loss. The fluid-dynamic properties of the valve allow ease of flow.
- Perfect seal at high and low pressures, and within wide temperature limits.
- Silent operation and low water hammering.
- Accurate and solid quality design, for high and reliable performances.

END CONNECTIONS

- Screwed to ISO 228/1 standard.

UTILISATION

- Water, heating and compressed air system.
- Hot and cold water, compressed air and oils.
- For special uses, see the table of chemical resistance on the pages 206 and 207.

INSTALLATION POSITION

- The **ROBEX•VT** ball valves can be installed in any position: horizontally, vertically or obliquely.

WORKING PRESSURE

- Min 0,05 bar (for check valve).
- Max PN 40 (size 1/2") to PN 20 (size 2").
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- -15°C +100°C

CRACKING PRESSURE

- Min. 0,025 bar.

SEALING PRESSURE

- Min. 0,05 bar.

INSTALLATION INSTRUCTIONS

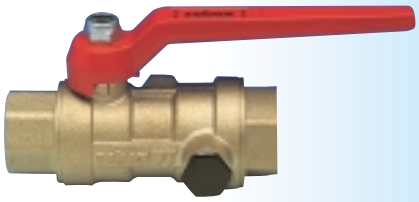
- The valves can be installed in any position: horizontal, vertical or oblique. In any case they must be visible and easily accessible. The operating handle must be free and it must be possible to rotate it easily and completely to the open and closed position. Except when something else is suggested, the valve can be closed by rotating it clockwise and it can be opened by rotating it counter- clockwise.
- For the seal of the threaded connections of the valve to the hoses, please refer to the standards UNI ISO 7, UNI ISO 228 or to other standards applying the particular case.
- The system must be planned and accomplished in such a way as to avoid bending or torsional stresses and other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed to the hoses with suitable means and by using its key of the valve. The operating torque should guarantee the seal without deforming or damaging any components of the valve.
- After installing the valve it is necessary to verify the seal of the gaskets and of the whole system by referring to the technical standards and to the applicable laws.
- Please avoid tampering with the valve and particularly with its parts which are intended to guarantee the sealing, with the operating devices and with the on-off stops.
- Do not let the valve in such a position where it is neither completely open nor completely closed for a long time, as this could damage the gaskets and the ball, compromise the seal and prevent the system from working how it should.
- If the valves, especially the big ones, are difficult to open or close after they have not been working for a long time, please use a hose or something similar and put it on their handle, so that it works as a sort of extension and makes the operation easier.
- It is recommended to install a y-strainer between the hose where the flow comes from and the valve in order to make the latter work correctly and to have a good seal.
- In order to avoid hammering, please do not close the valve too quickly. That's why the "BRAVO" handle is available. It reduces indeed the speed of rotation of the ball.
- For every further question please contact the authorized dealers or ENOLGAS BONOMI S.p.A. directly.

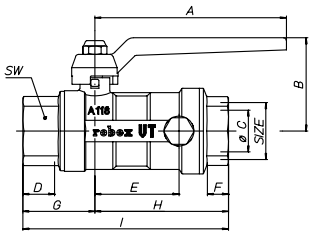
MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Forged brass bar
2	End adapters	CW 617 N UNI EN 12165	Forged brass bar
3	Ball	CW 614 N UNI EN 12164	Machined brass bar, chrome-plated
4	Ball gaskets	P.T.F.E.	Pure Teflon
5	Stem	CW 614 N UNI EN 12164	Machined brass bar
6	Thrust washer	P.T.F.E.	Pure Teflon
7	O-Rings	Elastomer	Suitable for the use
8	Lever and T-Handle	AL UNI5076	Red polyurethan-coated aluminium
9	Self-locking nut	8G Steel	Zinc-plated steel
10	Jumper gasket	NBR	Molded with metal insert
11	Jumper	Hostaform	Molded plastic
12	Jumper guide	Hostaform	Molded plastic
13	Spring	AISI302 stainless steel	Normalized
14	Caps	Nylon	Molded plastic
15	Gaskets	Aluminium	Die cut

TRIPLE VALVE

Art. S.0370 ROBEX•VT

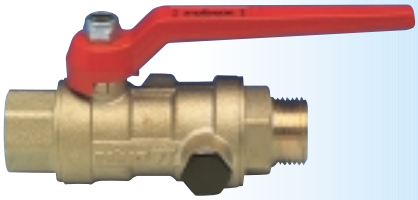


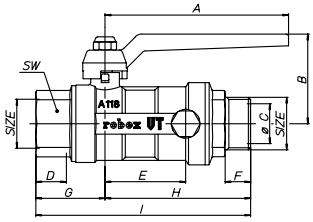


Triple valve with aluminium lever, female/female.

SIZE	½"	¾"	1"	1"¼	1"½	2"
A mm	95	115	115	130	150	170
B mm	42,5	52	56	65,5	76	87,5
øC bore	15	20	25	32	40	50
D mm	15	16,3	19,1	21,4	21,4	25,7
E mm	33,5	38,5	50,5	59	75	92
F mm	9,7	11,2	12,7	13,7	15,7	17,7
G mm	32,5	36,7	43,2	50,7	55,7	66,2
H mm	58	65,7	80,2	93,7	113,7	139,7
I mm	90,5	102,5	123,5	144,5	169,5	206
SW mm	26	32	39	48	55	68
Weight gr.	374	585	916	1450	2482	5161

Art. S.0371 ROBEX•VT

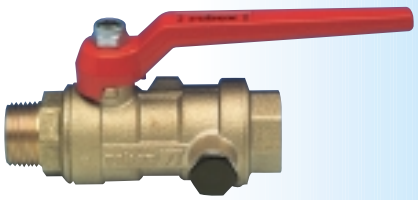


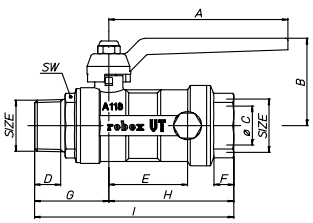


Triple valve with aluminium lever, female/male.

SIZE	½"	¾"	1"	1"¼	1"½	2"
A mm	95	115	115	130	150	170
B mm	42,5	52	56	65,5	76	87,5
øC bore	15	20	25	32	40	50
D mm	15	16,3	19,1	21,4	21,4	25,7
E mm	33,5	38,5	50,5	59	75	92
F mm	8,7	12,2	13,7	17,2	17,2	21,7
G mm	32,5	36,7	43,2	50,7	55,7	66,2
H mm	63,5	76,7	91,2	107,7	127,2	153,2
I mm	96	113,5	134,5	158,5	183	219,5
SW mm	26	32	39	48	55	68
Weight gr.	383	601	933	1545	2530	5180

Art. S.0372 ROBEX•VT

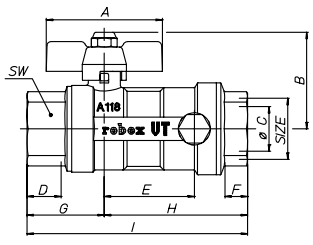




Triple valve with aluminium lever, male/female.

SIZE	½"	¾"	1"	1"¼	1"¼	2"
A mm	95	115	115	130	150	170
B mm	42,5	52	56	65,5	76	87,5
øC bore	15	20	25	32	40	50
D mm	11,5	12,9	14,7	17,2	17,2	21,7
E mm	33,5	38,5	50,5	59	75	92
F mm	9,7	11,2	12,7	13,7	15,7	17,7
G mm	36,5	42	47,2	54,2	60,2	72,2
H mm	58	65,7	80,2	93,7	113,7	139,7
I mm	94,5	108	127,5	148	174	212
SW mm	26	32	39	48	55	68
Weight gr.	378	601	921	1574	2532	5197

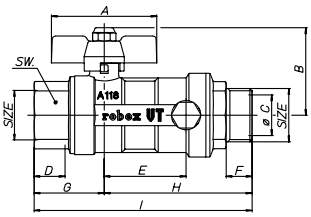
Art. S.0380 ROBEX•VT



Triple valve with aluminium T-handle, female/female.

SIZE	½"	¾"	1"
A mm	52	65	65
B mm	41	50	54
øC bore	15	20	25
D mm	15	16,3	19,1
E mm	33,5	38,5	50,5
F mm	9,7	11,2	12,7
G mm	32,5	36,7	43,2
H mm	58	65,7	80,2
I mm	90,5	102,5	123,5
SW mm	26	32	39
Weight gr.	364	572	903

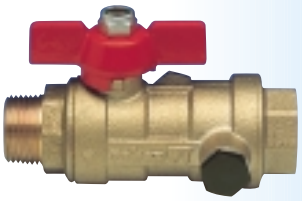
Art. S.0381 ROBEX•VT

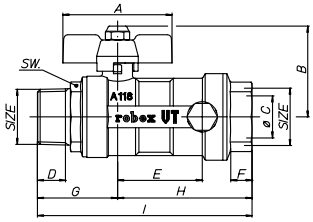


Triple valve with T-handle, female/male.

SIZE	½"	¾"	1"
A mm	52	65	65
B mm	41	50	54
øC bore	15	20	25
D mm	15	16,3	19,1
E mm	33,5	38,5	50,5
F mm	8,7	12,2	13,7
G mm	32,5	36,7	43,2
H mm	63,5	76,7	91,2
I mm	96	113,5	134,5
SW mm	26	32	39
Weight gr.	385	588	920

Art. S.0382 ROBEX•VT

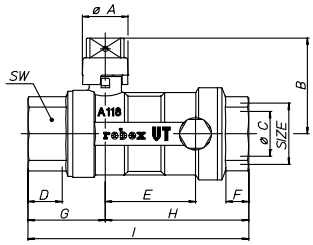




Triple valve with T-handle, male/female.

SIZE	½"	¾"	1"
A mm	52	65	65
B mm	41	50	54
øC bore	15	20	25
D mm	11,5	12,9	14,7
E mm	33,5	38,5	50,5
F mm	9,7	11,2	12,7
G mm	36,5	42	47,2
H mm	58	65,7	80,2
I mm	94,5	107,7	127,5
SW mm	26	32	39
Weight gr.	368	588	908

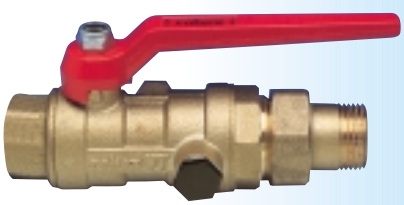
Art. S.0391 ROBEX•VT

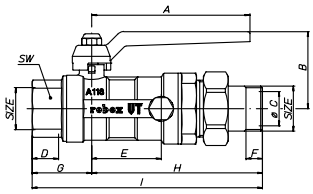


Triple valve with lockable rectangular head, female/female.

SIZE	½"	¾"	1"
øA mm	23	25,5	25,5
B mm	39,5	49	53,5
øC bore	15	20	25
D mm	15	16,3	19,1
E mm	33,5	38,5	50,5
F mm	9,7	11,7	12,7
G mm	32,5	36,75	43,25
H mm	58	65,75	80,25
I mm	90,5	102,5	123,5
SW mm	26	32	39
Weight gr.	376	-	-

Art. S.0400 ROBEX•VT



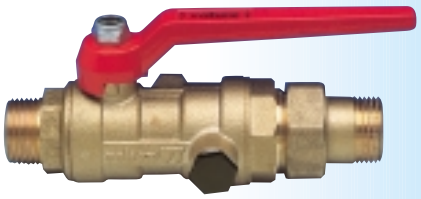


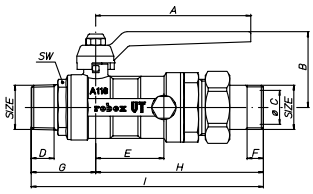
Triple valve with aluminium lever, female/nut and tail.

SIZE	½x½	¾x¾	1"x1"	1"¼x1"¼	1"½x1"½
A mm	95	115	115	130	150
B mm	42,5	52	56	65,5	76
øC bore	15	20	25	32	40
D mm	15	16,3	19,1	21,4	21,4
E mm	33,5	38,5	50,5	59	75
F mm	10	12	12	15	20
G mm	32,5	36,7	43,2	50,7	55,7
H mm	90	106	125	146	194
I mm	122,5	143	168	197	250
SW mm	26	32	39	48	55
Weight gr.	440	780	1150	1841	3177

TRIPLE VALVE

Art. S.0401 ROBEX•VT

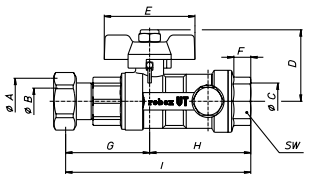




Triple valve with aluminium lever, male/nut and tail.

SIZE	½"x½"	¾"x¾"	1"x1"	1"¼x1"¼	1"½x1"½
A mm	95	115	115	130	150
B mm	42,5	52	56	65,5	76
øC bore	15	20	25	32	40
D mm	11,5	12,9	14,7	17,2	17,2
E mm	33,5	38,5	50,5	59	75
F mm	10	12	12	15	20
G mm	36,5	42	47,2	54,2	60,2
H mm	90	106	125	146	194
I mm	126,5	148	172	200	254
SW mm	26	32	39	48	55
Weight gr.	444	776	1155	1861	3167

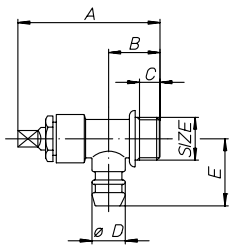
Art. S.0408 ROBEX



Triple valve with T-handle, nut/female.

SIZE	½"
A mm	70
B mm	17,5
øC bore	10
øD mm	14,5
E mm	8,4
SW mm	22
Weight gr.	128

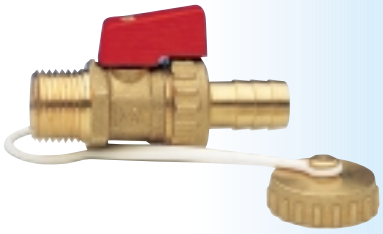
Art. S.0428 DRAIN COCK

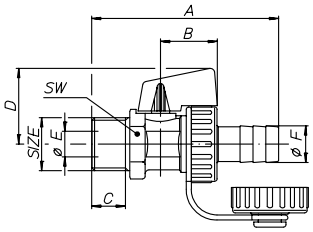


Drain cock for Robex-VT triple valve.

SIZE	¼"
A mm	42
B mm	14,5
C mm	6
øD mm	9
E mm	19,5
Weight gr.	35

Art. S.0429 DRAIN VALVE

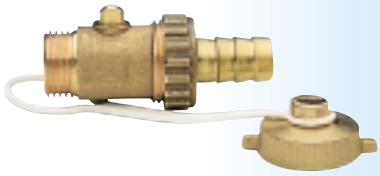


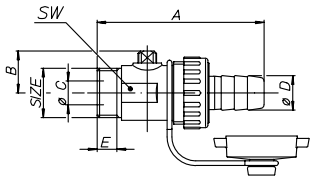


Heavy line complete boiler drain ball valve, 90° on/off lever operated.

SIZE	½"
A mm	72
B mm	22
C mm	13,2
D mm	29
øE bore	10
øF mm	14,5
SW mm	24
Weight gr.	142

Art. S.0430 DRAIN VALVE

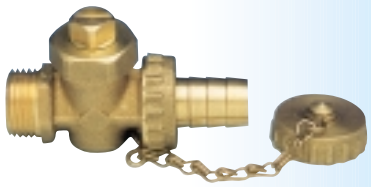


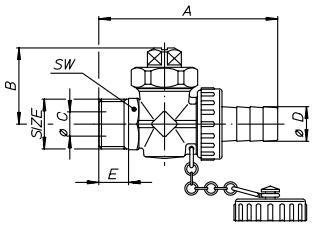


Complete boiler drain ball valve, on/off operable by cap-key.

SIZE	½"
A mm	70
B mm	17,5
øC bore	10
øD mm	14,5
E mm	8,4
SW mm	22
Weight gr.	128

Art. S.0431 DRAIN COCK

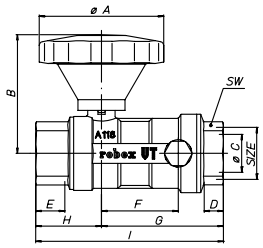




Complete boiler drain tapered plug cock.

SIZE	3/8"	1/2"	3/4"
A mm	74	75	91
B mm	28,5	31,5	38,5
øC bore	8	10	13
øD mm	13	14,5	20
E mm	9,3	10	12
SW mm	19	22	28
Weight gr.	135	152	315

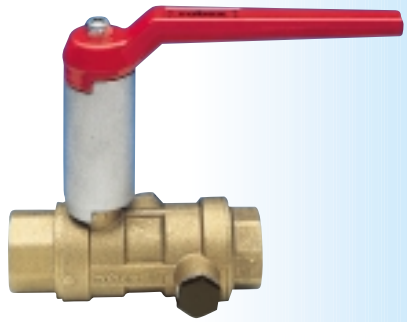
Art. S.0490 ROBEX•VT•BRAVO

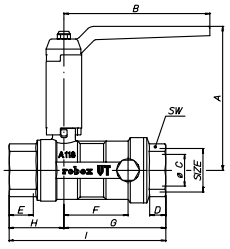


Triple valve, female/female, with BRAVO gear handle.

SIZE	1/2"	3/4"	1"	1"¼	1"1/2	2"
øA mm	82	82	82	128	128	128
B mm	68,5	75	79	115	122	130,5
øC bore	15	20	25	32	40	50
D mm	9,7	11,7	12,7	13,7	15,7	17,7
E mm	15	16,3	19,1	21,4	21,4	25,7
F mm	33,5	38,5	50,5	59	75	92
G mm	58	65,7	80,2	93,7	113,7	139,7
H mm	32,5	36,7	43,2	50,7	55,7	66,2
I mm	90,5	102,5	123,5	144,5	169,5	206
SW mm	26	32	39	48	55	68
Weight gr.	430	629	960	1757	2650	5284

Art. S.0494 ROBEX•VT•XT





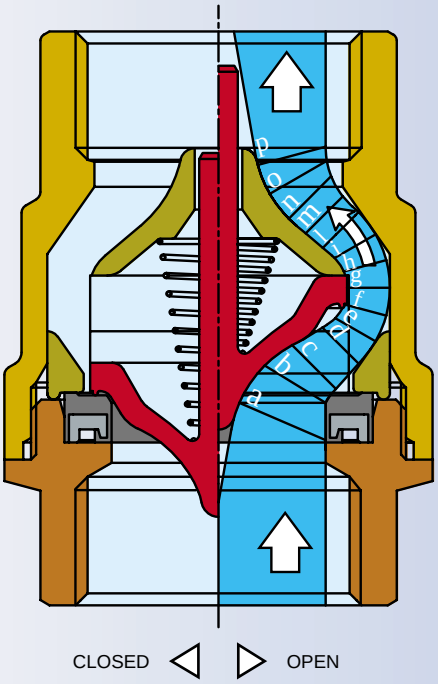
Triple valve, with XT extended stem, female/female, with red aluminium lever.

SIZE	1/2"	3/4"	1"	1"¼	1"1/2	2"
A mm	98	108,5	112,5	122	132	144
B mm	95	115	115	130	150	170
øC bore	15	20	25	32	40	50
D mm	9,7	11,7	12,7	13,7	15,7	17,7
E mm	15	16,3	19,1	21,4	21,4	25,7
F mm	33,5	38,5	50,5	59	75	92
G mm	58	65,7	80,2	93,7	113,7	139,7
H mm	32,5	36,7	43,2	50,7	55,7	66,2
I mm	90,5	102,5	123,5	144,5	169,5	206
SW mm	26	32	39	48	55	68
Weight gr.	454	686	1017	1699	2650	5408

VALSTOP - EUROSTOP

NON-RETURN VALVES

VALSTOP - EUROSTOP NON-RETURN VALVES



BODY 1
END ADAPTER 2
GASKET 3
JUMPER 4
JUMPER GUIDE 5
SPRING 6
FLOW 7

The VALSTOP check valve is designed to perform high flow capacity, safe and silent functioning.

MATERIAL SPECIFICATION

	ITEM	MATERIAL	DESCRIPTION
1	Body	CW 617 N UNI EN 12165	Forged brass bar
2	End adapter	CW 617 N UNI EN 12165	Forged brass bar
3	Gasket	NBR (art. H.151 - H.153, H.161 - H.163)	Black rubber
	Gasket	Elastomer (art. H.141)	Suitable for the use
4	Jumper	Hostaform	Molded plastic
5	Jumper guide	Hostaform	Molded plastic
6	Spring	AISI302 Stainless steel	Normalized steel

VALSTOP - EUROSTOP CHECK VALVES

- All the technical data regarding **VALSTOP** check valves (heavy line) are also suitable for **EUROSTOP** check valves (standard line), except for the pressure/temperature diagram: see this page for **VALSTOP**.

FEATURES

- Minimum head loss thanks to the streamlined flow design.
- Solid state, full bore, high flow capacity.
- Perfect seal at low and high pressure, within a wide temperature range.
- Very silent functioning and low water hammering.
- Wear resistant and long lasting materials.
- Compact dimensions, superior performances and constant high quality.

END CONNECTIONS

- Screwed to ISO 228/1 standard.

UTILISATION (VALSTOP art. H.151 - H.153)

- For any type of plumbing, heating and pneumatic system.
- Hot and cold water, compressed air, oils.
- With the stainless steel filter it is particularly recommended for immersion pumps and autoclaves as a foot valve.
- For special uses, see the table of chemical resistance on pages 206 and 207.

UTILISATION (VALSTOP art. H.141)

- Fitted with fluoroelastomer gasket (Viton seat) VALSTOP is suitable also for non-halogenized hydrocarbons in general (Petrol, Kerosene etc.).

INSTALLATION

- Can be installed in any position: vertical, horizontal, oblique.

WORKING PRESSURE

- Min 0,05 bar.
- Max PN 50 (size 1/4") to PN 10 (size 3").
- See pressure/temperature diagram.

TEMPERATURE LIMITS

- -20°C +100°C
  (Max +135°C with Elastomer gasket = art. H.141).

CRACKING PRESSURE

- Min 0,025 bar (25 cm of water column).

SEALING PRESSURE

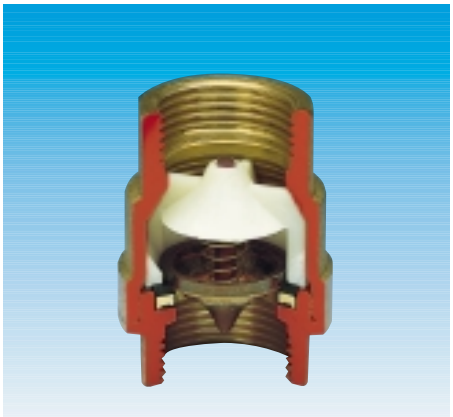
- Min 0,05 bar (50 cm of water column).

FUNCTIONING

- During the normal flow of fluids (in the direction of the arrow, see cross-section of drawing opposite) the jumper moves until the mushroom shaped base of its head comes into contact with the identically shaped base of the jumper-guide, thus forming a biconical unit, whose external surfaces form together with the internal surfaces of the valve, a venturimetric-shaped channel having a constant cross section area along all its length (see cross section on the opposite page: all the flow capacity sections from **a** to **p** are the same). So, the flow at the entrance of the valve is evenly diverted by the point of the jumper, to penetrate in the conduit delimited by the continuity and shape of both the external and central surfaces. This eliminates turbulence of the fluid both at the entrance and in exit from the valve, thus reducing loss of head to a minimum.
- Absolutely high flow capacity is consequently granted.

PERFORMANCE

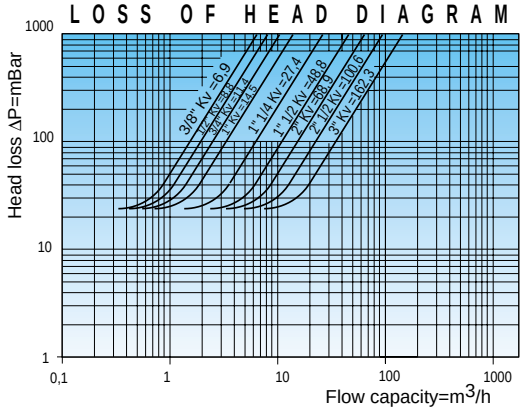
- Exceptionally high Kv performances: see diagram on this page for **VALSTOP**.
- As a definition the nominal "Kv" capacity coefficient is the volumetric capacity of water in cubic metres per hour at the temperature of 15,5°C, which causes a loss of head of 1 bar (10,33 m of water gauge).



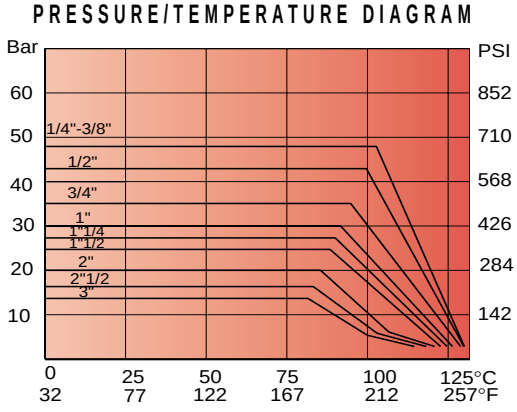
INSTALLATION INSTRUCTIONS

- The valves can be installed in any position; horizontal, vertical, oblique ecc..
- The flow direction must correspond to the arrow pressed on the valve.
- For the seal of the threaded connections of the valve, refer to what is provided for in the standards UNI ISO 7, UNI ISO 228 or other standards which apply different cases.
- The aplliance should be planned and realized in such a way as to avoid bending and torsional stresses or other forces which could damage the valve, prevent its sealing and its regular working.
- The valve must be screwed to the pipes with suitable means and by using the apposite key of the valve itself. The torque wrench setting must guarantee the seal without deforming or damaging any parts of the valve.
- After installing it, it is necessary to check the sealing of the connections and of the whole appliance by referring to the applicable technical standards and laws.
- Avoid tampering with the valve and especially with its devices which are intended to guarantee the seal and the movement of the inner details.
- It is recommended to install a y-strainer at least between the hose where the fluids come from and the valve so that the valve can work regularly and maintain a good sealing.
- For every further information, please contact the authorized dealers or Enolgas directly.

LOSS OF HEAD DIAGRAM

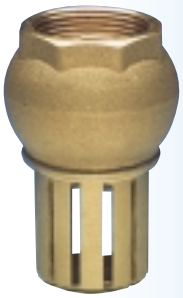


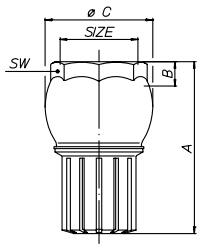
PRESSURE/TEMPERATURE DIAGRAM



NON-RETURN VALVES

Art. H.0041 FOOTY

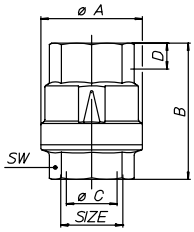




Foot valve.

SIZE	½"	¾"	1"	1"¼	1" ½	2"	2" ½	3"	4"
A mm	59	72	80	91	102	120	141	150	185
B mm	8	9	11	13	14	16	16	16	16
øC mm	31	45	51	61	68	80	102	117	146
SW mm	26	34	40	50	55	69	85	95	123
PN bar	8	8	8	8	8	8	6	6	6
Weight gr.	120	215	280	430	590	870	1360	1741	3500

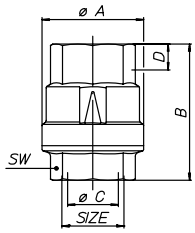
Art. H.0141 VALSTOP



Full bore check valve, **heavy line**, female/female, with **elastomer gasket**.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA mm	28	28	34	41,5	50	60,5	73,5	89	114	137	142
B mm	46,5	46,5	50	59	67	76	90	101	127	150	133,5
øC mm	10	10	15	20	25	32	40	50	65	80	80
D mm	10	8,7	9,7	11,2	12,7	13,7	15,7	17,7	19,7	21,7	23
SW mm	21	21	26	32	39	49	56	69	86	100	124
Weight gr.	97	83	147	218	340	551	913	1414	2519	4447	4234

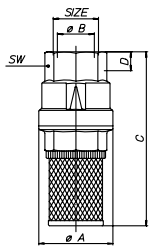
Art. H.0151 VALSTOP



Full bore check valve, **heavy line**, female/female, with **NBR gasket**.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"
øA mm	28	28	34	41,5	50	60,5	73,5	89	114	137
øB bore	46,5	46,5	50	59	67	76	90	101	127	150
C mm	10	10	15	20	25	32	40	50	65	80
D mm	10	8,7	9,7	11,2	12,7	13,7	15,7	17,7	19,7	21,7
SW mm	21	21	26	32	39	49	56	69	86	100
Weight gr.	97	83	147	218	340	551	913	1414	2519	4447

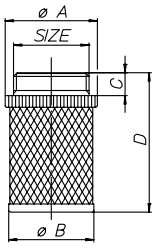
Art. H.0153 VALSTOP



Full bore foot valve with stainless steel filter, **heavy line** (art. H.151 + art. H.157).

SIZE	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"
øA mm	28	34	41,5	50	60,5	73,5	89	114	137
øB bore	10	15	20	25	32	40	50	65	80
C mm	84	92	107	119	133	157	179	211	246
D mm	8,7	9,7	11,2	12,7	13,7	15,7	17,7	19,7	21,7
SW mm	21	26	32	39	49	56	69	86	100
Weight gr.	101	157	237	365	579	943	1459	2612	4535

Art. H.0157 VALSTOP

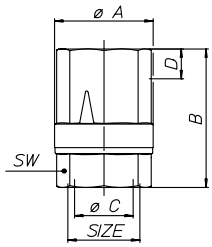


Stainless steel filter.

SIZE	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
øA mm	21	26	32	40	49	55	68	85	99	121
øB mm	19	23	29	37	44	50	61	80	93	116
C mm	7	8	9	10	11	11	12	13	14	14
D mm	46,5	50	57	62	68	78	90	97	110	128
Weight gr	6	8	14	20	29	35	52	88	116	167

Art. H.0161 EUROSTOP

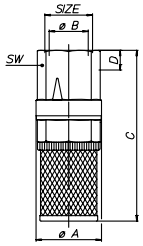
AVAILABLE ALSO IN DZR BRASS



Check valve, female/female with NBR gasket.

SIZE	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
øA mm	34	34,5	41,5	51	60	73	91	116,5	142
B mm	48	52,5	59	65	72,5	82,5	93,5	113	133,5
øC bore	15	15	20	25	32	40	50	65	80
D mm	11,5	13	15	16	17	17	19	20,5	23
SW mm	25	31	38	47	55	67	84	98	124
Weight gr.	109	142	242	367	554	824	1512	2513	4183

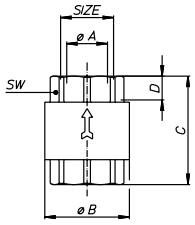
Art. H.0163 EUROSTOP



Foot valve with stainless steel filter.

SIZE	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
øA mm	34	34,5	41,5	51	60	73	91	116,5	142
øB bore	15	15	20	25	32	40	50	65	80
C mm	90	100,5	111	122	139,5	160,5	177,5	209	247,5
D mm	11,5	13	15	16	17	17	19	20,5	23
SW mm	25	31	38	47	55	67	84	98	124
Weight gr.	121	160	253	404	562	876	1600	2629	4350

Art. H.0171 MONDIAL•NYLON

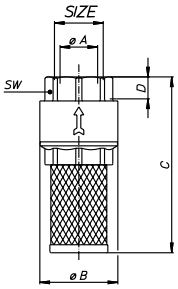


Non-return valve with **nylon jumper**, female/female.

SIZE	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
øA mm	34	34,5	41,5	51	60	73	91	116,5	142
B mm	48	52,5	59	65	72,5	82,5	93,5	113	133,5
øC bore	15	15	20	25	32	40	50	65	80
D mm	11,5	13	15	16	17	17	19	20,5	23
SW mm	25	31	38	47	55	67	84	98	124
Weight gr.	109	142	242	367	554	824	1512	2513	4183

NON-RETURN VALVES

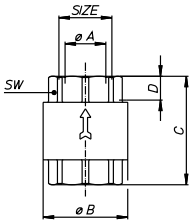
Art. H.0173 MONDIAL•FOOTY



Foot valve, female thread, plastic shutter, with swivel in stainless steel.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA mm	15	20	25	30	35	45	68	77	100
øB bore	32	39	46	56	69	84	100	110	140
C mm	80	87	95	107	124	140	-	-	-
D mm	10	10	14	15	16	18	20	23	24
SW mm	26	32	38	48	55	66	81	94	121
Weight gr.	??	??	??	??	??	??	??	??	??

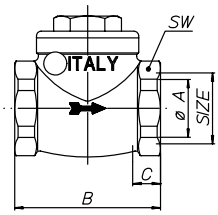
Art. H.0191 MONDIAL•METAL



Non-return valve with **metal jumper**, female/female.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	15	20	25	33	37	47	55	70	90
B mm	47	53	63	70	88	97	120	135	180
C mm	9	10	11	12	12	14	17	17	23
SW mm	25	31	38	47	55	68	82	98	128
PN bar	12	12	12	10	10	10	8	8	8
Weight gr.	142	200	343	425	760	1000	1650	2300	5100

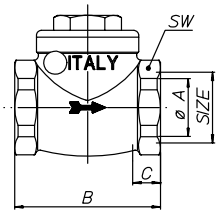
Art. H.0200 SWING CHECK•METAL



Horizontal swing check valve, **metal seat**.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	15	20	25	33	37	47	55	70	90
B mm	47	53	63	70	88	97	120	135	180
C mm	9	10	11	12	12	14	17	17	23
SW mm	25	31	38	47	55	68	82	98	128
PN bar	12	12	12	10	10	10	8	8	8
Weight gr.	142	200	343	425	760	1000	1650	2300	5100

Art. H.0202 SWING CHECK•NBR



Horizontal swing check valve with **NBR gasket**.

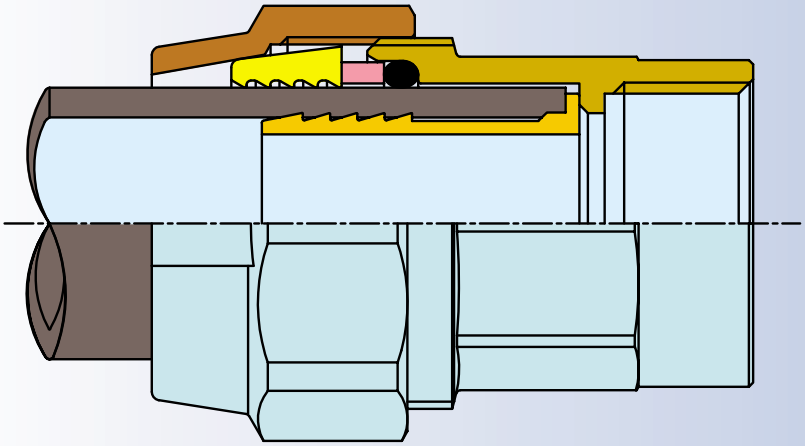
SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	15	20	25	33	37	47	55	70	90
B mm	47	53	63	70	88	97	120	135	180
C mm	9	10	11	12	12	14	17	17	23
SW mm	25	31	38	47	55	68	82	98	128
PN bar	12	12	12	10	10	10	8	8	8
Weight gr.	142	200	343	425	760	1000	1650	2300	5100

AXO • PE

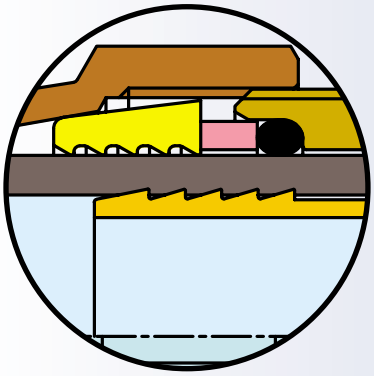
BRASS FITTINGS FOR PE - PIPE

AXO • PE

BRASS FITTINGS FOR PE-PIPE

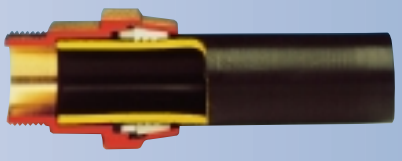


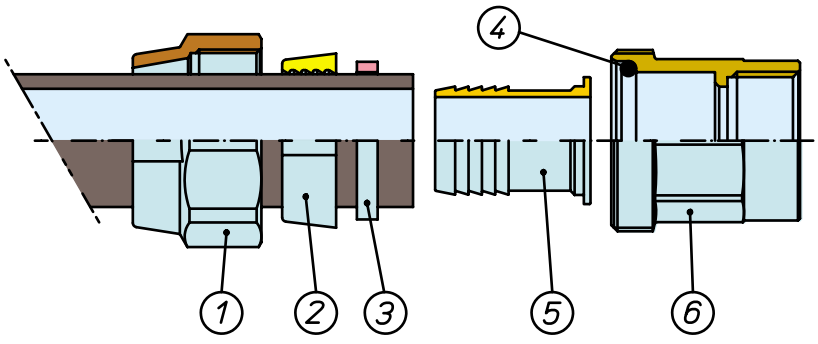
NUT	1	
PIPE GRIP CONE	2	
THRUST RING	3	
O-RING	4	
PRESSURE CONE	5	
BODY	6	



DOUBLE SEAL

- The tightness of the fitting and the locking of the pipe are obtained through two different elements.
- The tightness is obtained through an O-Ring compressed by the adequate thrust ring.
- The locking of the pipe is obtained through the conical ring which has got jaws wich cling to the pipe through the tightening of the nut.





NOTE: To allow easy assembling of the AXO-PE fittings, the tube must not be oval-shaped.

ASSEMBLING INSTRUCTIONS

To obtain a correct and swift assembling of the **AXO-PE** fittings, please follow the instructions in the following priority:

1. Cut the tube vertically, then trim the flash.
2. Insert on the external diameter of the tube, respectively: the **nut** (part 1), **the pipe grip cone** (part 2), the **thrust ring** (part 3) while the sealing **O-ring** (part 4) is seated into the body.
3. Insert the **pressure cone** (part 5 - for use with gas only) into the polyethylene tube, completely.
4. Insert the tube into the **body** (part 6) to its terminal stop.
5. Approach the single components (part 3 and part 2) to the **body** (part 6); finally approach the **nut** (part 1) and screw it tight to the **body** (part 6).

FEATURES

- Extended depth of the pipe seating into the **body** (part 6), to allow a proper housing for obliquely cut pipes too.
- Steady tightening of the pipe by means of the crests (No. 3 crests by 20 mm. to No. 5 crests by 110 mm.) of the **pipe grip cone** (part 2), that grips the pipe widely and firmly.
- Simple and swift assembly and disassembly, by screwing and unscrewing the **nut** (part 1).
- The pipe grip cone is made in robust Hostaform to prevent from cutting the polyethylene pipe.
- Perfect seal performed by the **O-Ring** (part 4), which is compressed on external diameter of the pipe by the **thrust ring** (part 3).
- Accurate and solid design for high and reliable performances.

END CONNECTIONS

- Screwed to ISO 228/1 standard.

UTILISATION

- The **AXO•PE** pipe fittings are suitable for the junction of the following pipe materials:
- Type 312 high density polyethylene to UNI 7611-7615 (PN 2,5 - PN 4 - PN 6 - PN 10 - PN 16).
- Type 316 high density polyethylene to UNI ISO 4437 for gas pipes (series S 5).
- Type 312 low density polyethylene to UNI 7990-7991 (PN 4 - PN 6 - PN 10).
- For uses with media, see table of chemical resistance on pages 206 and 207.

USE WITH GAS

- The **AXO•PE** pipe fittings are suitable for use also with polyethylene pipe for gas. However, to secure a perfect seal with gas, a pressure cone must prior be inserted inside the polyethylene pipe. The pressure cone is available and supplied only upon request.

AXO•PE

- The standard **AXO•PE** line of brass fittings for PE pipes have plastic components (pipe grip cone and thrust ring).

AXO•PE•METAL

- The **AXO•PE•METAL** line of brass fittings for PE pipes have metal components (pipe grip cone and thrust ring).

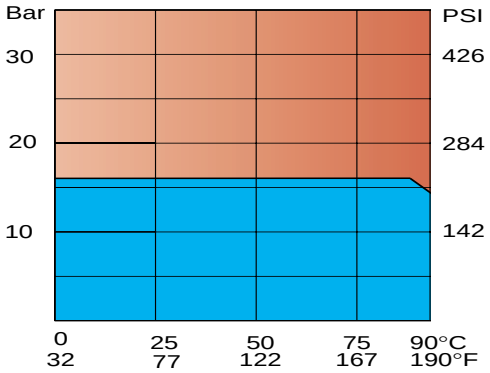
WORKING PRESSURE

- PN 16 max.

TEMPERATURE LIMITS

- -20°C +90°C

PRESSURE/TEMPERATURE DIAGRAM



MATERIAL SPECIFICATION

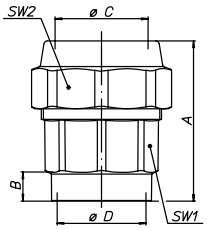
ITEM	MATERIAL	DESCRIPTION
1 Nut *	CW 617 N UNI EN 12165	Forged brass, sandblasted
2 Pipe grip cone	Hostaform or CW 614 N UNI EN 12164	Various
3 Thrust ring	Hostaform or CW 614 N UNI EN 12164	Various
4 O-Ring	NBR to DIN 3535	Black rubber
5 Pressure cone	CW 614 N UNI EN 12164	Machined brass bar
6 Body *	CW 617 N UNI EN 12165	Forged brass, sandblasted

*The size 110 mm of Art. H.301 and Art. H.303 is made in cast iron.

*The sizes 75 mm, 90 mm and 110 mm of Art. H.304 are made in cast iron.

BRASS FITTINGS FOR PE - PIPE WITH PLASTIC COMPONENTS INSIDE

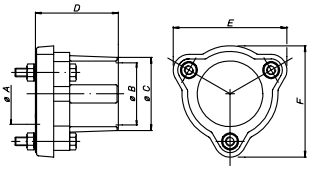
Art. H.0300 AXO•PE



Straight pipe fitting for PE-pipe, female.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63		½"x25	¾"x32	1"x40
A mm	44	51,8	59	66,5	76,5	89		50,3	57,2	65,5
B mm	9,7	11,2	12,7	13,7	15,7	17,7		9,7	11,2	12,7
øC mm	20	25	32	40	50	63		25	32	40
øD mm	½"	¾"	1"	1"¼	1"½	2"		½"	¾"	1"
SW1 mm	25	31	38	47	57	70		31	38	47
SW2 mm	34	40	50	59	72	86		40	50	59
Weight gr.	107	140	279	359	563	862		162	285	369

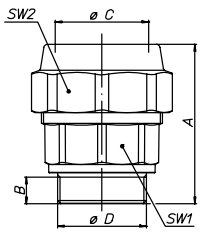
Art. H.0301 AXO•PE



Straight pipe fitting, female/flanged, for PE-pipe.

SIZE	2"½x75	3"x90	4"x110							
øA mm	75	90	110							
øB mm	2"½	3"	4"							
øC mm	83	98	126							
D mm	105	107	190							
E mm	131	150	180							
F mm	130	149	181							
Weight gr.	1720	2465	5485							

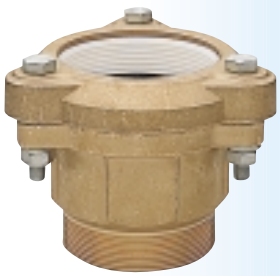
Art. H.0302 AXO•PE

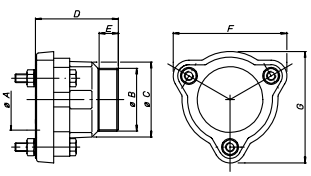


Straight pipe fitting for PE-pipe, male.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63		½"x25	¾"x32	1"x40
A mm	44	51,3	58,5	65,5	75,5	87,5		49,8	56,7	64,5
B mm	8,7	10,2	11,7	12,7	14,2	16,2		8,7	10,2	11,7
øC mm	20	25	32	40	50	63		25	32	40
øD mm	½"	¾"	1"	1"¼	1"½	2"		½"	¾"	1"
SW1 mm	25	31	38	47	57	70		31	38	47
SW2 mm	34	40	50	59	72	86		40	50	59
Weight gr.	93	128	229	353	680	820		125	222	324

Art. H.0303 AXO•PE

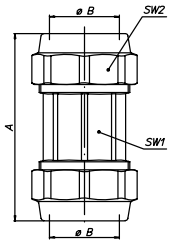




Straight pipe fitting, male/flanged, for PE-pipe.

SIZE	2"½x75	3"x90	4"x110							
øA mm	75	90	110							
øB mm	2"	3"	4"							
øC mm	83	98	126							
D mm	102	108	190							
E mm	23	23	25							
F mm	131	150	180							
G mm	130	149	181							
Weight gr.	1860	2460	5250							

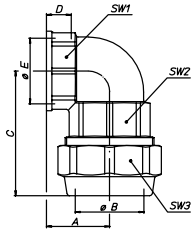
Art. H.0304 AXO•PE



Straight double pipe fitting for PE-pipe.
Sizes mm 75, mm 90 and mm 110 are **flanged** and made in **cast iron**.

SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63	mm 75	mm 90	mm 110
A mm	64,5	75,5	85,5	96,5	113	133	163	178	302
øB mm	20	25	32	40	50	63	75	90	110
SW1 mm	25	31	38	47	57	70	-	-	-
SW2 mm	34	40	50	59	72	86	-	-	-
Weight gr.	174	218	362	532	850	1288	1453	4040	11000

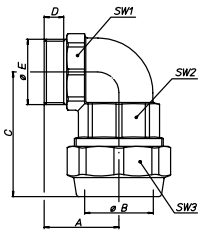
Art. H.0306 AXO•PE



Straight double pipe fitting for PE-pipe.
Sizes mm 75, mm 90 and mm 110 are **flanged** and made in **cast iron**.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	23,5	29,5	34,5	39	46	55
øB mm	20	25	32	40	50	63
C mm	43	52	60	70,5	83,5	100,5
D mm	9,7	11,2	12,7	13,7	15,7	17,7
øE mm	½"	¾"	1"	1"¼	1"½	2"
SW1	25	31	38	47	57	70
SW2	25	31	38	47	57	70
Sw3	34	40	50	59	72	86
Weight gr.	121	190	308	621	788	1214

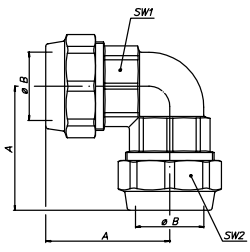
Art. H.0308 AXO•PE



Elbow pipe fitting for PE-pipe, male.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	28	33	40	47	54	64,5
øB mm	20	25	32	40	50	63
C mm	43	52	60	70,5	83,5	100,5
D mm	8,7	10,2	11,7	12,7	14,2	16,2
øE mm	½"	¾"	1"	1"¼	1"½	2"
SW1 mm	25	31	38	47	57	70
SW2 mm	25	31	38	47	57	70
SW3 mm	34	40	50	59	72	80
Weight gr.	128	184	330	532	836	1622

Art. H.0310 AXO•PE



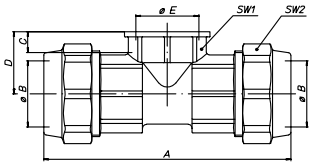
Elbow double pipe fitting for PE-pipe.

SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63
A mm	43	52	60	70,5	83,5	100,5
øB mm	20	25	32	40	50	63
SW1 mm	25	31	38	47	57	70
SW2 mm	34	40	50	59	72	86
Weight gr.	170	254	436	812	1104	1661

BRASS FITTINGS FOR PE - PIPE WITH PLASTIC COMPONENTS INSIDE

Art. H.0312 AXO•PE

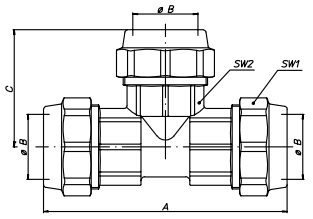
H0312 = H0342



T-pipe fitting for 2 PE-pipes, female.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	80,5	96,5	112,5	131	156	187
øB mm	20	25	32	40	50	63
C mm	9,7	11,2	12,7	13,7	15,7	17,7
D mm	23,5	29,5	34,5	39	46	55
øE mm	½"	¾"	1"	1"¼	1"½	2"
SW1 mm	34	40	50	59	72	86
SW2 mm	25	31	38	47	57	70
Weight gr.	190	284	502	720	1360	2548

Art. H.0316 AXO•PE

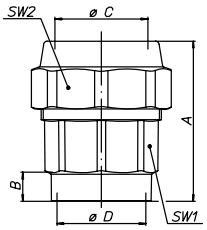


T-pipe fitting for 3 PE-pipes.

SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63
A mm	80,5	96,5	112,5	131	156	187
øB mm	20	25	32	40	50	63
C mm	43,5	52	60	70,5	83,5	100,5
SW1 mm	25	31	38	47	57	70
SW2 mm	34	40	50	59	72	86
Weight gr.	244	352	610	992	1643	2940

BRASS FITTINGS FOR PE - PIPE WITH BRASS COMPONENTS INSIDE

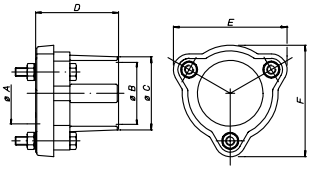
Art. H.0330 AXO•PE•METAL



Straight pipe fitting for PE-pipe, female, **brass components**.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	44	51,8	59	66,5	76,5	89
B mm	9,7	11,2	12,7	13,7	15,7	17,7
øC mm	20	25	32	40	50	63
øD mm	½"	¾"	1"	1"¼	1"½	2"
SW1 mm	25	31	38	47	57	70
SW2 mm	34	40	50	59	72	86
Weight gr.	100	160	260	400	635	945

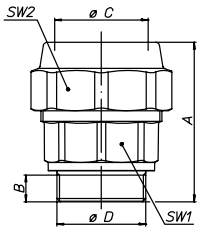
Art. H.0331 AXO•PE•METAL



Straight pipe fitting, female/flanged, for PE-pipe, **brass components**.

SIZE	2"½x75	3"x90	4"x110
øA mm	75	90	110
øB mm	2"½	3"	4"
øC mm	83	98	126
D mm	105	107	190
E mm	131	150	180
F mm	130	149	181
Weight gr.	1870	2660	5710

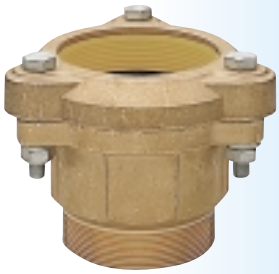
Art. H.0332 AXO•PE•METAL

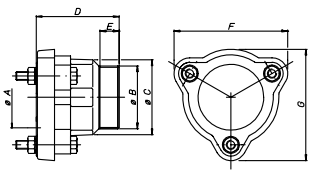


Straight pipe fitting for PE-pipe, male, **brass components**.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	44	51,3	58,5	65,5	75,5	87,5
B mm	8,7	10,2	11,7	12,7	14,2	16,2
øC mm	20	25	32	40	50	63
øD mm	½"	¾"	1"	1"¼	1"½	2"
SW1 mm	25	31	38	47	57	70
SW2 mm	34	40	50	59	72	86
Weight gr.	100	155	252	400	570	900

Art. H.0333 AXO•PE•METAL



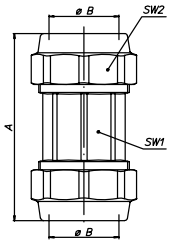


Straight pipe fitting, male/flanged, for PE-pipe, **brass components**.

SIZE	2"½x75	3"x90	4"x110
øA mm	75	90	110
øB mm	2"	3"	4"
øC mm	83	98	126
D mm	102	108	190
E mm	23	23	25
F mm	131	150	180
G mm	130	149	181
Weight gr.	2010	2660	5500

BRASS FITTINGS FOR PE - PIPE WITH BRASS COMPONENTS INSIDE

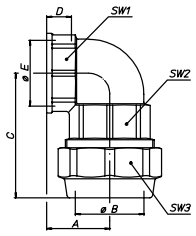
Art. H.0334 AXO•PE•METAL



Straight double pipe fitting for PE-pipe, **brass components**. Sizes mm 75, mm 90 and mm 110 are **flanged**.

SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63	mm 75	mm 90	mm 110
A mm	64,5	75,5	85,5	96,5	113	133	163	178	302
øB mm	20	25	32	40	50	63	75	90	110
SW1 mm	25	31	38	47	57	70	-	-	-
SW2 mm	34	40	50	59	72	86	-	-	-
Weight gr.	180	252	414	608	982	1430	1750	4440	1730

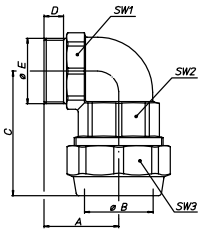
Art. H.0336 AXO•PE•METAL



Elbow pipe fitting for PE-pipe, female, **brass components**.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	23,5	29,5	34,5	39	46	55
øB mm	20	25	32	40	50	63
C mm	43	52	60	70,5	83,5	100,5
D mm	9,7	11,2	12,7	13,7	15,7	17,7
øE mm	½"	¾"	1"	1"¼	1"½	2"
SW1	25	31	38	47	57	70
SW2	25	31	38	47	57	70
Sw3	34	40	50	59	72	86
Weight gr.	132	210	340	510	870	1314

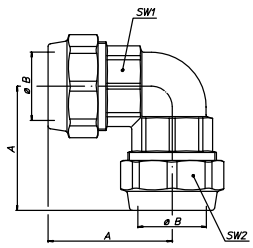
Art. H.0338 AXO•PE•METAL



Elbow pipe fitting for PE-pipe, male, **brass components**.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	28	33	40	47	54	64,5
øB mm	20	25	32	40	50	63
C mm	43	52	60	70,5	83,5	100,5
D mm	8,7	10,2	11,7	12,7	14,2	16,2
øE mm	½"	¾"	1"	1"¼	1"½	2"
SW1 mm	25	31	38	47	57	70
SW2 mm	25	31	38	47	57	70
SW3 mm	34	40	50	59	72	80
Weight gr.	140	207	360	570	870	1350

Art. H.0340 AXO•PE•METAL

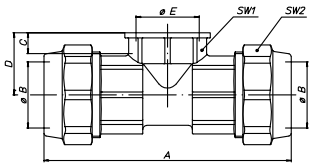


Elbow double pipe fitting for PE-pipe, **brass components**.

SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63
A mm	43	52	60	70,5	83,5	100,5
øB mm	20	25	32	40	50	63
SW1 mm	25	31	38	47	57	70
SW2 mm	34	40	50	59	72	86
Weight gr.	200	298	480	888	1200	1813

Art. H.0342 AXO•PE•METAL

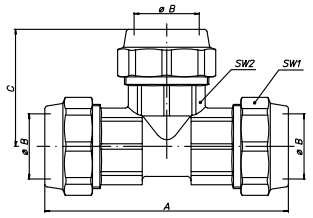
H0342 = H0312



T-pipe fitting for 2 PE-pipes, female, **brass components**.

SIZE	½"x20	¾"x25	1"x32	1"¼x40	1"½x50	2"x63
A mm	80,5	96,5	112,5	131	156	187
øB mm	20	25	32	40	50	63
C mm	9,7	11,2	12,7	13,7	15,7	17,7
D mm	23,5	29,5	34,5	39	46	55
øE mm	½"	¾"	1"	1"¼	1"½	2"
SW1 mm	34	40	50	59	72	86
SW2 mm	25	31	38	47	57	70
Weight gr.	213	320	547	585	1310	1950

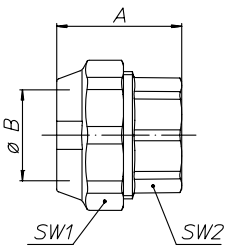
Art. H.0346 AXO•PE•METAL



T-pipe fitting for 3 PE-pipes, **brass components**.

SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63
A mm	80,5	96,5	112,5	131	156	187
øB mm	20	25	32	40	50	63
C mm	43,5	52	60	70,5	83,5	100,5
SW1 mm	25	31	38	47	57	70
SW2 mm	34	40	50	59	72	86
Weight gr.	300	406	680	1050	1840	2430

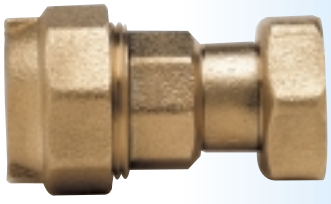
Art. H.0347 AXO•PE•METAL

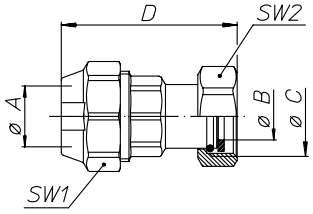


Plug for PE-pipe, **brass components**.

SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63
A mm	33	39,5	44	50	58,5	68,5
øB mm	20	25	32	40	50	63
SW1 mm	34	40	50	59	72	86
SW2 mm	25	31	38	47	57	70
Weight gr.	100	190	230	285	630	915

Art. H.0349 AXO•PE•METAL



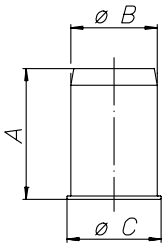


Straight pipe fitting, female, with nut, **brass components**.

SIZE	¾"x20	1"x20	1"¼x20
A mm	20	20	20
øB mm	15	15	15
øC mm	¾"	1"	1"¼
D mm	58	60	62
SW1 mm	34	34	34
SW2 mm	30	37	47

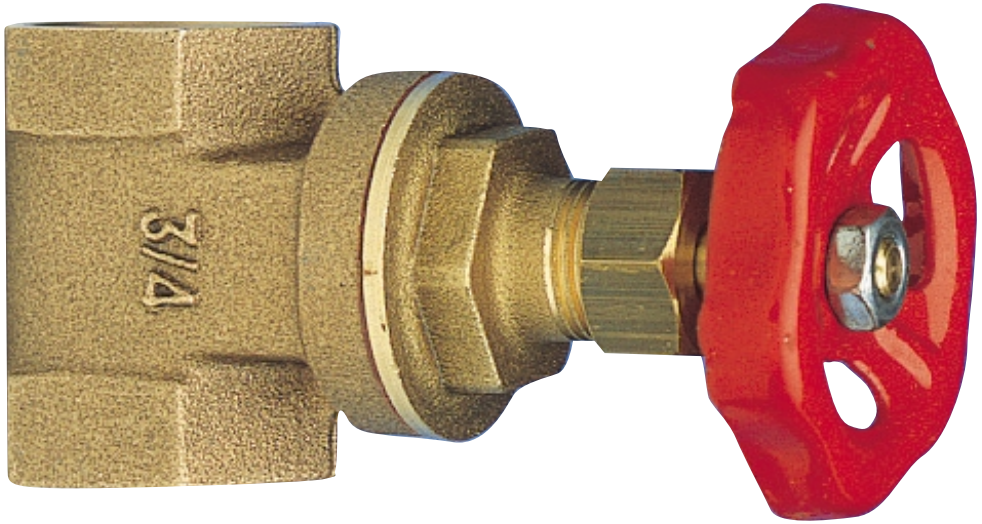
BRASS FITTINGS FOR PE - PIPE WITH BRASS COMPONENTS INSIDE

Art. H.0915 AXO•PE



Pressure cone for high pressure PE-pipe.
For series S5.

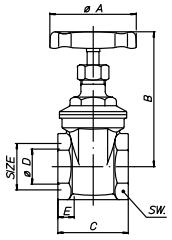
SIZE	mm 20	mm 25	mm 32	mm 40	mm 50	mm 63	mm 75	mm 90
A mm	29	35	39	45	53	67	80	90
øB mm	13,7	18,7	25,7	32,2	40,4	51	60,8	73,2
øC mm	15	20	28	34	42	59,5	65	78
Weight gr.	12	19	28	54	52	87	164	234



GATE VALVES AND FITTINGS

GATE VALVES AND FITTINGS

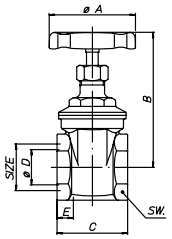
Art. H.0011 WATERGATE



Bronze full bore gate valve, **heavy line**, PN 16.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA mm	45	45	45	50	55	60	70	80	100	100	120
B mm	66	66	68	78	92	108	125	145	175	200	240
C mm	36	38	38	45	48	51	58	62	76	80	96
øD bore	11	13	15	19	24	32	37	47	60	72	93
E mm	8	9	9	10	11	11	13	13	16	16	19
SW mm	19	22	26	32	39	48	56	67	84	98	
PN bar	16	16	16	16	16	16	16	16	10	10	10
Weight gr.	165	165	194	286	370	570	810	1215	2100	2700	4800

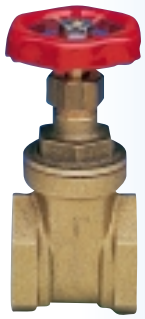
Art. H.0012 WATERGATE

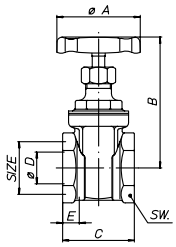


Brass full bore gate valve, **heavy line**, PN 16.

SIZE	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA mm	45	45	50	55	60	70	80	100	100	120
B mm	67	68	78	91	108	125	143	175	200	235
C mm	33	38	44	48	51	58	63	64	74	84
øD bore	13	15	19	24	32	37	47	60	72	93
E mm	8	9	10	11	12	13	13	13	14	16
SW mm	22	27	33	40	48	56	67	83	94	123
PN bar	16	16	16	16	16	16	16	10	10	10
Weight gr.	165	185	250	360	550	690	1060	1690	2190	4150

Art. H.0013 WATERGATE

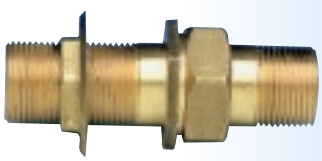


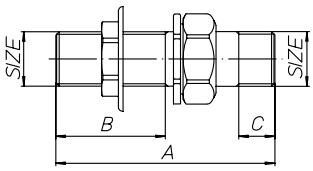


Brass reduced bore gate valve, **standard line**, PN 10.

SIZE	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA mm	45	45	45	50	55	60	70	70	100	100
B mm	67	68	68	80	86	107	134	143	175	202
C mm	33	35	39	43	48	54	58	63	73	80
øD bore	13	13,5	15,5	19	27	33	45	47	60	72
E mm	8	9	9	10	10	11	12	13	13	15
SW mm	22	26	32	39	48	56	67	-	94	-
PN bar	10	10	10	10	10	10	10	10	10	10
Weight gr.	154	160	180	255	373	530	845	1230	1780	2800

Art. H.0061

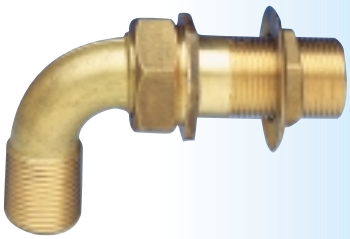


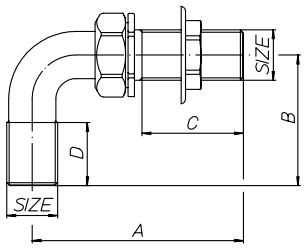


Straight fitting, sandblasted.

SIZE	⅜"	½"	¾"	1"	1"¼	1" ½	2"			
A mm	65	73	87	98	95	105	115			
B mm	24	27,5	40	40	34	33	36			
C mm	12	16	16,5	20	23	25	28			
Weight gr.	85	136	221	337	455	610	985			

Art. H.0063

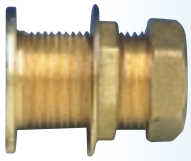


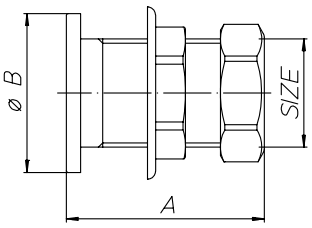


Angled fitting, sandblasted.

SIZE	½"	¾"	1"
A mm	76	95	99
B mm	53	51	53,5
C mm	32	41	37
D mm	26	27	26
Weight gr.	187	292	418

Art. H.0067

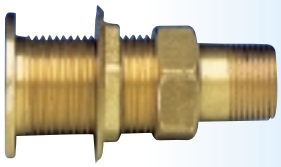


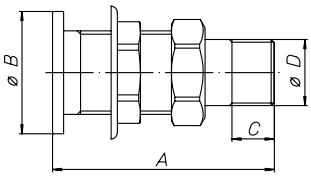


Fitting, with plug, sandblasted.

SIZE	½"	¾"	1"
A mm	51	56	60
øB mm	33,5	40	48
Weight gr.	92	149	200

Art. H.0069

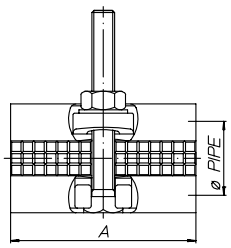




Fitting, with tail, sandblasted.

SIZE	½"	¾"	1"
A mm	73	79	88
øB mm	33,5	40	48
C mm	14	15	16
øD mm	⅜"	½"	¾"
Weight gr.	107	164	244

Art. H.0324 COLLAR

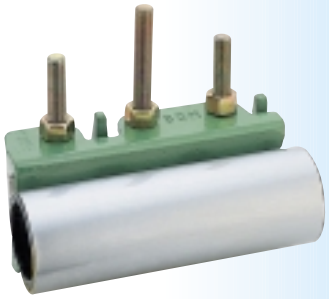


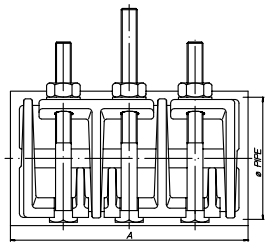
Stainless steel repair neck for hoses with a single tie rod.

SIZE	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
A mm	80	80	80	80	80	80	80	80	80
øpipe mm	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
min	21	26	33	42	48	60	71	87	105
max	25	30	37	45	51	64	76	93	111
Weight gr.	228	230	242	252	267	440	466	506	536

GATE VALVES AND FITTINGS

Art. H.0326 COLLAR

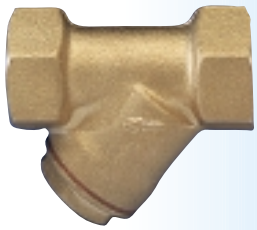


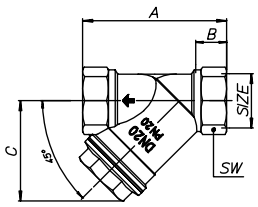


Stainless steel repair neck for hoses with 3 tie rods.

SIZE	1"½	2"	2"½	3"	4"					
A mm	200	200	200	200	200					
øpipe mm	1"½	2"	2"½	3"	4"					
min	48	56	68	88	108					
max	56	64	78	98	118					
Weight gr.	3500	3600	3700	3900	4000					

Art. H.0400 BRASS•Y•STRAINER

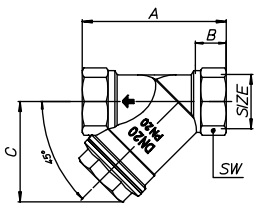




Brass Y-Strainer with stainless steel sieve for water and fluids, female/female.

SIZE	⅜"	½"	¾"	1"	1"¼	1"½	2"			
A mm	55	58	70	87	96	106	126			
B mm	10	12	13	17	20	21	22			
C mm	40	40	50	60	68	75	90			
SW mm	21	25	31	38	48	55	68			
øbore mm	0,4	0,4	0,4	0,4	0,5	0,5	0,5			
empty/full %	38%	38%	38%	38%	48%	48%	48%			
PN bar	16	16	16	16	16	16	16			
Weight gr.	130	150	240	395	700	860	1330			

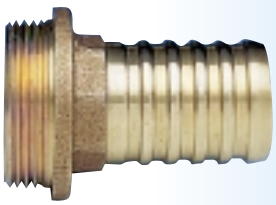
Art. H.0401 BRONZE•Y•STRAINER

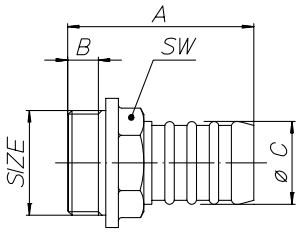


Bronze Y-Strainer with stainless steel sieve for water and fluids, female/female.

SIZE	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
A mm	55	58	70	87	96	106	126	145	165	215
B mm	10	12	13	17	20	21	22	24	26	27
C mm	40	40	50	60	68	75	90	100	118	170
SW mm	21	25	31	38	48	55	68	85	99	126
øbore mm	0,4	0,4	0,4	0,4	0,5	0,5	0,5	0,6	0,6	0,6
empty/full %	38%	38%	38%	38%	48%	48%	48%	50%	50%	50%
PN bar	20	20	20	20	20	20	20	20	20	20
Weight gr.	130	177	284	456	700	940	1510	2180	3220	6740

Art. H.0523

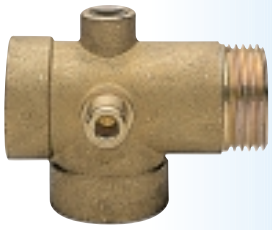


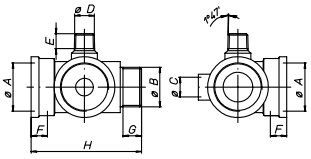


Fitting with outlet connector, Roma type, sand-blasted.

SIZE	½"x15	¾"x20	1"x25	1"x30	1"¼x30	1"½x40	2"x50	2"½x60	3"x80	4"x100
A mm	43	47,5	58,5	64,5	67	80,5	89	95,5	109,5	120,5
B mm	9,5	10	12	12	13	14	15,5	17,5	19	21,5
øC mm	15,5	20	26	31	31	41	51	61	81	101
SW mm	20	25	30	32	32	43	53	61	81	101
Weight gr.	39	64	130	148	172	297	480	720	1145	1730

Art. H.0600 5 WAY CONNECTOR

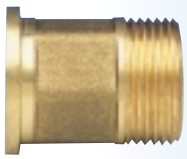


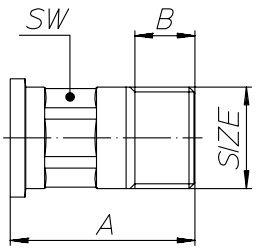


5-way fitting for pumps, sandblasted.

SIZE	1"
øA	1"
øB	1"
øC	1/4"
øD	1/4"
E mm	9,7
F mm	13
G mm	11,7
H mm	79
Weight gr.	220

Art. H.0611

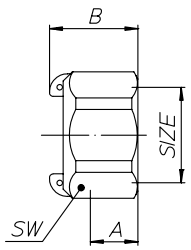




Tail, male threaded, for water meter, sandblasted.

SIZE	½"	¾"	1"	1"¼	1"½	2"
A mm	37	39	46	56	66	76
B mm	13,5	16	18,5	21	23	29
SW mm	17	28	30	37	44	55
Weight gr.	42	69	112	175	285	455

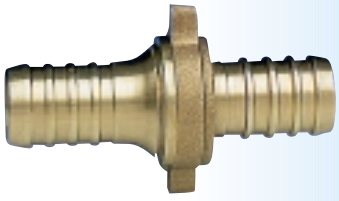
Art. H.0613

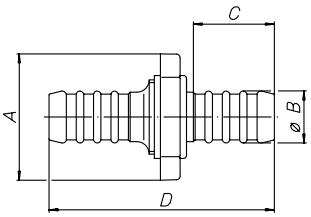


Female threaded nut for water meter, with locking holes, sandblasted.

SIZE	¾"	1"	1"¼	1"½	2"	2"½
A mm	13	17	18	18	19	23
B mm	20	27	27	27	31	31
SW mm	29	36	46	53	69	84
Weight gr.	32	53	108	143	211	482

Art. E.0160



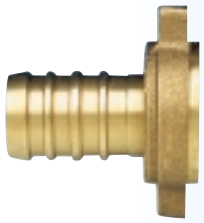


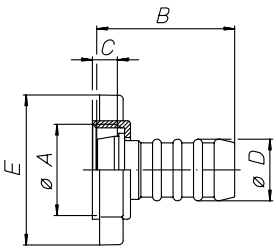
3-piece hose union for rubber hose, sandblasted.

SIZE	15	20	25	30	35	40	50
A mm	45	51	60	67	74	82	100
øB mm	16	21	26	31	36	41	51
C mm	27,5	32	32	39	39	42	46,5
D mm	85	91	100	123	129	142	158
Weight gr.	86	135	219	323	423	530	983

GATE VALVES AND FITTINGS

Art. E.0164

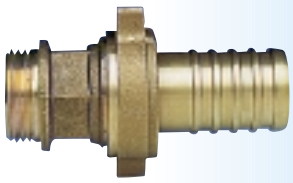


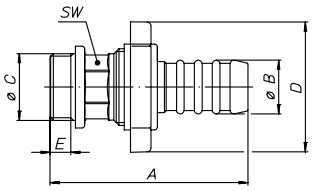


2-piece hose union, male, with nut, sandblasted.

SIZE	13	15	20	25	30	35	40	50		
øA	½"	¾"	7/8"	37,5x8	41,5x8	46,7x8	52x8	66,6x8		
B mm	35	42	47	52	63	67	74	80		
C mm	6,2	8,2	9,7	10,4	11,9	12,9	13,9	14,9		
øD mm	14	16	21	26	31	36	41	51		
E mm	34	45	51	60	67	74	82	100		
Weight gr.	30	50	82	129	225	268	310	498		

Art. E.0166

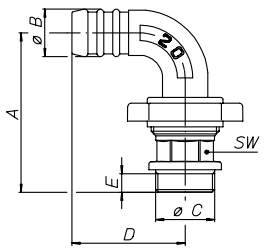




Straight hose coupling for excelsior pump, sandblasted.

SIZE	⅜"x13	½"x15	¾"x20	¾"x25	1"x25	1"x30	1"¼x30	1"¼x35	1"½x40	2"x50
A mm	56,5	65	77,5	84,5	87	101	102,5	106,5	116,5	128,5
øB mm	14	16	21	26	26	31	31	36	41	51
øC	⅜"	½"	¾"	¾"	1"	1"	1"¼	1"¼	1"½	2"
D mm	34	45	51	60	60	67	67	74	82	100
E mm	6,2	7,2	8,2	8,2	9,7	9,7	10,7	10,7	11,7	13,2
SW mm	14,5	18,5	22	27	27	30,5	30,5	35	39	56
Weight gr.	59	100	158	240	254	371	397	466	576	948

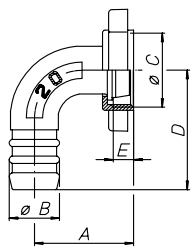
Art. E.0168



Elbow hose coupling for excelsior pump, sandblasted.

SIZE	¾"x20	¾"x25	1"x25	1"x30	1"¼x30	1"¼x35	1"½x40	2"x50		
A mm	70,5	79,5	82	90	91,5	99,5	108,5	124,5		
øB mm	21	26	26	31	31	36	41	51		
øC	¾"	¾"	1"	1"	1"¼	1"¼	1"½	2"		
D mm	50	55	55	67	67	72	87	101,5		
E mm	8,2	8,2	9,7	9,7	10,7	10,7	11,7	13,2		
SW mm	22	27	27	30,5	30,5	35	39	56		
Weight gr.	202	305	319	432	458	608	775	1351		

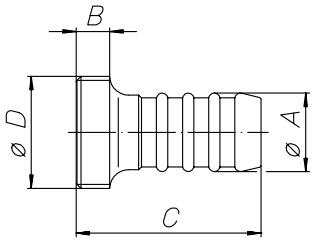
Art. E.0170



Elbow for excelsior pump with nut, sandblasted.

SIZE	20	25	30	35	40	50				
A mm	40	47	52	60	66	76				
øB mm	21	26	31	36	41	51				
øC	7/8"	37,5x8	41,5x8	46,7x8	52x8	66,6x8				
D mm	50	55	67	72	87	101,5				
E mm	9,5	10,5	10,5	12	13	13				
Weight gr.	126	194	286	410	509	901				

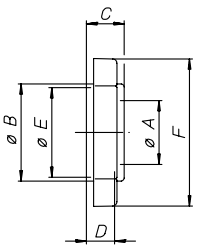
Art. E.0683



1 piece for hose union, machined.

SIZE	15	20	25	30	35	40	50
øA mm	16	21	26	31	36	41	51
B mm	8	9	9	10	11	11	12
C mm	47	49,5	54	66	69	75	85
øD	3/4"	7/8"	37,5x8	41,5x8	46,7x8	52x8	66,6x8
Weight gr.	36	53	90	130	155	220	480

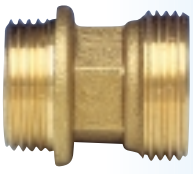
Art. E.0685

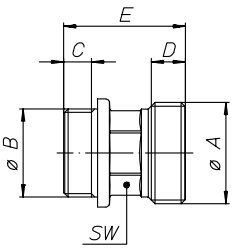


Nut for fittings, sandblasted.

SIZE	15	20	25	30	35	40	50
øA mm	16,5	22	30	34,5	39,5	44,5	53
øB mm	29	33,5	41	45	50,5	56	72
C mm	12	13	16	17,5	19	20	21
D mm	8,2	9,7	10,4	11,9	12,9	13,9	14,9
øE	3/4"	7/8"	37,5x8	41,5x8	46,7x8	52x8	66,6x8
F mm	45	51	60	67	74	82	100
Weight gr.	20	40	65	83	100	140	198

Art. E.0687

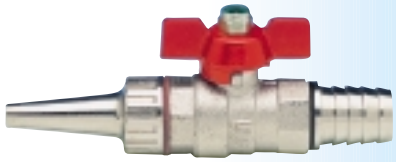


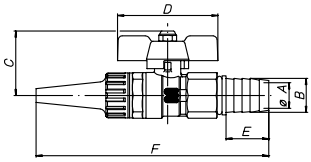


Nipple for excelsior pump, sandblasted.

SIZE	3⁄8"x13	½"x15	¾"x20	¾"x25	1"x25	1"x30	1"¼x30	1"¼x35	1"½x40	2"x50
øA	½"	¾"	7/8"	37,5x8	37,5x8	41,5x8	41,5x8	46,7x8	52x8	66,6x8
øB	3⁄8"	½"	¾"	¾"	1"	1"	1"¼	1"¼	1"½	2"
C mm	6,2	7,2	8,2	8,2	9,7	9,7	10,7	10,7	11,7	13,2
D mm	8	8	9	9	9	10	10	11	11	12
E mm	29,5	28	36	38,5	41	44	45,5	46,5	50	56
SW mm	14,5	18,5	22	27	27	30,5	30,5	35	39	56
Weight gr.	29	78	86	111	125	146	185	198	266	450

Art. H.0039





Ball valve with nozzle and outlet connector, with red T-handle, nickel-plated.

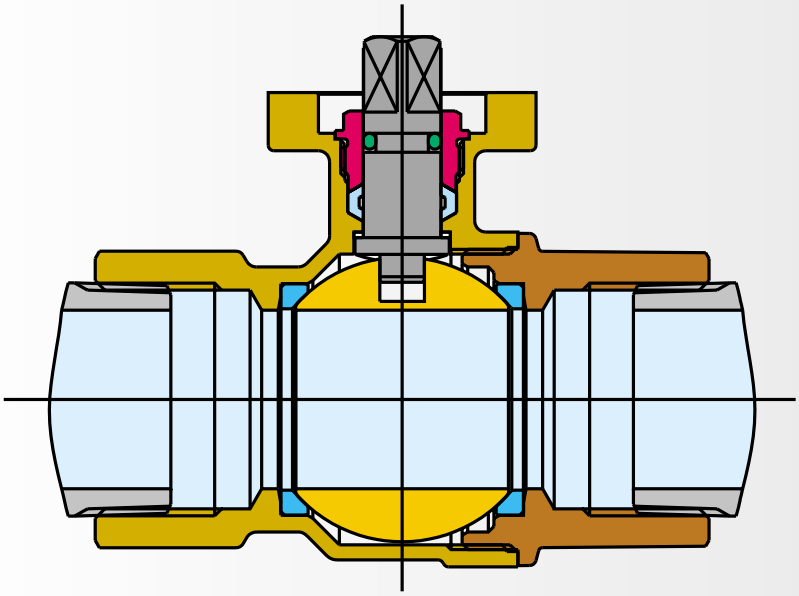
SIZE	½"x20	¾"x20
øA bore	15	20
B mm	20	20
C mm	40	48
D mm	52	65
E mm	25	28
F mm	130	154
Weight gr.	255	440

BALL•O•MATIC®

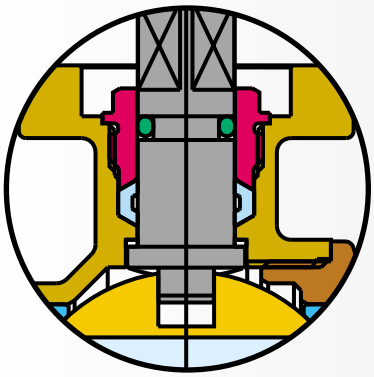
HEAVY LINE FULL BORE BALL VALVE FOR ACTUATORS

BALL•O•MATIC®

HEAVY LINE FULL BORE BALL VALVE FOR ACTUATOR

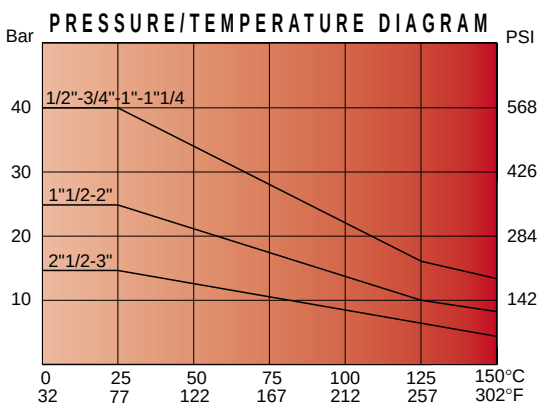


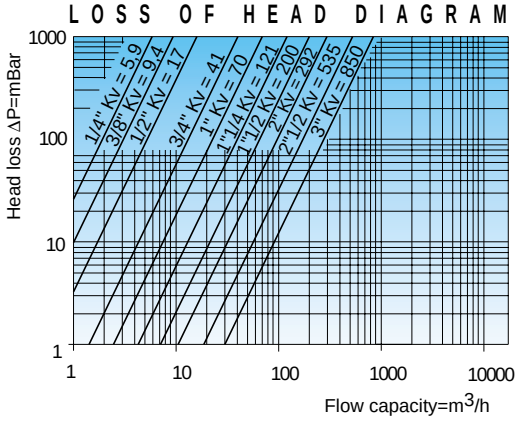
BODY	1	CW 617 N UNI EN 12165
COUPLING	2	CW 617 N UNI EN 12165
BALL	3	CW 614 N UNI EN 12164
BALL GASKETS	4	P.T.F.E.
STEM	5	CW 614 N UNI EN 12164
O-RING	6	ELASTOMER
GLAND	7	CW 614 N UNI EN 12164
ANTI-FRICTION RING	8	P.T.F.E.
STEM GASKET	9	P.T.F.E.



TRIPLE SEALING BLOW OUT-PROOF STEM

- **BALL•O•MATIC** ball valve is bottom loaded stem designed to prevent blow-out, with a triple sealing: in the upper part one stem packing in PTFE and one O-Ring in elastomer; an anti-friction thrust washer in PTFE in the lower part.
- The patented and automatic system guarantees a perfect tight seal in any working condition, maintains pressure constant on the seats and, by taking up slackenings, avoid any need for maintenance.





CHARACTERISTICS OF THE VALVE

- **BALL•O•MATIC** ball valve in forged brass, of solid and advanced design, is specially designed to be combined with an actuator, by an easy and quick installation.
- Connection with actuators to ISO 5211.
- Leading design and accurate machining and finishing of the valves guarantee a perfect tightness and lifetime troubleless working operations.

TECHNICAL FEATURES

- Full bore, long threads.
- Heavy line perfect seal at low and high pressures.
- Wear resistant, solid and long lasting materials.
- Smooth and rapid on/off 90° turn operation.
- Maintenance free.
- All valves are tested at 20 bar pressure, for a period exceeding 48 hours.

END CONNECTIONS

- Female screwed to ISO 7/1 Rp = DIN 2999.

WORKING PRESSURE

- From PN 40 (size 1/2") to PN 16 (size 3")

TEMPERATURE LIMITS

- From -20°C to +150°C

UTILISATION

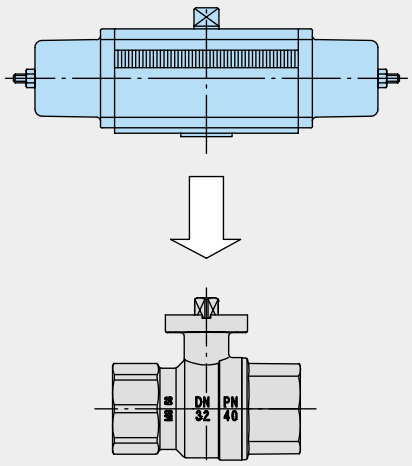
- **BALL•O•MATIC** is suitable for hot and cold water, compressed air, oils, non-corrosive fluids and hydrocarbons in general.
- For special uses, see the table of chemical resistance on pages 206 and 207.

INSTALLATION INSTRUCTIONS

- The **BALL•O•MATIC** valves can be installed in any position: horizontal, vertical, oblique ecc.. In any case they must be visible and easily accessible. Unless something else s indicated, the valve can be closed by rotating it clockwise and opened by rotating it counter-clockwise.
- There is not any difference in the flow direction, if it is not indicated by an arrow on the valve.
- For the seal of the threaded connections, please refer to what is provided for in the standards UNI ISO 7, UNI ISO 228 or other standards applying other cases.
- The appliance must be planned and realized in such a way as to avoid bending or torsion stresses or other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed to the pipes with suitable means and by using the apposite key. The torque wrench setting must guarantee the seal without deforming or damaging any parts of the valve.
- After installing the valve it is necessary to control the connection sealing, the operating devices and the on-off stops.
- Do not let the valve for a long time in such positions where it is neither completely open nor closed. This could indeed damage the gaskets, the ball and prevent the valve itself from sealing and working correctly.
- It is recommended to install a y-strainer at least between the pipe where fluids come from and the valve, in order to make it work properly and to guarantee its seal.
- Moderate the closing speed in order to avoid hammering.
- For every further information please contact the authorized dealers or ENOLGAS BONOMI S.P.A. directly.

INSTALLATION OF THE ACTUATOR

- Please use actuators whose connection is conformal to the standard ISO 5211 or specific tail and nuts. In order to choose the force of the actuator refer to the operating effort indicated in the table for each size of the valve.
- In order to guarantee that valves work also after a long while they have not been used, it is recommended to choose an actuator whose force is higher than the operating effort indicated for the valve.
- For every further information contact the authorized dealers or ENOLGAS BONOMI S.P.A.



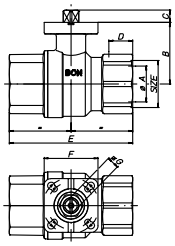
BALL•O•MATIC
Example of coupling of valve with actuator.

SIZE	DN	MAX BREAKING TORQUE AT PN 0 T 25°C	MAX BREAKING TORQUE AT PN 16 T 25°C	MAX BREAKING TORQUE AT PN 25 T 25°C	MAX BREAKING TORQUE AT PN 40 T 25°C	Kv H2O
1/4"	8	2 Nm (17,7 Lbin)	2,4 Nm (21,24 Lbin)	2,6 Nm (23,01 Lbin)	2,8 Nm (24,78 Lbin)	5.9
3/8"	10	2 Nm (17,7 Lbin)	2,4 Nm (21,24 Lbin)	2,6 Nm (23,01 Lbin)	2,8 Nm (24,78 Lbin)	9.4
1/2"	15	3 Nm (26,55 Lbin)	3,6 Nm (31,86 Lbin)	4 Nm (35,40 Lbin)	4,2 Nm (37,17 Lbin)	17
3/4"	20	4 Nm (35,4 Lbin)	5 Nm (44,25 Lbin)	5,2 Nm (46,02 Lbin)	5,6 Nm (49,56 Lbin)	41
1"	25	6 Nm (53,1 Lbin)	7,2 Nm (63,72 Lbin)	7,8 Nm (69,03 Lbin)	8,4 Nm (74,04 Lbin)	70
1 1/4"	32	7 Nm (61,95 Lbin)	8,5 Nm (75,23 Lbin)	9,1 Nm (80,54 Lbin)	9,8 Nm (86,73 Lbin)	121
1 1/2"	40	10 Nm (88,5 Lbin)	12 Nm (106,20 Lbin)	13 Nm (115,05 Lbin)	-	200
2"	50	19 Nm (168,16 Lbin)	23 Nm (203,57 Lbin)	25 Nm (221,27 Lbin)	-	292
2 1/2"	65	32 Nm (283,22 Lbin)	38 Nm (336,33 Lbin)	-	-	535
3"	80	*	*	-	-	-
4"	100	*	*	-	-	-

(*) Technical information available upon request.

HEAVY LINE FULL BORE BALL VALVE FOR ACTUATOR

Art. S.1021 BALL•O•MATIC



Full bore ball valve female/female threaded, with ISO plate for actuator, nickel-plated.

SIZE	¼"	⅜"	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	8	10	15	20	25	32	40	50	63	78	*
B mm	38	38	38	40,5	44	55	61,5	73	82,75	94,5	*
C mm	9	9	9	9	9	11	11	14	15,5	15,5	*
D mm	15	15	15	16,3	19,1	21,4	21,4	25,7	30,2	33,3	*
E mm	75	75	75	80	90	110	120	140	155	182	*
F mm	37	37	37	37	37	48	48	48	68	68	*
øG mm	9	9	9	9	9	11	11	14	14	14	*
SW mm	26	26	26	32	41	50	55	70	83	98	*
ISO FLANGE	F3	F3	F3	F3	F3/F4	F4/F5	F4/F5	F5	F7	F7	*
Weight gr.	412	390	342	463	705	1220	1650	2888	3285	5800	-

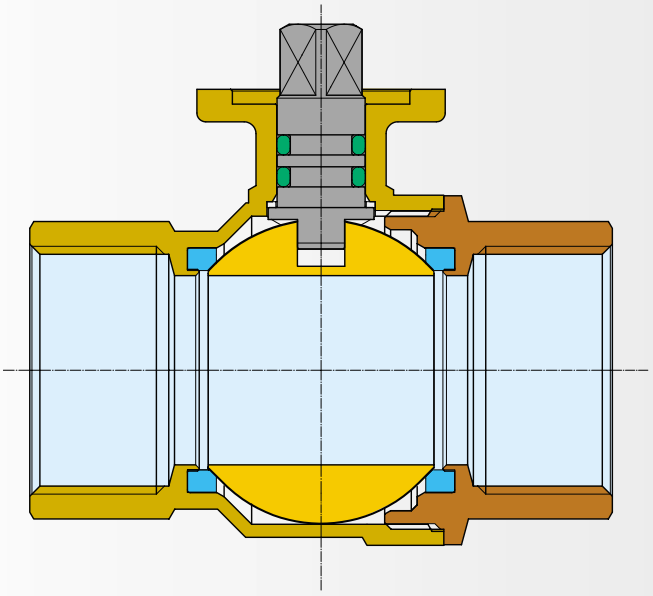
* available on request

SWIFT•O•MATIC ®

ISO•TOP FULL BORE BALL VALVE FOR ACTUATORS

SWIFT•O•MATIC®

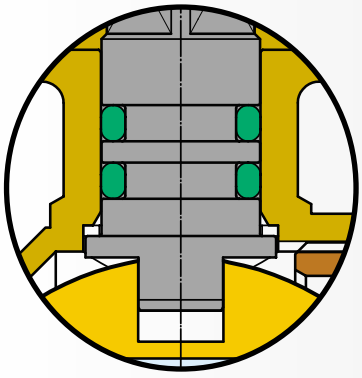
ISO•TOP FULL BORE BALL VALVE FOR ACTUATOR



BODY	1	CW 617 N UNI EN 12165
COUPLING	2	CW 617 N UNI EN 12165
BALL	3	CW 614 N UNI EN 12164
BALL GASKETS	4	P.T.F.E./ELASTOMER COMPOUND
STEM	5	CW 614 N UNI EN 12164
THRUST WASHER	6	P.T.F.E.
STEM PACKING	7	2 ELASTOMER O-RING

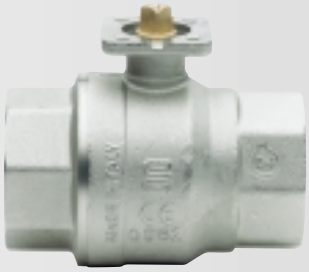
TECHNICAL, DYNAMIC AND STRUCTURAL CHARACTERISTICS

- **SWIFT•O•MATIC ISO•TOP** offers extremely high performance characteristics in terms of duration and reliability of the whole package valve/actuator.
- The generous scaling renders **SWIFT•O•MATIC ISO•TOP** suitable for heavy usage.
- The operating torques for all sizes are extremely low (see table below). Stress from the drives is extremely contained.
- The life of the valve, understood as the number of sudden on/off cycles equating to 1 second, is comparable to the life of the actuator.
- The floatation of the shutter organ of the valve, subjected to the dynamic action of the fluid intercepted, is extremely contained, intensifying the features of stability and resistance of the valve itself.



DOUBLE SEAL BLOW OUT PROOF- STEM

- The **SWIFT•O•MATIC ISO TOP** ball valves are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.



CHARACTERISTICS AND NORMS

- **SWIFT•O•MATIC ISO•TOP** valves are made of brass, robust and specially designed to be easily and quickly automated with the actuators.
- Full bore.
- Flange for connection with actuator: ISO 5211
- Brass: UNI EN 12165 CW 614 / CW 617 N
- **PED 97/23/CE - MODULE H**

END CONNECTIONS

- Threaded connections: ISO 7/1, NPT, BSPT

UTILISATIONS

- **SWIFT•O•MATIC ISO•TOP** is a ball valve designed for industrial automation and HVAC uses.

LIMITS OF USE

- Temperature: -20°C + 130°C (valve)
- Temperature: -10°C + 80°C (actuator)

MAIN USES

- Hot and cold water, air
- Hydrocarbons in general
- Non-aggressive fluids

CHEMICAL COMPATIBILITY

- ***For detailed information on the chemical compatibility: contact Enolgas.***

COUPLING WITH ACTUATOR

- The connection between **SWIFT•O•MATIC ISO•TOP** valve and the actuator is extremely stable: square, stem and flange ISO 5211

ADVANTAGES AND COMPETITIVENESS

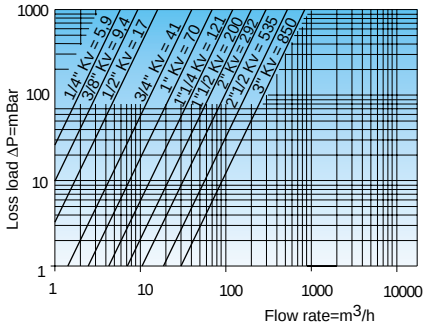
- The mechanical characteristics of **SWIFT•O•MATIC ISO•TOP** provide the motorized valve with considerable advantages.
- The operating torque is greatly reduced and permits a substantial reduction in the choice of the electrical or pneumatic drives. This benefit materializes in significant savings in terms of cost for the entire valve plus actuator package.
- The valve and actuator have a comparable life in terms of comparable cycle duration.
- The structural stability of the valves offers the possibility of automating heavy usage in many industrial applications too.

INSTALLATION INSTRUCTIONS

- The **SWIFT•O•MATIC ISO•TOP** valves can be installed in any position: horizontal, vertical, oblique ecc.. In any case they must be visible and easily accessible.
- For the seal of the threaded connections, please refer to what is provided for in the standards UNI ISO 7, UNI ISO 228 or other standards applying other cases.
- The appliance must be planned and realized in such a way as to avoid bending or torsional stresses or other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed to the pipes with suitable means and by using the apposite key. The torque wrench setting must guarantee the seal without deforming or damaging any parts of the valve.
- After installing the valve it is necessary to control the connection sealing, the operating devices and the on-off stops.
- Do not let the valve for a long time in such positions where it is neither completely open nor closed. This could indeed damage the gaskets, the ball and prevent the valve itself from sealing and working correctly.
- It is recommended to use the complete package "valve+actuator" supplied by ENOLGAS.
- In order to choose the force of the actuator refer to the operating effort indicated in the table for each size of the valve.
- Rotate the valve cautiously after it has been kept in the same position for a long time.
- For every further information contact the authorized dealers or ENOLGAS BONOMI S.P.A. directly.

SWIFT•O•MATIC® ISO•TOP
Ball valve fitted with pneumatic actuator.

LOAD LOSS DIAGRAM
(TEST CARRIED OUT WITH WATER)



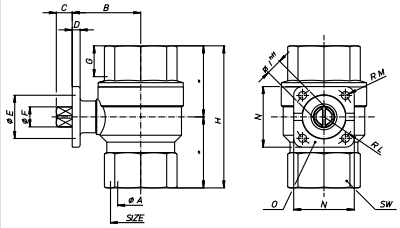
SIZE	DN	MAX BREAKING TORQUE AT PN 0 T 25°C	MAX BREAKING TORQUE AT PN 6 T 25°C	MAX BREAKING TORQUE AT PN 10 T 25°C	MAX BREAKING TORQUE AT PN 16 T 25°C	Kv H2O
1/4"	8	<1 Nm (8,85 Lbin)	1 Nm (8,85 Lbin)	1 Nm (8,85 Lbin)	1,2 Nm (10,62 Lbin)	5.9
3/8"	10	<1 Nm (8,85 Lbin)	1 Nm (8,85 Lbin)	1 Nm (8,85 Lbin)	1,2 Nm (10,62 Lbin)	9.4
1/2"	15	1 Nm (8,85 Lbin)	1,4 Nm (12,39 Lbin)	1,4 Nm (12,39 Lbin)	1,6 Nm (14,16 Lbin)	17
3/4"	20	1,6 Nm (14,16 Lbin)	2 Nm (17,70 Lbin)	2 Nm (17,70 Lbin)	2,5 Nm (22,12 Lbin)	41
1"	25	2,8 Nm (24,78 Lbin)	3,5 Nm (30,97 Lbin)	3,5 Nm (30,97 Lbin)	4 Nm (35,40 Lbin)	70
1 1/4"	32	4,4 Nm (38,94 Lbin)	5,5 Nm (48,68 Lbin)	5,5 Nm (48,68 Lbin)	6,1 Nm (53,98 Lbin)	121
1 1/2"	40	5 Nm (44,25 Lbin)	7 Nm (61,95 Lbin)	8 Nm (70,80 Lbin)	*	200
2"	50	6 Nm (53,10 Lbin)	8,5 Nm (75,23 Lbin)	10 Nm (88,50 Lbin)	*	292
2 1/2"	65	8,5 Nm (75,23 Lbin)	11,5 Nm (201,78 Lbin)	15 Nm (132,96 Lbin)	*	535
3"	80	*	*	*	-	-
4"	100	-	-	-	-	-

(*) Technical information available upon request.

The given values are referred to a new valve, as released by the manufacturer.

ISO•TOP FULL BORE BALL VALVE FOR ACTUATOR

Art. S.1031 SWIFT•O•MATIC

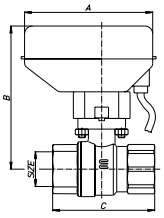


Full bore ball valve female/female threaded, with ISO flange for actuator, nickel-plated.

Size	½"	¾"	1"	1"¼	1"½	2"	2"½	3"	4"
øA bore	15	20	25	32	40	48	61	78	*
B mm	29,4	33	37,2	47,5	53	64	82,75	94,5	*
C mm	9	9	9	11	11	14	15	15,5	*
D mm	5	5	5	5,5	5,5	6,5	10	12	*
E mm	25	25	25	30	30	30	55	55	*
F mm	10,8	10,8	10,8	13,9	13,9	13,9	17,9	17,9	*
H mm	61	69,5	84,5	98,5	110	130	158,5	182	*
I mm	9	9	9	11	11	11	14	14	*
L mm	18	18	18	21	21	21	35	35	*
M mm	2,75	2,75	2,75	2,75	2,75	2,75	4,5	4,5	*
N mm	37	37	42	42	42	48	68	68	*
O mm	F3	F3	F3	F4	F4	F4	F7	F7	*
SW mm	25	31	38	47	55	68	83	98	*
ISO FLANGE	F3	F3	F3	F4	F4	F4	F7	F7	*

* available on request

Art. S.2011 to S.2046 SWIFT•O•MATIC



Full bore ball valve with electrical servo control series LITE IP 44.

Size	1/2"	3/4"	1"	1"¼
A	113	113	113	113
B	119	122	126	137
C	61	69,5	84,5	98,5
Weight gr.	982	1003	1245	1760

ACTUATOR CHARACTERISTICS

S2011N	230V	50 HZ	3 wires	1 MICRO*	8Nm	45 sec. IP 44	one-way
S2016N	24V	50 HZ	3 wires	1 MICRO*	8Nm	45 sec. IP 44	one-way
S2021N	230V	50 HZ	2 wires	1 MICRO*	8Nm	45 sec. IP 44	one-way
S2026N	24V	50 HZ	2 wires	1 MICRO*	8Nm	45 sec. IP 44	one-way
S2031N	230V	50 HZ	3 wires	1 MICRO*	8Nm	45 sec. IP 44	two-way
S2036N	24V	50 HZ	3 wires	1 MICRO*	8Nm	45 sec. IP 44	two-way
S2041N	230V	50 HZ	2 wires	1 MICRO*	8Nm	45 sec. IP 44	two-way
S2046N	24V	50 HZ	2 wires	1 MICRO*	8Nm	45 sec. IP 44	two-way

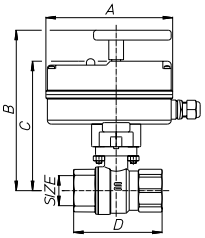
The manoeuvre time refers to a rotation of 90°

*A microstare free

Special drives available:
-60 HZ
-Different manoeuvre times

* available on request

Art. S.2051 to S.2136 SWIFT•O•MATIC



Full bore ball valve whit industrial electrical servo control series HEAVY DUTY with handle IP 55.

Size	1/2"	3/4"	1"	1"¼	1"½	2"	2"½	3"
A	131	131	131	131	131	131	*	*
B	157	159	163	174	180	192	*	*
C	125	128	131	142	149	160	*	*
D	61	69,5	84,5	98,5	110	130	*	*
Weight gr.	1192	1313	1555	2070	2500	3738	*	*

ACTUATOR CHARACTERISTICS

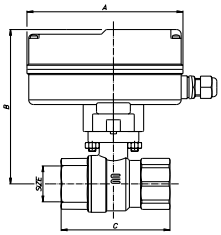
S2051N	230V	50 HZ	3 wires		11Nm	35 sec. IP55	two-way
S2056N	110V	50 HZ	3 wires		11Nm	35 sec. IP55	two-way
S2061N	24V	50 HZ	3 wires		11Nm	35 sec. IP55	two-way
S2066N	230V	50 HZ	2 wires		11Nm	35 sec. IP55	two-way
S2071N	110V	50 HZ	2 wires		11Nm	35 sec. IP55	two-way
S2076N	24V	50 HZ	2 wires		11Nm	35 sec. IP55	two-way
S2081N	230V	50 HZ	3 wires	1 MICRO	11Nm	35 sec. IP55	two-way
S2086N	110V	50 HZ	3 wires	1 MICRO	11Nm	35 sec. IP55	two-way
S2091N	24V	50 HZ	3 wires	1 MICRO	11Nm	35 sec. IP55	two-way
S2096N	230V	50 HZ	2 wires	1 MICRO	11Nm	35 sec. IP55	two-way
S2101N	110V	50 HZ	2 wires	1 MICRO	11Nm	35 sec. IP55	two-way
S2106N	24V	50 HZ	2 wires	1 MICRO	11Nm	35 sec. IP55	two-way
S2111N	230V	50 HZ	3 wires	2 MICRO	11Nm	35 sec. IP55	two-way
S2116N	110V	50 HZ	3 wires	2 MICRO	11Nm	35 sec. IP55	two-way
S2121N	24V	50 HZ	3 wires	2 MICRO	11 Nm	35 sec. IP55	two-way
S2126N	230V	50 HZ	2 wires	2 MICRO	11 Nm	35 sec. IP55	two-way
S2131N	110V	50 HZ	2 wires	2 MICRO	11 Nm	35 sec. IP55	two-way
S2136N	24V	50 HZ	2 wires	2 MICRO	11 Nm	35 sec. IP55	two-way

The manoeuvre time refers to a rotation of 90°

Special drives available:
- 60 HZ
-Different manoeuvre times
- 24 Volt. D.C.
- Protected version with components in AISI 303/Brass

* available on request

Art. S.2141 to S.2226 SWIFT•O•MATIC



Full bore ball valve whit industrial electrical servo control series HEAVY DUTY IP 55.

Size	1/2"	3/4"	1"	1"¼	1"½	2"	2"½	3"
A	131	131	131	131	131	131	*	*
B	125	128	131	142	149	160	*	*
C	61	69,5	84,5	98,5	110	130	*	*
							*	*
Weight gr.	1287	1408	1650	2165	2595	3833	*	*

ACTUATOR CHARACTERISTICS

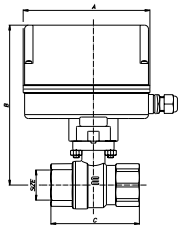
S2141N	230V	50HZ	3 wires	11Nm	35 sec. IP55	two-way
S2146N	110V	50HZ	3 wires	11Nm	35 sec. IP55	two-way
S2151N	24V	50HZ	3 wires	11Nm	35 sec. IP55	two-way
S2156N	230V	50HZ	2 wires	11Nm	35 sec. IP55	two-way
S2161N	110V	50HZ	2 wires	11Nm	35 sec. IP55	two-way
S2166N	24V	50HZ	2 wires	11Nm	35 sec. IP55	two-way
S2171N	230V	50HZ	3 wires 1 MICRO	11Nm	35 sec. IP55	two-way
S2176N	110V	50HZ	3 wires 1 MICRO	11Nm	35 sec. IP55	two-way
S2181N	24V	50HZ	3 wires 1 MICRO	11Nm	35 sec. IP55	two-way
S2186N	230V	50HZ	2 wires 1 MICRO	11Nm	35 sec. IP55	two-way
S2191N	110V	50HZ	2 wires 1 MICRO	11Nm	35 sec. IP55	two-way
S2196N	24V	50HZ	2 wires 1 MICRO	11Nm	35 sec. IP55	two-way
S2201N	230V	50HZ	3 wires 2 MICRO	11Nm	35 sec. IP55	two-way
S2206N	110V	50HZ	3 wires 2 MICRO	11Nm	35 sec. IP55	two-way
S2211N	24V	50HZ	3 wires 2 MICRO	11Nm	35 sec. IP55	two-way
S2216N	230V	50 HZ	2 wires 2 MICRO	11Nm	35 sec. IP55	two-way
S2221N	110V	50HZ	2 wires 2 MICRO	11Nm	35 sec. IP55	two-way
S2226N	24V	50HZ	2 wires 2 MICRO	11Nm	35 sec. IP55	two-way

The manoeuvre time refers to a rotation of 90°

Special drives available:
- 60 HZ
- 24 Volt. D.C.
- Different manoeuvre times
- Protected version with components in AISI 303/Brass

* available on request

Art. S.2231 - S.2236 SWIFT•O•MATIC



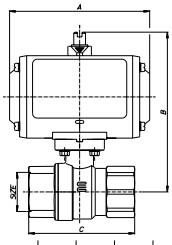
Full bore ball valve with proportional industrial servo control series HEAVY DUTY IP 55.

Size	1/2"	3/4"	1"	1"¼	1"½	2"			
A	131	131	131	131	131	131			
B	156	159	162	173	180	191			
C	61	69,5	84,5	98,5	110	130			
Weight gr.	1352	1473	1715	2230	2660	3898			

ACTUATOR CHARACTERISTICS

S2231N	24V	50HZ	4:20 mA (0:20 mA) (0-10V)	0°/90° - 0°/180°
S2236N	230V	50HZ	4:20 mA (0:20 mA) (0-10V)	0°/90° - 0°/180°

Art. S.2301 to S.2331 SWIFT•O•MATIC



Full bore ball valve with pneumatic servo control in technopolymer.

Size	1/2"	3/4"	1"	1"¼	1"½	2"	2"½	3"	
A	119	119	119	119	119	119	*	*	
B	129	131,5	135	146	152,5	174	*	*	
C	61	69,5	84,5	98,5	110	130	*	*	
							*	*	
Weight gr.	927	1048	1290	1805	2235	3070	*	*	

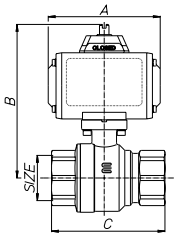
ACTUATOR CHARACTERISTICS

S2301N Double effect technopolymer
S2306N Double effect technopolymer with micro box incorporated
S2321N Single effect technopolymer
S2331N Single effect technopolymer with micro box incorporated

Maximum air pressure 8 bar
For P < 4 bar single effect: contact Enolgas

* available on request

Art. S.2401 - S.2406 SWIFT•O•MATIC



Full bore ball valve with aluminium servo control.

Size	1/2"	3/4"	1"	1"¼	1"½	2"	2"½	3"	
A	119	119	119	119	119	165	*	*	
B	139	142	146	156	162	194	*	*	
C	61	69,5	84,5	98,5	110	130	*	*	
							*	*	
Weight gr.	1162	1283	1525	2040	2470	3300	*	*	

ACTUATOR CHARACTERISTICS

S2401N Double effect aluminium
S2406N Single effect aluminium

Maximum air pressure 10 bar
For P < 4 bar single effect: contact Enolgas

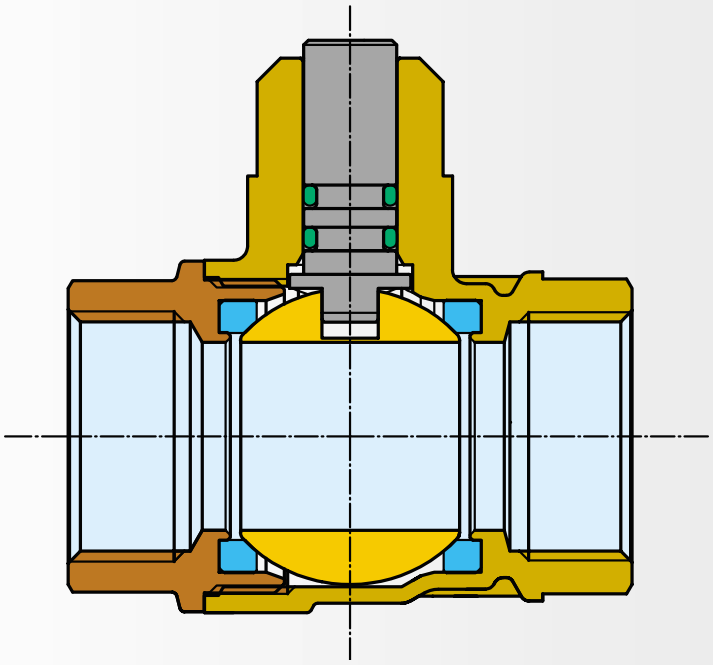
* available on request

SWIFT•O•MATIC® QM

QUICK MOUNTING FULL BORE BALL VALVE FOR ACTUATOR

SWIFT•O•MATIC® QM

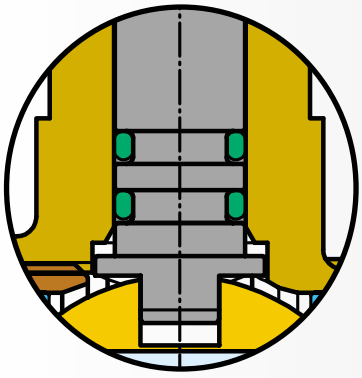
QUICK MOUNTING
FULL BORE BALL VALVE FOR ACTUATOR



BODY	1	
CW 617 N UNI EN 12165		
COUPLING	2	
CW 617 N UNI EN 12165		
BALL	3	
CW 614 N UNI EN 12164		
BALL GASKETS	4	
P.T.F.E./ELASTOMER COMPOUND		
STEM	5	
CW 614 N UNI EN 12164		
THRUST WASHER	6	
P.T.F.E.		
STEM PACKING	7	
2 ELASTOMER O-RING		

TECHNICAL, DYNAMIC AND STRUCTURAL CHARACTERISTICS

- **SWIFT•O•MATIC QUICK MOUNTING** offers extremely high performance characteristics in terms of duration and reliability of the whole package valve/actuator.
- The generous scaling renders **SWIFT•O•MATIC QUICK MOUNTING** suitable for heavy usage.
- The operating torques for all sizes are extremely low (see table in the opposite page). Stress from the drives is extremely contained.
- The life of the valve, understood as the number of sudden on/off cycles equating to 1 second, is comparable to the life of the actuator.
- The floatation of the shutter organ of the valve, subjected to the dynamic action of the fluid intercepted, is extremely contained, intensifying the features of stability and resistance of the valve itself.



DOUBLE SEAL BLOW OUT PROOF- STEM

- The **SWIFT•O•MATIC QUICK MOUNTING** ball valves are bottom loaded stem designed. This is called “anti-blow-out” system, because it gives further guarantees against the accidental blow-out of the stem and because it is impossible to tamper it accidentally from the outside.

CHARACTERISTICS AND NORMS

- **SWIFT•O•MATIC QUICK MOUNTING** valves are made of brass, robust and specially designed to be easily and quickly automated with the actuators.
- Full bore, long threads.
- Brass: UNI EN 12165 CW 614 / CW 617 N
- Threaded connections: ISO 7/1 - ISO 228 - NPT - BSPT
- **PED 97/23/CE - MODULE H**

LIMITS OF USE

- Temperature: -20°C + 130°C (valve)
- Temperature: -10°C + 80°C (actuator)

MAIN USES

- Hot and cold water, air
- Hydrocarbons in general
- Non-aggressive fluids

CHEMICAL COMPATIBILITY

- ***For detailed information on the chemical compatibility: contact Enolgas.***

COUPLING WITH ACTUATOR

- The quick and easy connection between the **SWIFT•O•MATIC QUICK MOUNTING** valve and the actuator is extremely stable.

ADVANTAGES AND COMPETITIVENESS

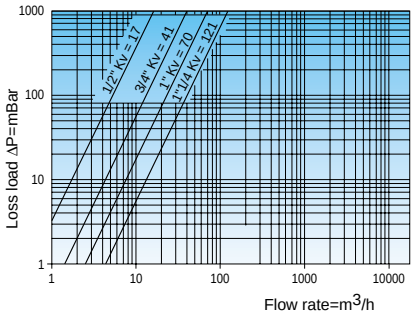
- The mechanical characteristics of **SWIFT•O•MATIC QUICK MOUNTING** provide the motorized valve with considerable advantages.
- The operating torque is greatly reduced and permits a substantial reduction in the choice of the electrical or pneumatic drives. This benefit materializes in significant savings in terms of cost for the entire valve plus actuator package.
- The valve and actuator have a comparable life in terms of comparable cycle duration.
- The structural stability of the valves offers the possibility of automating heavy usage in many industrial applications too.

INSTALLATION INSTRUCTIONS

- The **SWIFT•O•MATIC QUICK MOUNTING** valves can be installed in any position: horizontal, vertical, oblique ecc.. In any case they must be visible and easily accessible.
- For the seal of the threaded connections, please refer to what is provided for in the standards UNI ISO 7, UNI ISO 228 or other standards applying other cases.
- The appliance must be planned and realized in such a way as to avoid bending or torsional stresses or other forces which could damage the valve, prevent it from working properly and obstruct its seal.
- The valve must be screwed to the pipes with suitable means and by using the apposite key. The torque wrench setting must guarantee the seal without deforming or damaging any parts of the valve.
- After installing the valve it is necessary to control the connection sealing, the operating devices and the on-off stops.
- Do not let the valve for a long time in such positions where it is neither completely open nor closed. This could indeed damage the gaskets, the ball and prevent the valve itself from sealing and working correctly.
- It is recommended to use the complete package "valve+actuator" supplied by ENOLGAS.
- In order to choose the force of the actuator refer to the operating effort indicated in the table for each size of the valve.
- Rotate the valve cautiously after it has been kept in the same position for a long time.
- For every further information contact the authorized dealers or ENOLGAS BONOMI S.P.A. directly.

SWIFT•O•MATIC® QM
Ball valve fitted with electric actuator.

LOAD LOSS DIAGRAM
(TEST CARRIED OUT WITH WATER)

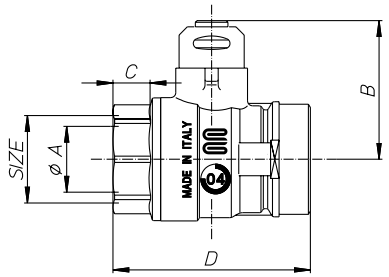


SIZE	DN	MAX BREAKING TORQUE AT PN 0 T 25°C	MAX BREAKING TORQUE AT PN 6 T 25°C	MAX BREAKING TORQUE AT PN 10 T 25°C	MAX BREAKING TORQUE AT PN 16 T 25°C	Kv H2O
1/2"	15	1 Nm (8,85 Lbin)	1,4 Nm (12,39 Lbin)	1,4 Nm (12,39 Lbin)	1,6 Nm (14,16 Lbin)	17
3/4"	20	1,6 Nm (14,16 Lbin)	2 Nm (17,70 Lbin)	2 Nm (17,70 Lbin)	2,5 Nm (22,12 Lbin)	41
1"	25	2,8 Nm (24,78 Lbin)	3,5 Nm (30,97 Lbin)	3,5 Nm (30,97 Lbin)	4 Nm (35,40 Lbin)	70
1 1/4''	32	4,4 Nm (38,94 Lbin)	5,5 Nm (48,68 Lbin)	5,5 Nm (48,68 Lbin)	6,1 Nm (53,98 Lbin)	121

The given value are referred to a new valve as releated by the manufacturer.

QUICK MOUNTING FULL BORE BALL VALVE FOR ACTUATOR

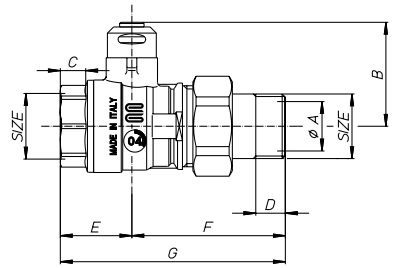
Art. S.1041 SWIFT•O•MATIC



Full bore ball valve female/female threaded, with quick mounting connection for actuator, nickel-plated.

Size	½"	¾"	1"	1"¼
øA bore	15	20	25	32
B mm	38,5	42	47	52
C mm	7,2	11	12,5	13,5
D mm	53	61	70,5	84
SW mm	26	31	38	47

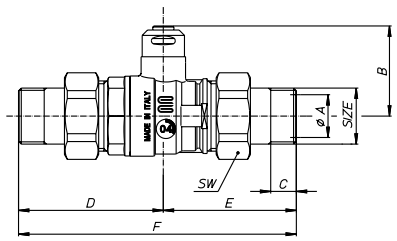
Art. S.1044 SWIFT•O•MATIC



Full bore ball valve nut and tail/female, with quick mounting connection for actuator, nickel-plated.

Size	½"	¾"	1"	1"¼
øA bore	15	20	25	32
B mm	38,5	42	47	52
C mm	7,2	11	12,5	13,5
D mm	10	12	12	15
E mm	25	29	35	41
F mm	54,5	62	69,5	81
G mm	79,5	91	104,5	122
SW1 mm	26	31	38	47
SW2 mm	30	37	47	52

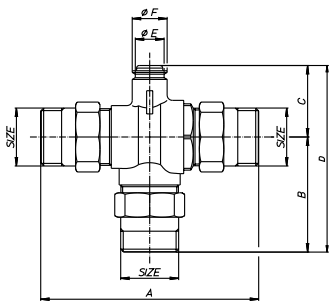
Art. S.1045 SWIFT•O•MATIC



Full bore ball valve nut and tail/nut and tail connection, with quick mounting connection for actuator, nickel-plated.

Size	½"	¾"	1"	1"¼
øA bore	15	20	25	32
B mm	38,5	42	47	52
C mm	10	12	12	15
D mm	57	68	77,5	87,5
E mm	54,5	62	69,5	81
F mm	111,5	130	147	168,5
SW mm	30	37	47	52

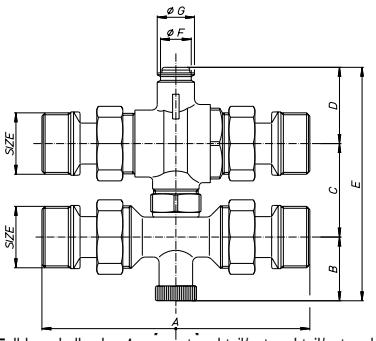
Art. S.1050 SWIFT•O•MATIC



Full bore ball valve 3 way, nut and tail connection on the 3 sides, with quick mounting connection for actuator, nickel-plated.

Size	½"	¾"	1"
A mm	100	110	125
B mm	50	57	66
C mm	32	34	41
D mm	82	91	107
øE mm	16,5	16,5	16,5
øF mm	20	20	20

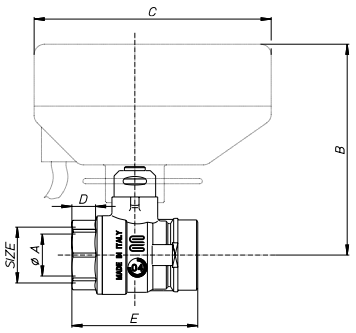
Art. S.1055 SWIFT•O•MATIC



Full bore ball valve 4 way, nut and tail/nut and tail/nut and tail/nut and tail connections, with quick mounting connection for actuator, nickel-plated.

Size	¾"	1"
A mm	143	143
B mm	34,5	34,5
C mm	50-60	50-60
D mm	40,5	40,5
øE mm	125	125
øF mm	16,5	16,5
øG mm	20	20

Art. S.2261 to S.2296 SWIFT•O•MATIC



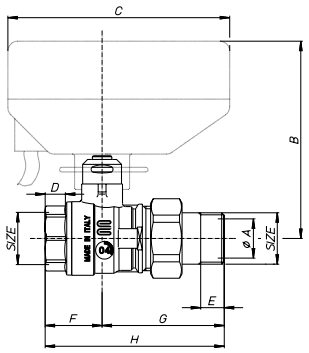
Full bore ball valve with electrical servo control series LITE IP 44.

Size	½"	¾"	1"	1"¼
øA bore	15	20	25	32
B mm	96,5	100	105	110
C mm	113	113	113	113
D mm	7,2	11	12,5	13,5
E mm	53	61	70,5	84
SW mm	26	31	38	47

ACTUATOR CHARACTERISTICS

S2261N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2266N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2271N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2276N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2281N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2286N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2291N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2296N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way

Art. S.2264 to S.2299 SWIFT•O•MATIC



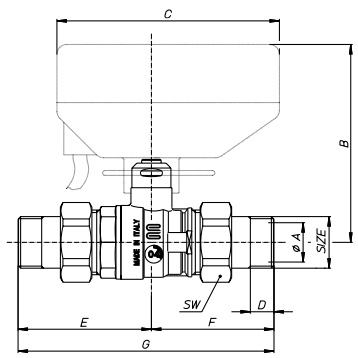
Full bore ball valve with electrical servo control series LITE IP 44.

Size	½"	¾"	1"	1"¼
øA bore	15	20	25	32
B mm	96,5	100	105	110
C mm	113	113	113	113
D mm	7,2	11	12,5	13,5
E mm	10	12	12	15
F mm	25	29	35	41
G mm	54,5	62	69,5	81
H mm	79,5	91	104,5	122
SW1 mm	26	31	38	47
SW2 mm	30	37	47	52

ACTUATOR CHARACTERISTICS

S2264N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2269N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2274N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2279N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2284N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2289N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2294N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2299N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way

Art. S.2265 to S.2300 SWIFT•O•MATIC



Full bore ball valve with electrical servo control series LITE IP 44.

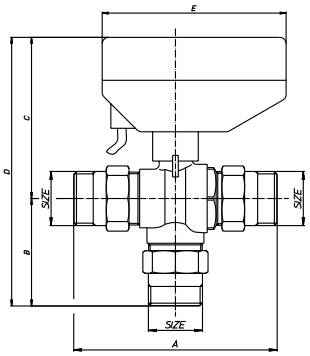
Size	½"	¾"	1"	1"¼
øA bore	15	20	25	32
B mm	96,5	100	105	110
C mm	113	113	113	113
D mm	10	12	12	15
E mm	57	68	77,5	87,5
F mm	54,5	62	69,5	81
G mm	111,5	130	147	168,5
SW1 mm	30	37	47	52

ACTUATOR CHARACTERISTICS

S2265N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2270N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2275N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2280N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2285N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2290N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2293N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2300N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way

QUICK MOUNTING FULL BORE BALL VALVE FOR ACTUATOR

Art. S.2241 to S.2248 SWIFT•O•MATIC



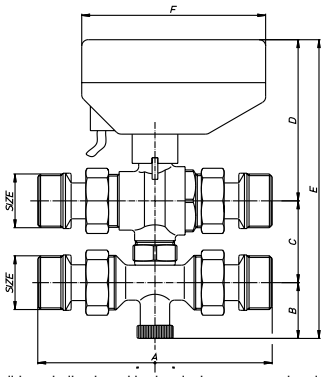
Full bore ball valve with electrical servo control series LITE IP 44.

Size	½"	¾"	1"
A mm	100	110	125
B mm	50	57	66
C mm	90	92	99
D mm	140	149	165
E mm	113	113	113

ACTUATOR CHARACTERISTICS

S2241N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2242N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2243N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2244N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2245N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2246N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2247N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2248N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way

Art. S.2251 to S.2258 SWIFT•O•MATIC



Full bore ball valve with electrical servo control series LITE IP 44.

Size		¾"	1"
A mm		143	143
B mm		34,5	34,5
C mm		50-60	50-60
D mm		99,5	99,5
E mm		194	194
F mm		113	113

ACTUATOR CHARACTERISTICS

S2251N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2252N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2253N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2254N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2255N 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2256N 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2257N 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2258N 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way

ACTUATORS

ELECTRIC AND PNEUMATIC ACTUATORS

ELECTRIC ACTUATORS

ELECTRIC INDUSTRIAL SERVO CONTROL
HEAVY DUTY

- Power supply voltage: 24/110/230V A.C. 50 Hz - IP 55
- Electricity absorption: 4,4VA
- Minimum and maximum running temperature: -10°C +70°C
- Torque on control rod: 9,8Nm
- Electric connection: with or without relay incorporated (see diagram)
- Manoeuvre time for 2-way valve both on opening and closing: 35 s
- Other manoeuvre times on request

PROPORTIONAL SERVO CONTROL FOR REGULATION HEAVY DUTY

- Power supply voltage: 24/230V A.C. - 50HZ - IP 55
- Minimum and maximum running temperature: -10°C +70°C
- Piloting: 4-20 mA (0-20 mA) - (0 -10V) for opening 0-90°/ 0 -180°
- Manoeuvre time: 90° 48 s
- Torque on control rod: 9,8

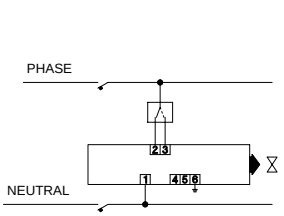
ELECTRIC SERVO CONTROL LITE

- Power supply voltage: 24/230V A.C. 50 Hz
- Degree of protection: IP 44
- Minimum and maximum running room temperature : -10°C +70°C
- Execution: two-way/one-way
- Special executions on request
- Normal manoeuvre time: 90° 45 s
- Electric connection: with relay plus additional micro incorporated.
- Torque on control rod: 8Nm (30,6Kg cm)

WIRING DIAGRAMS (INDUSTRIAL SERVO CONTROL HEAVY DUTY)

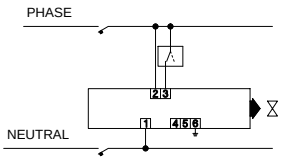
WITHOUT RELAY INCORPORATED

POSITION OF THE TERMINAL BOARD



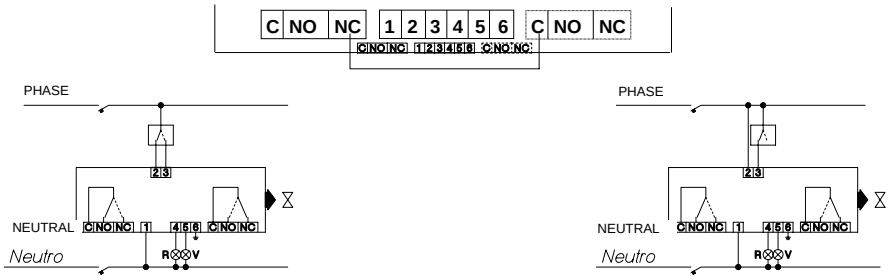
TERMINAL	CONNECTION	DESCRIPTION
1	NEUTRAL	CONNECTION OF NEUTRAL OF THE ELECTRICAL SYSTEM
2	OPEN	WHEN THE PHASE OF THE ELECTRIC SYSTEM IS CONNECTED TO TERMINAL 2 THE VALVE OPENS
3	CLOSE	WHEN THE PHASE OF THE ELECTRIC SYSTEM IS CONNECTED TO TERMINAL 3 THE VALVE CLOSES
4	PHASE WITH OPEN VALVE	WITH VALVE OPEN, PRESENCE OF PHASE ON TERMINAL 4
5	PHASE WITH CLOSED VALVE	WITH VALVE CLOSED, PRESENCE OF PHASE ON TERMINAL 5
6	EARTH	TERMINAL FOR CONNECTION TO THE EARTHING SYSTEM

WITH RELAY INCORPORATED



TERMINAL	CONNECTION	DESCRIPTION
1	NEUTRAL	CONNECTION OF NEUTRAL OF THE ELECTRIC SYSTEM
2	PHASE	CONNECTION OF PHASE OF THE ELECTRIC SYSTEM
3	OPENS	WHEN THE PHASE OF THE ELECTRIC SYSTEM IS CONNECTED TO TERMINAL 3 THE VALVE OPENS
	CLOSES	IN THE ABSENCE OF POWER TO TERMINAL 3 THE VALVE CLOSES
4	PHASE WITH OPEN VALVE	WITH VALVE OPEN, PRESENCE OF PHASE ON TERMINAL 4
5	PHASE WITH CLOSE VALVE	WITH VALVE CLOSED, PRESENCE OF PHASE ON TERMINAL 5
6	EARTH	TERMINAL FOR CONNECTION TO THE EARTHING SYSTEM

SUBSIDIARY MICROSWITCH WITH AVAILABLE CONTACTS

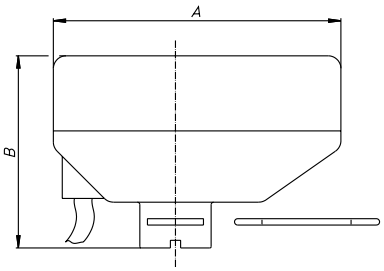


As an option, one or two microswitches with exchange contacts (switches) which are electrically independent from the servo control circuits (microswitches for use by the users), can be installed on the gearmotor side. The contacts of the subsidiary micro switch(es) have on vital importance for the control, consent and signalling functions in automatic industrial systems.

TERMINAL		CONNECTION		DESCRIPTION
A	B	A	B	
C	C	COMMON	COMMON	THIS IS THE CENTRAL CONTACT COMMON TO THE DEVIATOR
NO	NC	NORMAL OPEN	NORMAL CLOSED	IN CONNECTION WITH THE TERMINAL CLOSED WHEN THE VALVE IS OPEN
NC	NO	NORMAL CLOSED	NORMAL OPEN	IN CONNECTION WITH THE TERMINAL CLOSED WHEN THE VALVE IS OPEN

Art. S.2811 to S.2818

LITE ELECTRIC ACTUATOR
QUICK MOUNTING CONNECTION



Electric servo control series LITE with quick mounting connection.

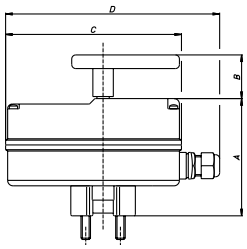
A mm	113
B mm	75,5

ACTUATOR CHARACTERISTICS

S2811P 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2812P 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2813P 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2814P 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 one-way
S2815P 230V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2816P 24V 50 HZ 3 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2817P 230V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way
S2818P 24V 50 HZ 2 wires 1 MICRO* 8Nm 45 sec. IP 44 two-way

Art. S.2851 to S.2868

HEAVY DUTY ELECTRIC ACTUATOR
WITH HANDLE



Industrial electric servo control series HEAVY DUTY with handle IP 55.

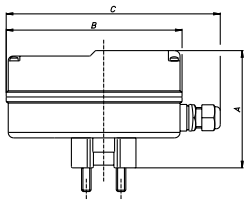
A mm	73
B mm	35
C mm	131
D mm	155

ACTUATOR CHARACTERISTICS

S2851P 230V 50 HZ 3 wires 11Nm 35 sec. IP 55 two-way
S2852P 110V 50 HZ 3 wires 11Nm 35 sec. IP 55 two-way
S2853P 24V 50 HZ 3 wires 11Nm 35 sec. IP 55 two-way
S2854P 230V 50 HZ 2 wires 11Nm 35 sec. IP 55 two-way
S2855P 110V 50 HZ 2 wires 11Nm 35 sec. IP 55 two-way
S2856P 24V 50 HZ 2 wires 11Nm 35 sec. IP 55 two-way
S2857P 230V 50 HZ 3 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2858P 110V 50 HZ 3 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2859P 24V 50 HZ 3 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2860P 230V 50 HZ 2 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2861P 110V 50 HZ 2 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2862P 24V 50 HZ 2 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2863P 230V 50 HZ 3 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2864P 110V 50 HZ 3 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2865P 24V 50 HZ 3 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2866P 230V 50 HZ 2 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2867P 110V 50 HZ 2 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2868P 24V 50 HZ 2 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way

Art. S.2881 to S.2898

HEAVY DUTY ELECTRIC ACTUATOR



Industrial electric servo control series HEAVY DUTY IP 55.

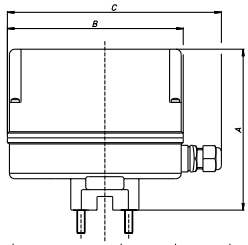
A mm	73
B mm	131
C mm	155

ACTUATOR CHARACTERISTICS

S2881P 230V 50 HZ 3 wires 11Nm 35 sec. IP 55 two-way
S2882P 110V 50 HZ 3 wires 11Nm 35 sec. IP 55 two-way
S2883P 24V 50 HZ 3 wires 11Nm 35 sec. IP 55 two-way
S2884P 230V 50 HZ 2 wires 11Nm 35 sec. IP 55 two-way
S2885P 110V 50 HZ 2 wires 11Nm 35 sec. IP 55 two-way
S2886P 24V 50 HZ 2 wires 11Nm 35 sec. IP 55 two-way
S2887P 230V 50 HZ 3 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2888P 110V 50 HZ 3 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2889P 24V 50 HZ 3 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2890P 230V 50 HZ 2 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2891P 110V 50 HZ 2 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2892P 24V 50 HZ 2 wires 1 MICRO* 11Nm 35 sec. IP 55 two-way
S2893P 230V 50 HZ 3 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2894P 110V 50 HZ 3 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2895P 24V 50 HZ 3 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2896P 230V 50 HZ 2 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2897P 110V 50 HZ 2 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way
S2898P 24V 50 HZ 2 wires 2 MICRO* 11Nm 35 sec. IP 55 two-way

Art. S.2901 - S.2902

HEAVY DUTY PROPORTIONAL SERVO
CONTROL FOR REGULATION



Proportional industrial servo control series HEAVY DUTY IP 55.

A mm	104
B mm	131
C mm	155

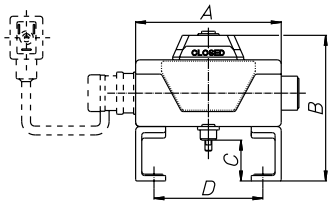
ACTUATOR CHARACTERISTICS

S2901P	24V	50HZ	4:20 mA (0:20 mA) (0-10V)	0°/90° - 0°/180°
S2902P	230V	50HZ	4:20 mA (0:20 mA) (0-10V)	0°/90° - 0°/180°

ACTUATORS ACCESSORIES

FOR PNEUMATIC ACTUATOR

Art. S.2501 - S.2502

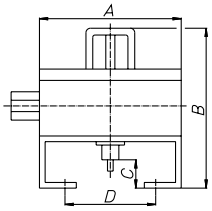


A	107
B	107
C	30
D	80
Weight gr.	385

PLASTIC MICRO BOX WITH MECHANICAL LIMIT STOPS, IP65
2 Mechanical limit stops IP65/DIN40050
Box Material: Fire-retardant plastic certified UL94V0
Electrical insulation: Double insulation (certified)
Plastic display
Running temperature: - 20°C / +80°C
Intake for electrical wiring: 1/2" NPT or M 20x1.5
Equipped with complete cable on request
Brackets: Metallic: Namur

S2501 Without cable/connectors
S2502 With cable/connectors

Art. S.2503 to S.2506

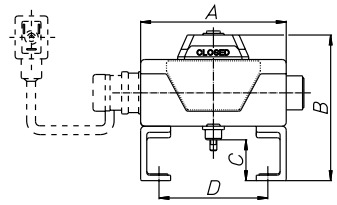


A	125
B	141
C	20
D	80
Weight gr.	600

ALUMINIUM MICRO BOX WITH INDUCTIVE LIMIT STOPS, IP65
2 Inductive limit stops IP65 / DIN 40050
Box material: Aluminium
Available with/without plastic display
Current: 16A (250 V AC) / 2,4 A (24 VCC)
Running temperature: -20°C / +80°C
Cable press: M 20x1.5
Brackets: Metallic: Namur

S2503 Without display with pin in Polyamide
S2504 With display and pin in Polyamide
S2505 Without display with pin in AISI304
S2506 With display and pin in AISI304

Art. S.2551 - S.2552

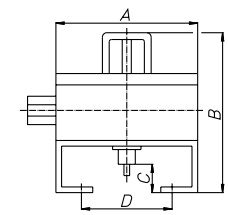


A	107
B	107
C	30
D	80
Weight gr.	385

PLASTIC MICRO BOX WITH INDUCTIVE LIMIT STOPS, IP67
2 Inductive limit stops IP67 / DIN 40050 (P+F)
Box Material: Fire-retardant plastic certified UL94V0
Electrical insulation: Double insulation (certified)
Plastic display
Running temperature: - 20°C / +80°C
Cable press: 1/2" NPT or M 20x1.5
Complete wiring furnished on request
Brackets: Metallic: Namur

S2551 Without cable/connectors
S2552 With cable/connectors

Art. S.2553 to S.2556



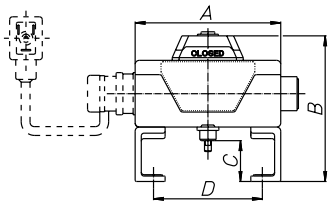
A	125
B	141
C	20
D	80
Weight gr.	600

ALUMINIUM MICRO BOX WITH INDUCTIVE LIMIT STOPS, IP67
2 Inductive limit stops IP67 / DIN 40050 (P+F)
Box material: Aluminium
Available with/without plastic display
Current: 0-100mA 1000Hz
Minimum current: 15mA
Voltage: 10-30 VCC
Running temperature: -20°C / +80°C
Cable press: M 20x1.5
Brackets: Metallic: Namur

S2553 Without display whit pin in Polyamide
S2554 With display and pin in Polyamide
S2555 Without display with pin in AISI304
S2556 With display with pin in AISI304

Available in version
Minimum Voltage/Current/Frequency/Current min.:
10-36V CC / 0-200mA /800Hz / 15MA
5-36V CC / 0-200mA / 2000Hz

Art. S.2601 - S.2602



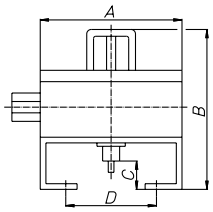
A	107
B	107
C	30
D	80
Weight gr.	385

PLASTIC MICRO BOX WITH INDUCTIVE LIMIT STOPS, IP67 EEx ia II T1....T6

2 Inductive limit stops EEx ia II T1....T6 IP67 (P+F)
Box material: Fire-retardant plastic certified UL94VO
Electrical insulation: Double insulation (certified)
Plastic display
Running temperature: -20°C / +80°C
Intake for electrical wiring: 1/2" NPT or M 20x1,5
Equipped with complete cable on request
Brackets: Metallic: Namur

S2601 Without Cable/connectors
S2602 With Cable/connectors

Art. S.2603 to S.2606



A	125
B	141
C	20
D	80
Weight gr.	600

ALUMINIUM MICRO BOX WITH INDUCTIVE LIMIT STOPS, IP67 EEx ia II T1...T6

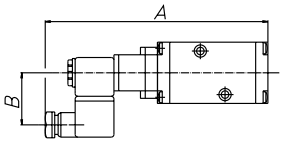
2 Inductive limit stops EEx ia II T1....T6 IP67 / DIN 40050 (P+F)
Box material: Aluminium
Available with/without plastic display
Current: 1-3 mA (operated-not operated)
Minimum current: 15ma
Voltage: 8VCC
Frequency: 1000 Hz
Running temperature: -20°C / +100°C
Cable press: M 20x1.5
Brackets: Metallic: Namur

S2603 Without display with pin in Polyamide
S2604 With display and pin in Polyamide
S2605 Without display with pin in AISI304
S2606 With display and pin in AISI304

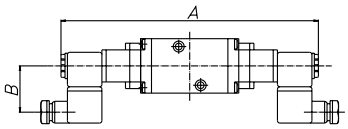
Available in version EEx ia II T1...T with the following values:
Minimum Voltage/Current/Frequency/Current min.:
8V CC/1-3mA/3000Hz/15mA
Available in version EEx d II C T6 (casing material aluminium provided on request)

Art. S.2701 to S.2706
Art. S.2731 to S.2736

MONOSTABLE



BISTABLE



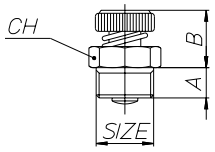
SOLENOID VALVE NAMUR

Namur multi-function solenoid valve 3/2 o 5/2 IP65
Device for manual control
Body/piston material UNI3177 (ASTM 240) Epoxy resin painted
Cop and plunger: UNI6362 (ASTM B241-60-63)
Rubber Gasket NBR
Hitch: 1/4" Gas (NPT)
Operating pressure: 2-10 bar
Operating temperature: -10°C + 70°C
Degree of protection IP 65/DIN 40050

MONOSTABLE		BISTABLE	
S2701	12VCC	**S2731**	12VCC
S2702	24VCC	**S2732**	24VCC
S2703	24VAC	**S2733**	24VAC
S2704	48VAC	**S2734**	48VAC
S2705	110VAC	**S2735**	110VAC
S2706	220VAC	**S2736**	220VAC

Available in the versions EEx m II T4 - T5 EEx ia IIC T6
Available alternative in aluminium (body) and internal components in polycarbonate /brass

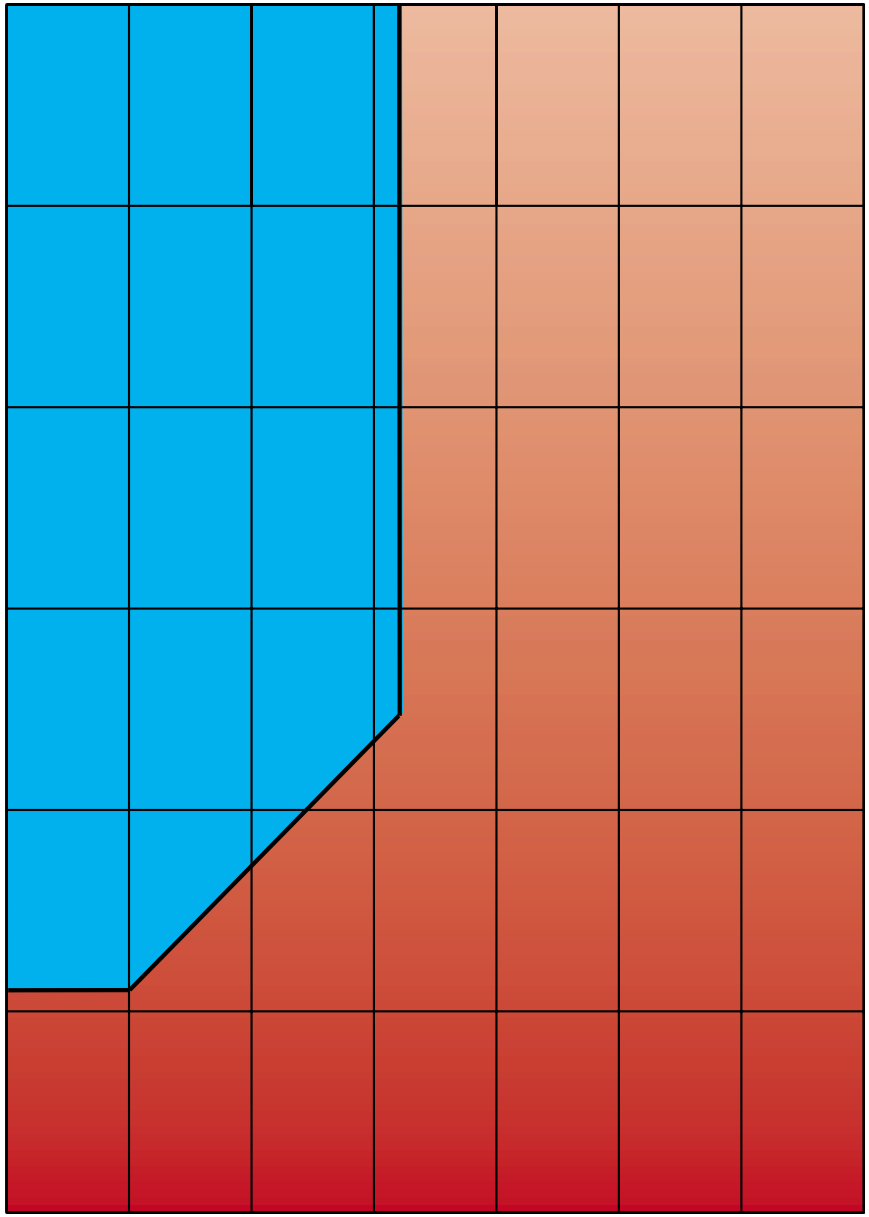
Art. S.2801



SILENCER

art. S2801

Shut off type DRSD for pneumatic actuators and electrovalves



TECHNICAL DATA

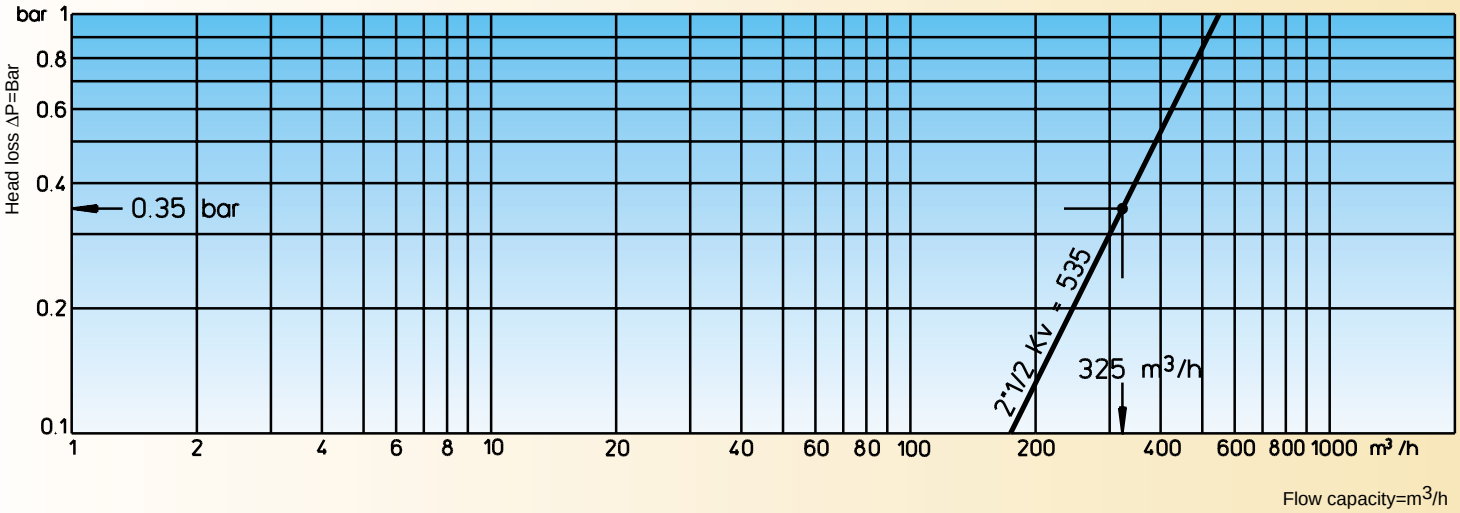
LOSS OF HEAD DIAGRAM

READING GUIDE

The curves of flow rate diagram have been drawn for every size of valve, according to laboratory tests.

The Kv value represents the loss of head expressed in cubic meters per hour of water at 15,5°C causing a loss of head of 1 bar (10,33 m of water gauge): the higher its value is, the lower are head losses.

For every other type of fluid and temperature level, the flow capacity changes accordingly: therefore to calculate it, it is necessary to introduce the relevant corrective coefficients into the formula.



Flow capacity=m^3/h

EXAMPLE

The 2"1/2 valve above represented determines a loss of head of 0,35 bar at the flow rate of 325 m^3/h.

Knowing the maximum loss of head allowed and the minimum necessary flow capacity, one chooses the size of the valve which gets as near as possible to the intersection point of the two half lines.

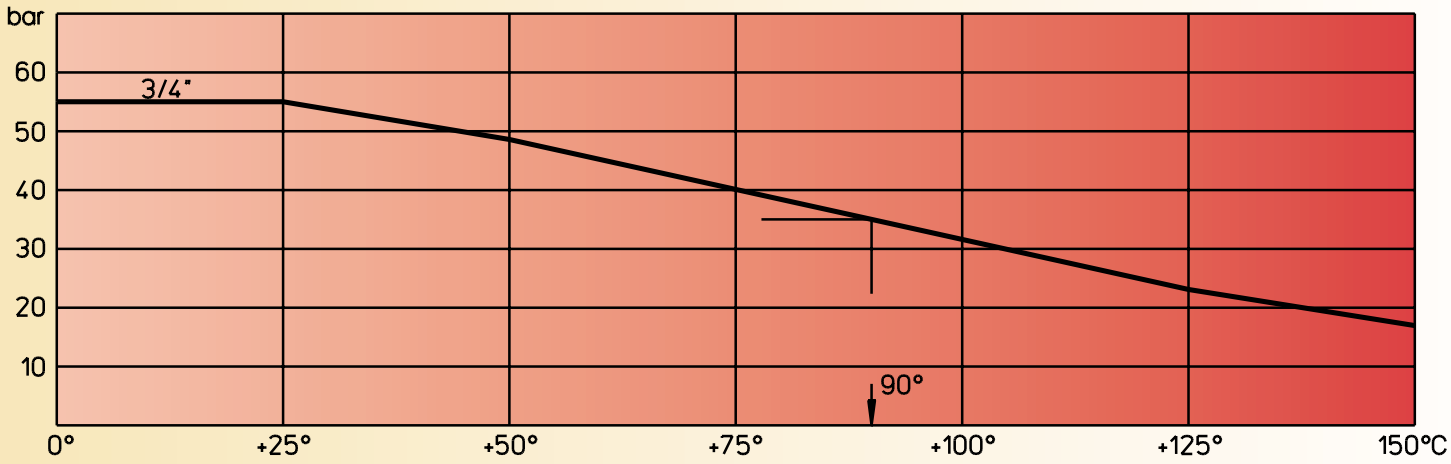
Knowing the flow rate of the installation, one can read the head loss corresponding to the chosen value and vice versa.

PRESSURE/TEMPERATURE DIAGRAM

READING GUIDE

The curves of pressure/temperature diagram have been drawn for every size of valve, on the ground of laboratory tests effected by using water. The values expressed in the curves represent the maximum working limits of the valves. Those values have been achieved by slow variation of pressure/temperature parameters. So, the reported parameters are just indicative: the type of the fluid, changes of pressure, temperature and frequency of manoeuvre operations have a certain influence on valves' life.

Going beyond the temperature of 125°C and getting near to the limit values of the curve, the life of the valves is remarkably reduced.



EXAMPLE

The above curve shows that on 3/4" valves at a working pressure of 35 bar you must not exceed the temperature of 90°C.

NOTE

PN = Nominal Pressure.
PN is the maximum working pressure value at the temperature of 20°C.

INTERNATIONAL UNIT SYSTEM (SI)

CONVERSION FACTORS

In order to pass from the measure expressed in SI system to those expressed in the units of other systems, you have to multiply per K; inversely you have to multiply per 1/K.

Size	Unit System	Unit of other misurement systems					
		Technic	factors K	1/K	Anglo-Saxson	factors K	1/K
lenght	**m(metro)**	m	1	1	in (inch)	39,370	0,0254
					ft (foot)	3,281	0,305
area	**m^2**	m^2	1	1	in^2(sq. in)	1550	0,000645
					ft^2(sq. ft)	10,764	0,0929
volume	**m^3**	m^3	1	1	ft^3(cu. ft)	35,315	0,0283
	$10^{-3}m^3 = dm^3 = 1$ (litro)	$dm^3 = 1$	1	1	gal US (gallon)	0,264	3,785
time	**s (second)**	s	1	1	sec (second)	1	1
		h (ora)	0,000278	3600	hr (hour)	0,000278	3600
rotation speed	**turn/s**	turn/min	60	0,0167	rpm(rev/min)	60	0,0167
speed	**m/s**	m/s	1	1	fpm(ft/min)	196,85	0,0051
frequency	**Hz (hertz)**	Hz (period/s)	1	1	Hz (cycle/sec)	1	1
mass	**kg(kilogram)**				lb (pound)	2,205	0,454
	g (gram)				gr (grain)	15,432	0,0648
volumetric mass	**kg/m^3**	(**)			lb/ft^3	0,0624	16,018
head capacity	**kg/s**	(**)					
force, weight(*)	**N (newton)**	kgf=kp (kg force)	0,102	9,807	lb (pound force)	0,225	4,448
specific, weight	**(**)**	kgf/m^3			lb/ft^3		
weight capacity	**(**)**	kgf/s			lbf/sec		
volum capacity	**m^3/s**	m^3/h	8600	0,000278	cfm (cu.ft/min)	2118,9	0,000472
	l/h	l/h	1	1	gpm (gal/min)	0,0044	227
force moment, torque (*)	**N-m**	kgf- m	0,102	9,807	lb-ft	0,738	1,356
moment of inertia (MR^2) (*)	**$kg-m^2$**	$kgf-s^2-m$(***)	0,102	9,807	$lb-ft^2$(***)	23,73	0,0421
pressure	**Pa (pascal) = N/m^2**	$kgf/m^2 = mmH_2o$	0,102	9,807	in wg(inch water gage)	0,00401	249,09
	10^5Pa=bar	kgf/cm^2= at (****)	0,0000102	98070	psi (lbf/in^2)	0,000145	6895
		torr = mmHg	0,0075	133,322	lbf/ft^2	0,0209	47,88
stress	**$N-mm^2$ = MPa**	kgf/mm^2	0,102	9,807	psi (lbf/in^2)	145	0,0069
material resistence (*)							
work , energy	**j (joule)**	kgf- m	0,102	9,807	lb-ft	0,738	1,356
		Wh (Watt x hour)	0,000278	3600			
		kcal (calory)	0,000239	4186,7	BTU (British Thermal Unit)	0,000948	1055
mechanic power (*)	**W (Watt)**	HP (Horse power)	0,00136	735,5	BHP (Brake Horse Power)	0,00134	745,7
electric power	**W**	W	1	1	W	1	1
thermic power	**W**	kcal/h	0,86	1,163	BTU/hr	3,413	0,293
temperature	**k (kelvin)**	k (*****)	1	1	°R (Rankine)	1,8	0,555
	° C (celsius)	°C	1	1	°F (fahrenheit)	(*****)	(*****)
specific heat	**j/kg k**	kcal/kgf°C	0,000239	4186,7	BTU/lbf°F	0,000239	4186,7
content of mass heat/heat power	**j/kg**	kcal/kgf	0,000239	4186,7	BTU/lbf°F	0,00043	2326
total heat		kcal/kgf					
content of volumetric heat	**j/m^3**	$kcal/m^3$	0,000239	4186,7	BTU/ft^3	$2,68E^{-5}$	37260
conducivity	**W/m k**	kcal/m h°C	0,86	1,163	BTU in/ft^2 hr °F	6,933	0,14423
					BTU/ft hr °F	0,5778	1,7308
thermic coefficient of trasmission	**W/m^2k**	$kcal/m^2h°C$	0,86	1,163	BTU/ft^2hr °F	0,176	5,679
specific thermical power	**W/m^2**	$kcal/m^2h$	0,86	1,163	BTU/ft^2 hr	0,317	3,1546
dynamics viscosity (*)	**Pa s = N s/m^2**	kgf s/m^2	0,102	9,807	lbf sec/ft^2	0,0209	47,88
		cP (centipoise)	1000	0,001			
kinematics viscosity	**m^2/s**	m^2/s	1	1	ft^2 /sec	10,764	0,0929
		cSt (centistoke)	10^6	10^6			
gas constant	**j/kg k**	m /k	0,102	9,807	ft /°R	0,602	1,661

Multiples and submultiples of SI unities

Multiplication factor	10^{12}	10^9	10^6	10^3	10^2	10^1	10^{-1}	10^{-2}	10^{-3}	10^{-6}	10^{-9}	10^{-12}	10^{-15}	10^{-18}
Prefix	tera	giga	mega	kilo	etto	deca	deci	centi	milli	micro	nano	pico	femto	atto
Symbol	T	G	M	K	h	da	d	c	m	µ	n	p	f	a

Notes

(*) Conversion factors are valid only if acceleration of gravity has the value g = 9,807 (m/s2) equivalent to 32,17 (ft/sec2)

(**) Specific weight and weight capacity are not considered in SI system: their numeric values in technic system do correspond, respectively, to those of volumetric mass and mass capacity in SI system.

The volumetric mass of the air in standard conditions (t = 20°C; pa = 100.000 Pa) has the value of 1,20/Kg/m3, same as 0,075 lb/ft3 in Anglo-Saxon system.

(***) Technic system prefers dynamic moment PD2 (kgf•m2).

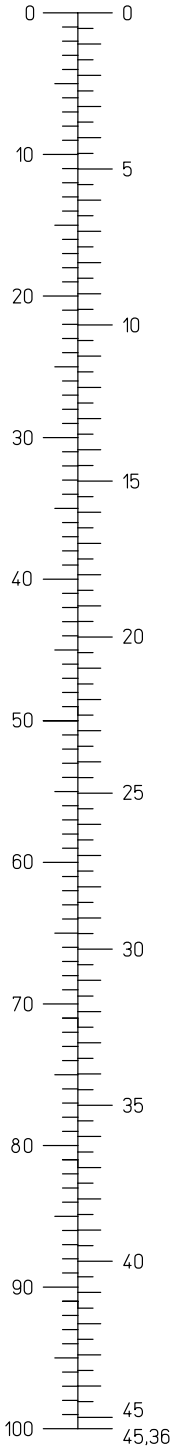
Moment of inertia in SI system results MR2 (Kg•M2) = PD2/4. Anglo-Saxon system uses the fly wheel effect WR2(lb•ft2) = 23,73 MR2

(****) at = metric or technic atmosphere = 736 torr. - atm = normal or physical atmosphere = 760 torr.

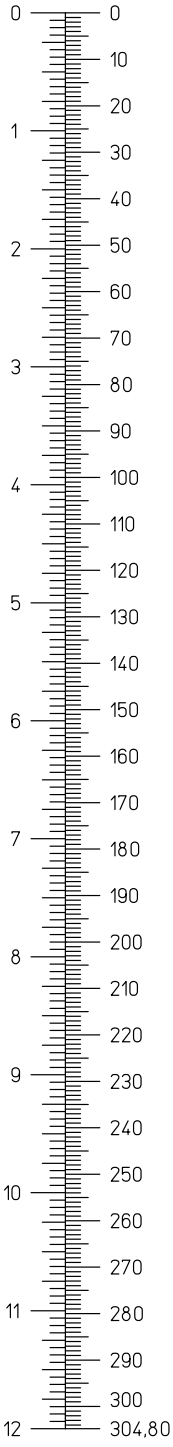
(*****) t (°C) = T(K) - 273,15 t (°C) = 5/9 [t(°F) - 32] - t(°F) = 9/5 t(°C) + 32

CONVERSION TABLE

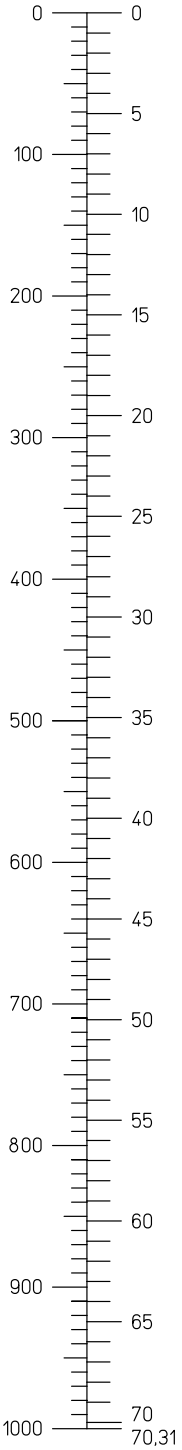
WEIGHT



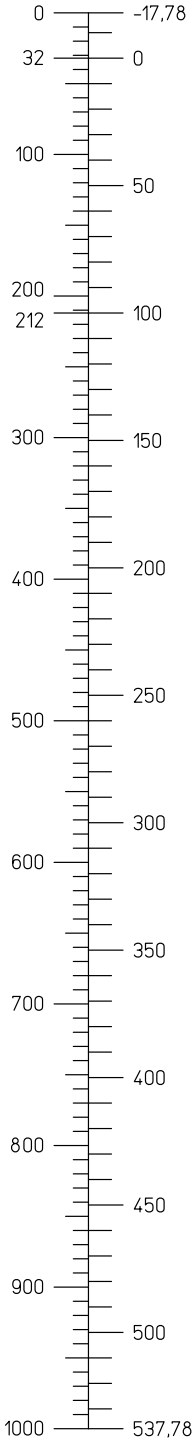
LENGTH



PRESSURE



TEMPERATURE



VOLUME

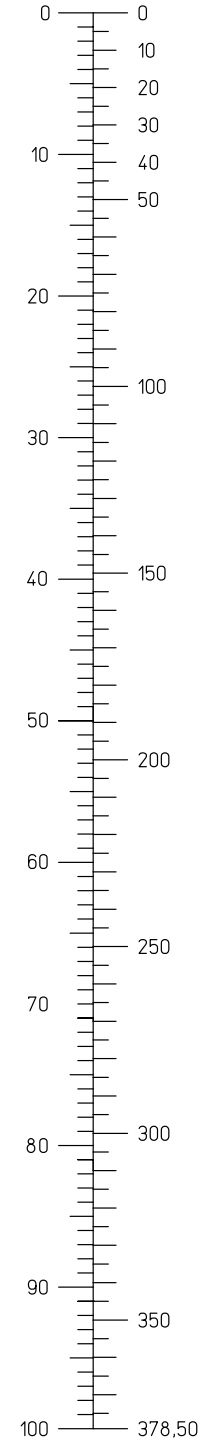


TABLE OF CHEMICAL RESISTANCE

E = EXCELLENT
G = GOOD
P = POOR
N = NOT RECOMMENDED
- = NO INFORMATION

	BRASS	CR-ALLOY	P.T.F.E.	ACETALIC RESIN (copolymer)	FLUOROELASTOMER	BUNA-N (N.B.R.)	A 105 (carbon steel)	AISI 316 (stainless steel)
Acetaldehyde	-	-	E	G	E	N	P	E
Acetic Acid	N	N	E	N	N	G	N	E
Acetic Anhydride	P	N	E	N	N	G	P	G
Acetone	G	G	E	E	N	G	G	E
Acetylene	P	G	E	E	E	G	E	E
Alcohol-amyl	E	N	E	E	G	-	N	E
Alcohol-butyl	E	G	E	E	E	E	G	E
Alumina	G	-	E	E	E	E	N	G
Aluminium Chloride	N	-	E	E	E	E	N	P
Aluminium Fluoride	-	-	N	-	-	E	N	P
Aluminium Sulphate	P	-	E	E	E	E	N	G
Amines	-	P	E	E	N	E	E	E
Ammonia, Anhydrous	E	-	E	-	N	G	G	E
Ammonia, Acqueous	N	N	E	-	N	G	G	E
Ammonium Bicarbonate	-	-	E	E	P	G	P	G
Ammonium Carbonate	-	-	E	E	P	E	G	G
Ammonium Chloride	N	-	E	E	P	E	P	G
Ammonium Hydroxide	N	N	E	E	P	E	G	E
Ammonium Monophosphate	-	N	E	G	P	E	N	E
Ammonium Nitrate	N	-	E	E	P	E	G	G
Ammonium Phosphate	-	N	E	-	-	E	N	G
Ammonium Phosphate (Dibasic)	-	N	E	-	P	E	E	E
Ammonium Phosphate (Tribasic)	-	-	E	-	P	E	G	E
Ammonium Sulphate	N	-	E	E	N	E	P	G
Amyl Acetate	G	N	E	G	N	E	P	G
Aniline Conc.	P	N	E	E	P	P	G	G
Arsenic Acid	-	-	E	E	E	-	N	G
Asphalt Liquid	E	-	E	E	E	E	G	E
Barium Carbonate	E	G	E	E	E	N	G	G
Barium Chloride	N	-	E	E	E	E	P	G
Barium Hydroxide	G	N	E	E	E	E	P	G
Barium Sulphate	E	N	E	E	E	E	G	G
Barium Sulphide	G	G	E	E	E	E	-	-
Beer	G	N	E	E	-	E	P	E
Benzene	E	G	E	E	E	E	G	G
Benzoic Acid	G	-	E	-	E	E	G	G
Borax	E	N	E	E	E	-	G	E
Boric Acid	G	N	E	E	E	E	N	G
Brines	G	G	E	-	-	E	P	G
Bormine (Dry)	E	N	E	-	G	E	N	N
Bromine (Wet)	N	-	E	-	G	N	N	N
Bromine Acid	N	-	E	-	E	N	-	N
Butadiene	-	-	E	E	E	E	G	E
Butane	E	-	E	E	E	E	G	G
Butylene	-	G	E	-	E	E	E	E
Butyrric Acid	P	-	E	E	G	E	P	G
Calcium Bisulphate	G	-	E	-	E	E	N	G
Calcium Carbonate	E	-	E	E	E	E	G	G
Calcium Chloride	N	-	E	E	E	E	P	N
Calcium Hydroxide	G	G	E	E	E	E	G	G
Calcium Hypochlorite	N	G	E	E	E	E	N	N
Calcium Sulphate	E	N	E	E	E	E	P	G
Carbolic Acid	G	G	E	N	E	E	P	G
Carbon Sulphate	E	N	E	-	-	E	G	G
Carbon Sulphide	G	-	E	E	E	N	G	G

	BRASS	CR-ALLOY	P.T.F.E.	ACETALIC RESIN (copolymer)	FLUOROELASTOMER	BUNA-N (N.B.R.)	A 105 (carbon steel)	AISI 316 (stainless steel)
Carbon Tetrachloride (Wet)	P	G	E	E	E	N	N	P
Carbonated Water	P	-	E	E	E	E	-	E
Castor Oil	P	-	E	E	E	E	G	E
Caustics Soda	P	N	E	-	E	E	G	G
Chlorine Gas (Dry)	N	G	E	E	E	E	-	P
Chlorobenzene (Dry)	-	-	E	E	E	P	E	E
Chloroform (Dry)	E	-	E	E	E	N	E	E
Chromic Acid	N	-	E	N	E	E	N	N
Chromic Anhydride	N	-	E	-	-	E	N	N
Citric Acid	P	N	E	-	-	E	N	G
Coal Tar	G	G	E	E	E	P	E	E
Coconut Oil	-	-	E	E	E	E	P	G
Copper Chloride	N	-	E	E	E	E	N	G
Copper Nitrite	P	-	E	E	-	E	N	E
Copper Sulphate	N	N	E	E	E	E	N	G
Cottonseed Oil	E	G	E	E	P	E	P	G
Creosote Oil	E	-	E	E	E	N	G	G
Cresvlic Acid	G	N	E	N	E	-	G	E
Dichloroethan	-	-	E	-	-	P	N	G
Distilled Water	E	-	E	E	G	E	P	E
Etyhl Acetate	E	G	E	E	N	-	G	G
Ethyl Alcohol	E	-	E	E	N	E	G	G
Ethyl Chloride (Dry)	G	-	E	E	E	E	E	E
Ethilene Oxide	E	-	E	E	N	N	G	G
Ferric Chloride	N	N	E	E	E	E	N	N
Ferric Sulphate	N	N	E	E	E	E	N	E
Ferrous Chloride	N	-	E	E	E	E	N	N
Ferrous Sulphate	N	N	E	E	E	E	P	G
Fish Oil	-	-	E	E	E	E	G	E
Flax Oil	G	-	E	-	-	E	E	G
Fluorosilic Acid	N	-	E	-	N	E	N	N
Formaldehyde	P	P	E	E	N	E	N	P
Formic Acid	N	N	E	N	-	E	N	P
Freon	E	-	E	-	E	G	E	E
Fruit Juices	N	P	E	E	E	E	N	E
Fuel Oil	E	G	E	E	E	E	G	E
Furfural	E	G	E	E	N	N	G	G
Gallic Acid	-	G	E	-	G	E	N	G
Gas, Natural	E	-	E	E	E	E	G	E
Gasoline	E	-	E	E	E	P	E	E
Gelatine	G	G	E	E	E	E	N	E
Glucose	E	G	E	E	E	E	G	G
Glycerine	E	G	E	P	E	E	E	E
Glucol Ethylene	G	-	E	-	E	G	E	E
Ground Water	G	-	E	E	P	E	P	E
Hydrobromic Acid	N	-	E	-	-	E	N	N
Hydrocarbons	E	-	E	-	E	E	E	E
Hydrochloric Acid	N	N	E	N	E	E	P	G
Hydrocyanic Acid	N	N	E	-	E	E	P	G
Hydrofluoric Acid	N	P	E	-	E	G	N	N
Hydrogen Peroxide	P	N	E	-	G	E	-	E
Hydrogen (Dry) Sulphide	E	P	E	-	N	-	-	-
Hydrogen (Wet) Sulphide	P	N	E	-	N	-	-	-
Hydrofluosilic Acid	G	-	E	-	E	E	N	P
Hyppochlorate Sodium	P	-	E	-	-	P	N	P

HOSTAFORM: For any information concerning the chemical resistance, please contact ENOLGAS technical department.

NOTE: The tables report the resistance of the materials to chemical corrosion. The data reported are obtained from tables given by the materials manufacturers and are indicative, not binding.
To make sure concerning the practical suitability of materials, one has to consider various factors, such as working conditions, pressure, temperature, time, fluid concentration and eventual dynamic shock.

E = EXCELLENT G = GOOD P = POOR N = NOT RECOMMENDED - = NO INFORMATION	BRASS	CR-ALLOY	P.T.F.E.	ACETALIC RESIN (copolymer)	FLUOROELASTOMER	BUNA-N (N.B.R.)	A 105 (carbon steel)	AISI 316 (stainless steel)
Hypochlorite Sodium	N	-	E	-	-	E	N	P
Hyposulphite Sodium	P	-	E	-	-	E	N	G
Iodoform	-	-	E	E	E	-	N	E
Iso-octane	-	-	E	E	E	E	E	E
Isopropilic Alcohol	-	-	E	E	E	E	G	G
Latic Acid	P	-	E	N	E	E	N	E
Lead Acetate	-	-	E	E	N	E	N	G
Magnesium Chloride	N	G	E	E	E	E	N	G
Magnesium Hydroxide	G	G	E	E	E	E	G	E
Magnesium Oxide	-	-	E	E	E	E	G	G
Magnesium Sulphate	P	G	E	E	E	E	G	G
Maleic Acid	-	N	E	E	E	E	G	G
Malic Acid	-	-	E	E	E	E	N	G
Mercury Salts	N	-	E	-	-	E	-	N
Mercury	N	N	E	E	E	E	G	P
Methane	E	G	E	E	E	E	G	G
Methil Acetate	-	-	E	-	N	N	G	E
Methil Alcohol	E	-	E	E	N	E	G	G
Methil Chloride	G	-	E	-	-	P	N	G
Methil Formate	-	-	E	-	N	P	P	G
Milk	G	P	E	E	E	E	N	E
Mineral Oil	E	-	E	E	E	E	G	E
Mineral Water	G	-	E	E	P	E	P	G
Molasses	G	N	E	-	E	E	-	E
Naphta	G	G	E	E	E	E	G	G
Naphtalene	-	-	E	E	E	-	E	G
Nickel Chloride	P	-	E	E	E	E	N	G
Nickel Nitrate	-	-	E	E	-	E	N	G
Nickel Sulphate	P	G	E	E	E	E	N	G
Nitric Acid 0 To 50%	N	-	E	N	E	G	N	E
Nitric Acid 50 To 90%	N	-	E	N	E	N	N	G
Nitric Acid (Conc.)	N	-	E	N	E	N	N	G
Nitrobenzene	-	G	E	-	G	N	G	G
Nitrogen	E	G	E	E	E	E	E	E
Oleic Acid	P	N	E	E	G	G	P	G
Oleum	-	-	E	N	E	N	G	G
Oxalic Acid	P	P	E	P	E	E	P	G
Oxygen	E	G	E	E	G	E	G	E
Paints	E	-	E	E	E	E	P	E
Paint Solvents	E	-	E	-	G	P	-	E
Palmitic Acid	P	N	E	E	E	G	P	G
Paraffin	E	-	E	E	E	E	E	E
Paraformaldehyde	-	-	E	E	-	G	G	G
Pentane	-	G	E	E	E	E	G	E
Phenol	-	P	E	N	E	G	P	G
Phosphoric Acid	N	-	E	N	E	G	N	N
Phthalic Acid	-	N	E	E	E	P	P	G
Picric Acid	N	-	E	-	E	N	P	G
Pine Oil	-	-	E	E	E	E	G	E
Potassium Bromide	-	-	E	E	E	E	G	G
Potassium Carbonate	P	G	E	E	E	E	G	G
Potassium Chlorate	-	-	E	E	-	E	G	G
Potassium Chloride	P	G	E	E	E	E	N	G
Potassium Cyanide	N	N	E	E	E	E	G	G
Potassium Dichromate	N	N	E	E	E	-	P	G

E = EXCELLENT G = GOOD P = POOR N = NOT RECOMMENDED - = NO INFORMATION	BRASS	CR-ALLOY	P.T.F.E.	ACETALIC RESIN (copolymer)	FLUOROELASTOMER	BUNA-N (N.B.R.)	A 105 (carbon steel)	AISI 316 (stainless steel)
Potassium Diphosphate	-	-	E	E	-	E	E	E
Potassium Disulphite	-	-	E	E	E	E	N	G
Potassium Hydroxide	P	N	E	-	-	E	E	E
Potassium Iodide	-	-	E	E	-	E	P	G
Potassium Sulphate	G	G	E	E	E	E	G	G
Propane	E	G	E	E	E	E	G	G
Pyrogallic Acid	-	N	E	E	E	-	G	G
Salicilic Acid	-	N	E	E	E	E	N	G
Sea Water	P	-	E	E	P	E	N	G
Silver Nitrate	N	-	E	E	E	E	N	G
Soap Solution	G	G	E	-	-	E	G	G
Sodium Acetate	-	-	E	E	P	G	P	G
Sodium Bicarbonate	P	G	E	E	E	E	P	G
Sodium Bisulfate	N	G	E	-	-	E	N	G
Sodium Bisulfite	G	-	E	E	E	E	N	E
Sodium Borate	-	-	E	E	E	E	P	G
Sodium Carbonate	P	P	E	E	E	E	G	G
Sodium Chloride	P	G	E	E	E	E	P	G
Sodium Cyanide	N	N	E	E	P	E	G	G
Sodium Fluoride	-	-	N	E	E	-	N	G
Sodium Hydrate	G	-	E	-	-	E	E	E
Sodium Hydroxide	P	N	E	-	E	E	E	E
Sodium Metalsilicate	-	-	E	-	-	E	P	E
Sodium Nitrate	P	-	E	E	P	E	G	G
Sodium Perborate	-	N	E	E	E	E	G	G
Sodium Phosphate	P	-	E	-	E	E	P	G
Sodium Phosphate(Dibasic)	G	-	E	-	-	E	N	G
Sodium Silicate	G	-	E	E	E	E	G	G
Sodium Sulphate	G	G	E	E	E	E	G	G
Sodium Sulphide	G	N	E	E	E	E	G	G
Sodium Sulphite	G	-	E	E	E	E	G	G
Sodium Thiosulphate	P	N	E	E	E	E	G	E
Soybean Oil	-	G	E	E	E	E	P	E
Steam	P	-	E	N	P	-	E	E
Stearic Acid	P	G	E	E	P	E	P	E
Styrene	-	-	E	-	G	G	E	E
Sulphur Anhydride(Dry)	E	-	E	N	E	E	G	G
Sulphur Anhydride(Wet)	N	-	E	E	E	E	-	P
Sulphur	E	-	E	-	N	E	G	E
Sulphur Dioxide(Dry)	N	G	E	E	N	N	G	G
Sulphuric Acid 0 To 10%	P	-	E	E	E	G	N	P
Sulphuric Acid 10 To 90%	N	N	E	P	E	N	N	P
Sulphuric Acid (Conc.)	N	-	E	N	E	P	G	G
Sulphurous Acid	P	N	E	P	E	N	N	G
Tannic Acid	G	P	E	E	E	E	N	E
Tartaric Acid	P	N	E	E	E	E	N	E
Toluene Or Toluol	E	G	E	E	E	P	E	E
Trichloroacetic Acid	P	-	E	-	-	-	N	N
Trichloroethylene(Dry)	E	-	E	-	G	P	G	G
Trychloroethylene(Wet)	P	-	E	-	G	P	-	-
Turpentine	G	G	E	E	E	N	E	E
Vinegar	N	P	E	-	E	E	N	E
Xylene	-	-	E	-	-	N	G	E
Zinc Chloride	N	N	E	E	E	E	N	G
Zinc Sulphate	N	G	E	E	E	E	N	G

HOSTAFORM: For any information concerning the chemical resistance, please contact ENOLGAS technical department.